

Lucent Technologies
Bell Labs Innovations



***StarKeeper*[®] II NMS
Customer Control System
(CCS) End User
Administrator's Guide**

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Release 10.0

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Preface

Overview

The CCS is an optional feature of *StarKeeper II* NMS that allows a Service Administrator to partition a CO-LAN into subnetworks of terminal users. Administrative tasks for these subnetworks are divided between the CCS network Service Administrator and an End User Administrator for the subnetwork. CCS provides End User Administrators with limited control over their particular subnetworks. It permits End User Administrators to:

- initiate changes to and displays of their subnetwork resources
- perform diagnostic loopback tests
- request and receive reports for their subnetworks.

Purpose

The purpose of the *StarKeeper II Network Management System (NMS) Customer Control System (CCS) End User Administrator's Guide* is to familiarize CCS End User Administrators with the commands and screens (forms) used to manage their subnetwork resources in a Central Office Local Area Network (CO-LAN) environment. This guide assumes that the CCS Service Administrator has divided the CO-LAN into subnetworks using *StarKeeper II* NMS CCS Release 10.0. The following information is included in this guide:

- overview of End User Administrator features
- listing of commands
- descriptions of menus and forms
- on-line help procedures
- instructions for using commands, forms, and menus.

The Service Administrator uses CCS to divide CO-LANs managed by *StarKeeper II* NMS into subnetworks that can be administered (to a limited extent) by an End

User Administrator. End User Administrators can use this guide to become familiar with the commands and procedures used to manage subnetworks.

Document Organization

The following chapters are included in this guide:

Chapter 1. System Basics Lists terms and definitions used in this guide; describes the typestyle conventions; presents an overview of the document organization; and includes an overview of network management and describes CCS features used by End User Administrators. It gives the basic for:

- logging on and off
- changing passwords
- using menus, forms, command keys and relational operators
- getting access to on-line help.

A quick reference listing for all CCS commands is also included.

Chapter 2. Resource Management Describes the commands and forms used to change parameters for subnetwork resources, diagnose trouble, remove resources from service, and restore resources to services.

Chapter 3. Network Monitoring Describes the commands and forms used to list and display subnetwork resources; graphically display network health; display connection information, Electronic Industries Association (EIA) lead status, module and port performance measurements, and module and port alarm status information; produce reports for monitoring call activity, port usage, and other purposes; and view CCS transactions for your subnetwork.

Documentation Conventions

The following conventions are used in this guide:

- Data that is entered at the console is printed in the **bold** typeface.
- System prompts and output are printed in *italic* typeface when listed in text.

For example: *Invalid node name.*

- System prompts and user entries are shown in constant width and constant width bold fonts within screen displays:

Please enter the module name: **ty12**

- Keys are shown boxed:
For example:
- The combination of two keys is shown in a single box. For example, to indicate that the and keys should be pressed simultaneously, the text would show



NOTE:

Some keyboards use the or another key as the carriage return key. This document uses to signify the carriage return key for your terminal.

- In this document, when the instructions say to enter a character, it is assumed that the character is followed by the key.

Courses

The following courses are available for *StarKeeper II NMS*:

- **NT3520**—*StarKeeper II NMS Core System Network Administration and Maintenance*
- **NT3521**—*Data Networking Management via StarKeeper II NMS Graphics System*

The CCS courses are available through:

Lucent Technologies Operations Systems Technical Center
184 Liberty Corner Road
P. O. Box 4908
Warren, NJ 07060-0908

For more information about these courses, call the Customer Information Center at **1-888-LUCENT8**.

Terms and Definitions

The following terms and definitions are used throughout this guide. (Refer also to the Glossary.)

