LBI-38703B

Technical Reference Manual

EDACS® VAX/VMS SYSTEM MANAGER

INSTALLATION, SETUP & TROUBLESHOOTING

ERICSSON

NOTE

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations or substitution of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

NOTICE!

CREDITS

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PREFACE

This manual is a guide for persons responsible for software installation and/or maintenance of the Enhanced Digital Access Communication System (EDACS) VAX/VMS System Manager. Instructions for initial installation, installation upgrade, troubleshooting, maintenance and/or field support of these systems are detailed. This manual does not explain "EDACS System Manager" functional operation; that information is found in the User's Guide.

INTRODUCTION

When a VAX computer system is purchased from Digital Equipment Corporation (DEC) it comes with the latest version of the VMS operating system pre-loaded on the main disk (called the system disk). Once inventoried, cabled up, powered up and checked out, Product Authorization Keys or PAK's must be entered. These PAK's are licenses purchased from DEC to legally use their software. Several DEC optional products are then loaded onto the system disk and initialized. At that point the EGE System Manager application package is installed and initialized.

All of these steps would normally be manually performed by a person called the VMS System Manager. In our case a tool developed by EGE called the **sminstall** utility can be used to perform all of these functions. The **sminstall** utility is a program (written in VMS DCL) having a user interface that asks a series of configuration questions and in response executes numerous complex VMS system management utilities. Therefore, the cost of employing a specialist to perform these tasks is saved. The following is a list of the various features included in this utility:

1 - Setup Of a New VAX System and Installation of the EGE Software Package.
2 - Setup Of an Existing VAX System and Installation of the EGE Software.*
3 - Installation Of a New EGE Software Release/Update.
4 - Add or Delete System or EDACS Devices.
5 - Display System Software and Hardware Product Versions.
6 - Review/Print EDACS Device Configuration Map.
7 - Initialize Any or All databases.
8 - Create a System Disk Image Backup.
9 - Build a Stand Alone BACKUP Kit.
10 - Log Out of the **sminstall** Account.
11 - Reboot the System.
12 - Shut Down the System.
13 - View the **sminstall** Log File.
14 - Execute System Diagnostics.*
15 - Display/Set System Time.*
16 - Remove the DECwindows Software Package.

* Indicates option is presently not available.

At the time this manual was written, the VAX processors being used were Micro VAX 3100-30,3100-40 and 3100-80. The version of the operating system was VMS V5.5-2. As processor models change and the Operating System changes this manual will be updated.

CONVENTIONS

The following conventions are used throughout this manual:

Convention	Description
^ or (ctrl)	When the ^ symbol is seen it indicates that the 'ctrl' key is to be used.
<cr>	This symbol indicates that the[RETURN] key is to be pressed.
"text"	Text shown within quotes is to be entered exactly as shown.
'text'	Text within ticks (or apostrophes) is to be replaced as explained in the next few examples.
'addr'	When 'addr' appears it should be replaced with the Ethernet Address in the form AA-AA-AA-AA-AA-AA.
'node'	When 'node' appears it should be replaced by the DECserver node name. [Ex. SMGDS1 or SMGDS2]
'smgds#'	Occurrences of 'smgds#' are replaced by the DECserver node name. [SMGDS1 or SMGDS2]
'port#'	Occurrences of 'port#' are replaced by a specific DECserver port number to be used. [DECservers have 8 ports ranging from 1-8 and are labeled J1 - J8 on the rear of the unit.
'port_name'	Occurrences of 'port_name' are replaced by a specific DECserver port name such as SITE_1 or DEVICE_33.
'sysdsk'	Occurrences of 'sysdsk' are replaced by the system disk name by following the instructions in Chapters 1 and 6.
'actdisk'	Occurrences of 'actdisk' are replaced by the activity disk name.
'tapedrv'	Occurrence of 'tapedrv' are replaced by the system tape drive name found by following the instructions in Chapters 1 and 6.
Note	A note contains information of special importance to the reader.
Caution	A caution contains information to prevent damage to the equipment.
Warning	A warning contains information to prevent personal injury.
(n1):(n2)	Screen numbers are designated as shown where n1 is the selected screen and n2 is the maximum number of screens available.
(Operator Entries)	Helvetica Bold 10 point font (i.e. "**help**").
(Normal Text)	Times Roman 10 point font (i.e. "Times Roman text").
(Computer responses or prompts)	Courier 10 point font (i.e. "`Enter a question mark(?) at any time for help`").

Help on any of the VMS commands seen in this manual can be obtained by typing "**help 'command'<cr>**" (where 'command' is the command that is in question) from within any of the VMS accounts.

CHAPTER 1 -
INITIAL SETUP OF A MICRO VAX 3100 AS AN EDACS SYSTEM MANAGER

1.1 - INITIAL SYSTEM SETUP DETAILED INSTRUCTIONS

NOTE

For assistance throughout this procedure reference the vendor's Customer Hardware Information manuals provided with the computer equipment. Also reference the hardware configuration diagrams in Chapter 2 of this manual for an explanation of the various system configurations. A copy of Appendix A sheet #1 must be made and used throughout this procedure to keep a list of necessary data as well as a check off log to keep track of progress. A separate sheet must be maintained for every system installation.

1.1.1 - Hardware Configuration and Inspection

1) Unpack the equipment, verify that the customer order is complete, inspect for any shipping damage.

2) Install the terminator to the SCSI expansion slot on the rear of the CPU cabinet. (Refer to Hardware Configuration Diagrams in Chapter 2.)

3) Install the thick wire Ethernet terminator to the thick wire Ethernet port on the rear of the CPU cabinet.

4) If this system uses DECservers:

   - Connect all associated Ethernet H/W.
   - Make sure the Network Selector Switch on the CPU and each server is in the right-hand position to select ThinWire Ethernet.

5) If no DECservers are used with this system install the thin wire terminator on the Thin wire port on the rear of the CPU.

6) Apply power to terminal and setup the comm 1 port as follows:

   - Press the F3 key to enter terminal setup.
   - Using the arrow keys, select the "Global" field and press ENTER
   - Using the arrow keys, select the "comm" field and using the ENTER key, select "s1=comm1" then select the field below that and make "comm1=dec423".
   - Using the arrow keys, select the "To Directory" field and press ENTER.
   - Using the arrow keys, select the "save" field and press the ENTER key.
   - Press the F3 key to exit terminal setup.

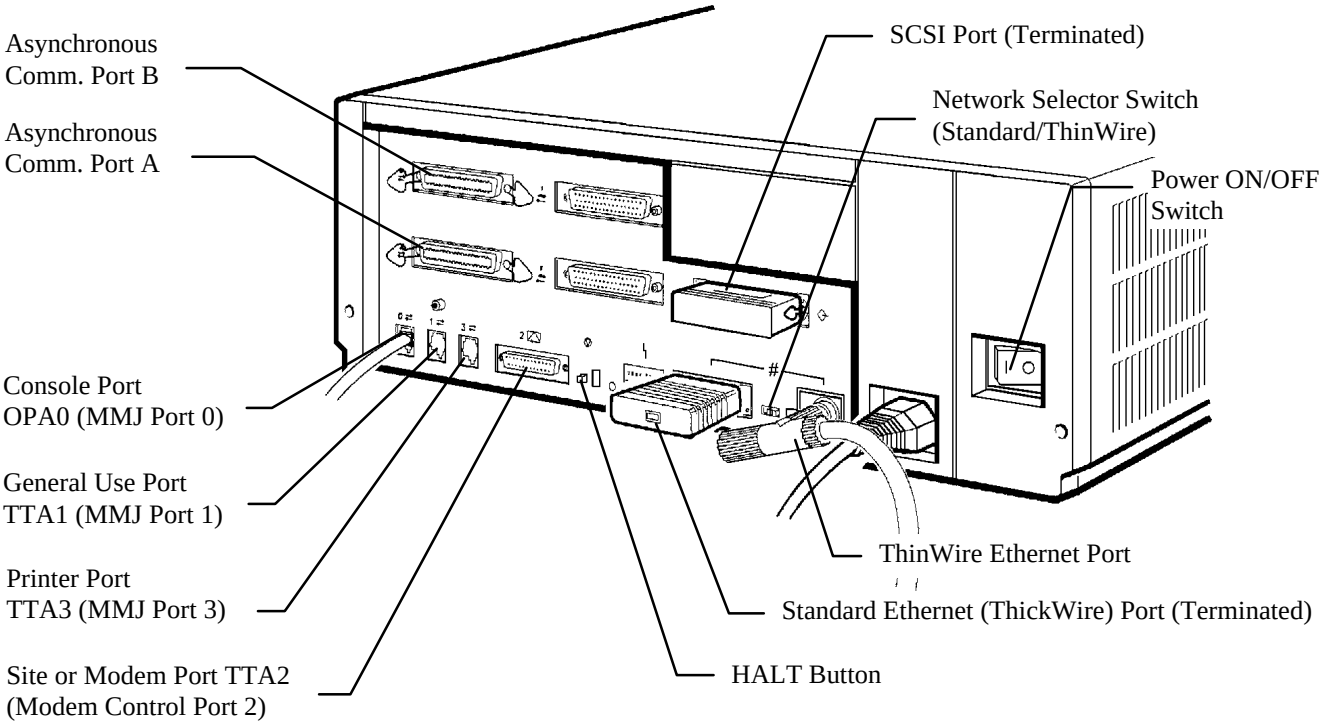

Figure 1-1. System Manager Model 40 and 80 CPU Cabinet (Rear View)

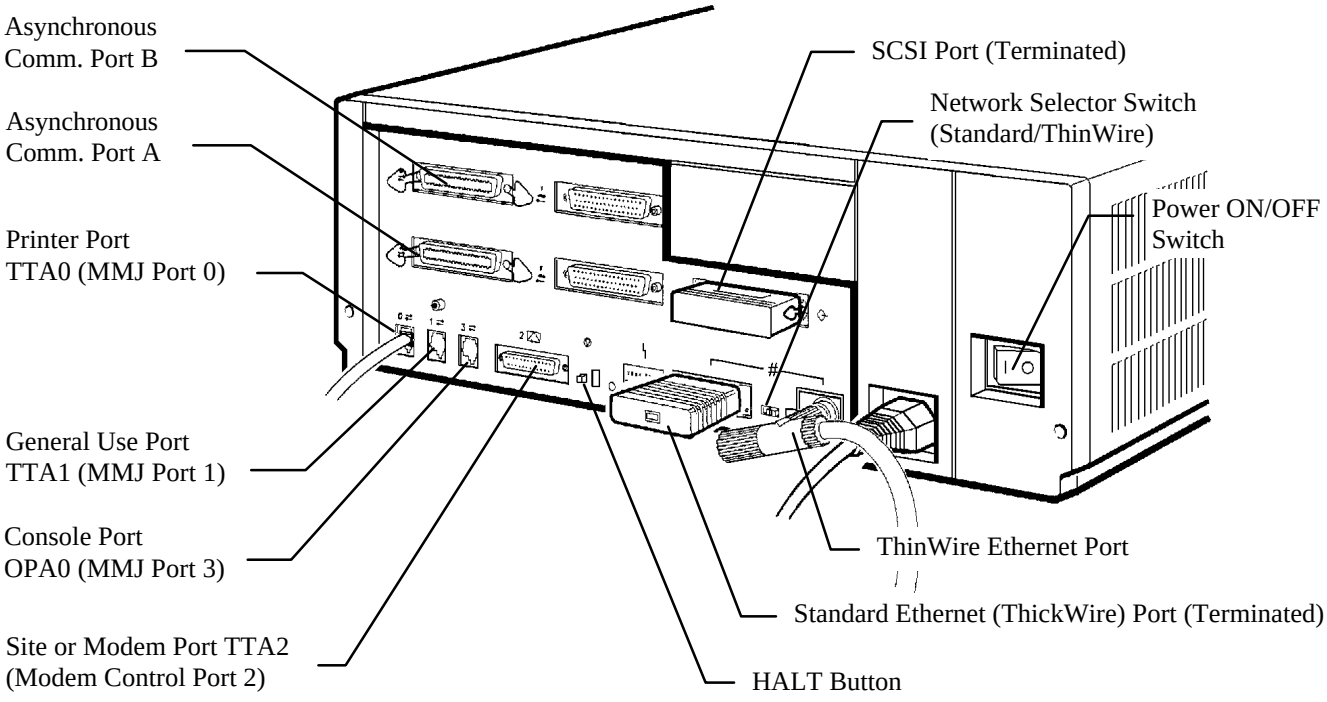

Figure 1-2. System Manager Model 85 CPU Cabinet (Rear View)

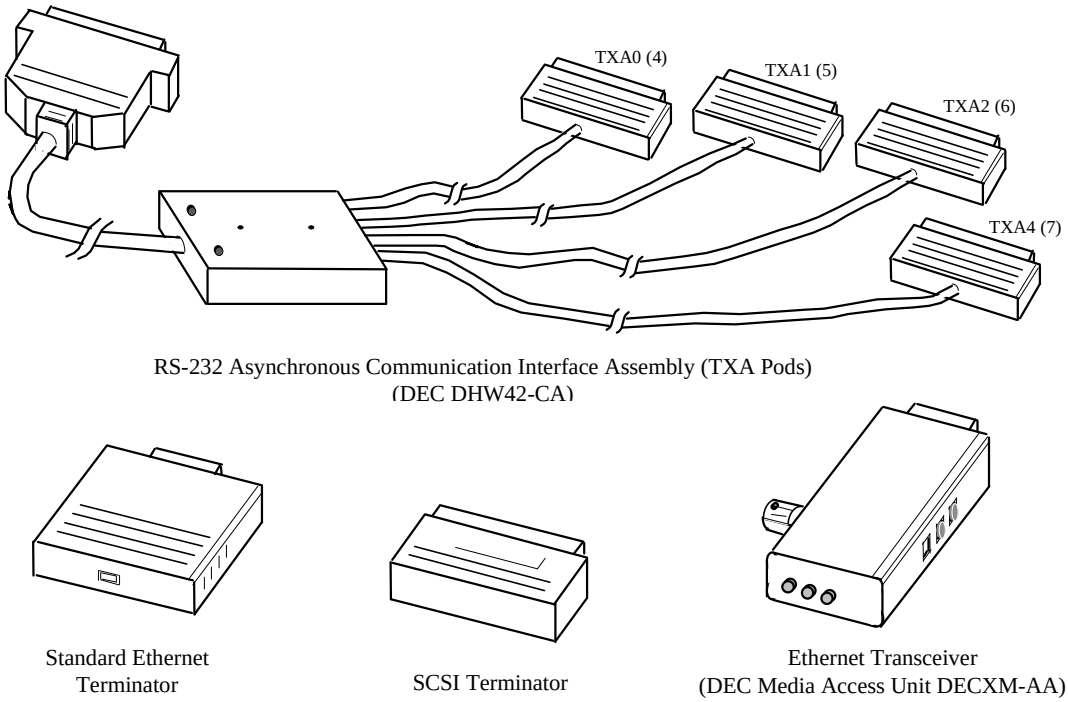

Figure 1-3. Ethernet Network Installation Accessories

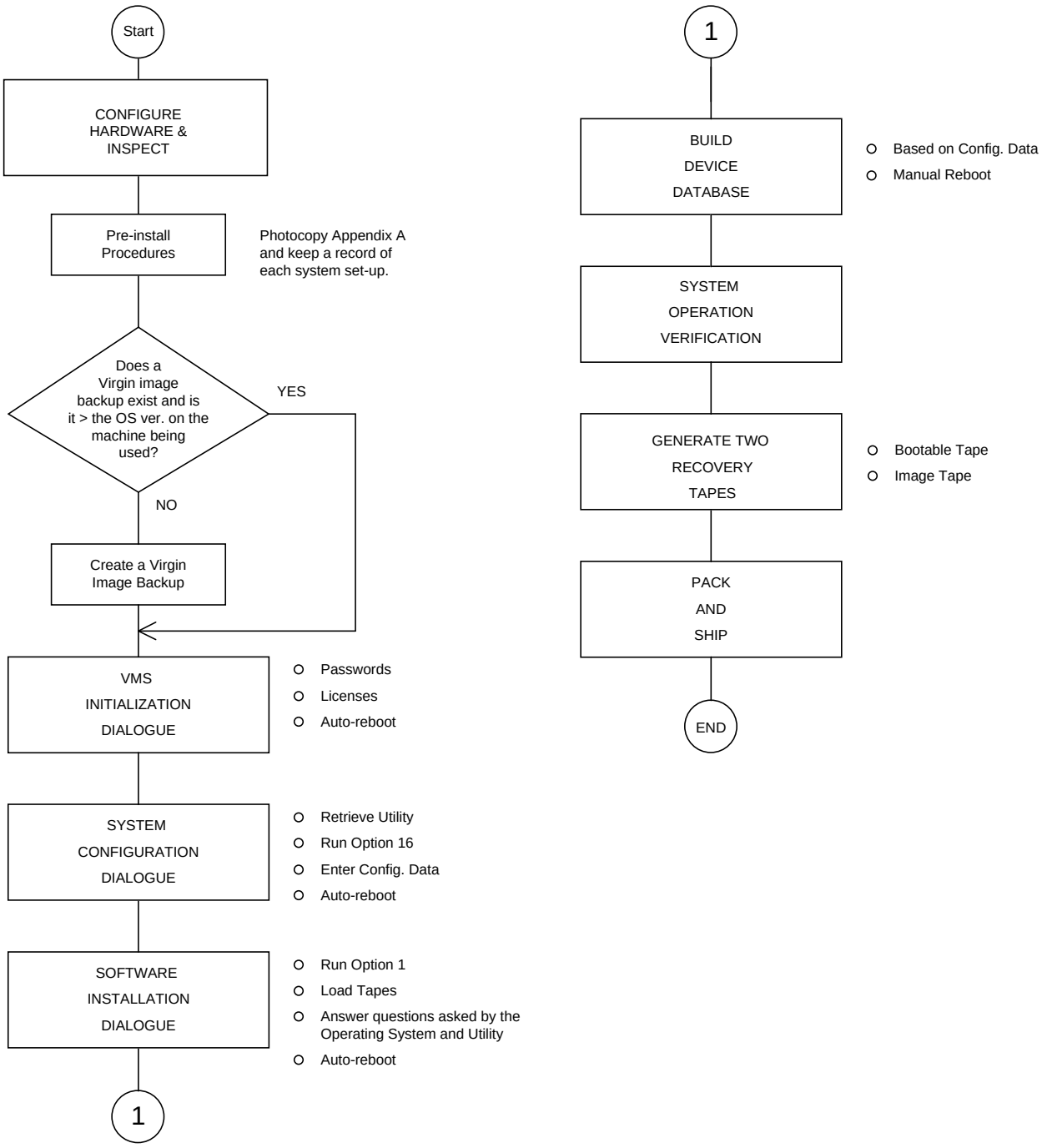

Figure 1-4. Initial Installation Process Flowchart

7) Using the flat DECconnect cable provided, connect the terminal port labeled 1 (with two arrows above it) to the MMJ port labeled 0 on the rear of the CPU. This CPU port is known as the console port and any terminal connected to it is designated the console terminal.

8) Turn power on to the VAX (switch at the rear of the machine). Now at the console terminal you should see the diagnostic tests as they proceed. If any question marks are seen during or after these tests reference the Customer Hardware Information Manual provided by DEC. Reference Figure 1-5 for a screen image following normal CPU power-up.

9) When the >>> prompt appears the system is ready for input. It is necessary to maintain an up-to-date pre-installation system disk image backup at all times. If no previous backup exists, follow the procedures in Chapter 5 of this manual to create one. If a previous backup does exist, enter: **b/e0000000<cr>** and compare the VMS version number that is displayed with that of the existing backup. If the version displayed is the same as that of the existing backup, depress the **HALT** button and continue. If the version displayed is higher than that of the already existing backup, follow the procedures in Chapter 5 of this manual to create a new one.

   Note: Throughout this procedure informational Operating System messages will be seen on the terminal. These messages are identified by a "-I-" as part of the message, these messages should be ignored.

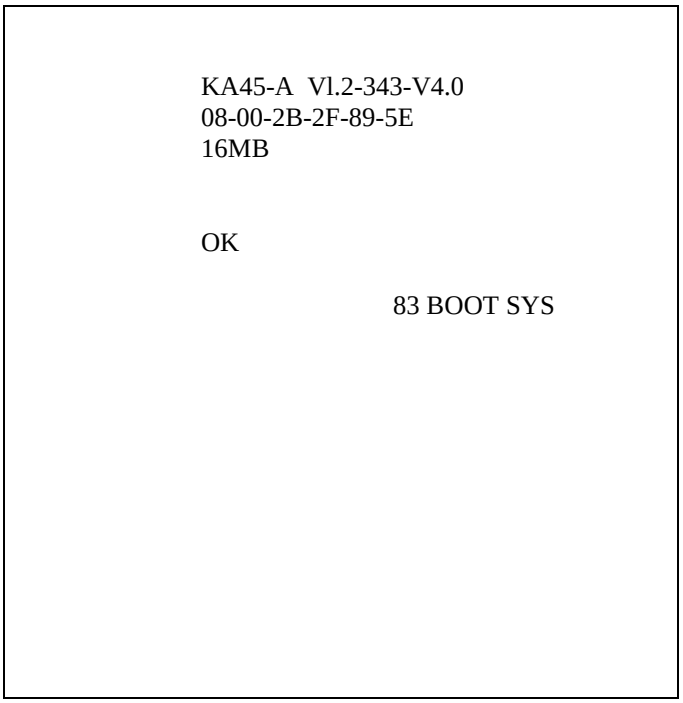

Figure 1-5. Display after normal CPU power-up

Unless otherwise instructed, the following commands are to be executed at the console terminal.

10) At the >>> prompt, enter:
show boot <cr>

11) At the >>> prompt, enter:
show device <cr>

12) From the device information displayed during steps 9 and 10, make note of all disk drive names and the tape drive name. The boot device is the system disk and the additional disk (if one exists) is the activity disk. If no additional disk drive exists, the activity disk is the same as the system disk. Also make note of the version of the EGE S/W labeled on the tape. Throughout this manual any occurrence of '**sysdsk**' and '**tapedrv**' must be replaced by the device names noted here.

13) At the >>> prompt, enter: **set halt 2 <cr>**

14) At the >>> prompt, enter: **boot<cr>**.

15) Verify that the system date is correct; if not, make the necessary change. You must use the form '**DD-MMM-YYYY**'.

16) Verify that the system time is correct; if not, make the necessary change. You must use the form '**HH:MM:SS**'.

17) Enter: **sysmgrsuper <cr>** for the system account password.

18) Enter: **sysmgrsuper <cr>** again for verification.

19) Enter: **YES <cr>** to define the systest and field account passwords.

20) Enter: **sysmgrsuper2 <cr>** for the systest account password.

21) Enter: **sysmgrsuper2 <cr>** again for verification.

22) Enter: **sysmgrsuper3 <cr>** for the field account password.

23) Enter: **sysmgrsuper3 <cr>** again for verification.

24) Follow steps A through E for all of the license keys provided by DEC:

NOTE

If more than one VMS-USER license PAK was shipped with the system enter only the one with the highest number of units. Throughout this procedure any text displayed within [brackets] is entered as the default unless other text is entered. To remove any of these default values, enter: **\<cr>**.

a) Enter: **1 <cr>** (for Register a new license PAK).
Enter: **yes <cr>** (If you have the PAK's)

b) The system now asks you for all of the information on the License Document or Product Authorization Key (PAK). Proceed through answering the questions using the PAK's provided. To clear out any undesired default values, enter: **\<cr>**

NOTE

The following question may or may not be asked:

"Is this PAK restricted to a cluster member node?"

If it is asked, enter: **no <cr>**

c) Is this information correct? - after verification, enter: **Y <cr>**

d) Do you want to load this license on this system? - enter: **yes <cr>**

e) Verify that no errors are encountered during the load. If there are, follow the prompts to modify the previously entered PAK.

f) After all PAK'S have been entered, enter: **99 <cr>**

g) Do you wish to configure this node to be a cluster member? - enter: **no <cr>**

- The system now runs a utility and automatically reboots.

25) After the system has rebooted (when accounting information is seen on the console terminal) plug the terminal into the MMJ port labeled 1 on the rear of the CPU (refer to the system Customer Hardware Information Manual).

The terminal is moved from the console port (0) to a general user port (1) to eliminate the scrolling of informational messages that are sent to the console port during the following steps. Unless otherwise instructed, all of the following commands are entered at port 1.

1.1.2 - VMS Initialization Dialog

26) Log into the SYSTEM account:

- Enter: **<cr>**, and when you see a response, log in as follows:
- At the `username`: prompt, enter: **system <cr>**
- At the `password`: prompt, enter: **sysmgrsuper<cr>**.

NOTE

If this system does not use any DECservers, skip to Step 29.

27) Enter: **@sys$update:vmsinstal <cr>**

a - Load the DECserver distribution tape.

b - Enter: **yes** (satisfied with backup).

c - Enter: **'tapedrv' <cr>** (where distribution tape is mounted).

d - Enter: ***** (product).

e - Enter: **none** (options).

f - Enter: **yes** (ready).

g - Enter: **yes** (purge).

h - Enter: **yes** (IVP).

i - Verify that the IVP has completed successfully.

NOTE

For DECserver Software Release V1.1 (or later) skip to step m. For all other versions perform steps j thru l only.

j - Load the DECserver 700 patch tape.

k - Enter: *****

l - Enter: **yes**

m - Enter: **^z** when prompted for the next product.

n - Unload the DECserver distribution tape.

28) Enter: **set def sys$sysroot:[decserver] <cr>**

29) Enter the following:

a - Enter: **copy wweng1.sys wweng2.sys <cr>**

b - Enter: **Set def sys$manager: <cr>**

NOTE

If you wish to perform an installation using a newer version of the sminstall utility other than the one on the distribution tape, insert the tape with the newest version now. Then during step 33 insert the normal distribution tape when instructed. This newer version will be on a tape labeled "SMINSTALL Utility Only".

1.1.3 - System Configuration Dialog

30) Load the sminstall tape in the tape drive.

31) Enter: **backup/rew/ver 'tapedrv':sminstall.com * <cr>**

32) Enter: **@sminstall <cr>**

33) From the **sminstall** Utility's main menu, select option 16 (to remove the DECwindows package):

a) Enter: **yes <cr>** in response to the question "Are you sure?"

NOTE

Ignore the instructions displayed on the screen until step c) that follows.

b) You are now prompted for the system configuration information:

NOTE

Immediately following these questions the utility asks you if all of the information is correct. If anything was entered improperly, enter NO and you are given an opportunity to correct the errors.

1) System configuration (A1-A5 or P31-P35). Refer to Configuration information in Chapter 2.

2) EGE software level being installed (core, mid or full). This information is given on the EGE tape label.

3) Number of hard disks. This information was found in step 11.

4) Specific device name for each hard disk. This information was found in step 11.

5) Specific device name for the tape drive. This information was found in step 11.

6) Number of local TXA ports available. This information can be found in section 2.1.3.2 of this manual.

7) Number of DECservers to be used (if any).

You are now prompted for the customer specific configuration data. If the exact customer specific data cannot be obtained at this time, use the generic data provided in section 1.1.3 of this manual.

8) Number of additional terminal ports required (if any).

9) Number of MSC ports to configure (if any).

10) Number of Site (or device) Controller ports to configure.

11) Exactly how each EDACS device will be physically connected.

Examples are:

- 9600 baud dedicated line
- 19200 baud dedicated line
- 9600 baud dialup modem

NOTE

The utility only request the number of 9600 baud dedicated and the number of 9600 baud dialup ports to configure. Any EDACS devices not configured as 9600 baud dedicated or 9600 baud dialup, are set to a default (19200 baud dedicated line). All Site (or Device) controllers must be configured for 9600 baud direct line and all MSCs must be configured for 19200 baud direct line because these are the internal defaults of the sites and MSC's.

c) You must now enter the DECwindows tailor utility. You need to answer the questions appropriately to remove the entire package as follows:

Enter: **`OFF <cr>`** to the first question, and
enter: **`YES <cr>`** to the remaining questions.

34) In about 10 minutes shutdown/reboot information is requested indicating that option 16 has completed.

Enter: **`<cr>`** (how soon).

Enter: **`<cr>`** (reason). When asked for a reboot reason, press <cr>.

Enter: **`<cr>`** (spindown).

Enter: **`<cr>`** (site spec shutdown).

Enter: **`YES <cr>`** (auto reboot).

Enter: **`<cr>`** (when).

Enter: **`<cr>`** (shutdown options).

35) After the reboot (approximately 3 min), log into the system account.

- Continue to press **`<cr>`** until you see a response, and then log in as follows:
- At the username: prompt, enter: **`system <cr>`**
- At the password: prompt, enter: **`sysmgrsuper <cr>`**

1.1.4 - Software Installation Dialog

36) Enter: **`@sminstall <cr>`**

37) From the SMINSTALL Utility's main menu, select option 1:

a - Enter: **`YES <cr>`** (are you sure).

b - Enter: **YES <cr>** (has opt 16 been executed).

c - The system may need to automatically reboot now. If it does, press **<cr>** now and pick up at step 31 in a few minutes.

d - Load the SMINSTALL tape when instructed.

e - Wait approximately 15 minutes...

f - When the DECforms layered product is referenced, unload the SMINSTALL tape.

g - Load the DECforms distribution tape.

Reference Figure 1-6 (end of Chapter) for a hardcopy example of the following dialogue.

h - Enter: **yes** (satisfied with backup).

i - Enter **'tapedrv'** (where distribution will be mounted).

j - Enter: *** <cr>** (product).

k - Enter: **none <cr>** (options).

l - Enter: **YES <cr>** (ready).

m - Enter: **YES <cr>** (purge).

n - Enter: **YES <cr>** (IVP).

o - Enter: **YES <cr>** (PAK loaded).

p - Enter: **YES <cr>** (DECtrace support).

q - During the IVP, press the F10 key when instructed.

r - Verify that the IVP has completed successfully.

s - Enter: **ctrl-z** when prompted for the next product.

t - Unload the DECforms distribution tape.

38) If this system configuration uses any DECservers, perform the following steps, otherwise skip to step 38.

a - When prompted for the DECserver tape, enter: **ctrl-z**

Reference Figure 1-7 (end of Chapter) for a hardcopy example of the following dialogue.

b - Load the TSM distribution tape.

c - Enter: **YES <cr>** (satisfied with backup).

d - Enter the tape drive name (where the distribution tape will be mounted).

e - Enter: *** <cr>** (product).

f - Enter: **none <cr>** (options).

g - Enter: **YES <cr>** (ready).

h - Enter: **YES <cr>** (continue).

i - Enter: **YES <cr>** (purge).

j - Enter: **YES <cr>** (IVP).

k - Enter: **YES <cr>** (PAK loaded).

l - Enter: **YES <cr>** (enable service).

m - Enter: **<cr>** (target directory).

n - Verify that the IVP has completed successfully.

o - Enter: **ctrl-z** when prompted for the next product.

p - Reset all DECservers following the instructions on the screen, and then press **<cr>**.

q - Hook up a terminal to all DECservers (Port J1) and do a "Show Server" and verify the Ethernet Address displayed matches the labels.

r - Enter the E-net addresses of all servers (the server address is on a label on the rear of the server).

s - Enter: **Y** to enable the Automatic DECserver port programming feature, or **N** to bypass this feature. (If the feature is bypassed, the ports can be configured at a later time by following procedures in section 4.1.1 of this manual.)

t - If Y was entered in the previous step, wait for server port configuration (roughly 1 minute per port)

39) Enter: **Y <cr>** to acknowledge completion.