Service Administrator	The person responsible for setting up CCS terminal users, defining the network resources owned by the customer, and imposing any operative constraints. The service administrator can insert, delete, and update the records in the database tables that are used for the service administrator commands.
End User Administrator	The network administrator designated at the customer site. The end user administrator uses CCS commands to monitor and administer subnetwork resources and their usage.
Terminal User	The person (end user) using data terminal equipment (DTE) to access network services through a switched data communications network.
Node	A data communications network switch. The Lucent Technologies data switches are the BNS-2000 and BNS-2000 VCS Switches.
Network Resources	Both the physical and logical resources supported by the network switching node. The supported network services include host computers, host lines, and others.
Logical Name	The label assigned to an addressable resource on the node. The logical name is usually constructed to indicate the resource's type, location, or function. The logical name should be meaningful and should be constructed to correspond to your company's numbering plan for resources. Logical names can be up to 12 characters and must be unique within each subnetwork. Spaces, semi-colons, and commas are not allowed.
Logical Resource	A logical resource is a software defined entity not associated with one particular hardware type. These include: group names (originating, receiving, two-way, and trunk) and service addresses.
Physical Resource	A physical resource refers to physical hardware types such as TY12, TSM8, X.25, and other interface modules. Each physical resource to be administered by the end user administrator must be assigned a logical name by the service administrator. The service administrator determines which of the physical resources an end user administrator can administer.

Slot	The slot number on the backplane of the node. For Synchronous/Asynchronous Multiplexers (SAMs) and concentrators, the trunk or link module in the backplane.
Port	The physical port number of a module.
CPort	The port number for a SAM Multiport link (SAMML) connected SAM.
Cslot/Board Number	The location of the interface module board in the SAM or concentrator. Other hardware types have only slots and ports.

System Basics

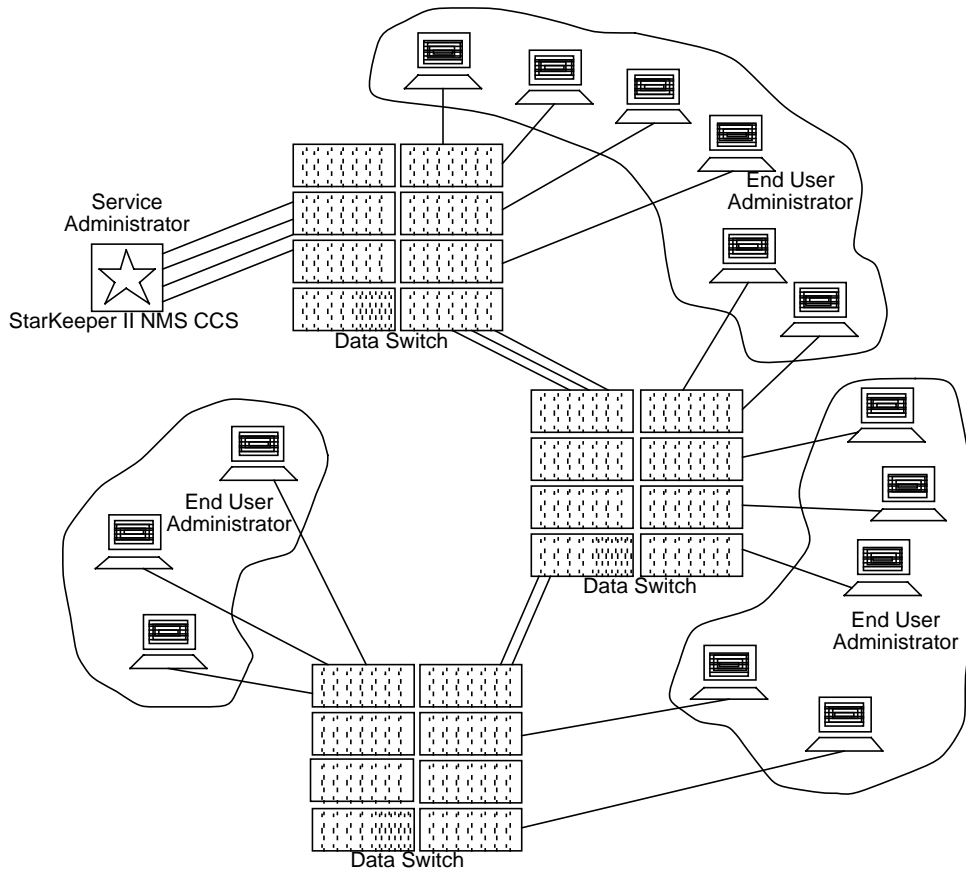
1

General

This chapter describes basics of a *StarKeeper II* NMS system, including information on administration, logging on and using menus, changing passwords, and using Help and forms. A list of end user administrator commands appears at the end of the chapter.