40) In a few moments the system automatically reboots. After the system reboots (this takes less than 3 minutes), log into the sminstall account:

- Enter: **<cr>**, and when you see a response, log in as follows:
- At the username: prompt, enter: **sminstall <cr>**
- At the password: prompt, enter: **sminstall <cr>**

41) Enter: **no <cr>** to the new release question.

42) Select option 6, select sub-option 1 (to list the port configuration map to the screen), then write down all port information (a separate checklist is provided in Appendix A for this information).

43) All servers (if any), ports, and cables should now be clearly labeled.

44) Exit the **sminstall** utility by selecting option 10 from the main menu and then entering **YES** to the verification question.

1.1.5 - Build Device Database

45) Set the terminal to have a VT320 ID as follows:

- Press the F3 key to enter terminal setup.
- Using the arrow keys, select the "**General**" field and press ENTER.
- Using the arrow keys, select the "**ID**" field and using the Enter key, select "**VT320 ID**".
- Using the arrow keys, select the "**To Directory**" field and press ENTER.
- Using the arrow keys, select the "**save**" field and press the ENTER key.
- Press the F3 key to exit terminal setup.

46) Log into the **egesysmgr** account:

Enter: **<cr>**.
Enter username: **egesysmgr <cr>**
Enter password: **egesysmgr <cr>**

47) Select Menu Item 10.

NOTE

Site (or Device) controllers can range from Device Number 1 - 32. MSCs can range from Device Number 33 - 64.

For every site (or device), enter the following:

- Device Number.
- Device name (ex. SITE_1).
- On screen 1:4 you must enter a **C** in the 1st RF field.
- Using the **NEXT** key, go to screen 4:4 and using the data from step 38), enter the following:
- Device Password (ex. 16PLUS).
- Primary Line Port Name (LTA#:, TXA#:, or TTA#:, from step 38) be sure to include the colon at the end of the port name.
- Primary Line Baud Rate
- Press the **DO** key to save the record.

For every MSC, enter the following:

- Device Number.
- Device Type (EGE_SWITCH).
- Device name (ex. MSC2).
- On screen 1:1 using the data from step 38, enter the following:
- Device Password ("GE MULTISITE").
- Primary Line Port Name (LTA#:, TXA#:, or TTA#:, from step 38) be sure to include the colon at the end of the port name.
- Primary Line Baud Rate = 19200.
- Press the **DO** key to save the record.

Go back to the lowest Device Number, select screen 4:4 and using the F11 key, verify that every site (or device) and MSC are properly configured.

Exit the **egesysmgr** account using the F6 and/or F7 keys.

48) Log into the shutdown account:

Enter: **<cr>**
Enter `username`: **shutdown <cr>**
Enter `password`: **shutdown <cr>**

49) Enter: **R** (To reboot the system.)

1.1.6 - Generate Two Recovery Tapes

After the system reboots it should be fully functional as a System Manager. After proper system operation has been verified (reference section 1.2 of this manual) it is recommended that the following steps be followed immediately. The purpose of this exercise is to:

1) Create DECserver recovery command files,

2) Generate one bootable tape, and

3) Generate another tape that is an exact image of the system disk.

These two tapes should be packed and shipped along with the system in case of a system disk crash. Reference Chapter 4 of this manual for instructions on how to use the DECserver recovery command file generated here. Reference section 5.2 of this manual for instructions on how to use the backup tapes generated here.

50) If this system uses DECservers then the following steps must be followed to create image files of the exact contents of the DECservers.

a) Log into the system account:

Enter: **<cr>**.

Enter `username`: **system <cr>**

Enter `password`: **sysmgrsuper <cr>**

b) Enter: **set def sys$sysroot:[decserver] <cr>**

Note: In the following 2 commands replace the # with a 7 if this system uses DS700s or a 2 if this system uses DS200s.

c) Enter: **dir TSM$DS#*_GET_CHAR.COM <cr>**

d) Make note of the file names returned.

If you are using DS200s, enter DS2 in place of the DS# text in the following command. If you are using DS700s, enter DS7 in place of the DS# text in the following command. Also make note of the highest version number returned and place that number in place of the VXX text in the following command. You must also supply the server name for the command file. This must be done for all DECservers on the system.

e) Enter: **@TSM$DS#_VXX_GET_CHAR.COM 'smgds#' system <cr>**

f) Enter: **lo <cr>** to log out of the system account.

51) Define any desired remote dialup ports at this time (reference Chapter 4 for details).

52) Log into the sminstall account:

Enter: **<cr>**.

Enter `username`: **sminstall <cr>**

Enter `password`: **sminstall <cr>**

53) Enter: **no <cr>** to the new release question.

54) Execute option 9 to build a Stand alone backup tape.

NOTE

Reference Appendix B for tape labeling instructions.

55) Follow the instructions in Chapter 5 to create a system disk image backup.

1.2 - SYSTEM OPERATION VERIFICATION

NOTE

If any of the following commands do not produce the expected results reference section 2.1.2 and/or Chapter 6 of this manual. For a pictorial explanation of the server port to site (or device) linkage, reference section 6.15 of this manual.

1) Log into the SYSTEM account.

   Enter: **<cr>**.

   Enter `username`: **system <cr>**

   Enter `password`: **sysmgrsuper <cr>**

NOTE

Be prepared to use the Hold (F1) key immediately after executing the next command because the data may exceed one page.

2) Enter: **show system <cr>** and verify that all of the following processes are listed in the 2nd column and that LEF is displayed next to them in the 3rd column. Note that unlike the other processes, the **disk_manager** process should have HIB listed next to it in the 3rd column. Reference Figure 1-8 (end of Chapter) for a hardcopy example of the following dialogue.

   - UPLDREG
   - EVENTLOG
   - ALMUPD
   - DISK_MANAGER (only on V2.00 or later software)
   - MONREG
   - RELTRG (only on V2.00 or later software)
   - DYN_RPG_CONTROL (only on V3.00 or later software)
   - EIO'XX' (for each site (or device) and MSC that was defined)
     (XX is replaced by the site (or device) and MSC number)
   - DBUP'XX' (for each site (or device) and MSC that was defined)
     (XX is to be replaced by each site (or device) and MSC number)

- ACT'XX' (for each site (or device) that was defined)
  (XX is to be replaced by each site (or device) number)
- UNTDIS
- MULTINET_SERVER (Used only on systems running Network Manager Interface.)
- TRAP_HANDLER (Used only on systems running Network Manager Interface.)
- SNMP_SUB_AGENT (Used only on systems running Network Manager Interface.)

3) If this system uses DECserver(s), verify that each DECserver has properly loaded as follows:
   - If using DS200s, LEDs 1, 2 and 3 of all servers are on steady.
   - If using DS700s, system OK LED is on steady and the 7-segment display shows a rotating pattern.

4) If this system uses DECservers, perform steps 4)a through 4)d and then repeat steps 4)b through 4)d for every DECserver on the system. (Reference Appendix D for examples of screen output.)
   a) Run TSM by entering: **`term <cr>`**
   b) Enter: **`use server 'smgds#' <cr>`**
   c) Enter: **`sho server <cr>`**

   Verify that the server name is correct.

   d) Enter: **`sho po # <cr>`**

   By replacing the **#** in step d) with 1 through 8, repeatedly, verify that all ports (1-8) for which EDACS devices are assigned are in the "(remote)" state as seen in the upper left corner of the screen. When the device driver successfully attaches to it's port, the upper left corner of the TSM sho port command displays "(Remote)". If the driver is unable to attach, "Port #:" is the only text seen in this field.

   e) Enter: **`ctrl-z`** to exit TSM.

5) If this system uses any TXA or TTA ports for EDACS device communication, verify that the communications driver has properly attached to all of these ports as follows:
   - If this system is an A1 configuration (no TXA ports or DECservers), enter: **sho term tta2:<cr>** and verify that the port is listed as "owner = EIOXX".
   - For every local TXA port that is used for EDACS device I/O on the system, enter: **sho term txa#:<cr>** and verify that the port is listed as "owner = EIOXX".

6) Log out of the system account by entering: **`lo <cr>`**

7) Log into the **egesysmgr** account and verify that all of the available options are accessible and work properly. (Reference Appendix C for a list of available options.)

8) If it is possible to connect all EDACS devices to their proper ports, do so now and verify that a database upload works to all EDACS devices.

9) If the EDACS devices cannot be hooked up at this time it is recommended to hook up a protocol analyzer to all site (or device) ports individually and initiate a site (or device) monitor to each site (or device) and verify that a logon message is being sent out the port. Then hook up the protocol analyzer to all of the MSC ports, initiate a database upload and verify that the database upload message goes out all of the MSC ports. Reference the System Manager to Site (or Device) Controller protocol document for a definition of these messages and section 6.20 for protocol analyzer instructions.

1.3 - GENERIC CUSTOMER SPECIFIC INFORMATION

NOTE

It is recommended that the exact customer specific data be acquired and entered rather than this generic data. This eliminates the need for the field installer to reconfigure ports when the system gets to the customer's site.

P74 (A1) setup:

0 MSC
1 Site - 9600 Baud Dedicated line
1 additional terminal

P75 (A2) setup:

1 MSC - 19200 Baud Dedicated line
5 Sites - 9600 Baud Dedicated line
2 additional terminals

P76 (A3) setup:

1 MSC - 19200 Baud Dedicated line
10 Sites - 9600 Baud Dedicated line
5 additional terminals

P77 (A4) setup:

1 MSC - 19200 Baud Dedicated line
20 Sites - 9600 Baud Dedicated line
11 additional terminals

P78 (A5) setup:

1 MSC - 19200 Baud Dedicated line
30 Sites - 9600 Baud Dedicated line
17 additional terminals

```
      The following procedure will install the DECforms layered
      product.  Reference the VAX System Manager Installation Manual
      for detailed instructions.


      VAX/VMS Software Product Installation Procedure V5.5-2

It is 17-JUN-1993 at 08:13.


Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted:  mka500

Enter the products to be processed from the first distribution volume set.
* Products: *
* Enter installation options you wish to use (none):
Please mount the first volume of the set on MKR500:.
* Are you ready? y


      The following procedure will install the DECforms layered
      product. Reference the VAX System Manager Installation Manual
      for detailed instructions.


      VAX/VMS Software Product Installation Procedure V5.5-2

It is 17-JUN-l993 at 08:13.

Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted:  mka500

Enter the products to be processed from the first distribution volume set.
* Products: *
* Enter installation options you wish to use (none):
Please mount the first volume of the set on MKA500:.
* Are you ready? y

%MOUNT-I-MOUNTED, FORMSR mounted on _MKR500:

      for detailed instructions.
```

Figure 1-6. Loading DECforms Distribution Tape Dialogue (example), Page 1 of 4

```
It is 17-JUN-1993 at 08:13.


Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted:  mka500

Enter the products to be processed from the first distribution volume set.
* Products: *
* Enter installation options you wish to use (none):
Please mount the first volume of the set on MKA500:.
* Are you ready? y
%MOUNT-I-MOUNTED, FORMSR mounted on _MKA500:

The following products will be processed:

    FORMSRT V1.4
    FORMSRT V1.4

    Beginning installation of FORMSRT V1.4 at 08:17

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.

    ******************************************************************
    *                                                                *
    *                  D E C f o r m s   V 1 . 4                     *
    *              ==================================                *
    *                        Runtime Kit                             *
    *                                                                *
    *           Copyright (C) 1989, 1990, l99l, 1992 BY              *
    *          Digital Equipment Corporation, Maynard, MA            *
    *                      All Rights Reserved.                      *
    *                                                                *
    ******************************************************************
* Do you want to purge files replaced by this installation [YES]?

    This kit contains an Installation Verification Procedure (IVP)
    to verify the correct installation of DECforms.
    Because the IVP required interactive operator input, it
    must be run using a VT100, VT200, VT300, or VT400 compatible
    video terminal. If you are using one of these terminal
    types, you may run the procedure immediately after
    installation by answering "YES" to the IVP prompt.  Or
    you may choose to invoke it later using the following:


                          @SYS$TEST:FORMS$PT_IVP.COM
```

Figure 1-6. Loading DECforms Distribution Tape Dialogue (Example), Page 2 of 4

```
* Do you want to run the IVP after the installation [YES]?

    Product:      FORMS-RT
    Producer:     DEC
    Version:      1.4
    Release Date: 2-MAR-1992

* Does this product have an authorization key registered and loaded? yes

* Do you wish to register DECforms for DECtrace support (50 blocks) [YES]?
    ************************************************************

    DECtrace has not been installed.  Now storing the FORMS
    facility definition into sys$share:epc$facility.tlb.
    After installing DECtrace, the facility definition
    may be placed in the DECtrace administration database.
    Please refer to the DECtrace User's Guide for instructions
    on how to insert binary facility definitions into the
    DECtrace administration database.

    ************************************************************
%FORMSRT-I-TRACEADDED, DECforms DECtrace definition successfully added to the
DEC trace registrar.
%VMSINSTAL-I-SYSDIR,    This    product    creates    system    disk    directory
VMI$ROOT:[SYSTEST.FORMS].

    The following files are added by this installation:

    SYS$LIBRARY:FORMS$MANAGER.EXE
    SYS$LIBRARY:CIOSHR.EXE
    SYS$LIBRARY:FORMS$PORTABLE_API.EXE
    SYS$MESSAGE:FORMS$MSGMGRSHR.EXE
    SYS$MESSRGE:FORMS$MSGMGRSHR_HEBREW.EXE
    SYS$STARTUP:FORMS$STARTUP.COM
    SYS$TEST:FORMS$RT_IVP.COM
    SYS$COMMON:[SYSTEST.FORMS]FORMS$RT_IVP.EXE


    The following files have been updated:

    SYS$LIBRARY:STARLET.OLB (inserted FORMS$MGR_OBJECT_TABLES*.OBJ)
    SYS$LIBRARY:IMAGELIB.OLB (inserted FORMS$MANAGER.EXE)
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

Figure 1-6. Loading DECforms Distribution Tape Dialogue (Example), Page 3 of 4

```
Starting Installation Verification Procedure (IVP)

   for DECforms V1.4 run-time Manager

|
|
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|

DECforms Interactive Installation Verification Procedure Complete.

   The Installation Verification Procedure has completed successfully.
   Refer to the Installation Guide for further verification procedures

   Installation of FORMSRT V1.4 completed at 08:22

   Enter the products to be processed from the next distribution volume set.
```

Figure 1-6. Loading DECforms Distribution Tape Dialogue (Example), Page 4 of 4

```
    The following procedure will install the TSM layered product.
    Reference the VAX System Manager Installation Manual for
    detailed instructions.


    VAX/VMS Software Product Installation Procedure V5.5-2


It is 17-JUN-1993 at 08:52.
Enter a question mark (?) at any time for help.




* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted: mka500

Enter the products to be processed from the first distribution volume set.
* Products: *
* Enter installation options you wish to use (none):
Please mount the first volume of the set on MKR500:.
* Are you ready?
* Are you ready? yes
%MOUNT-I-MOUNTED, TSM mounted on _MKA500.

The following products will be processed:

    TSM V1.6

    Beginning installation of TSM V1.6 at 08:57

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.

    TSM V1.6 upgrades database files by performing a file conversion
    procedure when TSM is invoked. Your current directory and server
    type files will be renamed and retained on the system. See the TSM
    documentation form for more information.

    It is recommended that you read the Release Notes before proceeding
    with the installation.

* Do you want to continue with the installation [Y]?

* Do you want to purge files replaced by this installation [YES]?

    This kit contains an Installation Verification Procedure (IVP)
    to verify the correct installation of TSM.  It can be run prior
    to the conclusion of this procedure by answering "YES" to the
    IVP prompt or invoked after the installation as follows:
```

Figure 1-7. Loading TSM Tape Dialogue (Example), Page 1 of 3

```
    @SYS$COMMON:[SYSTEST]TSM$IVP.COM

* Do you want to run IVP after the installation[YES]?
    Product:      TSM
    Producer:     DEC
    Version:      1.6
    Release Date: 1-APR-l992

* Does this product have an authorization key registered and loaded? yes

    The TSM installation procedure normally enables service
    on the first circuit that it finds on this node.  This
    allows the node to down-line load and up-line dump
    terminal servers.

    If you answer "No" to the following question, service
    will not be enabled.

* Do you want service enabled in the installation procedure [YES]?

    TSM requires a directory where the TSM command files and library
    will be installed.  If the logical TSM$DEFAULT_DIRECTORY is
    defined, the files will be installed in that directory.  If
    the logical is not defined, the files will be installed in a
    directory on the system disk called SYS$COMMON:[DECSERVER].
    The target directory for the files as it is now defined is shown
    below.

    Press return to use the value shown or enter a new disk and
    directory specification.

    *  If upgrading from TSM V1.5, and dynamic server types have been
       defined, then press the Return key to ensure successful database
       conversion.

* Target directory for TSM files [SYS$COMMON:[DECSERVER]]:

    No further questions will be asked during the installation.
    Installation will take approximately 5 minutes.
    Installing Terminal Server Manager VMS Version V1.6...
    Linking Terminal Server Manager VMS V1.6...
    Restoring the remaining TSM distribution kit files...
    Adding TSM to DCL command tables...
    Adding TSM to VMS help library...
    Defining and setting OBJECT NML to PROXY BOTH ALIAS OUTGOING ENABLED
    Enabling SERVICE on SVA-0...
%%%%%%%%%%%%%  OPCOM 17-JUN-l993 08:59:17.21    %%%%%%%%%%%%%%%
Message from user DECNET
DECnet event 4.7, circuit down, circuit fault
From node 1.1 (SYSMGR), 17-JUN-1993 08:59:17.17
Circuit SVA-0, Line synchronization lost
```

Figure 1-7. Loading TSM Tape Dialogue (Example), Page 2 of 3

```
    After the installation use AUTHORIZE to create proxy accounts for
    all the TSM users (if you have not done so already).

    Installation procedure for Terminal Server Manager VMS V1.6
    has completed.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%%%%%%%%%%%%%%%   OPCOM  17-JUN-l993 08:59:23.08   %%%%%%%%%%%%%
Message from user DECNET
DECnet event 4.10, circuit up
From node 1.1 (SYSMGR), 17-JUN-l993 08:59:18.05
Circuit SVA-0

    Beginning the TSM V1.6 Installation Verification Procedure.

    Please ignore the following TSM test data.

%TSM-I-CREATE, Creating TSM directory database SYS$SYSROOT:[SYSTEST]TSM$CONFIG.
DAT; 17-JUN-1993 08:59:39.0
Terminal Server Manager V1.6
Copyright (C) Digital Equipment Corporation. 1992. All Rights Reserved.
Usage is DIRECTORY

Server:      IVP_TEST_TSM Circuit(s):   SVR-0
Address:     FE-FF-FF-FF-FF-FF  Maint. Password:   0000000000000000
Type:        DS100        Login Password:   ACCESS
Partition name: DEFAULT      DECnet Address:   0
Dump File:   SYS$SYSROOT:[SYSTEST]DS1IVP_TEST_TSM.DMP
Image FIle:  SYS$SYSROOT:[SYSTEST]PS0801ENG.SYS
Reference File: SYS$SYSROOT:[SYSTEST]IVP_TEST_TSM.TXT

  Installation Verification Procedure for TSM V1.6 has completed successfully.

   Installation of TSM V1.6 completed at 08:59

Enter the products to be processed from the next distribution volume set.
```

Figure 1-7. Loading TSM Tape Dialogue (Example), Page 3 of 3

```
3100G2> sho sys
VAX/VMS V5.5-2 on node SMSMGR 23-JUL-l992 09:35:33.60  Uptime  14-NOV-1859 05
:18:31
   Pid   Process Name    State  Pri      I/O       CPU       Page flts    Ph.Mem
00000101 SWAPPER         HIB    16        0   0 00:00:02.00         0          0
00000104 IPCACP          HIB    10        7   0 00:00:00.05       114         69
00000106 ERRFMT          HIB     8     2461   0 00:00:05.58        96        102
00000107 OPCOM           HIB     8      276   0 00:00:00.82       359        156
00000108 AUDIT_SERVER    HIB    10      113   0 00:00:01.00      1576         67
00000109 JOB_CONTROL     HIB    10      255   0 00:00:00.55       193        142
0000010A QUEUE_MANAGER   HIB     8      143   0 00:00:01.18       677        373
0000010B TP_SERVER       HIB    10    16012   0 00:02:39.60       239        132
0000010C NETACP          HIB    10      111   0 00:00:25.91       356        165
0000010D EVL             HIB     6       56   0 00:00:00.34     60559         37
0000010E REMACP          HIB     8       48   0 00:00:00.08        79         48
0000010F LATACP          HIB    14       11   0 00:00:00.29       281        151
00000110 SYMBIONT_1      HIB     4       15   0 00:00:00.17       188        135
00000156 UPLDREG         LEF    11      341   0 00:00:01.50       499        318
00000157 EVENTLOG        LEF    13     5389   0 00:00:23.55       707        188
00000158 ALMUPD          LEF    15     1120   0 00:00:00.74       565        149
00000159 DISK MANAGER    HIB     6   291024   0 00:31:31.01       503        450
0000015A DYN_RGP_CONTROL LEF     6     2289   0 00:05:19.11      1753        129
0000015B MONREG          LEF    14      428   0 00:00:00.33        83        117
0000015D RELTRG          LEF    15      624   0 00:00:01.38       421        377
0000015E EIO33           LEF     7   187094   0 00:02:32.35       607        136
0000015F DBUP33          LEF    11     9327   0 00:00:19.30       588        317
00000160 EIO34           LEF     7      117   0 00:00:00.59       493        346
00000161 DBUP34          LEF    11      112   0 00:00:00.59       431        244
00000162 EIO03           LEF     7      404   0 00:00:00.61       513        2S2
00000163 DBUP03          LEF     6      194   0 00:00:00.82       503        264
00000164 ACT03           LEF    14       85   0 00:00:00.60       425        355
00000165 EIO05           LEF     7    19788   0 00:00:16.71       567        161
00000166 DBUP05          LEF     6     3198   0 00:00:04.30       447        207
00000167 ACT05           LEF    14     8386   0 00:00:17.76       588        512
00000168 EIO06           LEF     7    71240   0 00:01:01.30       526        168
00000169 DBUP06          LEF     6     3200   0 00:00:05.16       450        117
0000016A ACT06           LEF    14    58334   0 00:01:54.47       638        433
0000016B EIO09           LEF     7    59216   0 00:00:48.52       549        146
0000016C DBUP09          LEF     6     4718   0 00:00:06.84       513        275
0000016D ACT09           LEF    14    40182   0 00:01:18.95       608        520
0000016E EIO16           LEF     9    15777   0 00:00:12.89       584        286
0000016F DBUP16          LEF     6     3198   0 00:00:05.41       432        247
00000170 ACT16           LEF    14     9408   0 00:00:19.10       630        448
00000171 EIO21           LEF     7      393   0 00:00:00.62       573        277
00000172 DBUP21          LEF     6      191   0 00:00:00.83       469        373
00000173 ACT21           LEF    14       71   0 00:00:00.54       405        443
00000175 UNTDIS          LEF    14      274   0 00:00:01.02       351        272
0000027F TEST2           CUR     7      308   0 00:00:01.53       815        246
```

Figure 1-8. Example Showing "Show System" dialogue, Page 1 of 1

CHAPTER 2 -
SYSTEM OPERATION
AND HARDWARE CONFIGURATION

2.1 - BASIC SYSTEM START UP EXPLANATION

After proper system setup and initialization, all that is necessary to restart after a power outage is to apply power to the computer. We recommend connecting a console terminal to the CPU console port, port 0, (this is Port 3 for Models 85 and above) during start-up. This will allow you to watch for system initialization errors. The console is configured to automatically reboot because of the "halt = 2" step during initial setup. If this system uses any DECservers, the proper sequence is to power up the CPU and wait until the console displays "DECnet starting" and then power up the DECservers. This is because once the servers power up, they send out a load request over the network. If they don't get an immediate load they wait a minute then retry. Thereafter, every wait duration is doubled. By waiting as stated above, an immediate load can be achieved.

2.2 - DETAILED SYSTEM SOFTWARE START UP EXPLANATION

This is the sequence of events that take place during start up of the VAX System Manager software. For a pictorial explanation of the server port to site (or device) linkage as explained during step 2, reference section 6.1.16 of this manual.

1) - SYS$MANAGER:SYSTARTUP_V5.COM - This com file is automatically executed by VMS during system start up (boot).

2) - SYSTARTUP_V5.COM calls SYS$MANAGER:LAT$SYSTARTUP.COM - This file creates and defines all of the system's LTA ports. With systems that do not use DECservers, knowledge of these ports is not necessary because TTA or TXA ports are used instead. These logical ports are the EDACS device I/O devices that equate to the physical DECserver ports. At the bottom of this com file there is a **create** command followed by a **setup** command for each port. In the **setup** command the node name must exactly match the server name and the port name must exactly match the name field of the server port. Now, once the LTA is properly setup it must be defined in the application database so that the communication driver (EIO) can physically attach to the server port when they are started up in the next step.

3) - SYSTARTUP_V5.COM also calls 'SYSDSK':[EGE_SM2.SMCOM]SMSTART.COM (as a batch job)

4) - SMSTART.COM calls 'SYSDSK':[EGE_SM2.SMCOM]SM_LOGICAL.COM - Which defines all of the detailed internal system logicals as well as the following directory logicals. When logged into the TEST2 account, the following logicals can be used to get around more easily.

smact: = 'act_disk ':[ege_sm2.smact] = Activity from sites (or devices)
smcom: = 'sysdsk ':[ege_sm2.smcom] = Command files
smdat: = 'sysdsk ':[ege_sm2.smdat] = Database files
smexe: = 'sysdsk ':[ege_sm2.smexe] = Executables
smfdl: = 'sysdsk ':[ege_sm2.smfdl] = FDL files
smlog: ='act_disk ':[ege_sm2.smlog] = Log files
smrpt: = 'sysdsk ':[ege_sm2.smrpt] = Report Generator output

5) - SMSTART.COM starts up all tasks related to the application package (listed below). All of these tasks run as VMS detached processes.

UPLDREG - This task creates and initializes the database upload flag region.

EVENTLOG - This task formats the information passed to it and prints it to the designated output device. In case of an error, the file **smlog:eventlog.log** should be referenced.

ALMUPD - This task receives alarm messages from sites (or devices) and maintains current alarm states in a condition available for simultaneous access from multiple terminals. In the case of an error, the file **smlog:almupd.log** should be referenced.

DISK_MANAGER - This task maintains the system disks to ensure they don't fill up. In the case of an error, the file **smlog:disk_manager.log** should be referenced.

MONREG - This task creates, initializes and updates the monitor regions for all sites (or devices).

RELTRG - This task can trigger relays at any site (or device) depending on any combination of site (or device) alarm conditions. In the case of an error, the file **smlog:reltrg.log** should be referenced.

UNTDIS - This task allows individual units to be disabled and re-enabled again. In the case of an error, the file **smlog:untdis.log** should be referenced.

ACTXX - This task receives site (or device) activity and processes it for the report generator tasks. In the case of an error, the file **smlog:actxx.log** should be referenced.

DBUPXX - This task processes EDACS Site 1 device database upload requests. In case of an error, the file **smlog:xdupxx.log** should be referenced (For devices). For sites, the file **smlog:siteupxx.log** should be referenced.

EIOXX - This task is responsible for all actual EDACS device I/O communication. As this task starts up it reads the external device database and attaches to the port referenced in the "Primary Line Port Name" field. When this task properly attaches to an LTA (DECserver) port the upper left corner of the TSM show port command displays "(Remote)". When this task properly attaches to a local TTA or TXA port, the upper right corner of the DCL show term command displays "Owner: EIOXX". In the case of an error, the file **smlog:eioxx.log** should be referenced.

DYN_RGP_CONTROL - This task handles all dynamic reqroup requests. In case of an error, the file **smlog:dyn_rgp_control.log** should be referenced.

2.3 - HARDWARE CONFIGURATION DIAGRAMS

Standard Configuration:	**A1**	**A2**	**A3**	**A4**	**A5**
Maximum Trunked Systems	1	5	10	20	30
Video Monitor	1	1	1	1	1
System Printer	1	1	1	1	1
Standard Hardware:					
MicroVAX Model	40	40	40	40	85
Hard Drive (Gigabytes)	1.05	1.05	1.05	1.05	2.10
Internal RAM (Mbytes)	16	16	24	32	64
DECservers (Ethernet Network Servers)			1	3	5

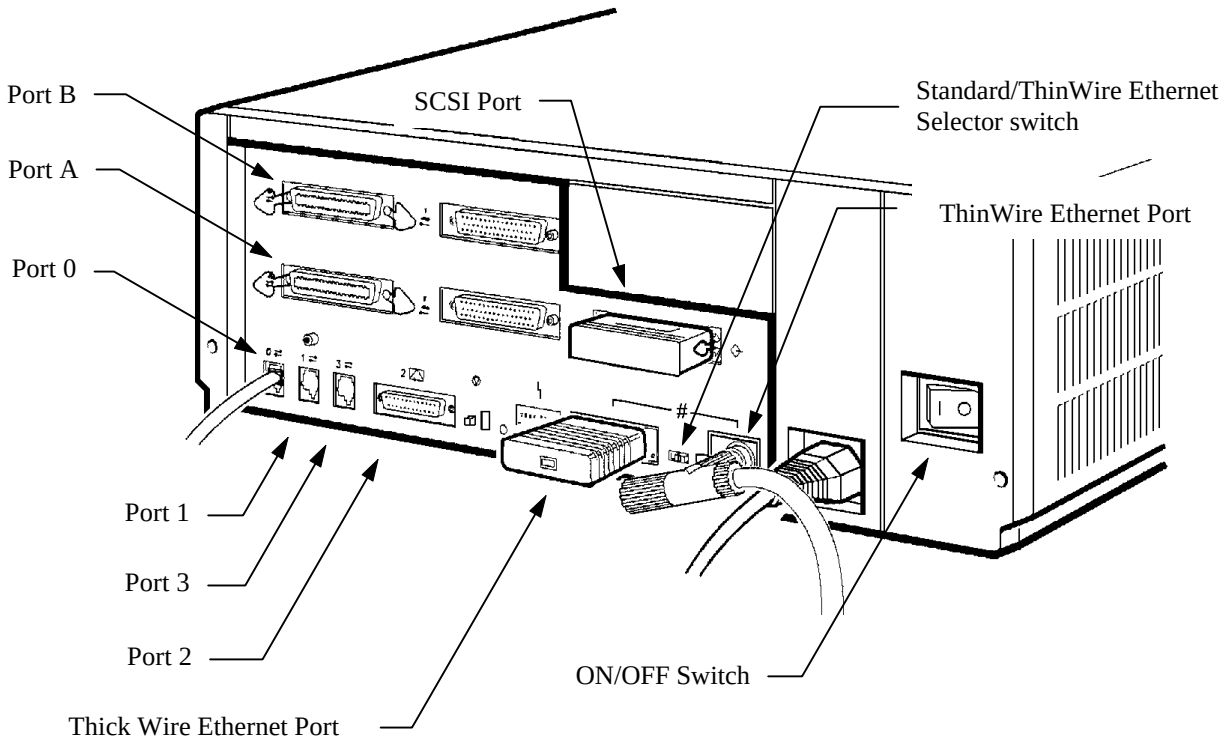
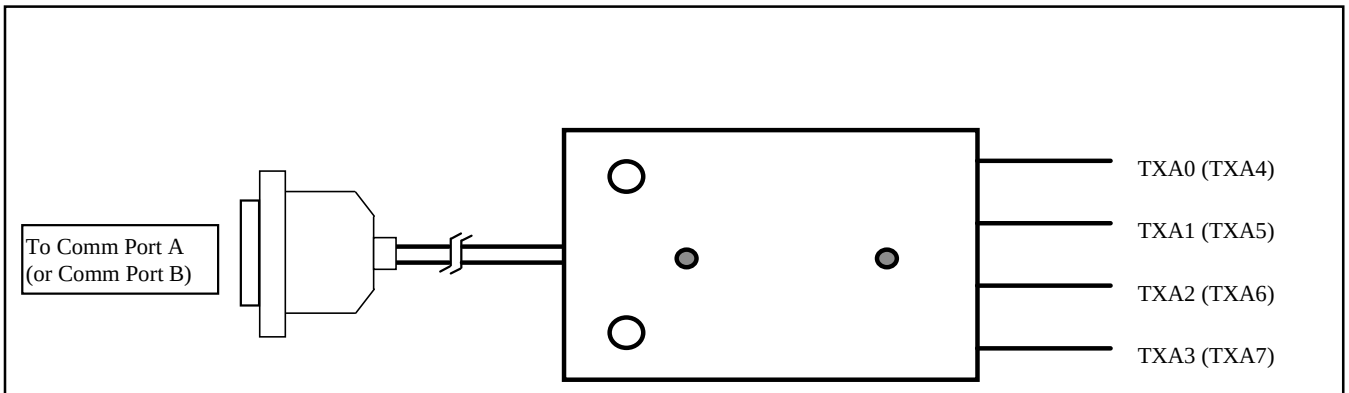


Figure 2-1. MicroVAX I/O Port Diagram:



Hold the TXA pods so the two small holes are in this position, the port numbers are as shown when the Interface assembly is connected to Port A (Port B shown in parentheses) on the left rear of the System Manager computer.

Figure 2-2. RS-232 Asynchronous Communication Interface Assembly (TXA Pods) Port Identification

2.4 - SYSTEM CONFIGURATION DIAGRAMS

The typical system configuration diagrams for 19A149575P31 (A1) thru P35 (A5) are shown in Figures 2-3 thru 2-7 respectively. Installation hardware identified in the diagrams is listed in Table 2-1.

Table 2-1. Installation Components

ITEM	EGE PART NUMBER	DESCRIPTION
1	19A149575P15 19A149575P16 19A149575P17	Terminal cable, 10 foot (sim to BC16E-10). Terminal cable, 25 foot (sim to BC16E-25). Terminal cable, 50 foot (sim to BC16E-50).
2	19A149575P12 19A149575P13 19A149575P14	Null Modem Terminal cable, 10 foot (sim to BC22D-10). Null Modem Terminal cable, 25 foot (sim to BC22D-25). Null Modem Terminal cable, 50 foot (sim to BC22D-50). Refer to Figure 2-8 for wiring diagram.
3	19A149575P18 19A149575P19 19A149575P20	Full Modem Terminal cable, 10 foot (sim to BC22E-10). Full Modem Terminal cable, 25 foot (sim to BC22E-25). Full Modem Terminal cable, 50 foot (sim to BC22E-50). Refer to Figure 2-9 for wiring diagram.
4	19A149575P48	BNC 50 Ohm Terminator for ThinWire (sim to DEC H8225-00), 2 required.
5	19A149575P45	BNC Tee Connector for ThinWire (sim to DEC H8223-00).
6	19A149575P46	BNC Cable Connector for ThinWire (sim to DEC H8222-00).
7	19A149575P42 19A149575P43 19A149575P44	RG58 ThinWire PVC Cable (15 feet). RG58 ThinWire PVC Cable (30 feet). RG58 ThinWire PVC Cable (1000 foot spool).
8	19D149575P47	BNC Inline Connector for ThinWire (sim to DEC H8224-00). * Shown for illustration only, may not be required.

NOTE

The A1 and A2 configurations, shown in Figures 2-3 and 2-4 do not use an Ethernet network. The Ethernet selector switch should be in the ThinWire position and both the Thick Wire and ThinWire terminators installed. The ThinWire terminator is constructed by installing two terminators (Item 4) on a Tee connector (Item 5) and installing the assembly on the ThinWire Ethernet port on rear of the machine.

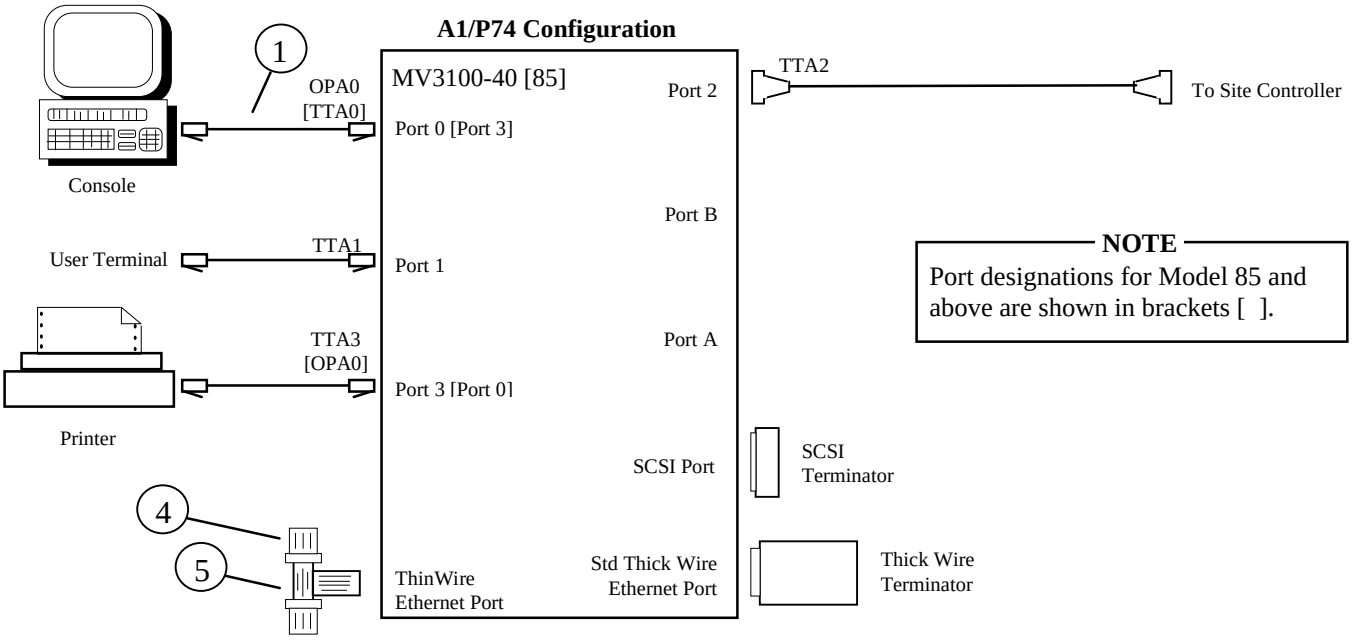


Figure 2-3. Typical A1/P74 System Configuration

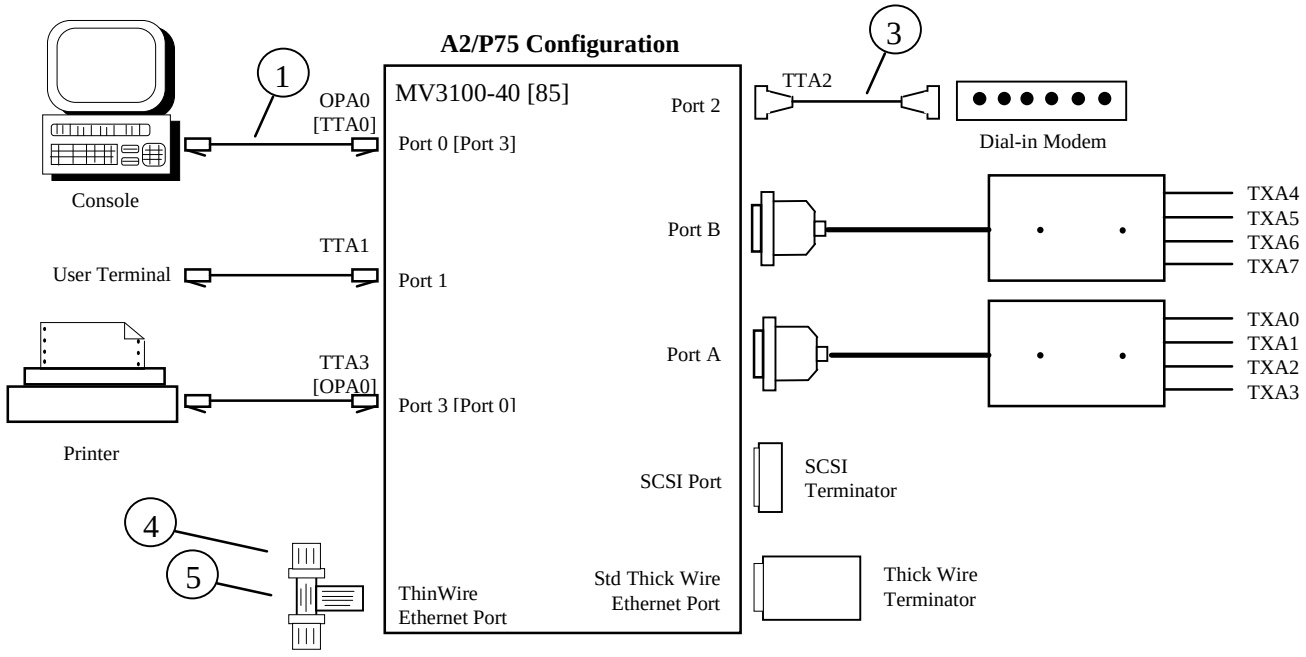
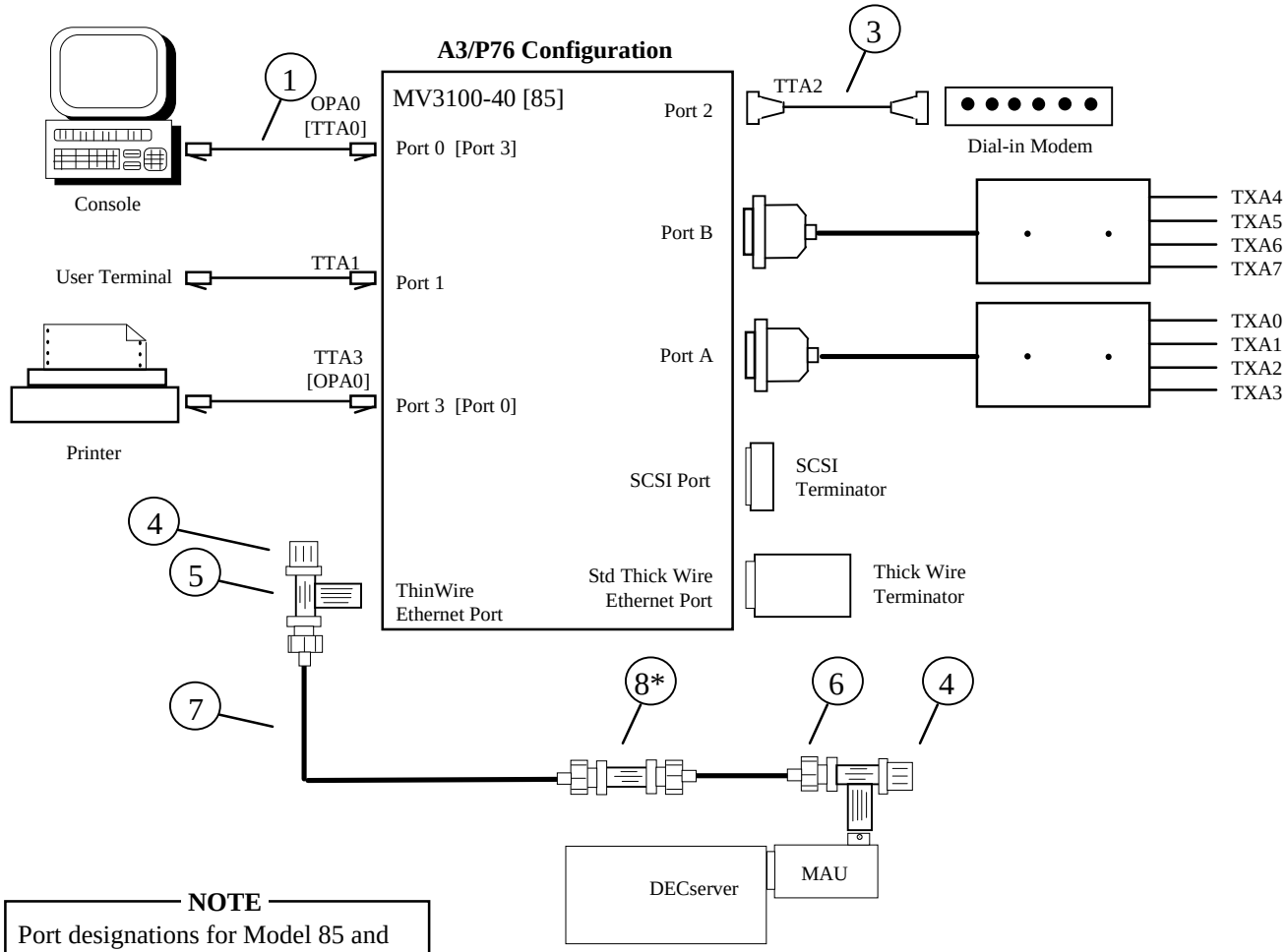


Figure 2-4. Typical A2/P75 System Configuration

NOTE

The A3 thru A5 configurations use the Ethernet network for communications with DECservers. Place the Ethernet selector switch in the ThinWire position. The Thick Wire port connector should be terminated using the Thick Wire terminator delivered with the system. The installation hardware should be shipped with every system. The rules in section 2-0 must be followed when configuring a ThinWire Ethernet network.



NOTE

Port designations for Model 85 and above are shown in brackets [ ].

Figure 2-5. Typical A3/P76 System Configuration

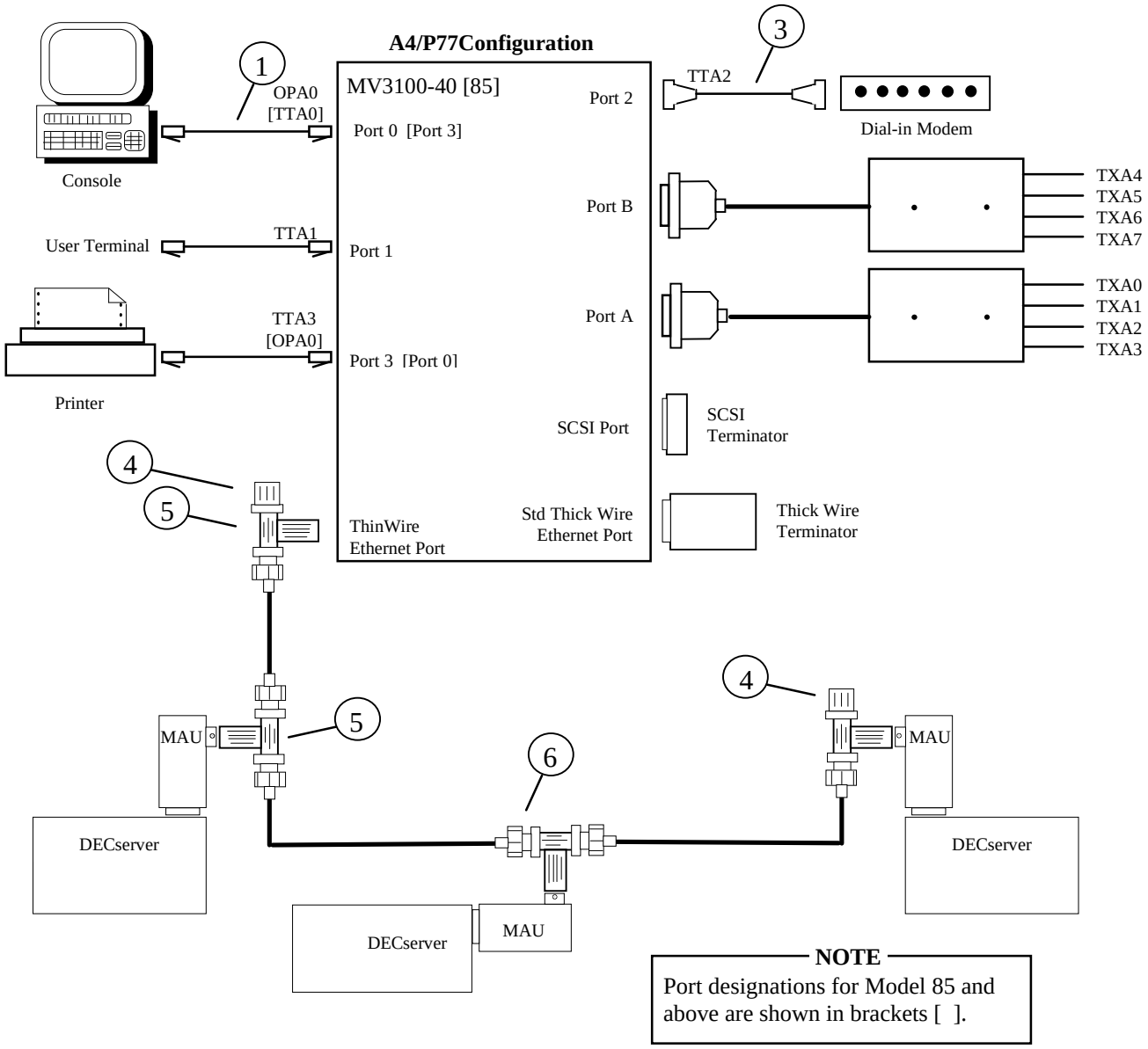


Figure 2-6. Typical A4/P77 System Configuration

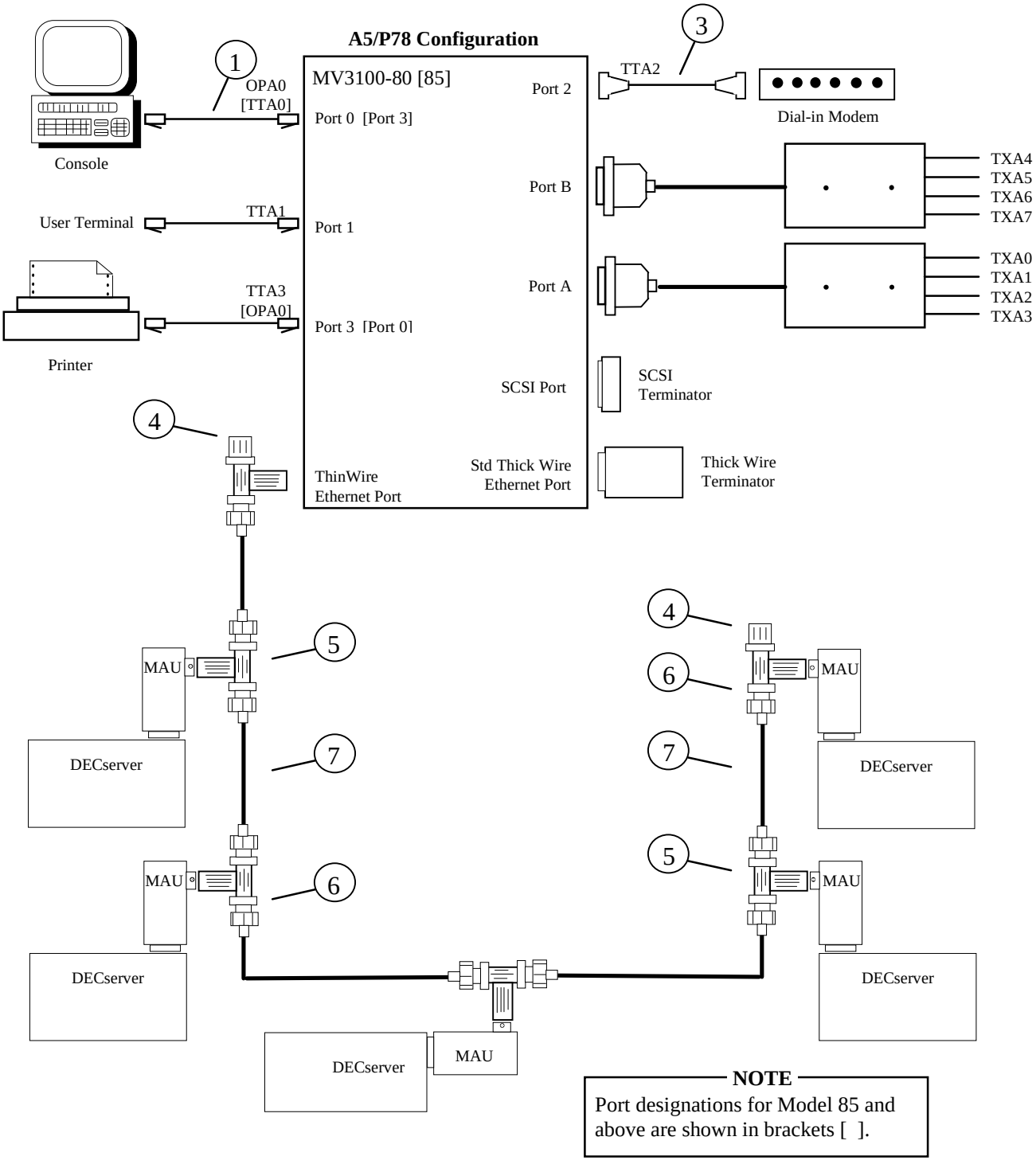


Figure 2-7. Typical A5/P78 System Configuration

2.5 - CABLING AND NETWORK SPECIFICATIONS DATA

2.5.1 - Ethernet Network Specification Data

- A segment is the total cable configuration between terminators.
- The maximum segment distance without repeaters is 500 meters (1640 feet).
- A maximum of three (3) segments can be connected end to end using repeaters to create a maximum system length of 1500 meters (4921 feet).
- A segment can have up to 100 transceivers (or T's) on it.
- The minimum cable distance between T's is one (1) meter.
- The network must be terminated on both ends.
- The maximum distance from a T to a device is three (3) inches (7.62 centimeters).

2.5.2 - RS-232C Cabling Specification Data

- The maximum allowable physical cable length for RS-232C connections is 50 feet (15.23 meters).

2.5.3 - RS-232C Dedicated Cable Diagram

- (See Figure 2-8 - Standard System Direct Connect Cable)

2.5.4 - RS-232C Dial-up Modem Cable Diagram

- (See Figure 2-9 - Standard System Modem Connect Cable)

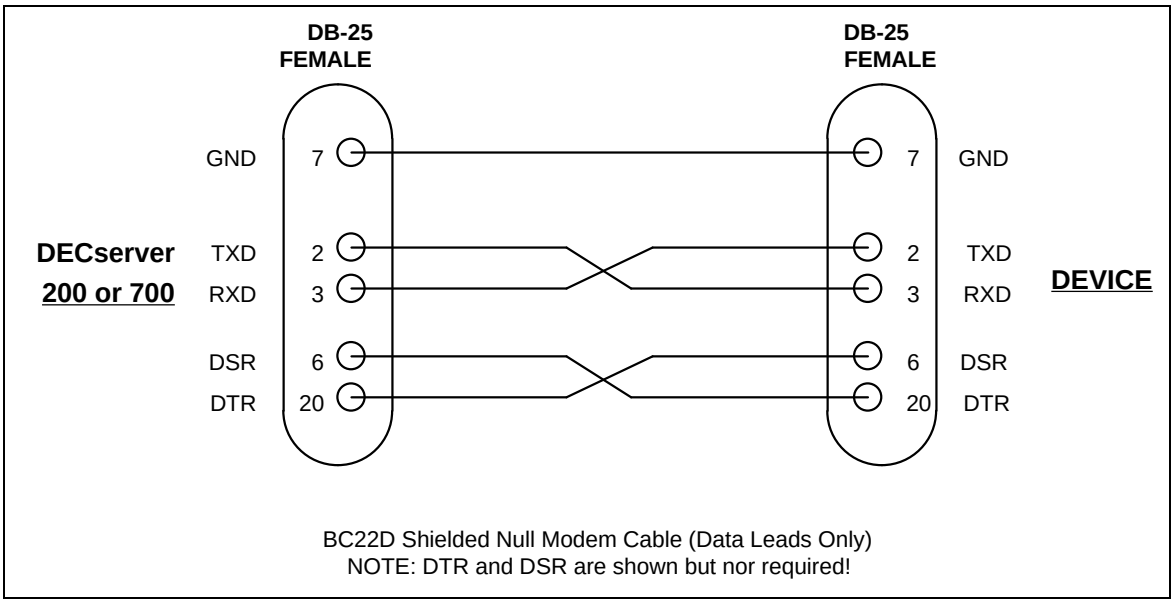


Figure 2-8. Standard System Direct Connect Cable (RS-232)

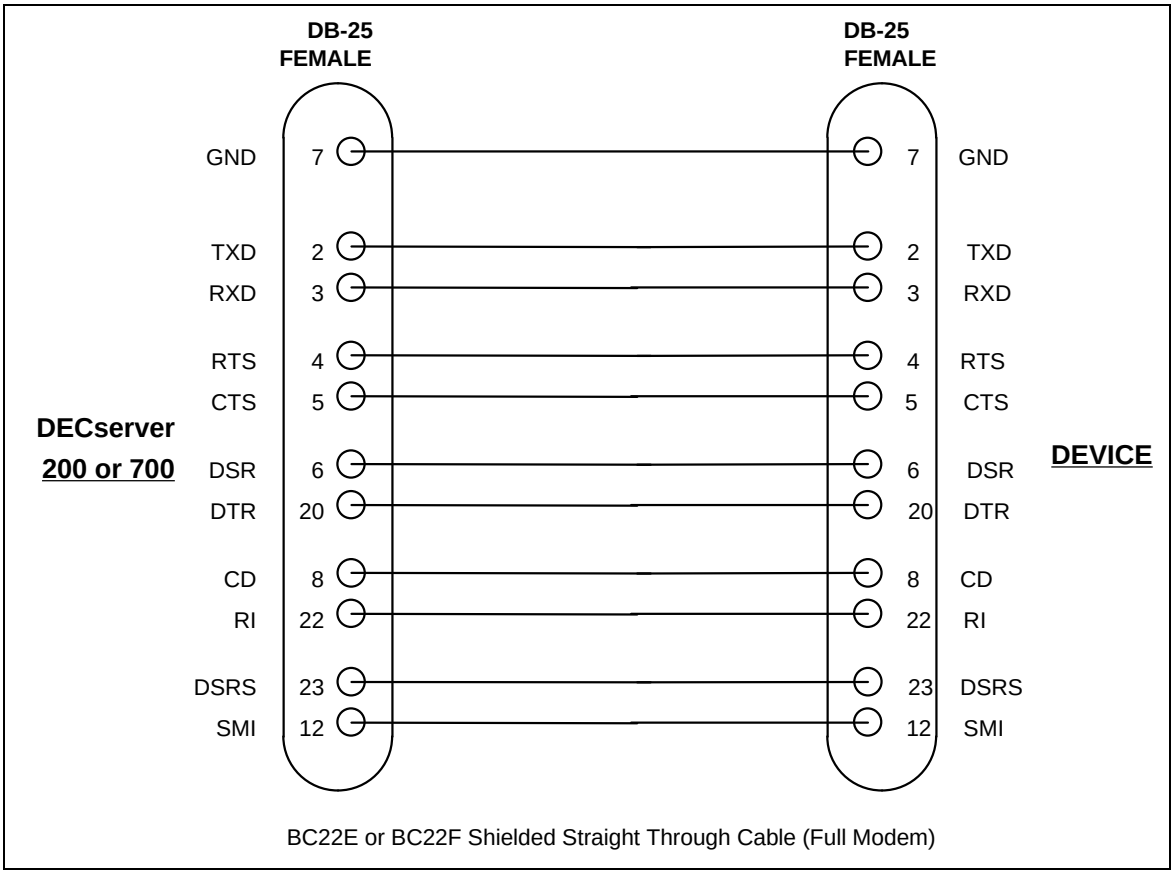


Figure 2-9. Standard System Direct Connect Cable (RS-232)

CHAPTER 3 - UPGRADING EDACS APPLICATION SOFTWARE

3.1 - EDACS SOFTWARE UPGRADE OVERVIEW

This procedure upgrades the EDACS System Manager application package on a previously initialized and operational VAX System Manager. Installation is done using a previously generated TK50 tape containing the latest software (S/W) release. The upgrade is done using the **sminstall** utility and usually takes about 15 minutes.

NOTE

Previously existing databases and/or the system configuration can be modified by this procedure.

You must get a copy of the Upgrade Release Notes that accompany the release you are installing. These release notes explain precisely what is necessary to perform the installation in addition to the instructions in section 3.1.2.

Prior to performing the upgrade, overall system operation (including communication to all devices) should be checked.

It is strongly recommended that a full image backup be done just before performing this procedure. Then after operation verification, another full image backup should be performed on the upgraded system. Reference Chapter 5 for complete image backup procedures.

3.2 - EDACS SOFTWARE UPGRADE DETAILED INSTRUCTIONS

1) log into the sminstall account by entering:

```
username: sminstall <cr>
password: sminstall <cr>
```

2) Answer YES to the following question.

Will you be installing a new release during this session?

3) Load the data tape.

4) The main menu is displayed after a short delay.

5) Select option 3 and the utility informs you of it's progress.

NOTE

Step 5 takes roughly 10 to 15 minutes.

6) Enter: **YES <cr>**

7) Upon completion (as indicated by the message on the screen) the utility prompts you to enter "**<cr>**" before it starts an automatic reboot.

8) Enter **<cr>**

3.3 - UPGRADE OPERATION VERIFICATION

Follow the procedures in Chapter 1, section 1.2, *System Operation Verification*, to properly verify that the upgrade was successful.

CHAPTER 4 -
SYSTEM MANAGER AND EXTERNAL DEVICE/SITE RECONFIGURATION

4.1 - EDACS SITE AND DEVICE MANAGEMENT

4.1.1 - Adding EDACS Sites or Devices to the System

Note 1: External devices are defined in the "Database Maintenance Site/Device Definition" screen (from an application package account such as **egesysmgr**) where an I/O port is assigned to the EDACS devices (sites). The I/O port can either be physical (TTA#: or TXA#:) or logical (LTA#:). The LTA port is the way VMS connects to a physical DECserver port. Reference Appendix D for a list of device (site) numbers.

Note 2: As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