Network Administration Summary

Following is a figure of a sample CCS Network illustrating *StarKeeper II* NMS network administration.



Sample CCS Network

CCS allows Service Administrators to set up and maintain subnetworks of terminal users. It also provides End User Administrators with limited network management capabilities for their own network resources. The preceding figure shows an example network (divided into subnetworks) for CCS. Each of the subnetworks has several terminal users and an End User Administrator. The Service Administrator is connected to the *StarKeeper II NMS* to oversee CCS operations. The sample configuration shown is used to operate CCS in a CO-LAN environment managed by *StarKeeper II NMS*.

⇒ NOTE:
 "Data Switch" in the preceding figure, and throughout this document, refers to a Lucent Technologies BNS-2000 or BNS-2000 VCS Switch.

Supported Network Services

The following list identifies the subnetwork resources supported by CCS. End User Administrators whose company owns or leases a resource can change or display the parameter settings that support these services.

- asynchronous terminals and host ports
- synchronous terminals and host ports
- PCs
- service address
- receiving, originating, two-way, and trunk groups

End User Administrator Capabilities

The Service Administrator decides which commands an End User Administrator can use and creates a menu of commands for each End User Administrator. Depending on this menu, an End User Administrator may be allowed to do some or all of the following functions:

- list subnetwork resources (**ulist**)
- remove network resources (except groups) from service (**uremove**)
- restore network resources (except groups) to service (**urestore**)
- display service configuration data (**udisplay**)
- modify service configuration parameters (for example, baud, parity, code set) (**uchange**)
- perform diagnostic loopback tests for specified terminals or ports (**udiag**)
- display or download host access reports, call activity reports, inactive ports reports, or customized reports for specified host ports or originating ports (**ureport host_access**, **ureport call_summary**, **ureport inact_reports**)
- display a graphical representation of resources to monitor the system and display alarm message information (**unetdisp**, **unetstat**)
- display connection information (**udispconn**)
- change the password for the End User Administrator login (**uutils**)
- display a log of End User Administrator CCS activity (**uvwlog**)
- display alarm status information (**udstat**)
- display performance measurements (**udmeas**)
- display EIA lead status (**udispeia**).

Service addresses, direct connections to *StarKeeper* II NMS, and dial-in logins are features that help ensure system security. End User Administrators cannot change resources that are not in their subnetwork, nor can they use commands that might disrupt another customer's subnetwork.

Using the System

When the End User Administrator logs on to perform administrative tasks, he/she can work *only* through the *main menu* that has been created for him/her by the System Administrator. The End User administrator cannot execute any CCS commands for resources used by other customers in the network, or any UNIX, node, or *StarKeeper* II NMS commands.

Logging On

End User Administrators obtain access to CCS using destinations, user logins, and passwords. These are obtained from the Service Administrator. Use the following procedure to log on to the system:

1. Turn on your terminal and enter the correct destination (if appropriate) at the `DESTINATION:` prompt.
2. Type in your login at the `login:` prompt.
3. Enter your password at the `password:` prompt. A welcoming banner should appear. If the welcoming banner does not appear, you may get one of the following messages:
 - a. `StarKeeper II NMS CCS: Access permission denied. Contact your CCS Administrator. If this message appears, contact the Service Administrator.`
 - b. `StarKeeper II NMS CCS: Maximum number of users (8) are on. If this message appears, you must wait until someone logs off before you can log on.`
 - c. `Please try later. If this message appears, try to log on a few minutes later.`
4. After the welcome banner is displayed, you will be prompted to enter your terminal type. Make the appropriate entry for terminal type as listed below:

Type:	For:
1	monochrome terminal emulators
2	color terminal emulators
3 or 4425	Teletype 4425 type terminals
4	Hewlett-Packard terminal emulator (hpterm)

Your *main menu* will be displayed and you can begin working in CCS.



NOTE:

If you are using a PC, you will probably be using a terminal emulation package. Do not assume that the model number of your PC is the terminal type. Check the terminal type your PC is emulating before entering the terminal type. It is important to enter the correct terminal type. CCS may not perform correctly if the wrong terminal type is entered.

Using Menus

When you choose a command from the main menu, CCS will either display another menu or display a form with the required entry fields.