```
username: sminstall <cr>
password: sminstall <cr>
```

and select the appropriate option.

Note 3: If devices are to be added using DECserver ports as I/O, please read and fully understand this paragraph. The LTA is created and assigned by the command file **lat$systartup.com**. This file is in sys$manager and is executed during system start up. In this file, the LAT port is assigned to a DECserver via it's specific node name. It is then assigned to a specific port on the server via a specific name given to the port when the DECserver port is programmed. The server port is programmed automatically during initial installation but can also be done manually by following procedures in Step 7) of this section. Examples of DECserver names are SMGDS1 or SMGDS2. Examples of port names are SITE_1 or DEVICE_33. When naming servers or ports please follow this naming convention.

Note 4: Any occurrence of 'node' or 'smgds#' should be replaced by the DECserver node name such as SMGDS1 or SMGDS2. Any occurrence of 'port#' should be replaced by the DECserver port number that is chosen. Any occurrence of 'port_name' should be replaced by the designated port name such as SITE_1 or DEVICE_33.

1) Logon into the test2 account by entering:

```
username: test2 <cr>
password: babbage <cr>
```

2) Then enter: **edit 'sysdsk':[ege_sm2.smcom]smstart.com <cr>**

About 15 lines down from the top (using the existing "call" lines as examples) add the appropriate new "call" lines for the sites and/or MSCs you are adding. Example for Site 9. The line "**$ call site 2 09**" starts up the necessary tasks for site #9. The entry "**$ call device 2 33**" starts up the necessary tasks for MSC #33.

NOTE: If the site number is less than ten (10) add a zero (0) place holder in front of the call line site number. For example: "**$ call site 2 05**"; where 05 refers to site 5.

3) Enter: **ctrl-z**, at the * prompt, enter ; **ex <cr>**.

4) Enter: **edit 'sysdsk':[ege_sm2.smcom]smstop.com <cr>**

If there are "**$ stop dbupXX**" entries about 10 lines down from the other EDACS devices on the system, add a similar additional line for each device you have added. Be sure to add the proper device number in place of the XX, shown in the entry at 4). If there are no such entries for other EDACS devices, make no such entries.

5) Enter: **ctrl-z**, at the * prompt, enter: **ex <cr>**

6) For all devices being adding using local (TTA or TXA) ports for I/O, identify an unused port and define it's name in step 11. To do this; log into the **sminstall** account by entering:

- username: **sminstall <cr>**
- password: **sminstall <cr>**
- Select option 6.
- Identify the ports being used and select an unused port.
- Select option 10 to log out.

There is no additional port setup because the communication driver takes care of that when it initializes (skip to step 8).

7) For each EDACS device you are adding using a DECserver port for I/O, identify an unused port and follow steps 7a) through 7c) for each new EDACS device.

7a) First set **def 'sysdsk':[ege_sm2.smcom]** making entries as follows:

- Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**
- Run TSM by entering: **term <cr>**
- Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

Now, depending on the type of communication you are using, enter one of the three (3) following commands to set up the port. The first is for 19200 baud dedicated, the second is for 9600 baud dedicated, and the third for 9600 baud dial-up modem.

For (19.2K baud ded.), enter "**@tsm_define_port_direct 'node' "system" 'port#' 'port_name' <cr>**"
For (9.6K baud ded.), enter "**@tsm_define_port_leased 'node' "system" 'port#' 'port_name' <cr>**"
For (9.6K baud dial.), enter "**@tsm_define_port_modem 'node' "system" 'port#' 'port_name' <cr>**"

- Enter: **use server smgds# <cr>**
- Enter: **set priv <cr>**
- Enter: **system <cr>**
- Enter: **init delay 0 <cr>**

The server now reboots and restarts in less than 1 minute.

- Enter: **ctrl-z <cr>** to exit TSM

7b) Enter: **edit sys$manager:lat$systartup.com <cr>** (reference section 5.12 for editor information) and near the bottom of the file identify the next LTA number to be used. Now, after the last defined port add the following example lines replacing X with the new LTA number. If there are no

existing LTA ports defined, start with LTA5 and enter the following text immediately after all of the existing examples in the file.

Type:

```
$! Create lat ports for each EDACS device connection <cr>
$! <cr>"
$! LTA'X': is the LAT connection for the EDACS device #X <cr>
$! <cr>
$ LCP CREATE PORT LTA'X': /NOLOG <cr>
$! <cr>
$! Map System Manager logical ports to their respective server ports <cr>
$!<cr>"
$ LCP SET PORT LTA'X':/APPLICATION/noqueued/nolog/NODE='smgds#'/PORT='name' <cr>
```

Where node is the name of the DECserver used in the 'node' field in step 7a, and the port name must match the name given in the 'port_name' field in step 7a.

7c) Enter: **`ctrl-z ex <cr>`**

8) Enter: **`lo <cr>`** to logoff the test2 account.

9) Logon to the VAX under the egesysmgr account by entering:

username: **egesysmgr <cr>**
password: **egesysmgr <cr>**

10) Select item 10 from the device definition screen to create the device number of your choice. (Refer to the EDACS System Managers User's Guide).

11) In the Communications Parameters screen, enter the baud rate, internal ID, and the port name from step 6) or 7).

12) Exit the "**egesysmgr**" account by using function keys F6 and/or F7.

13) Reboot the system using the procedures in section 5.13, *How Shutdown or Reboot When NOT Logged Into a VMS Account.*

4.1.2 - Adding a CAD Device to the System Manager (for SMIX/CAD interfaces)

This section describes how to add a **C**omputer **A**ided **D**ispatch (CAD) Interface to an existing VAX System Manager application, for both the **S**ystem **M**anager **I**mport/E**x**port (SMIX) PC utility and an actual CAD interface.

1) Log into the System Manager Application, under an account with access to screen 10, Database Maintenance. Add the CAD Intyerface Device in that screen with a free device number from 33 to 64. **Save the record**.

2) Log into **sminstall**, the System Manager's configuration utility account.

username: **sminstall <cr>**

password: **sminstall <cr>**

3) Use **sminstall**, option 4, to add an MSC-II/CEC/IMC/MSC type device to the System Manager. Use the device number being allocated for the CAD device interface. Select the communication port assignment (i.e., LTA, TXA), that you want the CAD interface to use.

4) Log out of the **sminstall** account.

5) Log into the TEST2 account.
   username: **`test2 <cr>`**
   password: **`babbage <cr>`**

NOTE

The password might have been changed on your system!

6) Edit the configuration startup file **smstart.com** by typing:

   "edt smcom:smstart.com" and then press the **<cr>** key.

7) At the star **'*'** prompt, type **"C"** and press the **<cr>** key. This will change the screen to full screen mode.

8) Press the **FIND** key on the keyboard.

9) Enter the device number you used when you added the MSC-II type device.

10) Press the **FIND** key again.

11) You should see a line which says:

    `$ call device XX`

    where the 'XX' is actually the device number.

12) Using the cursor keys, move the cursor so it is on the letter **'d'** of the word **'device'** on the line displayed in the preceding step.

13) Press the dash, or minus, key on the keypad (just below the PF4 key). This will cut out the word **'device'**.

14) Type in the word **`'cad '`** (YOU MUST INCLUDE THE SPACE).

15) Verify that the line now reads:

    `$ call cad XX`

    where again the 'XX' is the device number.

    Use the cursor keys and the delete key (located above the RETURN key) to make corrections if necessary.

16) Once verified, save the changes by pressing the **ctrl** and the **Z** keys at the same time. At the asterisk prompt, type "**EXIT"** and press the **<cr>** key.

NOTE

IN ORDER FOR THIS CHANGE TO TAKE EFFECT, YOU ***MUST REBOOT*** THE SYSTEM MANAGER MICROVAX. Do this by logging into the SHUTDOWN account, and selecting the **'R'** option for "Shutdown and reboot".

4.1.3 - Deleting EDACS Devices from the System

Reference section 4.1.1 of this manual and reverse the steps for the EDACS device in question as shown in the following steps.

1) Edit **smstart.com** and remove the line that starts up the tasks for that particular site.

2) Edit **smstop.com** and remove the line associated with this particular site.

3) If a device that uses a DECserver port is being removed:
   a) Edit **lat$systartup.com** and delete the lines associated with the LTA port for this device.
   b) Enter: **`set def 'sysdsk':[ege_sm2.smcom] <cr>`**
   c) Enter: **`term <cr>`** to invoke TSM.
   d) Enter: **`@tsm_reset_port 'node' system 'port#' <cr>`**
   e) Enter: **`ctrl-z <cr>`** to exit TSM.

4) Delete the site from the egesysmgr account database.

4.1.4 - Reconfiguring EDACS Devices on the System

4.1.4.1 - Changing an EDACS Device From 19.2K baud Dedicated Line to 9.6K baud Dedicated Line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the test2 account by entering:

   username: **`test2 <cr>`**
   password: **`babbage <cr>`**

2) Enter: **`set def 'sysdsk':[ege_sm2.smcom] <cr>`**

3) Run TSM by entering: **`term <cr>`**

4) Enter: **`@tsm_reset_port 'node' system 'port#' <cr>`**

5) Enter: **`@tsm_define_port_leased 'node' system 'port#' 'port_name' <cr>`**

6) Enter: **`ctrl-z <cr>`** to exit TSM.

7) Enter: **`lo <cr>`** to log out.

8) Logon to the VAX under the **egesysmgr** account by entering:

   username: **`egesysmgr <cr>`**
   password: **`egesysmgr <cr>`**

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 9600.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.1.4.2 - Changing an EDACS Device From 19.2K baud Dedicated Line to 9.6K baud dial-up Line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the **test2** account by entering:

```
username: test2 <cr>
password: babbage <cr>
```

2) Enter; **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **@tsm_define_port_modem 'node' system 'port#' 'port_name' <cr>**

6) Enter: **ctrl-z <cr>** to exit TSM.

7) Enter: **lo <cr>** to log out.

8) Logon to the VAX under the **egesysmgr** account by entering:

```
username: egesysmgr <cr>
password: egesysmgr <cr>
```

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 9600 and define the proper phone number for the target device.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.1.4.3 - Changing an EDACS Device From 9.6K baud dial-up Line to 9.6K baud Dedicated Line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the test2 account by entering:

```
username: test2 <cr>
password: babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **@tsm_define_port_leased 'node' system 'port#' 'port_name' <cr>**

6) Enter: **ctrl-z <cr>** to exit TSM.

7) Enter: **lo <cr>** to log out.

8) Logon to the VAX under the **egesysmgr** account by entering:

```
username: egesysmgr <cr>
password: egesysmgr <cr>
```

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 9600 and remove the phone number.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.1.4.4 - Changing an EDACS device from 9.6K baud dial-up line to 19.2K baud dedicated line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the test2 account by entering:

```
username: test2 <cr>
password: babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **@tsm_define_port_direct 'node' system 'port#' 'port_name' <cr>**

6) Enter: **ctrl-z <cr>** to exit TSM.

7) Enter: **lo <cr>** to log out.

8) Logon to the VAX under the **egesysmgr** account by entering:

```
username: egesysmgr <cr>
password: egesysmgr <cr>
```

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 19200 and remove the phone number.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.1.4.5 - Changing an EDACS Device from 9.6K baud Dedicated Line to 19.2K baud Dedicated Line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the test2 account by entering:

```
username: test2 <cr>
password: babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **@tsm_define_port_direct 'node' system 'port#' 'port_name' <cr>**

6) Enter: **ctrl-z <cr>** to exit TSM.

7) Enter: **lo <cr>** to log out.

8) Logon to the VAX Under the **egesysmgr** Account by entering:

```
username: egesysmgr <cr>
password: egesysmgr <cr>
```

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 19200.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.1.4.6 - Changing an EDACS Site or Device from 9.6K baud Dedicated Line to 9.6K baud dial-up Line.

- If the I/O uses a local (TTA or TXA) port, no port setup changes need to be made because the communication driver takes care of that when it initializes, skip to step 8.
- If the I/O uses a DECserver port, perform the following steps:

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **@tsm_define_port_modem 'node' system 'port#' 'port_name' <cr>**

6) Enter: **ctrl-z <cr>** to exit TSM.

7) Enter: **lo <cr>** to log out.

8) Logon to the VAX under the **egesysmgr** account by entering:

```
username:  egesysmgr <cr>
password:  egesysmgr <cr>
```

9) From the device definition screen, enter the site number to be changed. Then from screen 4 of 4 set the baud rate to 9600 and define the proper phone number of the target device.

10) Follow the procedures in Chapter 5 of this manual and reboot the system.

4.2 - SYSTEM MANAGER DEVICE MANAGEMENT

4.2.1 - Reconfiguring/Managing DECservers

Maintenance Note: As of October 7 1993, DECservers come in two models. Each model requests different load files from the host. The first model, DSRVW-YA, requests WWENG1.SYS. The second model, DSRVW-ZA, requests WWENG2.SYS. The second file (WWENG2) is a more expensive, and larger, software package, that we do not need. Therefore, it is created from WWENG1 to satisfy either DECserver. (See paragraph 1.1.1, step 28). WWENG2 requires 4Mbytes of memory, while WWENG1 only requires 2Mbytes. If, for any reason, the WWENG2 software is used in the future, all DECservers on the system will require a memory upgrade.

NOTE

Any occurrence of '**sysdsk**' is replaced by the name of the system disk in the operating procedures below. Any occurrence of '**addr**', in the procedures below, is replaced by the DECserver Ethernet address labeled on the rear of the server. Any occurrence of 'id', in the procedures below, is replaced by the next available node address on the system.

For DECserver configuration information:

1) Log into the **test2** account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **term <cr>**

3) Enter: **show server all <cr>**

4) Enter: **ctrl-z**

5) Enter: **lo <cr>** to log out.

4.2.1.1 - How to Add a DECserver to a System That Already has TSM, DECserver and an Existing DECnet Network.

1) Purchase the required DECserver from DEC.

Properly connect all of the necessary Ethernet hardware (reference Chapter 2 and the DEC hardware manuals).

NOTE

As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

username: **sminstall <cr>**

password: **sminstall <cr>**

and select the appropriate option.

3) Log into the test2 account by entering:

username: **test2 <cr>**
password: **babbage <cr>**

4) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

5) Run TSM by entering: **term <cr>**

6) Enter: **add server smgds# address 'addr' type DS700 - <cr>**

7) Enter: **decnet address 'id' circuit sva-0 <cr>**

8) Enter: **@tsm_define_server_name 'smgds#' system <cr>**

9) Enter: **ctrl-z <cr>** to exit TSM.

10) Enter: **lo <cr>** to log out.

4.2.1.2 - How to add a DECserver to a system that does not have TSM, DECserver or an existing DECnet network.

1) Purchase the TSM and DECserver optional products and the required DECserver from DEC.

NOTE: Reference drawing 19A199575 for optional product part numbers.

2) Properly connect all of the necessary Ethernet hardware (reference Chapter 2 and the DEC hardware manuals).

3) Install the licenses for TSM and DECserver (reference Chapter 5 for exact procedures).

4) Install the DECserver optional product (reference Chapter 5 for exact procedures).

5) Log into the test2 account by entering:

username: **test2 <cr>**
password: **babbage <cr>**

6) Enter: **@sys$manager:netconfig <cr>**

a) Enter: **'sysmgr' <cr>** (the name of the node).

b) Enter: **'1.1' <cr>** (DECnet address of the node).

c) Enter: **<cr>** to all of the following question

7) Enter: **`define/system/exec/name_attribute=no_alias/nolog - <cr>`**
`mom$load sys$sysroot:[mom$system],sys$sysroot:[decserver] <cr>`

8) Install the TSM optional product (reference Chapter 5 for exact procedures).

NOTE

As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

username: **`sminstall <cr>`**

password: **`sminstall <cr>`**

and select the appropriate option.

9) Enter: **`set def 'sysdsk':[ege_sm2.smcom] <cr>`**

10) Run TSM by entering: **`term <cr>`**

11) Enter: **`add server 'smgds#' address 'addr' type ds700 - <cr>`**

12) Enter: **`decnet address 'id' circuit sva-0 <cr>`**

13) Enter: **`@tsm_define_server_name 'smgds#' system <cr>`**

14) Enter: **`ctrl-z <cr>`** to exit TSM.

15) Enter: **`lo <cr>`** to log out.

4.2.1.3 - How to Remove a DECserver From a System.

NOTE

As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

username: **`sminstall <cr>`**

password: **`sminstall <cr>`**

and select the appropriate option.

1) Log into the test2 account by entering:

username: **`test2 <cr>`**
password: **`babbage <cr>`**

2) Run TSM by entering: **`term <cr>`**

3) Enter: **`remove server 'smgds#' <cr>`**

NOTE

A Privilege Violation error may be seen, if so, it can be ignored.

4) Enter: **ctrl-z <cr>** to exit TSM.

5) Enter: **lo <cr>** to log out.

4.2.1.4 - How to Replace a DECserver

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Check to see if there is an existing setup file (an image of the one being replaced) so that the new server can be programmed easily.

   - Enter: **dir sys$sysroot:[decserver]'smgds#'_setup.com <cr>**

3) Even if a setup file does exist for this server it is a good idea to generate an up-to-date one if the server is operational enough to allow it. The following steps generate this setup file.

   a) Enter: **set def sys$sysroot:[decserver] <cr>**

   Note: In the following 2 commands replace the # with a 7 if this system uses DS700s or with a 2 if the system uses DS200s.

   b) Enter: **dir TSM$DS#*_GET_CHAR.COM <cr>**

   c) Make note of the file names returned.

   If you are using DS200s, enter DS2 in place of the DS# text in the following command. If you are using DS700s, enter DS7 in place of the DS# text in the following command. Also make note of the highest version number returned and place that number in place of the VXX text in the following command. You must also supply the server name for the command file. This must be done for all DECservers on the system.

   d) Enter: **@TSM$DS#_VXX_GET_CHAR.COM 'smgds#' system <cr>**

4) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

5) Run TSM by entering: **term <cr>**

6) Enter: **remove server 'smgds#' <cr>** to remove the defective server.

7) Physically replace the defective server.

8) Enter: **add server 'smgds#' address 'addr' type ds700 -<cr>**
   Where 'addr' is the etherent address of the server (for example: 08-00-2B-0D-8C-93).

9) Enter: **decnet address 'id' circuit sva-0 <cr>**
   Where 'id' is the node ID of the server(for example: 1.2, 1.3, etc.).

10) Enter: **@tsm_define_server_name 'smgds#' system <cr>**

11) Enter: **ctrl-z <cr>** to exit TSM.

12) Enter: **set def sys$sysroot:[decserver] <cr>**

13) Run TSM by entering: **term <cr>**

14) Enter: **use server 'smgds#' <cr>**

15) Enter: **set priv <cr>**

16) Enter: **system <cr>**

17) If a setup file does exist, make the following entry and then skip step 18.

    a) Enter: **@'smgds#'_setup.com <cr>**

18) If a setup file does not exist, execute the following steps:

    a) Enter: **ctrl-z <cr>** to exit TSM.

    b) Enter: **set def smcom: <cr>**

    c) Run TSM by entering: **term <cr>**

    The following steps must be executed for each and every port that is to be used for EDACS device communication.

    d) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

    Now, depending on the device communication to be used, enter one of the following commands to set up the port appropriately. Step e) sets a port for 19200 baud dedicated line use, step f) sets a port for 9600 baud dedicated line use, and step g} sets a port for 9600 baud dial-up modem use.

    e) Enter: **@tsm_define_port_direct 'node' system 'port#' 'port_name' <cr>**

    f) Enter: **@tsm_define_port_leased 'node' system 'port#' 'port_name' <cr>**

    g) Enter: **@tsm_define_port_modem 'node' system 'port#' 'port_name' <cr>**

19) Enter: **init delay 0 <cr>** to reboot the server.

20) Enter: **ctrl-z <cr>** to exit TSM.

21) Enter: **lo <cr>** to log out of the test2 account.

4.2.1.5 - How to Reset a DECserver to Factory Configuration

1) Press and hold the **HALT** button on the rear of the unit.

2) While holding the **HALT** button in, disconnect and reconnect the AC power cord and continue holding the **HALT** button in for about 10 seconds.

4.2.1.6 - How to Reset a Single DECserver Port to Factory Configuration (basic terminal use)

1) Log into the test2 account by entering:

   username: **test2 <cr>**

```
password:  babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **use server 'smgds#' <cr>**

6) Enter: **set priv <cr>**

7) Enter: **system <cr>** to the password prompt.

8) Enter: **log po 'port#' <cr>**

9) Enter: **lo <cr>** to log out.

4.2.1.7 - How to configure a DECserver Port for automatic connect dedicated terminal use.

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **use server 'smgds#' <cr>**

6) Enter: **set priv <cr>**

7) Enter: **system <cr>** to the password prompt.

8) To setup this port to automatically connect to the VAX when the user hits **<cr>** :

   a) Enter: **def po 'port#' preferred service sysmgr <cr>**

   b) Enter: **def po 'port#' autoconnect <cr>**

9) Enter: **log po 'port#' <cr>**

10) Enter: **lo <cr>** to log out.

4.2.1.8 - How to Configure a DECserver Port for a Dedicated Connection to Another Computer.

1) Log into the **test2** account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'node' system 'port#' <cr>**

5) Enter: **use server 'smgds#' <cr>**

6) Enter: **set priv <cr>**

7) Enter: **system** to the password prompt.

8) Using the define port commands, configure the port to match the port displayed in, Figure D-8, Appendix D.

9) Enter: **log po 'port#' <cr>**

10) Enter: **lo <cr>** to log out.

4.2.1.9 - Procedures to setup a Three System Manager Wide Area Configuration.

1) Verify to determine known starting point.

2) Stop the System Manager Application software as follows:

   a) Log into the **test2** account by entering:

      username: **test2 <cr>**
      password: **babbage <cr>**

   b) Enter: **@smcom:stop_application**

   c) Enter: **lo <cr>** to exit the **Test2** account.

3) Create images of all DECservers by following the procedures in section 6-12, *Generating DECserver Image Files*. This backs up the existing system information.

4) Change all node names and addresses following the procedures in section 4.2.2.2, - *Example of how to put 3 A4/P77 (an A4 system is a 3 DECserver system) System Managers on the same DECnet network.*

5) Reboot the System Manager and verify all Site Controller and IMC I/O communication. (Refer to section 5.13, *How to Shutdown or Reboot, Not Logged into VMS Account*)

6) Create images of all DECservers by following the procedures in section 6-12, *Generating DECserver Image Files*. This backs up the new system information.

7) For an asynchronous DECnet configuration between nodes 1 and 2, reconfigure the hardware as shown in Figure 4-1. For a synchronous network, reconfigure hardware as shown in Figure 4-2.

8) If this is a synchronous configuration skip to step 11.

9) If an asynchronous configuration was chosen in step 7, install the DVNETRTG licenses on nodes 1 and 2 by performing the Asynchronous DECnet routing license installation and activation procedure as follows:

NOTE

DVNETRTG licenses must be purchased from Digital Equipment Corporation.

a) Log into the **system** account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

b) Enter: **@sys$update:vmslicense <cr>**

c) Enter: **1 <cr>** to register the Product Authorization Keys.

d) Respond to all of the questions using the data provided on the license PAK.

e) From the main menu, select option 4 and record the Authorization Numbers for the DVNETENT.

f) Select option 6 to disable DVNETEND.

g) Select option 7 to delete DVNETEND.

h) Enter: **99 <cr>** to exit.

i) Enter: **license unload dvnetend <cr>**

j) Enter: **license load dvnetrtg <cr>**

k) Enter: **mc ncp set exec state off <cr>**

l) Enter: **mc ncp def exec type routing IV <cr>**

m) Enter: **@sysmanager: startnet <cr>**

n) Enter: **lo <cr>** to log off the **system** account.

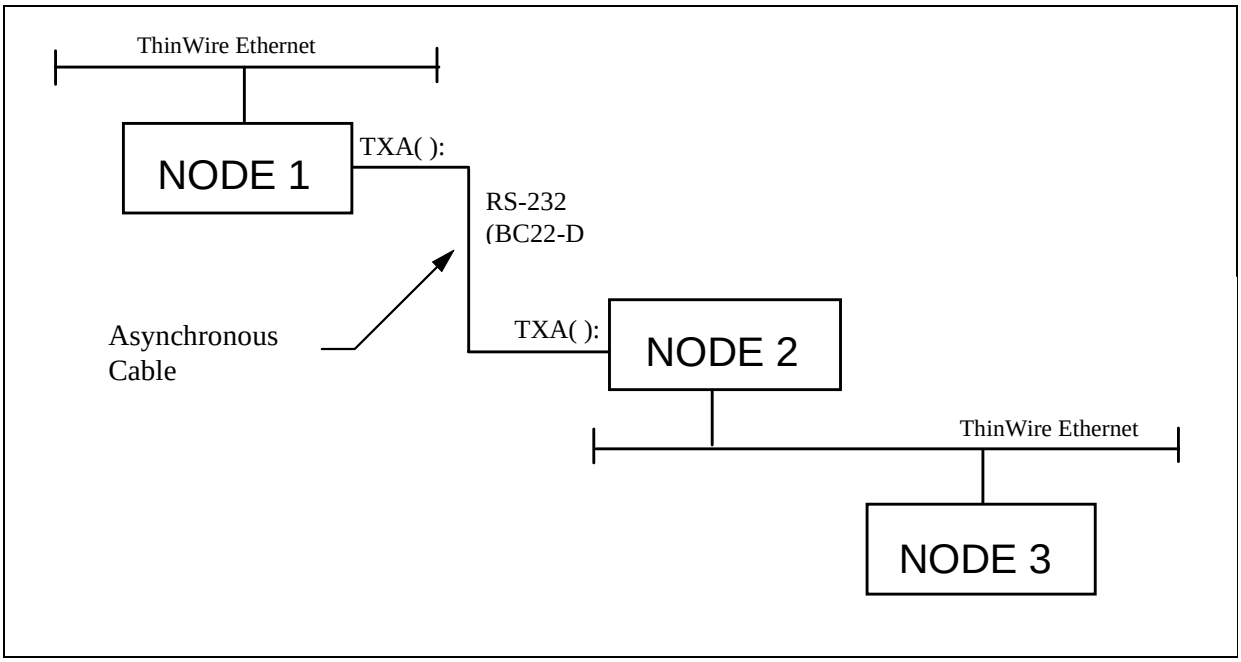


Figure 4-1. Typical Asynchronous DECnet Configuration

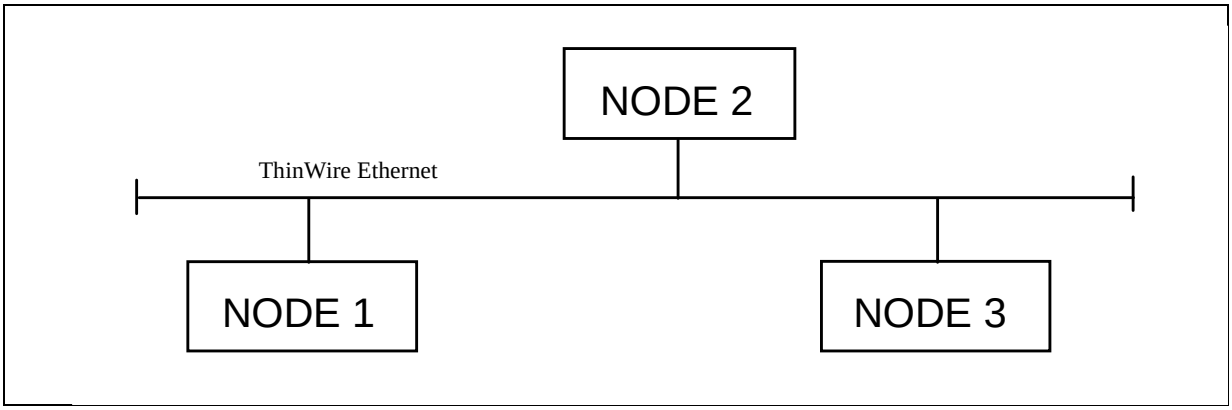


Figure 4-2. Typical Synchronous DECnet Configuration

10) Configure nodes 1 and 2 for asynchronous DECnet operation by performing the Asynchronous DECnet startup and configuration procedure as follows:

a) Log into the **system** account by entering:

```
username:  system <cr>
password:  sysmgrsuper <cr>
```

b) Enter: **set def sysmanager <cr>**

c) Edit the loadnet.com file to add the following highlighted lines:

```
$ ! Command procedure to create network ACP process and load network
driver.
$ !
$ REQUIRED_PRIVILEGES = "ACNT,DETACH,CMKRNL,ALTPRI"
$ PREV_PRIVS = F$SETPRV(REQUIRED_PRIVILEGES)
$ IF .NOT. F$PRIVILEGE(REQUIRED_PRIVILEGES) THEN GOTO NO_PRIVILEGES
$ ON ERROR THEN GOTO EXIT
$ ON CONTROL_Y THEN GOTO EXIT
$
$ SYSGEN := $SYSGEN
$ sysgen connect noa0/noadapter
$ IF F$GETDVI("_NET:","EXISTS") THEN SYSGEN RELOAD NETDRIVER
$ SYSGEN CONNECT NET/NOADAPTER/DRIVER=NETDRIVER
$ IF F$GETDVI("_NDA0:","EXISTS") THEN SYSGEN RELOAD NDDRIVER
$ SYSGEN CONNECT NDA0/NOADAPTER
$
$ IF P1 .EQS. "" THEN P1 = "SYS$SYSTEM:NETACP"
$ !
$ ! Check for user-supplied defaults.
$ !
$ MAX_WORK = F$LOGICAL("NETACP$MAXIMUM_WORKING_SET")
$ IF MAX_WORK .EQS. "" THEN MAX_WORK = "350"
$ PAGE_FILE = F$LOGICAL("NETACP$PAGE_FILE")
$ IF PAGE_FILE .EQS. "" THEN PAGE_FILE = "20480"
$ EXTENT = F$LOGICAL("NETACP$EXTENT")
$ IF EXTENT .EQS. "" THEN EXTENT = "1500"
$ ENQLM = F$LOGICAL("NETACP$ENQUEUE_LIMIT")
$ IF ENQLM .EQS. "" THEN ENQLM = "255"
$ BUF_LIM = F$LOGICAL("NETACP$BUFFER_LIMIT")
$ IF BUF_LIM .EQS. "" THEN BUF_LIM = "65535"
$ RUN 'P1' -
    /NOACCOUNTING-
    /NOAUTHORIZE-
    /AST_LIMIT=100-
    /BUFFER_LIMIT='BUF_LIM'-
    /EXTENT='EXTENT'-
    /FILE_LIMIT=128-
    /IO_BUFFERED=32767-
    /IO_DIRECT=32767-
    /QUEUE_LIMIT=16-
    /ENQUEUE_LIMIT='ENQLM'-
    /MAXIMUM_WORKING_SET='MAX_WORK'-
    /PAGE_FILE='PAGE_FILE'-
    /PRIORITY=8-
    /PRIVILEGES=CMKRNL-
    /PROCESS_NAME=NETACP-
    /UIC=[1,3]
$!
$ set term txa2:/perm/speed=9600/eightbit/noparity/noautobaud -
  /notypeahead/nohangup
$ set term txa2:/perm/protocol=ddcmp
$!
$EXIT:
```

d) Edit the startnet.com file to add the following highlighted lines after SET KNOWN NODES ALL:

```
SET KNOWN NODES ALL
$!
$ NCP
 SET LINE TT-0-2 STATE ON RECEIVE BUFFERS 4 LINE SPEED 9600
 SET CIRCUIT TT-0-2 STATE ON
 DEFINE LINE TT-0-2 STATE ON RECEIVE BUFFERS 4 LINE SPEED 9600
 DEFINE CIRCUIT TT-0-2 STATE ON
```

NOTE

The annotation TT-0-2 indicates port TTA2, where the zero (0) means "A."

11) Reboot the System Manager

12) From within the TEST2 account on node 1, verify network operation as follows:

a) Enter: **MC NCP SET NODE 1.5 SYSMG2**

b) Enter: **MC NCP SET NODE 1.9 SYSMG3**

c) Enter: **MC NCP DEFINE NODE 1.5 SYSMG2**

d) Enter: **MC NCP DEFINE NODE 1.9 SYSMG3**

e) Enter: **set host SYSMG2**

f) Log into **SYSMG2** and then log out.

g) Enter: **set host SYSMG3**

h) Log into **SYSMG3** and then log out.

If unable to verify asynchronous network operation, refer to section 6.22, *How to perform a basic Asynchronous DECnet Analysis*.

13) Verify Site Controller and device I/O.

4.2.2 - Reconfiguring/Managing DECnet Node Names and Addresses

4.2.2.1 - System Manager Node Name and Address Change

NOTE

The information given here is intended as an example only. On an Ethernet network, no two nodes can have the same node name or node address. Therefore, when adding nodes to an already existing Ethernet network, consult the network manager for unique node names and addresses.

1) Log into the test2 account as follows:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **@smcom:stop_application <cr>**

3) Enter: **mc ncp <cr>**

4) Enter: **list exec char <cr>**

5) Enter: **set exec state off <cr>**

NOTE: In the following command, replace 'x.x' with the node address to be used.

6) Enter: **def exec addr 'x.x' <cr>**

NOTE: In the following command, replace 'nodename' with the node name to be used.

7) Enter: **def exec name 'nodename' <cr>**

8) Enter: **list exec char <cr>**

9) Enter: **ctrl-z <cr>**

10) Edit **SYS$MANAGER:SYSTARTUP_V5.COM** and search for "**lat$startup**", the string immediately following this contains the node name and it must be changed to reflect the new node name used in step 7).

11) Reboot the System (reference Chapter 5).

4.2.2.2 - Example of how to put 3 A4/P77 (an A4 system is a 3 DECserver system) System Managers on the same DECnet network.

NOTE

The information given here is intended as an example only. On an Ethernet network, no two nodes can have the same node name or node address. Therefore, when adding nodes to an already existing Ethernet Network, consult the network manager for unique node names and addresses. Node names can be a maximum of 6 characters.

1. **SYSTEM #1**

   Leave system #1 addresses and node names unchanged.

   VAX node name = sysmgr, address = 1.1
   DECserver #1 node name = smgds1, address = 1.2
   DECserver #2 node name = smgds2, address = 1.3
   DECserver #3 node name = smgds3, address = 1.4

2. **SYSTEM #2**

   A) Change System #2's executor address and node name (reference section 4.2.2.1) to the following:

      VAX node name = sysmg2, address 1.5

   B) Remove all of system #2's DECservers (reference section 4.2.1.3)

   C) Add all of system #2's DECservers (reference section 4.2.1.1) with the following addresses and node names:

      DECserver #1 node name = smgds4, address = 1.6
      DECserver #2 node name = smgds5, address = 1.7
      DECserver #3 node name = smgds6, address = 1.8

   D) Change all references to smgds1, smgds2, and smgds3 to smgds4, smgds5, and smgds6, respectively. This is done in the file **sys$manager:lat$systartup.com** as follows:

      1) Log into the test2 account as follows:

         ```
         username:  test2 <cr>
         password:  babbage <cr>
         ```

      2) Edit the file and make the appropriate text replacement changes (reference section 5.12).

      3) Enter: **`lo <cr>`** to logoff the test2 account.

3. **SYSTEM #3**

   A) Change System #3's executor address and node name (reference section 4.2.2.1) to the following:

      VAX node name = sysmg3, address 1.9

   B) Remove all of system #3's DECservers (reference section 4.2.1.3).

   C) Add all of system #3's DECservers (reference section 4.2.1.1) with the following addresses and node names:

      DECserver #1 node name = smgds7, address = 1.10

DECserver #2 node name = smgds8, address = 1.11
DECserver #3 node name = smgds9, address = 1.12

D) Change all references to smgds1, smgds2, and smgds3 to smgds7, smgds8, and smgds9, respectively. This is done in the file **sys$manager:lat$systartup.com** as follows:

1) Log into the test2 account as follows:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Edit the file and make the appropriate text replacement changes (reference section 5.12).

3) Enter: **`lo <cr>`** to logoff the test2 account.

4. **CONCLUSION**

A) Reboot all systems that had changes made to lat$systartup.com (2 and 3 in this case) (reference Chapter 5).

B) Verify system operation on all systems (reference section 1.2).

4.2.3 - Reconfiguring/Managing Miscellaneous System Components

4.2.3.1 - Adding a Dial-up Modem to a DECserver Port to be Used for Remote Terminal Access.

Note 1: These procedures assume that the DECserver is fully operational as an Ethernet node.

Note 2 Reference drawing 19A149786 for modem setup details.

NOTE

As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

```
username: sminstall <cr>
password: sminstall <cr>
```

and select the appropriate option.

1) From a terminal on the system manager, exit the User Menu.

2) Log into the System account by entering:

```
username:  system <cr>
password:  sysmgrsuper <cr>
```

3) If the system has TSM registered and loaded, follow steps 3a) & 3b), otherwise use step 3c) through 3e).

a) Enter: **`term <cr>`**

b) Enter: **`use server 'smgds#'<cr>`** (where # is the server number of the port you are configuring).

c) Enter: **mc ncp con node 'smgds#'<cr>** (where # is the server number of the port you are configuring).

d) Enter: **<cr>**

e) Enter: **access <cr>**

4) Enter: **set priv <cr>**

a) In response to the password: prompt, enter: **system <cr>**

Note: In all of the following steps, replace # with the desired port number (1-8) on the server.

5) Enter: **def po # name dialin <cr>**

6) Enter: **def po # user dialin <cr>**

7) Enter: **def po # flow xon <cr>**

8) Enter: **def po # access local <cr>**

9) Enter: **def po # break local <cr>**

10) Enter: **def po # speed 9600 (if the modem is 9600 baud) <cr>**

11) Enter: **def po # modem ena <cr>**

12) Enter: **def po # local ^] <cr>**

13) Enter: **def po # type soft <cr>**

14) Enter: **def po # autoc ena <cr>**

15) Enter: **def po # autob ena <cr>**

16) Enter: **def po # autop dis <cr>**

17) Enter: **def po # broad ena <cr>**

18) Enter: **def po # dial-up ena <cr>**

19) Enter: **def po # dtrwait dis <cr>**

20) Enter: **def po # inactivity ena <cr>**

21) Enter: **def po # input flow ena <cr>**

22) Enter: **def po # loss ena <cr>**

23) Enter: **def po # mess ena <cr>**

24) Enter: **def po # output flow ena <cr>**

25) Enter: **def po # verif ena <cr>**

26) Enter: **def po # remote dis <cr>**

27) Enter: **def po # signal dis <cr>**

28) To setup this port to automatically connect to the VAX when the user hits **<cr>**, enter: **def po 'port#' preferred service sysmgr <cr>**

29) Enter: **log po # <cr>**

30) Enter: **ctrl-z <cr>** to exit TSM or NCP.

31) Enter: **lo <cr>** to log out.

4.2.3.2 - Adding a Dial-up Modem to a Local (TTA or TXA) Port to be Used for Remote Terminal Access

Note 1: On an A3-A5 system, TTA2 (the RS-232 port on the rear of the CPU) is already configured for dial-up use. Proper modem operation requires a DB25, RS-232 connector, therefore the MMJ ports on the rear of the CPU ***should not*** be used.

Note 2: Reference paragraph 4.2.4, - US Robotics Modem Reconfiguration and LBI-33031 for modem setup details.

NOTE

As of Version 3.00 of the EDACS application software, this procedure is automated in the **sminstall** utility. To use this utility, log into the **sminstall** account by entering:

username: **sminstall <cr>**
password: **sminstall <cr>**

and select the appropriate option.

1) Log into the **system** account by entering:

username: **system <cr>**
password: **sysmgrsuper <cr>**

2) Enter: **edit/edt sys$manager:systartup_V5.COM <cr>**

3) Using the editor (reference section 5.12) add the following two lines near the bottom just before the "$exit" line:

a) Enter: **$! Setup TXA# for use as a dial-up modem port <cr>**

b) Enter: **$ Set term TXA#:/perm/modem/dialup/hangup/disconnect/speed=9600 <cr>**

Where the # must be replaced by the port number chosen.

4) Enter: **ctrl-z <cr>**

5) Enter: **`ex <cr>`**

6) Enter: **`set term TXA#:/perm/modem/dialup/hangup/disconnect/speed=9600 <cr>`**

7) Hook up the modem (configured to factory settings) and it should work fine.

4.2.4 - US Robotics Modem Reconfiguration

The following procedures configure the System Manager and Site Controller modems when using a US Robotics data modem. Refer to the vendor's manual for switch location and identification.

The following applications are covered:

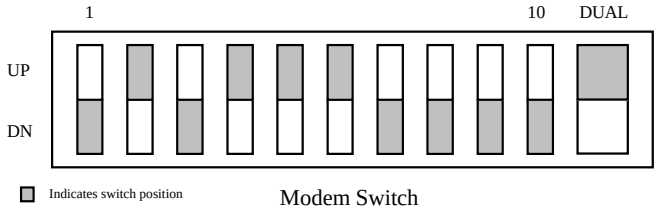
- Dial-up System Manager To Site Controller
- Dedicated Line, System Manager To Site Controller
- Dial-up Remote System Manager Terminal
- Dedicated Line, Remote System Manager Terminal

4.2.4.1 - Dial-up System Manager To Site Controller

NOTE

In this application, both modems are configured the same, except for the DIP Switch settings in Step 7.

1) Set the DIP switches (located on the bottom of the of modem) as shown below:



Modem Switch

NOTE: V.34 modems do not have a dual modem switch. This switch is not used in System Manager applications.

2) Connect PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

4) Connect AC power to modem and turn it *ON*.

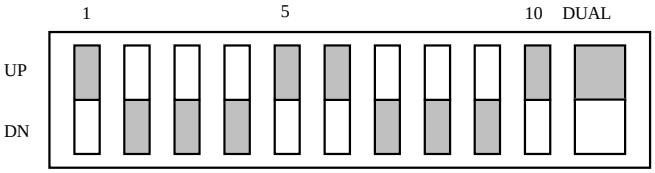
5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS13=1
AT&MO
AT&K0
AT&B1
AT&N6
AT&S4
ATT
ATX0
ATQ0
AT&W

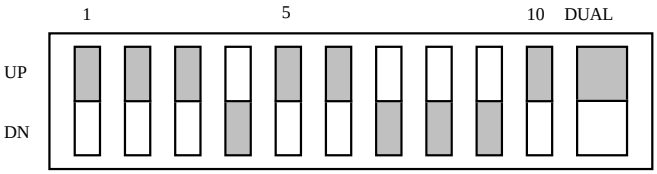
7) Turn modem OFF and reset DIP switches as shown below:

For VAX System Manager Application:



Modem Switch

For PDP System Manager, PDP Site Controller, and VAX Site Controller Applications:

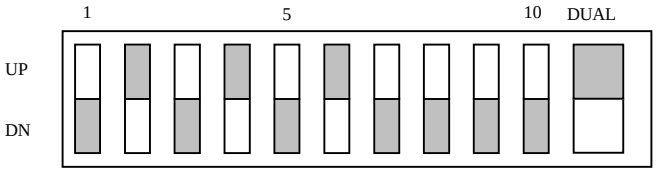


Modem Switch

4.2.4.2 - Dedicated Line, System Manager To Site Controller

Site Controller Modem:

1) Set the DIP switches (located on the bottom of modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

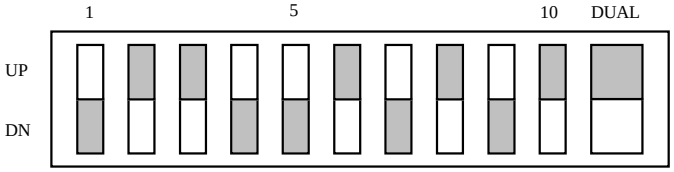
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS7=255
AT&M0
AT&K0
AT&B1
AT&N6
AT&L1
AT&S2
AT&W

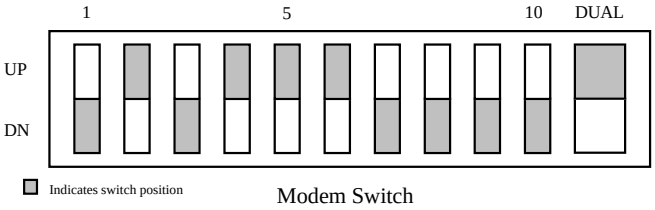
7) Turn modem OFF and reset DIP switches as shown below:



Modem Switch

System Manager Modem

1) Set the DIP switches (located on the bottom of the modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

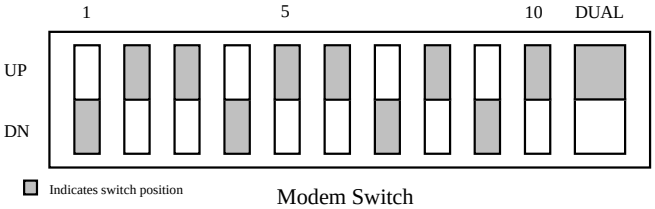
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS7=255
ATS13=1
AT&M0
AT&K0
AT&B1
AT&N6
AT&L1
AT&S2
AT&W

7) Turn modem OFF and reset DIP switches as shown below:

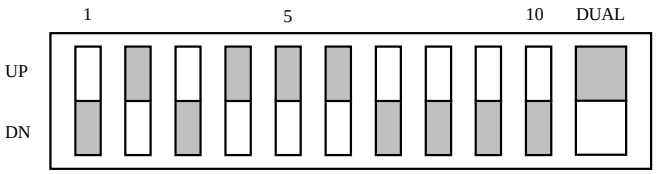


Modem Switch

4.2.4.3 - Dial-up Remote System Manager Terminal

System Manager Modem

1) Set the DIP switches (located on the bottom of the of modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

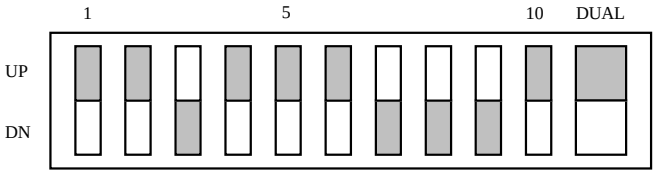
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS13=1
AT&H2
AT&B1
ATT
ATX6
AT&W

7) Turn modem OFF and reset DIP switches as shown below:



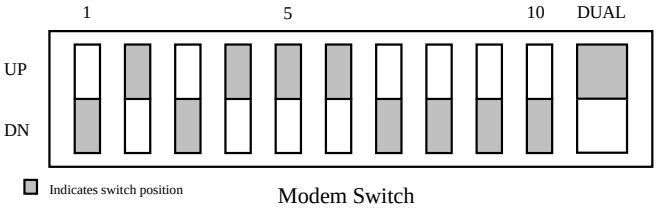
Modem Switch

NOTE

The modem port should be set for 9600 baud, remote, and no autobaud.

Remote Terminal Modem

1) Set the DIP switches (located on the bottom of the of modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

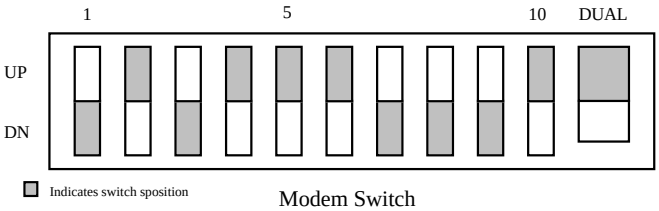
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
AT&H2
AT&B1
ATT
ATX6
AT&W

7) Turn modem OFF and reset DIP switches as shown below:



Modem Switch

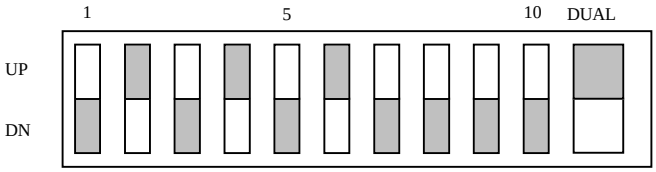
NOTE

Terminal should be set for 9600 baud, data leads only (no modem control), XON/XOFF recognition (default for all DEC VT1xx/VT2xx/VT3xx terminals).

4.2.4.4 - Dedicated Line, Remote System Manager Terminal

Remote Terminal Modem

1) Set the DIP switches (located on the bottom of modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

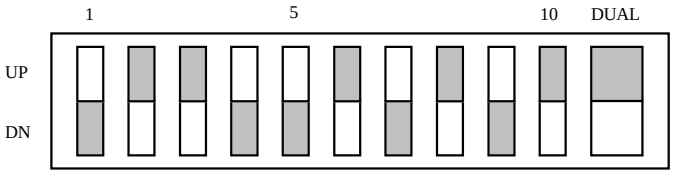
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS7=255
AT&N6
AT&L1
AT&S2
AT&W

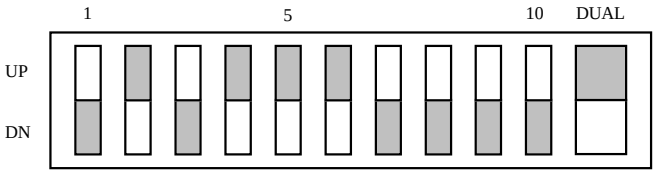
7) Turn modem OFF and reset DIP switches as shown below:



Modem Switch

System Manager Modem

1) Set the DIP switches (located on the bottom of the modem) as shown below:



Modem Switch

2) Connect the PC or Computer Terminal to the modem using a straight-through modem cable (a full ribbon cable is OK).

3) Set the terminal to 9600 baud, 8-bit, no parity *ONLY*. Refer to Robotics Maintenance Manual for additional information.

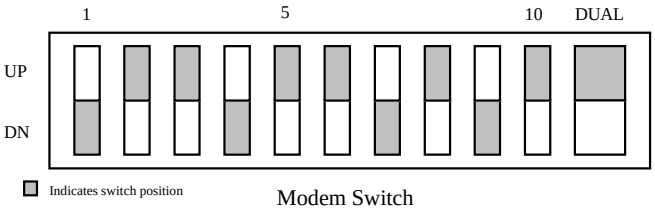
4) Connect AC power to modem and turn it *ON*.

5) Type "AT" <ENTER>. Terminal should respond "OK". (If not, check cable and verify steps 1-4 above).

6) Type the following commands in the order given, following each with a carriage return:

ATS15=32
ATS7=255
ATS13=1
AT&N6
AT&L1
AT&S2
AT&W

7) Turn modem OFF and reset DIP switches as shown below:



Modem Switch

NOTE

The modem port should be set for 9600 baud, remote, and no auto-baud.

4.2.5 - Report Printer Reconfiguration.

4.2.5.1 - To configure an additional printer (maintaining the one connected to TTA3) on a DECserver port:

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **sho dev lta**

- Verify that LTA4 is free (not shown on the list), if LTA4 is not free, use LTA3.

3) Enter: **edit sys$manager:lat$systartup.com <cr>** (reference section 5.12 for editor information). Add the following lines to the file after the reference to “Create and Map ports.”

Type:

$!<cr>

```
$! lta4: is the LAT que connection for the additional printer<cr>
$!<cr>
$ lcp create port lta4: /nolog<cr>
$ lcp set port lta4:/app/node='smgds#'/port=remote_printer/queued/nolog<cr>
$!<cr>
```

4) Edit the **SYS$MANAGER:SYSTARTUP_V5.COM** file and add the following lines, three lines after the reference to "**@sys$startup:lat$startup**":

Type:

```
$!<cr>
$! Setup the que for the additional printer<cr>
$!<cr>
$ define/system $additional_printer lta4:<cr>
$ set terminal $additional_printer/permanent/nobroadcast/notypeahead-
   /nowrap/width=132/page=66/device_type=la210<cr>
$ set device/spooled=(printer2, sys$sysdevice:) $additional_printer<cr>
$initialize/queue/start/on=$additional_printer/processor=latsym-
   /noseparate printer2<cr>
$!<cr>
```

5) Configure the DECserver port as explained in paragraph 4.2.2.3.3.

6) Reboot the system (reference Chapter 5).

7) Using the additional printer, generate the desired reports from within the User Menu. After the reports are complete, perform the following steps:

   a) Log into the test2 account by entering:

      username: **test2 <cr>**
      password: **babbage <cr>**

   b) Enter: **set def smrpt: <cr>**

   c) Enter: **dir*.txt <cr>**, view the report files and choose the desired report(s) and make note of the file names.

   d) Enter: **print/que=printer2 'desired_file.ext' <cr>** (where *desired_file.ext* was chosen in step 7c).

4.2.5.2 - To move the existing printer from TTA3 to a DECserver port:

1) Log into the test2 account by entering:

   username: **test2 <cr>**
   password: **babbage <cr>**

2) Enter: **sho dev lta <cr>**

- Verify that LTA4 is free (not shown on the list), if LTA4 is not free, use LTA3.

3) Enter: **edit sys$manager:lat$systartup.com <cr>** (reference section 5.12 for editor information). Add the following lines to the file after the reference to "Create and Map ports."

Type:

```
$!<cr>
$! lta4: is the LAT que connection for the report printer<cr>
$!<cr>
$ lcp create port lta4: /nolog<cr>
$ lcp set port lta4:/app/node='smgds#'/port=remote_printer/queued/nolog<cr>
$!<cr>
```

4) Edit the **SYS$MANAGER:SYSTARTUP_V5.COM** file and change the report que setup to be identical to the following:

Type:

```
$!<cr>
$! Setup que report<cr>
$!<cr>
$ define/system $report_printer lta4:<cr>
$ set terminal $report_printer/permanent/nobroadcast/notypeahead-
   /nowrap/width=132/page=66/device_type=la210<cr>
$set device/spooled=(report$print, sys$sysdevice:) $report_printer
$ initialize/queue/start/on=$report_printer/processor=latsym/noseparate-
   report$print<cr>
$!<cr>
```

5) Configure the DECserver port as explained in paragraph 4.2.5.3.

6) Reboot the system (reference Chapter 5).

7) Using the printer:

   a) Generate the desired reports from within the user menu.

   b) Print the desired reports using the Report Manager from within the User Menu.

4.2.5.3 - DECserver Port Setup:

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **set def 'sysdsk':[ege_sm2.smcom] <cr>**

3) Run TSM by entering: **term <cr>**

4) Enter: **@tsm_reset_port 'smgds#' system 'port#' <cr>**

5) Enter: **set priv <cr>**

6) Enter: **system <cr>** to the password prompt.

7) Enter: **def po # access remote <cr>**

8) Enter: **def po # name remote_printer <cr>**

9) Enter: **def po # autobaud dis <cr>**

10) Enter: **def po # broadcast dis <cr>**

11) Enter: **def po # failover dis <cr>**

12) Enter: **def po # input flow dis <cr>**

13) Enter: **def po # lock dis <cr>**

14) Enter: **def po # verification dis <cr>**

15) Enter: **def po # queuing ena <cr>**

16) Enter: **log po # <cr>**

17) Enter: **ctrl-z <cr>**

4.2.6 - Alarm Log To Printer Setup:

1) Log into **sminstall**, the System Manager's configuration utility account.

   username: **sminstall <cr>**

   password: **sminstall <cr>**

2) Select option 4, to add or delete system or EDACS devices.

3) Select sub-option 8, “Alarm Printer Configuration.”

4) Enter the type of port the printer will be connected to. (For example: TTA, TXA or LTA.)

5) Enter the Port number for the port designated in the previous step if TTA or TXA. For LTA, enter; enter the DECserver name, Port #, and LTA #.

6) Log out of the **sminstall** account.

7) Log into the SHUTDOWN account, and select the **'R'** option for "Shutdown and reboot".

4.2.7 - Adding a Network Printer:

This procedure is used to add a network printer that can be used from the VMS prompt to print to a printer on the network. The default printer for the System Manager will still be used for printing reports from the System Manager application.

1) Log into the TEST2 account by entering:

   username: **test2 <cr>**

   password: **babbage <cr>**

2) Enter: **multi config/printer**

3) Enter: **add ntwk_printer**

4) Enter the IP address of the printer.

5) For the protocol type, enter: **stream**

6) Enter the TCP port number of the printer's ethernet controller.

7) Enter: **exit**

8) Enter: **@multinet:remote-printer-queues.com <cr>**

* The printer should now be operational and the following 3 steps will verify this.

9) Enter: **set def smrpt <cr>**

10) Enter: **dir <cr>** and identify the desired report

11) Enter: **print/que=ntwk_printer report.txt <cr>**
Where "report.txt" is replaced by the actual name identified in the previous step.

12) Now in order to make this que available permanently (i.e. after system reboot):

Enter "edit/edt sys$manager:systartup_v5.com" (refer to the technical reference manual if an editor tutorial is necessary)

Near the bottom of the file, following the 5 lines referring to report_printer and report$print, add the following lines:

$! Initialize the remote network printer que <cr>

$ @multinet:remote-printer-queues.com <cr>

13) Enter: **lo <cr>** to logout of the **TEST2** account.

14) Reboot the system and verify operation thereafter.

4.2.8 - Replacing The Default Report Print Queue with a Network Print Queue:

This procedure is used to send the reports from the System Manager application to a network printer instead of a local printer.Log into the TEST2 account by entering:

username: **test2 <cr>**
password: **babbage <cr>**

2) Enter: **stop/que/reset report$print <cr>**

3) Enter: **delete/que report$print <cr>**

4) Enter: **multi config/printer <cr>**

5) Enter: **add report$print <cr>**

6) Enter the IP address of the printer

7) For the protocol type, enter: **stream <cr>**

8) Enter the TCP port number of the printer's ethernet controller.

9) Enter: **exit <cr>**

10) Enter: **@multinet:remote-printer-queues.com <cr>**

    * The printer should now be operational from the report manager menu (screen 69).

11) Now in order to make this que available permanently (i.e. after system reboot):

    Enter: **edit/edt sys$manager:systartup_v5.com <cr>** (refer to the technical reference manual if an editor tutorial is necessary)

    Near the bottom of the file, comment out the 5 lines referring to report_printer and report$print and just after those lines, add the following lines:

    $! Initialize the remote network printer que <cr>

    $ @multinet:remote-printer-queues.com <cr>

12) Reboot the system and verify operation thereafter (refer to the technical reference manual if necessary).

4.3 - SYSTEM MANAGER HARDWARE RECONFIGURATION

4.3.1 - Network Design (System Manager V5.0 and later)

4.3.1.1 - Requirements

1) Remotely located System Manager to System Manager database record transfer/update. When a record is created, modified or deleted on one system, the other system's databases will be automatically updated.

4.3.1.2 - Network Implementation

4.3.1.2.1 - Software

Networking of the System Manager (V5.0) will be accomplished via DECnet. Since DECnet is supplied with the VMS OS and is a record transfer mechanism, using it will make the record transfer part of this transparent.

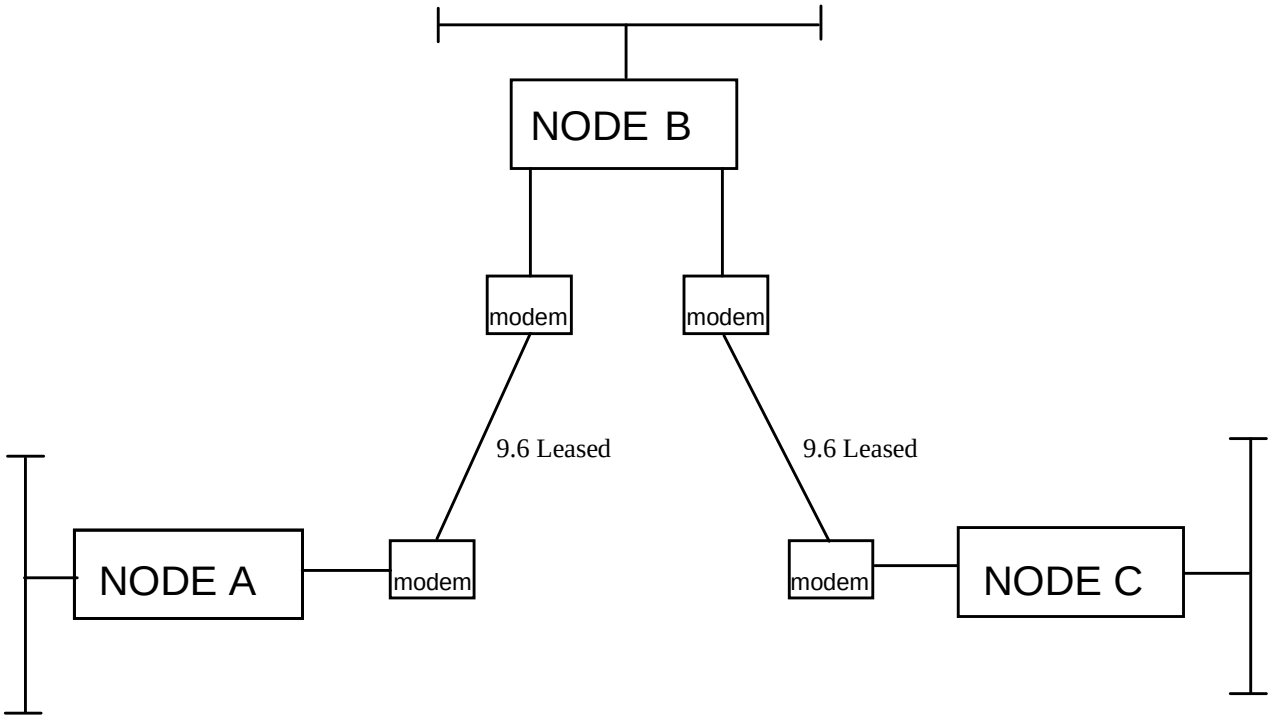
4.3.1.2.2 - Hardware

DECnet can be used in two modes: asynchronous using modems (least cost and requires an extra DECnet Full Node License) and synchronous using routers (higher cost and requires a DECnet End Node licensewhich is already included). Both partial and full redundancy will be discussed here and tested for effectiveness.

The routers chosen were Digital's low end, multiprotocol WANrouter 90. These routers are extremely versatile and have a very attractive price. Protocols routed include DECnet, TCP/IP and OSI CLNP. Routing protocols supported include integrated IS-IS, RIP, EGP, ISO IS-IS as well as DECnet. Datalinks supported include DDCMP, HDLC, X.25 and sysnc/async. Supported network management includes SNMP, NCL, CMIP and POLYCENTER.

Please note that any number of nodes on the same segment of Ethernet is also a valid configuration.

4.3.1.3 - Non-redundant dedicated line modem Wide Area Network



Typically the cost (excluding cost of the computers) of implementing this configuration is relatively low:

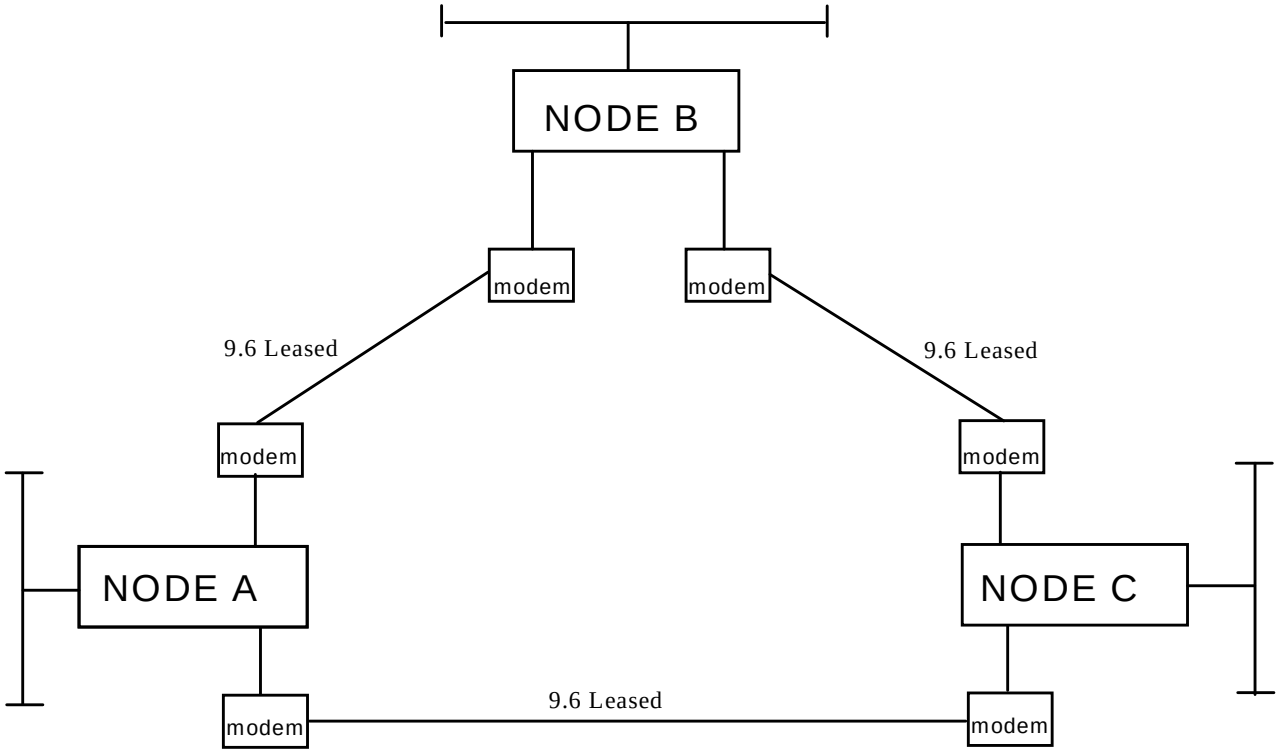
Initial Installation:

Modems	4 each
DECnet Routing S/W	3 nodes
Leased lines	2 lines

Monthly cost:

Leased lines	2 lines

4.3.1.4 - Fully redundant dedicated line modem Wide Area Network



Typically the cost (excluding cost of the computers) of implementing this configuration is considered medium low:

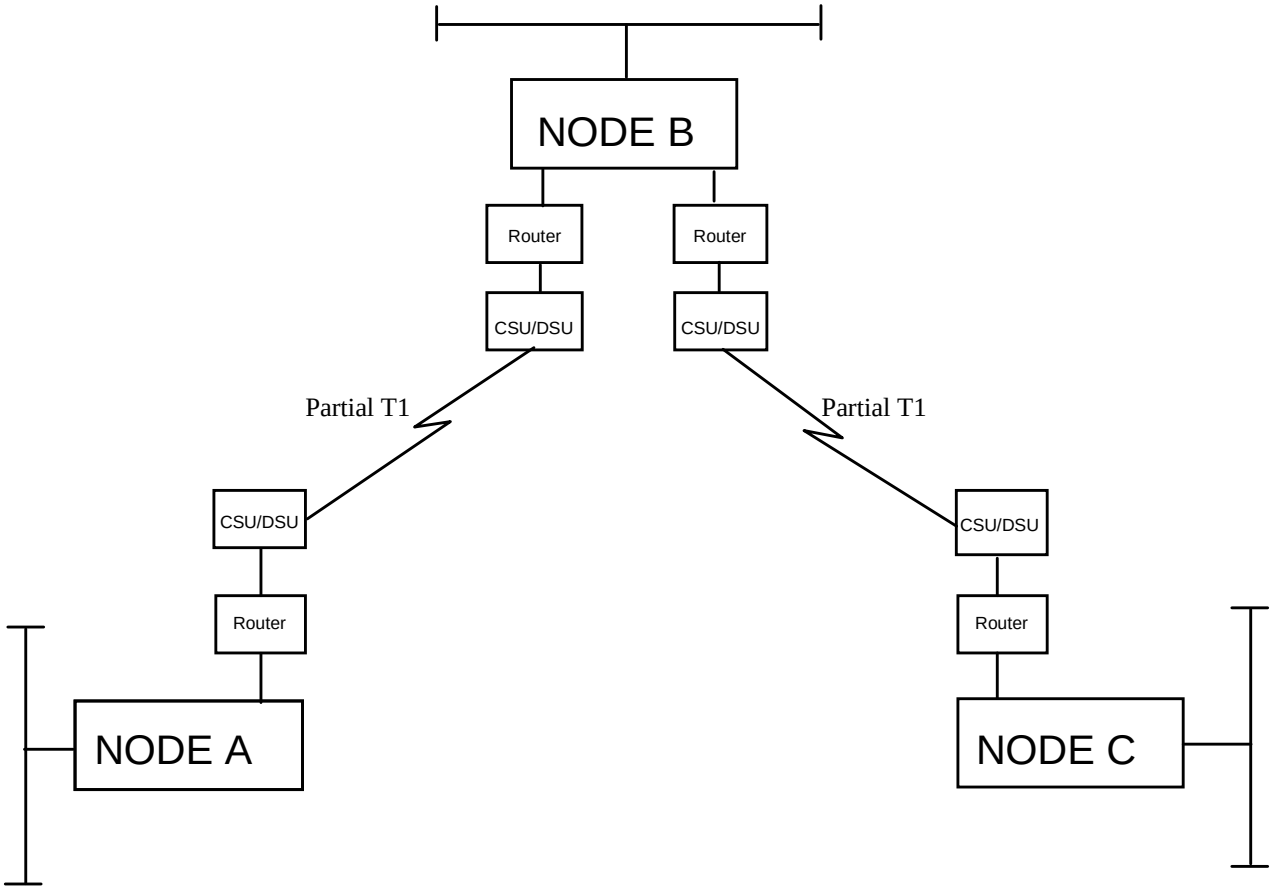
Initial Installation:

Modems	6 each
DECnet Routing S/W	3 nodes
Leased lines	3 lines

Monthly cost:

Leased lines	3 lines

4.3.1.5 - Non-redundant T1 Wide Area Network



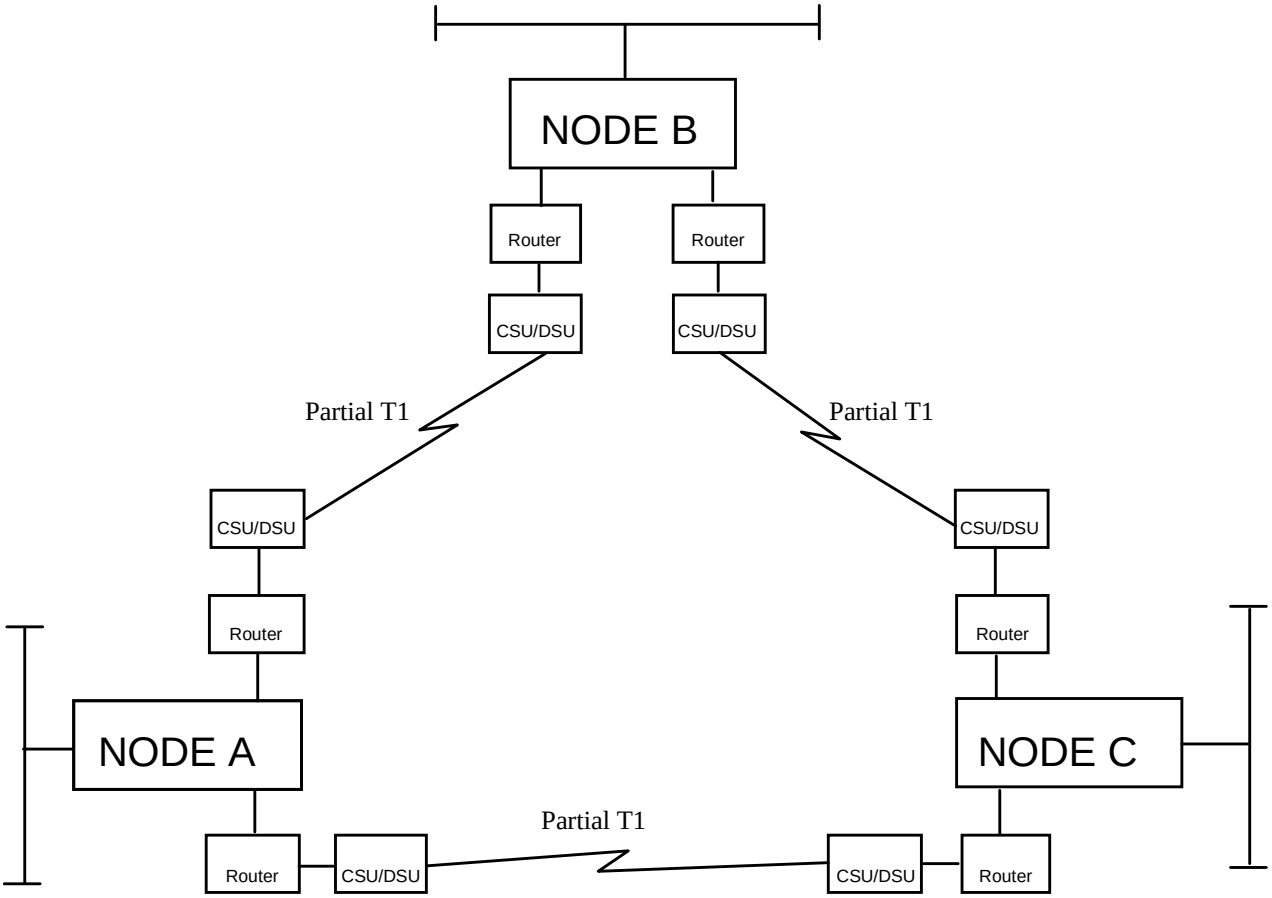
Typically the cost (excluding cost of the computers) of implementing this configuration is considered medium high.

Initial Installation:	
Routers	4 each
Router S/W	one time charge
Partial T1 circuit	2 each
CSUs/DSUs	4 each
Monthly Cost:	
Partial T1 circuits	2 each

NOTE

The customer will usually supply the CSU/DSUs and T1 circuit.

4.3.1.6 - Fully redundant T1 Wide Area network



Typically the cost (excluding cost of the computers) of implementing this configuration is high:

Initial installation:

Routers	6 each
Router S/W	One time charge
Partial T1 circuits	3 each
CSUs/DSUs	6 each

Monthly cost:

Partial T1 circuits	3 each

NOTE

The customer will usually supply the CSU/DSUs and T1 circuit.

4.3.1.7 - Application Software Implementation

When a LID or GID is created, modified or deleted and the wide area bit is true, a procedure will be called to update all known nodes.

The node update procedure must scan the database and for all nodes, make the necessary changes in their database.

Node Database implementation will be done by adding a new device type to the type list in the existing External Device Database and associated form. The node will be device type XX and will be called SYMGR. The device database entry for this type will have the node name, system disk name and the VMS group number which will all be used to build the logical name to reference the external databases.

The node information will be maintained in the NCP database and be transparent to the actual remote database operation. Regardless of whether the modem or router configurations are used this approach will work fine.

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CHAPTER 5 - VMS OPERATING SYSTEM MAINTENANCE TASKS

5.1 - SYSTEM DISK IMAGE BACKUP PROCEDURES

NOTE

This procedure is the only proper way to backup the VMS operating system disk and should be performed prior to an upgrade.

1) If any user terminals are logged on to the system, log all terminals off the system now.

NOTE

The following commands must be entered at the system console terminal (port 0 on the computer) and all occurrences of ddmmmyyyy should be replaced by the current date.

2) Log into the shutdown account.

   username: **shutdown <cr>**
   password: **shutdown <cr>**

   - Enter: **s <cr>** to shutdown the system.

3) When the shutdown has completed (indicated by the message on the screen), depress the HALT switch at the rear of the CPU.

4) At the >>> prompt, Enter: **show boot <cr>**
   Make note of the disk drive name for use in the backup command in step 9).

5) At the >>> prompt, Enter: **show dev <cr>**
   Make note of the tape drive name for use in the backup command in step 9).

6) At the >>> prompt, Enter: **B/E0000000 <cr>**

7) Enter the date and time as **DD-MMM-YYYY HH:MM:SS <cr>**

8) Load the desired tape in the tape drive.

NOTE

Reference Appendix B for tape labeling instructions.

9) In a few moments the $ prompt appears. Then enter:

   BACKUP/REW/VER/IMAGE/LABEL=SYSBAK 'sysdsk': 'tapedrv':ddmmmyyyy.SAV<cr>

10) Enter: **YES <cr>** after the tape is loaded.

```
>>>

>>>

>>>

>>>

>>>  b/e0000000

-DKA300
   VAX/VMS Version V5.5-1   Major version id = 1 Minor version id = 0

PLEASE ENTER DATE AND TIME (DD-MMM-YYYY  HH:MM)  23-JUL-1993 09:50

Configuring devices . . .

Available device DKA0:                          device type Generic_DK
Available device DKA300:                        device type RZ25
Available device MKA500:                        device type TZ30
%BACKUP-I-IDENT, Stand-along BACKUP V5.5; the date is 23-JUL-1993  09:51:32.49
$
$ backup/rew/ver/image/label=sysbak dka300: mka500:23junl993.sav
%BACKUP-W-MOUNTERR, volume 1 on _SABKUP$MKR500 was not mounted because
 its label does not match the one requested
 specify option (QUIT, NEW tape or OVERWRITE tape)
BACKUP> over
%BACKUP-I-STARTVERIFY, starting verification pass
%BACKUP-I-PROCDONE, operation completed.  Processing finished at 23-JUL-l993
09:55:45.20
If you do not want to perform another standalone BACKUP operation,
use the console to halt the system.

If you do want to perform another standalone BACKUP operation,
ensure the standalone application volume is online and ready.
Enter:  YES" to continue:
```

Figure 5-1. Example of Console Output for Image Backup

11) Enter: **OVER <cr>** to overwrite the tape you just loaded.

NOTE

The backup takes approximately 50 min. per tape for TK50 tapes and can take up to three tapes. For TLZ07 tapes, the backup is much faster and uses only one tape. The system will inform you when to replace the tapes.

NOTE

Reference Figure 5-1 for example of an actual screen output.

NOTE

If this procedure is being followed after initial setup and immediately prior to packing and shipping the system to the customer, stop here and power all equipment off.

12) Upon completion, depress the HALT button and at the >>> prompt, Enter: **BOOT <cr>**. The System Manager then starts.

5.2 - SYSTEM DISK IMAGE RESTORATION PROCEDURES

NOTE

This is the procedure to follow to restore a system disk from a previously made image backup tape. These procedures can be followed for a crashed, or operational, system disk.

1) Halt the CPU by pressing the **HALT** switch.

2) At the console terminal (for model 40 and 80 the terminal is connected to port 0, for model 85, the terminal is connected to Port 3):

   - Enter: **sho BOOT <cr>** - This displays the system disk name.
   - Enter: **sho dev <cr>** - This displays all disk and tape device identities.

3) If the system has a crashed system disk:

   - Load the stand alone backup tape (labeled "bootable tape").
   - To start loading, enter: **boot 'tapedrv' <cr>**

4) If the system does not have a crashed disk:

   - Enter: **B/E0000000 <cr>**

5) Enter the date and time, in the format shown, when prompted.

6) Unload the stand alone backup tape (if it was used).

7) Load the image backup tape.

```
Configuring devices . . .

Available device  DKA300:                          device type Generic_DK
Available device  MKA500:                          device type TZ30
%BACKUP-I-IDENT,   Stand-alone   BACKUP   V5.5-2;   the   date   is   15-JUL-l993
10:54:00.82
$ backup/rew/ver/image mka500: dka300:
%BACKUP-I-STARTVERIFY, starting verification pass
%BACKUP-I-RESUME, resuming operation on volume 2
%BACKUP-I-READYREAD, mount volume 2 on _SABKUP$MKA500: for reading
Enter:  YES" when ready: yes
%BACKUP-I-READYREAD, mount volume 2 on _SABKUP$MKA500: for reading
Enter:  YES" when ready: yes
%BACKUP-I-STARTVERIFY, starting verification pass
%BACKUP-I-PROCDONE, operation completed.  Processing finished at 15-JUL-1993
129
If you do not want to perform another standalone BACKUP operation,
use the console to halt the system.

If you do want to perform another standalone BACKUP operation,
ensure the standalone application volume is online and ready.
Enter:  YES" to continue:
```

Figure 5-2. Example of Console Output for Image Restoration

8) Enter: **backup/rew/ver/image 'tapedrv': 'sysdsk': <cr>**

   If the backup consists of more than 1 tape the system prompts you when to load the second tape.

   (NOTE: See Console output example, Figure 5-2 on the next page)

9) The system informs you when the operation has completed.

10) Depress the **HALT** switch.

11) To boot the system, Enter: **BOOT <cr>**

5.3 - UPGRADING A VMS OR DEC LAYERED PRODUCT

NOTE

The installation manual and software product release notes should always be thoroughly reviewed to determine the exact procedures. In the case of a major VMS upgrade, the contents of the system disk may be completely overwritten. Always perform a complete system disk image backup prior to any upgrade (reference Chapter 5).

1) Log into the **system** account by entering:

   username: **system <cr>**
   password: **sysmgrsuper <cr>**

   - Typically a minor upgrade can be installed by the following commands:

2) Enter: **@sys$update:vmsinstal * 'tapedrv': options n <cr>**

   a) Enter: **Y <cr>** (continue).

   b) Enter: **Y <cr>** (backup).

   c) Enter: **Y <cr>** (ready).

   d) Enter: **Y <cr>** (release).

   e) Enter: **Y <cr>** (continue).

   f) Enter: **Y <cr>** (purge).

   g) Enter: **Y <cr>** (run).

   h) Enter: **Y <cr>** (PAK loaded).

   i) Enter: **Y <cr>** (register).

3) Follow the System Operation Verification Procedures, in Chapter 1, Section 1.2, to verify proper system operation following all upgrades.

4) Enter: **lo <cr>** to log out.

5.4 - DISPLAYING OR SETTING SYSTEM TIME

1) Log into the **system** account by entering:, Displaying Or Setting

   username: **system <cr>**
   password: **sysmgrsuper <cr>**

2) Enter: **sho time <cr>**

3) Enter: **set time='DD-MMM-YYYY:HH:MM:SS' <cr>**

4) Enter: **lo <cr>** to log out.

5.5 - HOW TO DEFRAGMENT A DISK

1) Perform an image backup of the disk, see paragraph 5-1.

2) Perform an image restoration, see paragraph 5-2. This will defragment the disk.

5.6 - ADDING DECSERVER SOFTWARE

NOTE

The installation manual should always be thoroughly reviewed. A complete system disk image backup should be performed prior to any upgrade (reference paragraph 5-0).

1) Log into the **system** account by entering:

   username: **system <cr>**
   password: **sysmgrsuper <cr>**

2) Enter: **@sys$update:vmsinstal <cr>**

   a) Load the DECsvr distribution tape.

   b) Enter: **yes <cr>** (satisfied with backup).

   c) Enter: **'tapedrv'** (drive where distribution tape is mounted).

   d) Enter: ***<cr>** (product).

   e) Enter: **none <cr>** (options).

   f) Enter: **yes <cr>** (ready).

   g) Enter: **yes <cr>** (purge).

   h) Enter: **yes <cr>** (IVP).

   i) Verify that the IVP has completed successfully (as indicated by the completion message on the screen).

   j) Enter: **ctrl-z <cr>** when prompted for the next product.

k) Unload the DECserver distribution tape.

3) Enter: **lo <cr>** to log off the **system** account.

5.7 - ADDING TSM SOFTWARE

NOTE

The installation manual should always be thoroughly reviewed. Always perform a complete system disk image backup prior to any upgrade (reference paragraph 5-0).

1) Log into the system account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

2) Enter: **@sys$update:vmsinstal <cr>**

a) Load the TSM distribution tape.

b) Enter: **yes** (satisfied with backup).

c) Enter the tape drive name (drive where distribution tape is mounted).

d) Enter: ***<cr>** (product).

e) Enter: **none <cr>** (options).

f) Enter: **yes <cr>** (ready).

g) Enter: **yes <cr>** (continue).

h) Enter: **yes <cr>** (purge).

i) Enter: **yes <cr>** (IVP).

j) Enter: **yes <cr>** (PAK loaded).

k) Enter: **yes <cr>** (enable service).

l) Enter: **<cr>** (target directory).

m) Verify that the IVP has completed successfully (as indicated by the completion message shown on the screen).

n) Enter: **ctrl-z <cr>** when prompted for the next product.

3) Enter: **lo <cr>** to log off the system account.

5.8 - PRODUCT AUTHORIZATION KEY IDENTIFICATION

This procedure explains how to identify currently registered user licenses called **P**roduct **A**uthorization **K**eys (PAKs).

1) Log into the **system** account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

2) Enter: **@sys$update:vmslicense <cr>** .

3) Enter: **4 <cr>** to list the Product Authorization Keys.

4) Enter: **99 <cr>** to exit.

5) Enter: **lo <cr>** to log off the **system** account.

5.9 - REGISTERING NEW VMS PAKS

This paragraph tells how to register a new VMS Product Authorization Key (PAK).

1) Log into the **system** account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

2) Enter: **@sys$update:vmslicense <cr>** .

3) Enter: **1 <cr>** to register the Product Authorization Keys.

4) Respond to all of the questions using the data provided on the license PAK.

5) Enter: **99 <cr>** to exit.

6) Enter: **lo <cr>** to log off the **system** account.

5.10 - MANAGING THE PRINT QUEUE

This paragraph tells how to manage the print queue.

1) Log into the **system** account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

2) Enter: **sho que <cr>** .

3) If you wish to stop an active listing, Enter: **stop/que/ent=# <cr>** where # is the entry number displayed in step 2.

4) If a que is stalled or stopped; Enter: **stop/que/reset 'queue_name' <cr>** , Enter: **start/que 'queue_name' <cr>** , where queue_name is the name of the que displayed in step 2.

5) Enter: **lo <cr>** to log off the **system** account.

5.11 - HOW TO MONITOR AND STOP A USER'S PROCESS

1) Log into the **system** account by entering:

```
username: system <cr>
password: sysmgrsuper <cr>
```

2) Enter: **sho user/fu <cr>** . (Note the process IDs are displayed.)

3) Enter: **stop/ID='userid'<cr>** , where 'userid' is replaced by the process ID displayed next to the user to be stopped in step 2.

4) Enter: **lo <cr>** to log off the **system** account.

5.12 - HOW TO USE THE EDT EDITOR

1) Log into any valid VMS account.

2) Enter: **edit/edt 'file.ext'<cr>** , where file.ext is replaced by the name of the file to be edited.

3) Enter: **c <cr>** to continue.

4) The following key entries are useful:

- The arrow keys move the cursor around the screen.
- A <**cr**> at the beginning of line, opens a new line.

Key Pad "**0**"	- scrolls down at beginning of line
Key Pad "**PF2**"	- help key
Key Pad "**PF1**""**PF3**"	- find text
Key Pad "**PF3**"	- find next occurrence of text
Key Pad "**PF4**"	- delete line
Key Pad "**PF1**""**PF4**"	- undelete line
Key Pad "**-**"	- delete word
Key Pad "**PF1**""**-**"	- undelete word
Key Pad "**,**"	- delete character
Key Pad "**PF1**""**,**"	- undelete character
Key Pad "**PF1**""**4**"	- go to bottom of file
Key Pad "**PF1**""**5**"	- go to top of file
"**ctrl-z**""**ex**"	- exit and save changes
"**ctrl-z**""**quit**"	- exit and do not save changes

5) Enter: **lo <cr>** to log off the **system** account.

5.13 - HOW TO SHUTDOWN OR REBOOT, NOT LOGGED INTO VMS ACCOUNT

This paragraph tells how to shutdown or reboot when not logged into a VMS account.

1) Log into the **shutdown** account by entering:

```
username:  shutdown <cr>
password:  shutdown <cr>
```

2) Enter: **R <cr>** to reboot or **S <cr>** to shutdown.

3) To verify that a reboot is complete, the console port displays accounting information and displays the "Username:" prompt following a **<cr>**.

5.14 - HOW TO SHUTDOWN OR REBOOT FROM WITHIN A VMS ACCOUNT

This paragraph tells how to shutdown or reboot from within a VMS account.

1) From a privileged account, Enter: **@sys$system:shutdown <cr>**

2) How many minutes until final shutdown? Enter: **<cr>**.

3) Reason for shutdown? Enter: **<cr>**.

4) Do you want to spin down the disk volumes? Enter: **<cr>**.

5) Do you want to invoke the site-specific shutdown procedures? Enter: **<cr>**.

6) Should an automatic system reboot be performed?

7) If an automatic reboot is desired, Enter: **yes <cr>**.

8) If a system halt for power down is desired, Enter: **<cr>**.

9) When will the system be rebooted? Enter: **<cr>**.

10) Shutdown options? Enter: **<cr>**.

5.15 - HOW TO CREATE A BOOTABLE TAPE

1) Log into the **SMINSTALL** account:

2) Enter **<cr>**.

```
Enter username: sminstall <cr>
Enter password: sminstall <cr>
```

3) Enter: **no <cr>** to the new release question.

4) Execute option 9 to build a Stand alone backup tape. Reference Appendix B for tape labeling instructions.

5) Select option 10 to log out of the **sminstall** Account.

CHAPTER 6 -
SYSTEM TROUBLESHOOTING GUIDE

NOTE

Wherever applicable throughout this Chapter, Chapter 2 should be referenced for further details.

6.1 - POWER-UP SEQUENCE OF EVENTS

This paragraph explains the sequence of events immediately following power-up of a MicroVAX 3100.

Upon power-up, the system console terminal displays the CPU version, Ethernet address and amount of system memory. Following this a bar graph is seen as the system executes it's internal diagnostics. If all diagnostics pass the system displays "OK" followed by the ">>>" console prompt. In the event of any failures, a "??" is displayed followed by error codes. Reference the Troubleshooting And Diagnostic Information Manual delivered along with the system to identify the error codes and then call your local DEC service technician.

At this point in time the system performs according to the value of the Default Recovery Action (halt) software switch/register.

At the console terminal:

- Enter: **`set halt 2 <cr>`**
- Enter: **`boot <cr>`**
- If errors are seen, reference the system hardware documentation to identify the reason and call your local DEC service technician.

6.2 - SYSTEM DISK FULL

This paragraph explains what to do if the System Disk fills and VMS will not Boot. You will need to enter what is known as a ***conversational boot***, here's how...

From the console terminal:

1) At the >>>, enter: **`b/1 <cr>`**

2) At the SYSBOOT>, enter: **`set/startup OPA0: <cr>`**

3) At the SYSBOOT>, enter: **`continue <cr>`**

4) Delete any of the report files on the system disk:
```
del  'sysdsk':[ege_sm2.smrpt]*.*;*
```

5) Delete any of the sort utility's temporary files on the system disk:
```
del  'sysdsk':[*...]sortwork*.tmp;*
```

6) Purge all older versions of files on the system disk:
```
purge  'sysdsk':[*...]
```

7) Check the space on the disk now:
```
sho  dev  'sysdsk'
```

8) Make sure the free space is at least greater than 1000 blocks (10000 free blocks or more is preferable); if the free space is not greater than 1000 blocks, then do the following (these commands might not work if the RAWPRT directory does not exist on the disk; in that case, skip these two commands and proceed with the next set of delete commands in step 9):

```
del  'sysdsk':[rawprt]r%%%%.*;*
del  'sysdsk':[rawprt]rawprt.prt;*,rawprt.loc;*
```

Check the space on the disk now:

```
sho  dev  'sysdsk'
```

9) Make sure the free space is greater than 1000 blocks (10000 free blocks or more is preferable); if the free space is not greater than 1000 blocks, then do the following:

```
del  'sysdsk':[test2]r%%%%.*;*
del  'sysdsk':[test2]*.log;*
del  'sysdsk':[test2]*.txt;*
```

Check the space on the disk now:

```
sho  dev  'sysdsk'
```

10) If the free disk space is still not greater than 1000 blocks, and this system is a single disk system, then do the following:

- Delete all of the raw activity files on the disk, created before yesterday. This does not affect the activity for reports!

```
del  'sysdsk':[ege_sm2.smact]r%%%%.*;*/before=yesterday
```

- If this is a two disk system, then we recommend that the Technical Assistance Center be contacted at 1-800-528-7711 in the United States.

NOTE

If the free disk space is greater than 250 blocks, the system will usually boot, but it will not be able to run for a great length of time. Calling the Technical Assistance Center as soon as possible is very important, since dial in support can be done much easier if the system can be booted.

11) Depress the **HALT** button.

12) At the >>>, enter: **boot<cr>**".

6.3 - APPLICATION PACKAGE DOES NOT START

This paragraph tells what to do if the application package does not start.

Reference Chapter 2 and troubleshoot the start up sequence.

6.4 - NO EDACS DEVICE COMMUNICATION

This paragraph tells what to do if there is no EDACS device communication.

- If a DECserver port is being used, check and make sure this Ethernet selector switch (on the rear of the CPU) is in the ThinWire position (reference Figure 2-1).
- For a DECserver 700, check and make sure the Ethernet selector switch (on the rear of the DECserver) is in the thick wire position (reference the DECserver's User's Guide).
- Check the communication driver for each site that is not working as follows:

  1) Log into the **system** account by entering:

     ```
     username:  system <cr>
     password:  sysmgrsuper <cr>
     ```

- In the following command, replace xx with the EDACS device number that is not working, [Ex. 01 for device 1 or 33 for device 33].

  2) Enter: **`type 'actdsk':[ege_sm2.smlog]eioxx.log <cr>`**

  3) The last entry should be **`run/nodebug smexe:eio.exe <cr>`**

  4) Enter: **`lo <cr>`** to log out.

NOTE

Section 6.15 gives a pictorial explanation of the following procedures.

For any DECserver ports that are in question:

1) Verify that the DECserver has properly loaded. Reference section 6.1.5 for detailed instructions.

2) Log into the **system** account by entering:

   ```
   username:  system <cr>
   password:  sysmgrsuper <cr>
   ```

3) Run TSM by entering "**term<cr>**".

4) Perform steps a) through c) for every DECserver on the system.

   a) Enter: **`use server 'smgds#' <cr>`**

   b) Enter: **`sho server <cr>`**
   Verify that the server name field exactly matches the server. [Ex. smgds1 or smgds2]

   c) Enter: **`sho po # <cr>`**
   Verify that all ports (1-7) having EDACS devices assigned are in the "(remote)" state. When the device driver successfully attaches to it's port, the upper left corner of the TSM show port command displays "(Remote)". If the driver is unable to attach, "**Port #:**" is the only text seen in this field.

- If remote is not displayed, perform the steps d) through g), otherwise skip to step h:

  d) Enter: **`set priv <cr>`**

  e) Enter: **`system <cr>`** when prompted for the password.

f) Enter: **`log po # <cr>`** where # is the number (1-8) of the DECserver port that you want to reset.

g) Continue to monitor the port and if it does not display **remote** within a minute:

- Verify that the baud rate (speed) matches that of the Site Controller and the EGESYSMGR database.
- If it does not, follow the procedures in Chapter 4 to define the port properly.

h) Enter: **`ctrl-z <cr>`** to exit TSM.

i) Enter: **`lo <cr>`** to log out.

5) For every local port used for EDACS site/device I/O on the system, enter **SHO TERM tta"X" or txa"X"<cr>** (where "X" is replaced with the site/device number) and verify that the port is displayed as owner = EIOXX in the upper right corner.

6) If the EDACS site/device is connected to a TTA or TXA port and the application package version is equal or prior to V2.04:

7) Disconnect the cable from the port.

8) Reboot the VAX using the shutdown procedures (refer to Chapter 5).

9) Reconnect the cable after the system has fully rebooted.

6.5 - DECSERVER NOT WORKING

This paragraph tells what to do if a DECserver does not work properly.

1) Check and make sure the Ethernet selector switch on the rear of the CPU is in the thin wire position.

2) For a DS700, check and make sure the Ethernet selector switch on the rear of the DECserver is in the Thick Wire position.

3) Check all of the cabling and terminations and make sure that all comply with the IEEE 802.3 specifications.

4) Connect port J1 to a VTXXX terminal at 9600 baud.

5) Cycle power to the DECserver.

6) Monitor the terminal for errors during initialization. Reference the DECserver hardware manual for error codes.

7) Monitor the LED display during initialization. Appearance depends upon the device as follows:

- DS200 - L1 & L2 turn on steady within 1 min., L3 turns on steady in a few moments (indicating that the server has been downloaded) and L4 blinks randomly (indicating network traffic).
- DS700 - The LED display counts down from F to 0 and after completing the download shows a rotating pattern.

8) Log into the system account by entering:

username: **`system <cr>`**
password: **`sysmgrsuper <cr>`**

9) Enter: **sho log mom$load <cr>** and verify that it points to "**SYS$SYSROOT:[DECSERVER]**".

10) Enter: **lo <cr>** to log out.

11) Start replacing components in the following order:

- Cables
- Thick Wire to ThinWire converter boxes
- DECservers
- Terminators and Tee connectors

12) Call DEC support.

6.6 - SYSTEM DISK FILLS DURING OPERATION

This paragraph tells what to do if the System Disk fills during operation..

As of version 2.05 of the EDACS System Manager software, a disk space manager exists. Check to see of this task is operational as follows:

1) Log into the **test2** account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **show system <cr>**

3) Verify that a process named **disk_manager** is seen.

4) Verify that the Disk Manager is properly set up from the Disk Manager user menu. (Reference the System Manager's User's Guide, LBI-38984.)

5) Delete any of the report files on the system disk:

```
del  'sysdsk':[ege_sm2.smrpt]*.*;*
```

6) Delete any of the sort utility's temporary files on the system disk:

```
del  'sysdsk':[*...]sortwork*.tmp;*
```

7) Purge all older versions of files on the system disk:

```
purge  'sysdsk':[*...]
```

8) Check the space on the disk now:

```
sho  dev   'sysdsk'
```

9) Make sure the free space is at least greater than 1000 blocks (10000 free blocks or more is preferable); if the free space is not greater than 1000 blocks, then do the following (these commands might not work if the RAWPRT directory does not exist on the disk; in that case, skip these two commands and proceed with the next set of delete commands in step 9):

```
del  'sysdsk':[rawprt]r%%%%.*;*
del  'sysdsk':[rawprt]rawprt.prt;*,rawprt.loc;*
```

Check the space on the disk now:

```
sho  dev  'sysdsk'
```

10) Make sure the free space is greater than 1000 blocks (10000 free blocks or more is preferable); if the free space is not greater than 1000 blocks, then do the following:

```
del  'sysdsk':[test2]r%%%%.*;*
del  'sysdsk':[test2]*.log;*
del  'sysdsk':[test2]*.txt;*
```

Check the space on the disk now:

```
sho  dev  'sysdsk'
```

11) If the free disk space is still not greater than 1000 blocks, and this system is a single disk system, then do the following:

- Delete all of the raw activity files on the disk, created before yesterday. This does not affect the activity for reports!

```
del  'sysdsk':[ege_sm2.smact]r%%%%.*;*/before=yesterday
```

- If this is a two disk system, then we recommend that the Technical Assistance Center be contacted at 1-800-528-7711 in the United States.

NOTE

If the free disk space is greater than 250 blocks, the system will usually boot, but it will not be able to run for a great length of time. Calling the Technical Assistance Center as soon as possible is very important, since dial in support can be done much easier if the system can be booted.

12) Enter: **lo <cr>** to log out.

6.7 - SLOW SYSTEM RESPONSE

This paragraph tells what to do if the system response is slow.

1) Log into the test2 account by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

2) Enter: **sho dev d <cr>**, to check for free disk space. (Should be at least 20,000 blocks free.)

3) Enter: **sho sys <cr>**, check that all tasks are OK (refer to System Operation Verification in Chapter 1).

4) Enter: **sho mem <cr>**, should be at least 10,000 pages free.

5) Enter: **lo <cr>** to log out.

6.8 - GETTING THE DECFORMS VERSION NUMBER

This paragraph tells how to get the current version of DECforms on the System.

- For System Manager programs V3.00 or later use the following procedure:

  With EDACS application software, this procedure is automated in the **sminstall** utility.

  1) To use this utility, log into the **sminstall** account by entering:

     ```
     username:  sminstall <cr>
     password:  sminstall <cr>
     ```

  2) Select the appropriate option to view the System Software version information.

  3) Exit the **sminstall** utility by selecting the Log Out option.

- For System Manager programs prior to V3.00 use the following procedure:

  1) Log into the **system** account by entering.

     ```
     username:  system <cr>
     password:  sysmgrsuper <cr>
     ```

  2) Enter: **anal/image/inter sys$share:forms$manager.exe <cr>**

  3) Press <**cr**> about 3 times until "**image file identification**" appears.

  4) Enter: **lo <cr>** to log out.

6.9 - GETTING THE TSM VERSION NUMBER

This paragraph tells how to get the current TSM version number.

- For System Manager programs V3.00 or later use the following procedure:

  With EDACS application software, this procedure is automated in the **sminstall** utility.

  1) To use this utility, log into the **sminstall** account by entering:

     ```
     username:  sminstall <cr>
     password:  sminstall <cr>
     ```

  2) Select the appropriate option to view the TSM version information.

  3) Exit the **sminstall** utility by selecting the Log Out option.

- For System Manager programs prior to V3.00 use the following procedure:

  1) Log into the **system** account by entering.

     ```
     username:  system <cr>
     password:  sysmgrsuper <cr>
     ```

  2) Enter: **anal/image/inter 'sysdsk'[VMS$COMMON.SYSEXE]TSM$MAIN.EXE] <cr>**

  3) Press **<cr>** about 3 times until "**image file identification**" appears.

  4) Enter: **lo <cr>** to log out.

6.10 - GETTING CURRENT DECSRV VERSION NUMBER

This paragraph tells how to get the current DECSRV version number.

- For System Manager programs V3.00 or later use the following procedure:

  With EDACS application software, this procedure is automated in the **sminstall** utility.

  1) To use this utility, log into the **sminstall** account by entering:

     ```
     username:  sminstall <cr>
     password:  sminstall <cr>
     ```

  2) Select the appropriate option to view the DECSRV version information.

  3) Exit the **sminstall** utility by selecting the Log Out option.

- For System Manager programs prior to V3.00 use the following procedure:

  1) Log into the **system** account by entering.

     ```
     username:  system <cr>
     password:  sysmgrsuper <cr>
     ```

  2) Run TSM by entering "**term<cr>**".

  3) Enter: **use server 'smgds#' <cr>**

  4) Enter: **sho server <cr>**
     Version is displayed in the upper left corner.

  5) Enter: **lo <cr>** to log out.

6.11 - GETTING SYSTEM DISK AND TAPE DRIVE INFORMATION

This paragraph tells how to get system disk and tape drive information.

- If the system is shut down, from the console prompt:

  1) Enter: **sho boot <cr>** to display the system disk name.

  2) Enter: **sho dev <cr>** to display all disk and tape device names.

- If the system is up and running:

  1) Log into the **system** account by entering:

     ```
     username:  system <cr>
     password:  sysmgrsuper <cr>
     ```

  2) Enter: **sho log sys$disk <cr>** to get the system disk name.

  3) Enter: **sho dev d <cr>** to get a list of all disk drives.

- The command "**sho dev d/fu <cr>**" (where; “d” is the disk drive name from the previous command) is used to determine the total size of a disk and the free space remaining on the disk.

4) Enter: **sho dev m <cr>** to get the name of the tape drive.

5) Enter: **lo <cr>** to log off.

6.12 - GENERATING DECSERVER IMAGE FILES

This paragraph tells how to generate DECserver image files. DECserver: Creating

1) Log into the **system** account by entering:

```
username:  system <cr>
password:  sysmgrsuper <cr>
```

2) Enter: **set def sys$sysroot:[decserver] <cr>**

- In the following command, replace the # with a 7, if this system uses DS700s, or a 2 if this system uses DS200s.

3) Enter: **dir TSM$DS#*_GET_CHAR.COM <cr>**, to get file names. Make note of the file names returned. If you are using DS200s, enter DS2 in place of the DS# text in the following command. If you are using DS700s, enter DS7 in place of the DS# text in the following command. Also make note of the highest version number returned and place that number in place of the VXX text in the following command. You must also supply the server name for the command file. This must be done for all DECservers on the system.

4) Enter: **@TSM$DS#_VXX_GET_CHAR.COM 'smgds#' system <cr>**

5) Enter: **lo <cr>** to log off.

6.13 - USER INTERFACE ABORT

This paragraph tells what to do if the user interface aborts.

There is a known problem with DECforms V1.4 and the VT420 terminals when the terminals are defined to have a VT420 ID. The terminal should be defined to have a VT320 ID in the terminal's general set-up screen as follows:

1) Press the F3 key to enter terminal setup.

2) Using the arrow keys, select the "General" field and press **ENTER**.

3) Using the arrow keys, select the "ID" field and using the Enter key, select "VT320 ID".

4) Using the arrow keys, select the "To Directory" field and press **ENTER**.

5) Using the arrow keys, select the "save" field and press the **ENTER** key.

6) Press the F3 key to exit terminal setup.

7) Then log back into the application package account and it should work fine.

6.14 - HOW TO IDENTIFY A VMS ERROR MESSAGE

Use this procedure to display the text message which corresponds to a returned error number.

1) Write down the error number(s) for which the text message is desired.

2) Log into an account with access to VMS (this is usually the TEST2 account, default password of BABBAGE) by entering:

```
username:  test2 <cr>
password:  babbage <cr>
```

3) At the operating system prompt, type in the following:

```
write sys$output f$message('message_number') <cr>
```

Where '*message_number*' is replaced by the error number.

4) The operating system will then display a text message in the form

facility-severity-ident, text

where:

- 'facility' is the VMS software generating the error for example:
  "RMS" for the database files of the System Manager.
- 'severity' is a single letter code indicating the type of message:
  I - for Information
  W - for Warning
  E - for Error
  F - for Fatal (or severe) error
  S - for successful completion
- 'ident' is an abbreviation for the message text
- 'text' is a short English (or whatever language the System Manager is running) description of the message code.

Example:

An example of an error reported in the Event Log Display:

Unable to connect to site 1 (8340)

The user notes that the error code is 8340.

Logging into the VMS operating system level on the System Manager, the user then types:

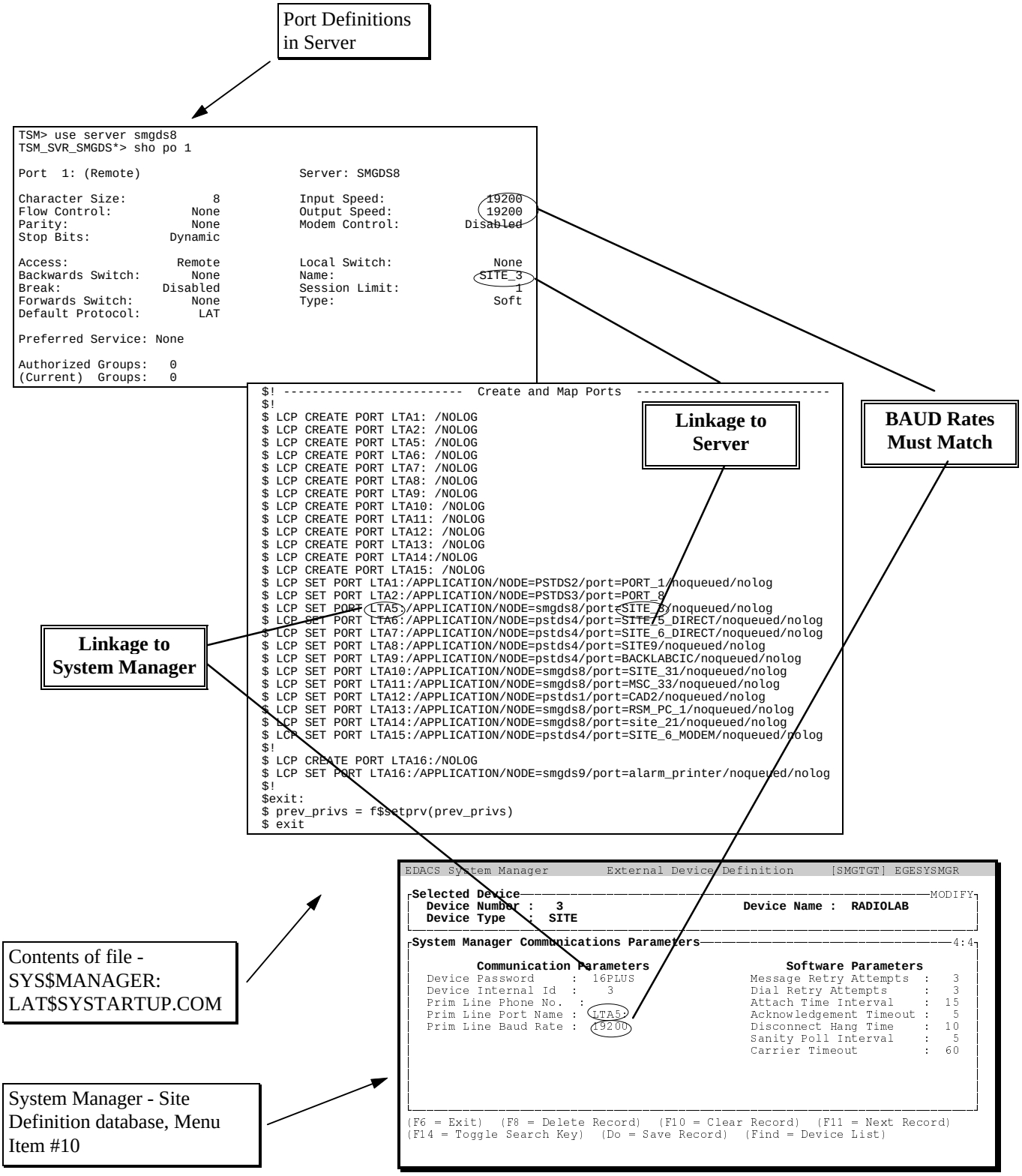
```
write sys$output f$message(8340) <cr>
```

which returns:

%SYSTEM-F-UNREACHABLE, remote node is not currently reachable

5) When finished decoding error numbers, enter: **`lo <cr>`** to log off the account.

6.15 - PICTORIAL EXPLANATION OF THE SERVER PORT TO DEVICE LINK



6.16 - MANUAL RETRIEVAL AND MANAGEMENT OF SYSTEM ACTIVITY FILES

This paragraph tells how to manually retrieve and manage system activity files.

1) Log into the test2 account by entering:

   username: **test2 <cr>**

   password: **babbage <cr>**

NOTE

To examine the contents of a tape, enter: **Backup/rew/list mka500:<cr>**".

2) Enter: **set def smact: <cr>**

3) To get a listing of a tape's contents perform the next two steps:

   - Load the desired tape and enter: **backup/rew/list=file.txt mka500: <cr>**
   - Enter: **print file.txt <cr>** to get a listing of the file.

4) Enter: **backup/rew mka500:dd-mmm-yyyy.sav * <cr>** to retrieve the data,

   or

   Enter: backup/rew/sel=file.ext mka500:dd-mmm-yyyy.sav *" to retrieve certain files on the tape. For example, use **/sel=act*.01 <cr>** to get only the processed activity files for site #1. Since the report generator only uses the act* files, these are the only files necessary.

5) To keep an eye on the free disk space, enter: **sho dev d <cr>**

6) From the **egesysmgr** account, run the necessary reports.

7) To manually delete the files after reports are run, enter: **delete act_*.*;*/before=dd-mmm-yyyy <cr>.** This command deletes all activity files generated prior to the date specified.

6.17 - HOW TO DUPLICATE A SOFTWARE DISTRIBUTION TAPE

1) Load the distribution tape to be duplicated.

2) Log into the **test2** account by entering:

   username: **test2 <cr>**

   password: **babbage <cr>**

3) Enter: **create/dir [duplicate.saveset1] <cr>**

4) Enter: **backup/list 'tapedrv' <cr>**

   The exact backup command used to generate the tape is displayed. Make note of this command.

5) When that operation finishes, enter: **backup/list 'tapedrv' <cr>** again to see if there is another saveset on the same tape.

   Keep repeating this operation until a message appears stating that there are no more savesets on the tape.

   If there are more savesets on the tape, enter:

   create/dir [duplicate.saveset2] <cr>, and

   create/dir [duplicate.saveset3] <cr>, and so on...

6) To retrieve the saveset(s):

   a) Enter: **set def [duplicate.saveset1] <cr>**

   b) Enter: **backup/ver 'tapedrv':'saveset.sav' <cr>**, where **saveset.sav** is replaced by the actual saveset name(s) from steps 4) and 5).

   c) Repeat steps a) and b) as many times as required to duplicate any additional savesets into their respective directories.

7) Enter: **dismount 'tapedrv' <cr>**

8) Load a scratch tape to create the duplicate.

9) Enter the backup command to create the appropriate savesets seen in steps 4) and 5).

10) When complete, enter: **dismount 'tapedrv' <cr>**

11) Enter: **lo <cr>** to log off the **test2** account.

6.18 - MANUAL SYSTEM ACTIVITY ARCHIVE

This paragraph tells how to manually archive system activity.

1) Log into the **test2** account by entering:

   username: **test2 <cr>**

   password: **babbage <cr>**

2) Enter: **set def smact: <cr>**

3) To get a listing of this directory, enter:

   dir act_*.*,r*.* <cr>

   The rddmmm.ss files are the raw (binary) files sent from the site controller. The act_ files are the processed activity files read by the report generators.

4) Enter: **backup/rew/ver/noas/label=dd-mmm/created/before=dd-mmm-yyyy <cr>**

   Enter: **act_*.*;1,r*.*;1 mka500:dd-mmm-yyyy.sav/save <cr>**

Replace the dd-mmm-yyyy in the "/before=" field with the last day to be included in the archive. Replace all other occurrences of dd-mmm and dd-mmm-yyyy with the present date.

5) Enter: **`rename/bef=dd-mmm-yyyy/nolog/exc=*.fdl - <cr>`**

Enter: **`smact:ACT_*.*;1,smact:r%%%%.%%;1 smact:*.*;255 <cr>`**

Replace the dd-mmm-yyyy in the "/before=" field with the same date used in the same field in step 4).

6) Enter: **`lo <cr>`** to log out of the **test2** account.

6.19 - CONVERTING DATABASES FROM PDP TO VAX

Conversion of the System Manager databases from PDP to VAX is not a simple process. If you must convert databases from PDP to VAX, contact the Technical Assistance Center for guidance.

The agency partition table should be created before doing the database conversion. It is recommended that a user start with a scratch database on the VAX since anything in the database being converted is destroyed. The following table describes the databases that are converted in this process:

PDP Database (V2.50)	VAX Database (2.x & 3.x)	Conversion supported
site.dat	extdev.dat	yes
logical.dat	logical.dat	yes
group.dat	group.dat	yes
line.dat	line.dat	yes
tollcall.dat	toll.dat	yes
rotary.dat	rotary.dat	yes
acupar.dat	acu.dat	yes
apt.dat	apt.dat	no
untena.dat	untdis.dat	no

The user should run database reports on the PDP System Manager before doing the database conversion. After the conversion process is done, rerun the reports using the converted data on the VAX System Manager to verify that PDP and VAX System Manager reports match. No partial or incremental update is supported by this process.

NOTE

We recommend System Manager Administrators contact the Ericsson Technical Assistance Center (TAC) at 1-800-528-7711 before attempting to convert databases from PDP to VAX.

6.20 - USING A PROTOCOL ANALYZER TO VERIFY SITE/DEVICE COMMUNICATION

This paragraph tells how to use a protocol analyzer to verify Site/Device communication. Verification

1) Connect the protocol analyzer between the System Manager and the Device to be monitored.

2) Turn on the protocol analyzer (HP4951C or similar machine).

3) Go to the set up menu and configure as follows:

Parameter	Setting	Parameter	Setting
Protocol	Char Async/Sync	Mode	Async 1
Bit Order	LSB 1st	Err Chk	None
Code	Hex 8	Bit Sense	Norm
Parity	None	Bits/Sec	9600
Transparent Text Char	None	Disp Mode	2 Line

4) Press exit button to leave set-up menu.

5) Select Run Menu.

6) Select Line Monitor.

7) Database Upload at the System Manager.

8) Press exit button to leave Line Monitor screen.

9) Select examine date.

10) To examine the data the following describes the message formats. All message characters are encoded in hexadecimal in the examples. Messages contain the following parts:

Frame Synchronization

Message Type Code

Data

Checksum

Frame Synchronization is:

AA

Message Type Codes for the System Manager application are:

00 - Acknowledge
20 - Sign-off
22 - Sign-on

Examples - showing hexadecimal character strings appearing on the analyzer display with acknowledgment messages in boldface type:

AA 22 05 31 36 50 4C 55 53 20 20 20 20 20 20 C5 **AA 00 FF** ···· ·· ·· · ·

Evaluation of the first message (AA through C5) yields:

AA - Frame sync byte

22 - Sign-on message to follow

05 - Site Number (site 5)
31 - 1 (coded characters following site number are interpreted as ASCII characters [as shown]).
36 - 6
50 - P
4C - L
55 - U
53 - S
20 - (space)
20 - (space)
20 - (space)
20 - (space)
20 - (space)
20 - (space)

C5 - Checksum

Evaluation of Acknowledge message:

AA - Frame sync byte

00 - Acknowledge code

FF - Checksum

6.21 - MODEM CONTINUOUS RESET PROBLEM

This paragraph tells what to do about a modem continuous reset problem.

To cure the problem, reset the modem to control DSR rather than have DSR high all the time. This is done by following the procedure of:

1) Connect a terminal to the modem.

2) Enter the characters: **AT&S1**

3) Enter the characters: **AT&W**

NOTE

This problem was seen on a remote dial-in port. The terminal driver sees DSR and thinks a dial in has happened. It now waits 15 seconds for CD and when no CD comes in, it resets the port and drops DTR to reset the modem. By setting &S1, the modem will insert DSR and CD at the proper time. Refer to LBI-33031, US Robotics Courier Modems.

6.22 - HOW TO PERFORM A BASIC ASYNCHRONOUS DECNET ANALYSIS

This paragraph provides the commands necessary to analyze and troubleshoot the Asynchronous DECnet.

1) Log into the **system** account by entering:

```
username:  system <cr>
password:  sysmgrsuper <cr>
```

2) Enter: **`list exec char <cr>`** and make sure type is routing IV.

3) Enter: **`sho dev noa( ): <cr>`**

4) Enter: **`mc ncp sho known lines <cr>`**

5) Enter: **`sho dev tta2:fu <cr>`**

6) Enter: **`mc ncp sho node 'name' char <cr>`**

7) Enter: **`mc ncp sho known circuit tt-0-2 <cr>`**

6.23 - UNIT ENABLE/DISABLE NOT FUNCTIONING

Receiving a message "Unit Enable/Disable is unavailable for use, try again later," indicates the System Manager has aborted the Unit Enable/Disable program. This only prevents you from using the Enable/Disable feature.

This error should be reported to EGE Customer Service immediately, if time permits. The only other recourse is to reboot the system. This may result in the loss of some data.

Reboot the system by logging into the SHUTDOWN account as follows:

1) Log into the **shutdown** account by entering:

```
username:  shutdown <cr>
password:  shutdown <cr>
```

2) Enter: **`R <cr>`** to reboot or **`S <cr>`** to shutdown.

3) To verify that a reboot is complete, the console port displays accounting information and displays the "Username: " prompt following a **`<cr>`**.

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APPENDIX A -
INITIAL SET-UP NOTES/CHECK-OFF SHEET
(OPTION 1)

DATE: _____

CUSTOMER: _____

SYSTEM CONFIGURATION (A31/P31-A35/P35): _____

EDACS S/W LEVEL: _____

EDACS S/W VERSION: _____

DECforms S/W VERSION: _____

TSM S/W VERSION: _____

DECserver S/W VERSION: _____

CPU MODEL NUMBER: _____

CPU SERIAL NUMBER: _____

INSTALLER: _____

1) __ (Order inventory complete)

2) __ (SCSI terminator installed)

3) __ (Ethernet terminator installed)

4) __ (DECserver Interconnect)

5) __ (No DECserver interconnect)

6) __ (Setup COM1)

7) __ (Connect Console Terminal)

8) __ (Diagnostic test complete)

9) __ (System Disk image backup)

   Backup version = _____

   Present version = _____

10) __ ("**Show Boot**" command)

    Boot Device = _____

11) __ ("**Show Device**" command)

12) Record device names

System Disk (data from step 9) = _____ Activity Disk = _____

Tape Drive = _____

13) __ ("**set halt 2**" command)

14) __ ("**boot**" command)

15) __ (System date)

16) __ (System time)

17) __ (System password)

18) __ (Password verification)

19) __ (Define passwords)

20) __ (Systest account password)

21) __ (Systest account password verification)

22) __ (Field account password)

23) __ (Field account password verification)

24) Register PAK license(s)

PAK# 1	PAK# 2	PAK# 3	PAK# 4	PAK# 5	PAK# 6
a __	a __	a __	a __	a __	a __
b __	b __	b __	b __	b __	b __
c __	c __	c __	c __	c __	c __
d __	d __	d __	d __	d __	d __
e __	e __	e __	e __	e __	e __

f __

g __

25. __ (Changing terminal port)

26) __ (System account login)

27) __ VMS initialization dialog (Retrieve SMINSTALL utility)

a.___

b.___

c.___

d.___

e.___

f.___

g.___

h.___

i.___

j.___

k.___

l.___

m.___

n.___

28) ___ (Set def)

29) a. ___ (Copy)

b. ___ (Set def)

30) ___ (Load tape)

31) ___ (Initiate backup command)

32) ___ (Run sminstall manually)

33) Run option 16 (removing DECwindows package)

a. __ (confirm operation)

b. __ (Enter system configuration information)

1. config: __

2. S/W level: __

3. # of disks: __

4. Disk name(s): _____, _____

5. Tape drive name: _____

6. Number of TXA ports: __

7. Does this system use any DECservers? __

# of DECservers (if answered yes to 7): __

8. Does this system use additional terminal ports? __

# of ports (if answered yes to 8): __

9. Does system use Multisite Controller (CEC/IMC) ports: __

# of ports (if answered yes to 9): __

# of 9600 baud dedicated line connections: __

# of dialup line connections: __

10. Number of Site Controller ports: __

11. Physical connections

# of 9600 baud dedicated line connections: __

# of 9600 baud dialup line connections: __

The remaining will default to 19200 baud dedicated line.

c. __ (Complete DECwindows removal)

34) __ (Reboot after completion of option 16)

35) __ (Log into system account)

36) __ (Run SMINSTALL utility)

37) Software install dialog (run option 1)

a. __

b. __

c. __

d. __

e. __

f. __

g. __

h. __

i. __

j. __

k. __

l. __

m. __

n. __

o. __

p. __

q. __

r. __

s. __

t. __

38) For systems using DECservers, load TSM

a. __

b. __

c. __

d. __

e. __

f. __

g. __

h. __

i. __

j. __

k. __

l. __

m. __

n. __

o. __

p. __

q. __

r. __

s. __

t. __ (waiting for port config)

39) __ (Acknowledge completion)

40) __ (Auto-reboot and login)

41) __ (not new release)

42) __ (Option 6, sub-option 1 - Document all port information on page A-9)

43) __ (label all servers, ports, and cables)

44) __ Exit utility (option 10)

45) __ (Setup terminal ID)

46) __ (log into EGESYSMGR account)

47) __ (Build device database)

48) __ (Log into shut-down account)

49) __ (Verify system operation - Document operation in checklist on page A-8)

50) __ (Generate recovery backup tapes)

a. __

b. __

c. __

d. __

e. __

f. __

51) __ (Define remote dialup ports)

52) __ (Log into sminstall account)

53) __ (not new release)

54) __ (Select option 9 for stand alone backup tape)

55) __ (Generate system disk image backup)

SYSTEM OPERATION
VERIFICATION NOTE/
CHECK-OFF SHEET

DATE:_____

SYSTEM CONFIGURATION(P31-P35 or A1-A5):_____

1. __ (Log into system account)

2. __ (List system processes)

3. __ (Verify DECserver is properly loaded)

4. __ (Run TSM)

   a. __

   b. __

   c. __

   d. __

   e. __

5. __ (Verify communication driver has attached to ports)

6. __ (Log out of system account)

7. __ (Log into EGESYSMGR account)

8. __ (Connect EDACS devices and verify database upload)

9. __ (Verify ports using Protocol Analyzer)

OPTION 1 STEP 42 NOTE/
CHECK-OFF SHEET

DATE:

SYSTEM CONFIGURATION(P31-P35):

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APPENDIX B -
TAPE LABELING EXAMPLES

Note: In the following three labeling examples, replace all occurrences of "X.X-X" with the version of VMS on the system being used. Also replace all occurrences of "level" with the version of EGE application software installed on the machine (core, mid, or full).

Pre installation image backup label:

VAX SYSMGR VMS VX.X-X
Pre install backup
ddmmmyyyy.sav

Post installation image backup label:

VAX SYSMGR VMS VX.X-x
Post install backup
ddmmmyyyy.sav LEVEL

Bootable stand-alone backup tape:

VAX SYSMGR
Bootable tape
VMS VX.X-X

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APPENDIX C - SOFTWARE PACKAGES

The System Manager software is grouped into three software configurations - the Core, Mid-Featured, and Full-Featured configuration.

Core Configuration

The Core configuration (344A4067Gx for TK50 tape, or 350A1817Gx for TLZ07 tape) is the basic software package.

Database Maintenance

- Site/Device Definition
- Logical Unit Definition
- Group Definition
- Rotary Definition
- Line Definition
- Toll Call Restrictions
- ACU Parameters
- SAID Definition**
- Database Import/Export*
- Extended Network Support*
- Multiple Channel Partitioning*
- Logical Record Duplication*
- Group Record Duplication*

Site Reconfiguration

- Channel
- Call Parameters
- Test Parameters
- Miscellaneous
- Relay

Site (Device) Communications

- Database Upload
- Site Monitor
- WWVB Time Synchronization* Note: Operates in Stand-alone (no WWVB Receiver) mode.
- Network Manager Interface**

Reports

- Report Manager
- Device Report
- Logical Unit
- Group
- Remote Printer Support*

System Maintenance

- Agency Partition Table
- User Account Maintenance
- Database Archive
- Database Retrieval
- System Backup
- A/F/S Access Restrictions*

Mid-Featured Configuration

The Mid-Feature configuration (344A4582Gx for TK50 tape, or 350A1818Gx for TLZ07 tape) includes all the Core features plus the following additional features:

Site (Device) Communications

- Activity Download

Alarm Control

- Alarm Control Display
- Relay Trigger Definitions
- Alarm Logging to Printer*
- MASTR III Alarm Support**

Radio Monitor and Control

- Unit Enable/Disable

System Maintenance

- Activity Archive
- Activity Retrieval

Reports

- Activity Detail
- Activity Summary
- Alarm
- Channel Statistics
- Site Statistics
- Event Log Display

Full-Featured Configuration

The Full-Feature configuration (344A4583Gx for TK50 tape, or 350A1816Gx for TLZ07 tape) includes all the Core and Mid-Feature features plus the following additional features:

Radio Monitor and Control

- Dynamic Regrouping
- Multisite Unit Location
- Multisite Group Location

***** - These features added by Version 5.01 software.
****** - These features added by Version 6.00 software.

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APPENDIX D -
SITE/DEVICE ID ASSIGNMENT
AND
DISPLAY OUTPUTS

Site Identification Numbers are defined as 1-32

The following devices or system connections are defined as "Sites".

- EDACS Level1 Sites
- Centralized Activity Logger Sites*
- Centralized Telephone Interconnect System (CTIS)
- Jessica CTIS
- StarGate
- Multi-Link
- Billing Correlation Unit (BCU)

Device Identification Numbers are defined as 33-64

The following devices or system equipments are defined as "Devices".

- Integrated, Multisite, and Console Controllers (IMC, MSC, and CEC)
- EDACS Data Gateway (EDG)
- Remote System Managers
- CAD
- Radio Status Monitors (RSMs)

```
TSM> use server smgds8
TSM_SVR_SMGDS8> show server


DECserver 700-08 V1.1 BL44-11  LAT V5.1  ROM V3.4-9  Uptime:  19 06:10:59

Address:   08-00-2B-32-C6-6F   Name:   SMGDS8             Number:     0

Identification:

Circuit Timer:            80          Password Limit:            3
Console Port:              1          Prompt:              Local>
Inactivity Timer:         30          Queue Limit:             100
Keepalive Timer:          20          Retransmit Limit:          8
Multicast Timer:          30          Session Limit:            64
Node Limit:              200          Software:              WWENG1

Service Groups:   0

Enabled Characteristics:
Announcements,  Broadcast,  Dump,  Lock

TSM_SVR_SMGDS8>
```

Figure D-1. "Show Server" Display of Server Name

```
TSM_SVR_PSTDS4> show port 5

Port 5: (Remote)                       Server: PSTDS4

Character Size:            8           Input Speed:        9600
Flow Control:           None           Output Speed:       9600
Parity:                 None           Modem Control:  Disabled

Access:                Remote          Local Switch:       None
Backwards Switch:        None          Name:      SITE_5_DIRECT
Break:                Disabled         Session Limit:         4
Forwards Switch:         None          Type:                Soft

Preferred Service: None

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:

Loss Notification,  Remote Modification

TSM_SVR_PSTDS4>
```

Figure D-2. "Show Port" Display of Port Configuration of a Site Controller for 9600 baud Dedicated Line Connection

```
TSM_SVR_PSTDS4> show port 8


Port 8: (Remote)                        Server: PSTDS4

Character Size:            8            Input Speed:        9600
Flow Control:           None            Output Speed:       9600
Parity:                 None            Modem Control:   Enabled

Access:                Remote           Local Switch:       None
Backwards Switch:        None           Name:              SITE_6
Break:                Disabled          Session Limit:         4
Forwards Switch:         None           Type:                Soft

Preferred Service: None

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:

Dialup,  DTRwait,  Loss Notification,  Remote Modification

TSM_SVR_PSTDS4>
```

Figure D-3. "Show Port" Display of Port Configured for a Site Controller at 9600 baud with a Dial-up Modem Connection

```
TSM_SVR_SMGDS8> show port 5

Port  5: (Remote)                       Server: SMGDS8

Character Size:            8            Input Speed:             19200
Flow Control:           None            Output Speed:            19200
Parity:                 None            Modem Control:         Disabled
Stop Bits:             Dynamic

Access:                 Remote          Local Switch:              None
Backwards Switch:        None           Name:                    MSC_33
Break:                Disabled          Session Limit:                4
Forwards Switch:         None           Type:                      Soft
Default Protocol:         LAT

Preferred Service: None

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:
Loss Notification,  Remote Modification

TSM_SVR_SMGDS8>
```

Figure D-4. "Show Port" Display of a Port Configured for a Multi-Site Controller 19200 baud Dedicated Line Connection

```
Port 5: USER                        Server: SMGDS2

Character Size:           8              Input Speed:          19200
Flow Control:           XON              Output Speed:         19200
Parity:                None              Modem Control:     Disabled
Stop Bits:          Dynamic

Access:               Local              Local Switch:          None
Backwards Switch:      None              Name:                PORT_5
Break:                Local              Session Limit:            4
Forwards Switch:       None              Type:                  Ansi
Default Protocol:       LRT

Dedicated Service: SYSMGR

Authorized Groups:     0
(Current)  Groups:     0

Enabled Characteristics:
Autobaud,  Autoconnect,  Autoprompt,  Broadcast,
       Loss Notification,  Message Codes,  Output Flow Control,
Verification

TSM_SVR_SMGDS2
```

Figure D-5. "Show Port" Display of Port Configured for a Dedicated Hard-wired User Terminal

```
TSM_SVR_PSTDS3> sho pr

Port 8: LA120 Printer                       Server: PSTDS3

Character Size:            8              Input Speed:             9600
Flow Control:            XON              Output Speed:            9600
Parity:                 None              Model Control:       Disabled

Access:               Remote              Local Switch:          None
Backwards Switch:       None              Name:                PORT_7
Break:              Disabled              Session Limit:            4
Forwards Switch:        None              Type:                  Hard

Dedicated Service: None

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:

Loss Notification,  Message Codes,  Output Flow Control,  Queuing

TSM_SVR_PSTDS3>
```

Figure D-6. "Show Port" DECserver Port Configuration for a Remote Printer Connection

```
Port 8:                                  Server:PSTDS1

Character Size:            8             Input Speed:           9600
Flow Control:            XON             Output Speed:          9600
Parity:                 None             Modem Control:      Enabled

Access:              Dynamic             Local Switch:            ^]
Backwards Switch:       None             Name:                DIALOUT
Break:                 Local             Session Limit:             8
Forwards Switch:        None             Type:                   Ansi

Preferred Service: None

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:

Autoprompt,  Broadcast,  Dialup,  Inactivity Logout,  Input Flow Control,
Loss Notification,  Message Codes,  Output Flow Control,  Password,
Verification

TSM_SVR_PSTDS1>
```

Figure D-7. "Show Port" Display of Port Configured for 9600 baud Dial-in/Dial-out Modem Use

```
Port 7:                                  Server: PSTDS2

Character Size:            8             Input Speed:       19200
Flow Control:            XON             Output Speed:      19200
Parity:                 None             Modem Control:  Disabled

Access:                Local             Local Switch:       None
Backwards Switch:       None             Name:              PORT_7
Break:                 Local             Session Limit:         8
Forwards Switch:        None             Type:                Ansi

Preferred Service: LECS3

Authorized Groups:   0
(Current)  Groups:   0

Enabled Characteristics:

Broadcast,  Inactivity Logout,  Input Flow Control,  Loss Notification,
Message Codes,  Output Flow Control,  Verification

TSM_SVR_PSTDS2
```

Figure D-8. "Show Port" Display of Port Configuration for 19200 baud Dedicated Line for Connection to another VAX Computer

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APPENDIX E - GLOSSARY

TERM	DEFINITION
ACU	**A**larm and **C**ontrol **U**nit. The ACU provides 32 alarm inputs and 8 relay outputs and allows for external device alarming to the System Manager. The ACU and Test Unit (TU) form the Test and Alarm Unit (TAU).
Administrator (or Admin or EDACS Administrator)	Administrators are those people responsible for centralized configuration of EDACS networks. Their role is to install and maintain the system-wide database, and in the case of Network Management, overview the operation of the network.
Aegis™	**Aegis™** is the Ericsson GE's voice scrambling system that employs advanced Digital Signal Processing (DSP) circuitry. Aegis has two primary modes – "Aegis digital" and "Aegis private". Aegis digital mode offers improved weak signal performance and impedance to unauthorized monitoring. Aegis digital transmissions are not encrypted. Aegis private mode also offers improved weak signal performance. In addition, since Aegis private transmissions are encrypted, Aegis private mode provides very secure communications against unauthorized monitoring.
Agent	Software that enables a device to respond to manager requests to view or update MIB data, and send traps reporting problems to significant events.
AMTS	**A**dvanced **M**ultisite **T**est **S**ystem.
API	**A**pplication **P**rogramming **I**nterface. Standard interface to a software application.
Audio Board	The **Audio Board** routes audio, mobile data and Aegis data between EDACS radio systems, dispatch consoles, logging recorders, etc. The board digitizes analog signals applied to its audio inputs and applies the digitized signals to the TDM bus. It also performs the reverse process for its audio outputs.
AUI	**A**ttachment **U**nit **I**nterface. Connector used with thick Ethernet that often includes a drop cable.
Battery-backup	Holds information in RAM until power is restored or battery is drained.
BCU	EDACS **B**illing **C**orrelation **U**nit. This EDACS unit converts Integrated Multisite Controller activity to Call Detail Records which can be used for billing.
Bridge	Used to connect Ethernet to Ethernet with capability to control two-way traffic. OSI data Link and Physical layers only.
C3 Maestro	The **C3 Maestro** is the CRT-type console that is designed to take advantage of the advanced features of EDACS. It consists of a specialized audio "tower" and an IBM PC compatible computer running custom software developed by Ericsson GE.

TERM	DEFINITION
CAD	Computer Aided Dispatch
CAL	**C**entralized **A**ctivity **L**ogger. This EDACS unit is inserted between the IMC and the System Manager to provide activity information from Basic EDACS, SCAT, and CNI systems.
Callee	The party to whom the call is placed, i.e., an individual or group of radios.
Caller	The originating party of the call request, i.e., an individual radio.
CAM	**C**entralized **A**ctivity **M**odule – The CAM is a CEC/IMC interface module that provides call activity information to the **C**entralized **A**ctivity **L**ogger (**CAL**) computer. Usage and billing information can be generated with the CAL through the CAM link.
CAP	EDG **C**entral **A**ctivity **P**rocessor. Provides an IP Ethernet interface to host computers and system services such as disk I/O, printing, and the Local Diagnostic Terminal interface.
CCI Board	**C**onventional **C**ontrol **I**nterface **Board** – This is a CEC/IMC Controller Board configured for use in the CIA rack. It provides master CI Board control. The control data port that connects the CIA rack to the VMIM is also located on the CCI Board. (Also see **CI Board.**)
CCITT	**C**onsultative **C**ommittee on **I**nternational **T**elephony and **T**elegraphy. An international organization which sets standards for interconnection of telephone equipment.
CD-ROM	**C**ompact **D**isk **R**ead **O**nly **M**emory. A media used for software and information distribution.
CEC	**C**onsole **E**lectronics **C**ontroller – The Ericsson GE CEC is an advanced radio communications controller incorporating time division multiplex digital audio switching technology. The CEC connects dispatch consoles to EDACS and CNI systems.
CEC Node Icon	A CEC Node icon consists of a CEC, Console(s), and the Site(s).
CEC/IMC Manager	The **CEC/IMC Manager** (formerly referred to as the "MOM PC") provides CEC/IMC switch monitoring and configuration functions. This IBM PC compatible computer running custom software developed by Ericsson GE is the window into the CEC/IMC switch for the system administrator and service technicians.
Channel	The smallest division of a frequency band which provides a single communication circuit, such as a voice or data channel.
CI Board	**C**onventional **I**nterface **Board** – This board is located in the CIA secondary interface rack. It contains circuitry used to connect conventional tone and dc controlled base stations and voting systems to the CEC/IMC switch.

TERM	DEFINITION
CIM	**C**onsole **I**nterface **M**odule – The CIM is a CEC/IMC interface module used to connect C3 Maestro (CRT-type) and C3 Modular/Desktop consoles to the CEC/IMC switch. C3 Modular/Desktop consoles also require a C3 Console Translator interface module. (Also see **XLTR.)**
CNI	**C**onventional **N**etwork **I**nterface – A conventional base station can be connected to the CEC/IMC switch via a CNI. The CNI is formed by a GETC shelf located at the conventional station that makes the station appear to a MIM as an EDACS site. In the CNI system, different Channel Guard tones are assigned to different talk groups.
Community Name	Used like a password in message, validating the right of the sender to access MIB data with a requested operation.
confirmed call	The **confirmed call** function ensures all EDACS radio systems being called have working channels available before the caller is given a channel access (talk permit) tone. This function can be disabled on a per system/group basis.
Console	Communication equipment which provides an operating position for a dispatcher.
Console Icon	The Console icon consists of equipment, displays, and controls where one operator interfaces with a radio system.
control data	**Control data** includes any data used by the switch for system control.
CPU	Central Processing Unit
CTIM	**C**entralized **T**elephone **I**nterconnect **M**odule – The CTIM is a CEC/IMC interface module used to connect **C**entralized **T**elephone **I**nterconnect **S**ystem (**CTIS**) equipment to the switch so radio users and dispatchers can access land-line telephone systems.
daemon	Background process that performs system-wide functions.
DATA	(see **EDG interface module**)
DEC	**D**igital **E**quipment **C**orporation
distributed multisite	Two or more IMC networks can be linked together for **distributed multisite** communication. Audio, mobile data/Aegis data and control data is transferred between the different IMC networks via a NIM at each IMC switch. (Also see **StarGate Controller**.)
DPRAM	**D**ual **P**ort **R**andom **A**ccess **M**emory – These specialized memory chips have two separate data buses that allow two microprocessor chips to quickly and efficiently transfer data between each other.
DVIM	**D**igital **V**oice **I**nterface **M**odule – The DVIM is a CEC/IMC interface module that connects **D**igital **V**oice **I**nterface **U**nits (**DVIU**) to the switch to provide Aegis digital and Aegis private voice operation for dispatch consoles and CTIS

TERM	DEFINITION
	equipment.
DVIU	**D**igital **V**oice **I**nterface **U**nit. Provides digital interface to the dispatch console and enables digital mode communications with the console operator.
EDACS	EDACS, short for **E**nhanced **D**igital **A**ccess **C**ommunications **S**ystem, is a registered trademark of Ericsson Inc. It is used by Ericsson to describe specific communications systems and their specific equipment which meet or exceed the needs of the Public Service, Industrial, Commercial, and Utility markets world-wide.
EDACS radio system	**E**nhanced **D**igital **A**ccess **C**ommunication **S**ystem **radio system** – The term "EDACS radio system" refers to RF equipment that may be interfaced to the EDACS CEC/IMC switch. The RF equipment may be located at a single location, such as an EDACS site or it may be located at several locations, such as in a voting system. Other examples of EDACS radio systems include simulcast, CNI, and SCAT systems.
EDG	**E**DACS **D**ata **G**ateway. Provides landline group and individual data calls for EDACS networks.
EDG interface module	**E**DACS **D**ata **G**ateway **interface module** – Mobile data is forwarded to the CEC/IMC switch from the EDG computer equipment via the **EDG interface module**.
EIO	External Input/Output.
ELI	Enhanced Local Interconnect. In EDACS trunking, a telephone switching system that allows authorized radio users to make and receive telephone calls without dispatcher assistance.
FCAPS	Standard term that stands for the five broad areas of network management: **F**aults, **C**onfiguration, **A**ccounting, **P**erformance, and **S**ecurity.
GETC	Ericsson **G**eneral **E**lectric **T**runking **C**ard – The GETC is a microprocessor-controlled shelf that can be configured to perform many different signal processing tasks for Ericsson GE radio communications equipment. In CEC/IMC applications, each GETC is equipped with a 9600 baud modem that provides serial control data communications between the CEC/IMC (Uplink GETC) and different radio systems (Downlink GETC).
Graphical User Interface	A **G**raphical **U**ser **I**nterface (GUI) is a way of communicating with a computer by manipulating icons (pictures) and windows with a mouse.
GSC bus	**G**lobal **S**erial **C**hannel **bus** – The GSC bus is a high-speed serial bus that provides packetized control data transfers between Controller Boards in the CEC/IMC switch.
GUI	See Graphical User Interface.
H/W	Hardware

TERM	DEFINITION
HDI	EDG **H**ost **D**ata **I**nterface. Provides an interface to host computers using RDI protocol.
HDLC	High-Level Data Link Control protocol. A link level protocol standard by ISO that is the basis for several link layer protocols.
HIB	Hibernate
HP OpenView	A suite of system and network management products offered by Hewlett-Packard.
HP OV NNM	Hewlett-Packard **O**pen**V**iew **N**etwork **N**ode **M**anager. Management platform that provides common management functions, such as data collection and reporting, using standard protocols and software interfaces.
Hub	Used to concentrate several 10BaseT (Twisted Pair Ethernet) onto coaxial Ethernet. OSI physical layer only.
IEA	Integrated EDACS Alarm.
IMC	**I**ntegrated **M**ultisite and **C**onsole **C**ontroller – The Ericsson GE IMC is a digital audio switch that routes audio/mobile data/Aegis data between EDACS radio systems and dispatch consoles. It is a second generation multisite controller plus a console controller for the C3 series consoles.
IMC Node Icon	The IMC Node icon consists of a Switching Center.
Internet	A set of networks connected by IP routers and appearing to its users as a single network.
Internet Protocol	The Internet Protocol (IP) is the TCP/IP layer 3 protocol responsible foe transporting datagrams across the network.
IP Address	An IP (Internet Protocol) address is the numeric identifier address of an element.
ISDN	Integrated Services Digital Network. A set of CCITT standards aimed at integrating voice and data services. ISDN provides end-to-end digital services. Allows for interconnection of remote systems and LANs over an ISDN network for applications running on top of the standard TCP-IP protocol.
IVP	Installation Verification Procedure
Jessica	Ericsson's tradename for a Private Branch Exchange (PBX) Gateway for telephone interconnect via a central network node.
LAN	Local Area Network. A short-distance data communication system that uses moderate to high data rates (100 kb/s to 50 Mb/s). The network interconnects a group of computers to provide intercommunication, sharing of data files, software, and printers.

TERM	DEFINITION
LAPB	A modified form of HDLC that CCITT chose as the link level protocol for X.25 networks. LAPB provides for the reliable transfer of a packet from a host to an X.25 packet switch, which then forwards the packet to its destination.
LAT	Local Area Transport.
LEF	Local Event Flag.
LRIM	**L**ogging **R**ecorder **I**nterface **M**odule – This CEC/IMC interface module provides audio outputs for logging recorders. Each output channel can be programmed to supply audio based on groups or individual units within the CEC/IMC network.
LTA	Logical Terminal Assignment.
Managed Object	An object holding network management information, characterized by an identifier, a value, implementation requirements, and valid operations.
Management Information Base	Management Information Base. A description of the data stored in a Network Element similar to a C structure. A MIB definition allows the EDACS Network Manager to read and write values in a Network Element.
MAU	Multistation Access Unit. A transceiver for LAN connections.
ME	Management Element. An EDACS platform that configures EDACS NEs. Examples of MEs are CEC/IMC Manager, EDACS 4 Radio Programmer, EDACS Network Manager, System Manager, PI terminal, EDG terminal, etc.
Media Access Control (MAC)	A protocol governing a station's access to a network.
MIB	See Management Information Base.
MIM	**M**ASTR II/III **I**nterface **M**odule – The MIM connects an EDACS radio system to the CEC/IMC switch. EDACS radio systems include EDACS sites, simulcast systems, voted systems, CNI and SCAT systems.
MMJ	Modified Modular Jack.
MOM	**MO**nitor **M**odule – The MOM is a CEC/IMC interface module that provides serial data connections for the CEC/IMC Manager (MOM PC) and the System Manager computers.
MOM PC	(see **CEC/IMC Manager**)
MSC	Multi-Site Coordinator.
Multiple Access Unit (MAU)	For a Token Ring, a concentrator used to connect multiple stations to the ring.

TERM	DEFINITION
multisite	A **multisite** is a network of multiple EDACS radio systems and possibly conventional radio systems all linked together for wide-area communication. In a multisite network, adjacent systems do not use the same radio frequencies. Each system networked may have a different number of working channels.
Native Proxy	Proxy that communicates with its agents via SNMP.
NE	**N**etwork **E**lement. An EDACS platform that provides links in the EDACS network for either digital voice, analog voice, data, or control information. IT IS NOT A PLATFORM USED TO CONFIGURE EDACS NEs. Examples of NEs are IMC, GETC, Site Controllers, PIs, etc.
Network Address	The 32-bit IP address of a system.
Network Manager	The EDACS Network Manager is a UNIX workstation or server that provides EDACS administrators with a consistent, integrated view of the alarm status of their EDACS network.
Network Number	A network is a logical association of IMC, StarGate, CEC, and Remote CEC nodes. The Network Number identifies the nodes for which the traffic will be monitored by the Multisite Monitor.
NIM	**N**etwork **I**nterface **M**odule – Two or more IMC networks can be linked together for distributed multisite communications using a NIM at each IMC switch.
NM	See Network Manager.
Node	A terminal of any branch of a network, or a terminal common to two or more branches.
Node Number	This is the EDACS Node Number which uniquely specifies an IMC/CEC/StarGate in the EDACS network.
Object Identifier	A string of numbers derived from a global naming tree, used to identify an object.
OpenView	See HP OpenView.
OS	Operating System.
PAK	Product Authorization Key.
PCM	**P**ulse **C**ode **M**odulation – An audio processing technique used to encode and decode analog signals so they can be transferred digitally.
PDP	Programmable Data Processor.
PDU	**P**rotocol **D**ata **U**nit. Grouping of data defined within SNMP.

TERM	DEFINITION
PI	**P**rivate Branch Exchange **I**nterface. The Jessica VMEbus chassis provides connectivity between the IMC and the MD110.
PMU	**P**ower **M**onitor **U**nit. This EDACS unit monitors the output power of the transmitters and the VSWR of the antenna system. If a fault occurs, it sends an alarm to the Site Controller. The PMU is co-located with the Site Controller computer.
Port	A point for accessing a device, circuit, or network. For a bridge, an interface to a LAN or point-to-point link.
Privacy	Protection of the contents of a message by means of encryption.
Proxy Agent	An agent that responds to requests from one or more managers by polling remote devices. A proxy also relays traps generated by devices under its supervision to other managers.
PSTN	**P**ublic **S**witched **T**elephone **N**etwork. The communication system that links telephones nationwide by means of loops, trunks, and switches owned and operated by the public telephone companies. The term is often used for data and other non-telephone services carried over the telephone network.
Radio Switch	Term used to designate the CEC, IMC, or StarGate.
RCEC	Remote Console Electronics Controller.
RCEC Node Icon	The RCEC Node icon consists of the RCEC and Consoles.
Request For Comments (RFC)	The RFC is a set of documents containing Internet protocols and discussions of related topics. These documents are available on-line at the Network Information Center.
RIM	**R**equest Status Monitor **I**nterface **M**odule – The RIM interface module enables the RSM computer to request status information from radios within the network.
Router	A system used to connect separate LANs and WANs into an internet, and to route traffic between the networks. In the Network Manager system, a router is needed to go from Ethernet to T1 physical media. OSI Network, Data Link, and Physical Layers only.
RS-232	A type of serial interface typically used for terminals, modems, and printers.
RS-232 SMED	
RSM	Radio Status Monitor.
RSM	**R**equest **S**tatus **M**onitor – The RSM is an IBM PC compatible computer running custom software developed by Ericsson GE. It allows the system administrator and/or the dispatchers to view status of EDACS units within the CEC/IMC network. Status information is typically initiated (transmitted) by the radio operator to identify the current condition (in route, at scene, etc.) of the unit.

TERM	DEFINITION
S/W	Software.
SCAT	**S**ingle-**C**hannel **A**utonomous **T**runking. In EDACS, SCAT is a trunked system consisting of a single failsoft repeater and a downlink GETC. Operationally, it functions as a control channel or a working channel, depending on the trunked service required. In its idle state, SCAT operates as a control channel. When a channel request is made, SCAT assigns the call to itself and converts to a working channel. EDACS address hierarchy is maintained as are many trunking features.
SCSI	Small Computer System Interconnect.
Shell	An HP-UX command interpreter (CSHELL, KORN, etc.), providing a working environment interface for the user. When user logs in, the Session Manager starts HP VUE applications that were running during a previous session.
Simple Network Management Protocol	The Simple Network Management Protocol (SNMP) is a protocol that enables a management station to configure, monitor, and receive trap (alarm) messages from a Network Element. It also provides additional administrative structure, authentication, and privacy.
Simulcast	Simultaneous Broadcast by two or more transmitters located at different sites operating on the same RF frequency.
site	This term normally refers to EDACS radio equipment at a single specific location.
Site Controller	A computer running Ericsson-developed application software that controls the moment-to-moment trunking process, plus such features as call validation, unit enable/disable, dynamic regrouping, and queuing management. The Site Controller communicates with the System Manager over an appropriate link.
Site Icon	The Site icon consists of physical devices located in one geographic location such as the Site Controller, ELI, ACU, PMU, TU, and Channels.
Site Number	This is the EDACS Site Number which uniquely identifies the Site on a particular Node.
SM	See System Manager.
SNMP	See Simple Network Management Protocol.
StarGate	In EDACS trunking, links up to eight EDACS wide-area multisite networks to create a single, seamless network.
StarGate Controller	A **StarGate Controller** is an IMC switch specifically configured for distributed multisite operation. It is the central point or "hub" for all distributed multisite communications.
SubSite Number	This is the EDACS SubSite Number which uniquely identifies the SubSite device on a particular Node. A channel is a subsite device.

TERM	DEFINITION
super user	The root user who has special privileges. Same as the System Administrator.
Switching Center	Collection of node level devices physically connected to the IMC. These devices include the PI, BCU, CAL, EDG, and Consoles.
System Manager	The **System Manager** is a DEC multitasking computer which performs features such as monitoring system operation, generating management reports, individual unit enable/disable and dynamic regrouping.
T1/E1	Digital landline and microwave transmission standards used in the United States and Europe.
TCP	**T**ransmission **C**ontrol **P**rotocol. A connection-oriented protocol with acknowledgments and retries.
TDM	**T**ime **D**omain **M**ultiplexing. Technique used to multiplex multiple signals onto a single hardware transmission channel (bus) by allowing each signal to use the channel for a short time before going on to the next one.
TDM bus	**T**ime **D**ivision **M**ultiplexed **bus** – The TDM bus in the CEC/IMC switch is a digitally multiplexed bus system used to transfer audio/mobile data/Aegis data throughout the CEC/IMC switch. Each signal coming into the CEC/IMC switch is assigned a TDM time slot and receiving devices extract the digitized signals from the appropriate time slot.
Technician (or Tech or EDACS technician)	Customer personnel whose main responsibility is to install, maintain, and troubleshoot individual EDACS platforms, such as GETCs, Site Controllers, EDGs, and IMCs. Technicians require software interfaces that run on common laptop/desktop personal computers to assist in hands-on setup of a particular platform.
Telnet	The TCP/IP protocol that enables a terminal attached to one host to log into other hosts and interact with their applications. It is the Standard internet protocol for terminal emulation.
TFTP	Trivial File Transfer Protocol. A basic TCP/IP protocol used to upload or download files. Typically uses include initializing diskless workstations.
tracking	In a multisite network, all active radios log into their particular system. This login information is databased to allow the CEC/IMC to track individual radio units as they move from system-to-system. The CEC/IMC can then route wide area calls based on this database.
Transmission Control Protocol	The Transmission Control Protocol (TCP) is the TCP/IP protocol that provides reliable, connection-oriented data transmission between a pair of applications.
Trap	A message that reports a problem or significant event.
Trunking	The process of dynamically allocating a limited number of radio channels to groups of people for communication purposes.

TERM	DEFINITION
TSI	EDG **T**runked **S**ystem **I**nterface. The TSI handles all communications to the rest of the EDACS trunked radio system via the CEC/IMC CIM.
TSM	Terminal Server Manager (an optional product from DEC used for Terminal Server Management).
TU	Test Unit. The TU continually tests channels and provides an alarm to the Site Controller if a fault is detected. The TU and ACU form the Test and Alarm Unit (TAU).
UDP	User Datagram Protocol. Connection-less-mode transport protocol used by SNMP. Does not use acknowledgments or retries.
UPS	Uninterruptible Power Source. Used to keep the system running in the event of a power outage.
VAX	Virtual Address eXtension.
VMIM	Con**V**entional **I**nterface **M**odule – The VMIM couples the CIA secondary interface rack to the primary CEC/IMC switch interface modules. The VMIM - CIA set allows conventional base stations and conventional satellite receiver voting systems to be connected to the CEC/IMC switch.
VMS	Virtual Memory Systems.
X-model	A network-based display device that uses the X protocol over LAN to communicate with the host.
X-terminal	The high-end performing X-model targeted at technical environments.
XLTR	C3 Modular/Desktop Console **Translator** – Using data protocol conversion techniques, this interface module allows the CEC/IMC switch to communicate with a C3 Modular/Desktop console. The XLTR is placed in the control data path between the C3 console and its respective CIM.

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