Navigate through the menus and make selections by moving the cursor to the selection or entering the number of the selection. A sample menu is shown in Screen 1-1.

Screen 1-1: Sample CCS Main Menu

```
END USER ADMINISTRATOR MENU

1  uchange          Change resource parameters
2  udiagnose        Run diagnostic test for a resource
3  udispcn          Display connection information
4  udisplay         Display information about a resource
5  ulist            List authorized resources
6  unetstat         View network health and monitor alarms
7  urepfile         Access report files stored on-line
8  uremove          Remove a resource from service
9  uutils           Access user administration utilities
H  HELP             Help for user commands
M  MORE             See more user commands
L  LOGOFF
```

Use space bar, arrow keys, or type number or letter to make selection.
Enter 'e' to return to previous menu or exit.
Enter carriage return to execute selection : 9

An underline or highlight bar appears at the current choice, and a short underline or highlight cursor appears at the bottom of the screen. To use a command (**uutils**, for example), move the highlight bar (using the space bar or arrow keys) to the appropriate number (**9** in this example) and press . You can also enter the number for your selection (**9**) at the bottom of the screen.

Obtaining Additional Menu Pages

If your customized menu has more than nine commands, it will list the *M MORE* option on the first menu screen. To get to the additional commands, enter **M**. The additional commands will be listed on the second page of the menu.

Returning to the Previous Menu

The command used to go back to a previous menu from the current menu is called **exit** and is executed by entering **e**. You can also use the *M More* command from the current menu; by entering **M** you can go back to the previous menu.

Logging Off from a Menu

Every menu will have a selection for logging off, *QUIT* or *LOGOFF*. To log off from a menu, enter **L** (L for log off).

utils — Changing Passwords

The **utils** command is used to change the password associated with your login. You can only use this command if it appears on the main menu. To change your password, select **utils** from the main menu; this will display the User Administration Utilities menu as shown in Screen 1-2.

Screen 1-2: Menu for the utils command

```
                                USER ADMINISTRATION UTILITIES

1  passwd                        Change password
L  LOGOFF

Use space bar, arrow keys, or type number or letter to make
selection.
Enter 'e' to return to previous menu or exit.
Enter carriage return to execute selection : 1
```

Use the following steps to change a password.

1. Enter **1** on the screen above and respond to the prompts with your old and new passwords as directed:

```
Changing password for login
old password: enter old password  RETURN
New password: enter new password  RETURN
Re-enter new password: enter new password  RETURN
```

2. Passwords must be a minimum of six characters and should include at least one number. The new password should differ from your old password in at least three positions.
3. The new password is now associated with your login. Use this password whenever you log on.

Using the Help Command

A useful feature offered by *StarKeeper II* NMS CCS is on-line help. This function allows you to get on-line documentation for End User Administrator commands. Help is available from the main menu.

To use the CCS help facility, follow the steps below:

1. To get help for any command, display the menu that lists the command. Screen 1-3 shows a sample menu.

Screen 1-3: Sample User Menu

```

                USER MENU

1  uchange          Change resource parameters
2  udiagnose       Run diagnostic test for a resource
3  udispconn      Display connections
4  udisplay        Display information about a resource
5  ulist           List all authorized resources
6  unetdisp       View network health
7  unetstat       View network health and monitor alarms
8  urepfile       Access report files stored on-line
9  uremove        Remove a resource to service
H  HELP           Help for user commands
M  MORE           See more user commands
L  LOGOFF

Use space bar, arrow keys, or type number or letter to make
selection.
Enter 'e' to return to previous menu or exit.
Enter carriage return to execute selection : H
```

2. To use the **help** command, move the cursor to the *H HELP* selection and press . You can also enter **H** at the bottom of the screen (where the cursor is already positioned). A help menu, similar to Screen 1-4, will be displayed.

Screen 1-4: Sample Help Menu

```
HELP MENU

1  uchange
2  udiagnose
3  udisconn
4  udisplay
5  ulist
6  unetdisp
7  unetstat
8  urepfile
9  uremove
L  LOGOFF

Use space bar, arrow keys, or type number or letter to make
selection.
Enter 'e' to return to previous menu or exit.
Enter carriage return to execute selection : 2
```

3. Move the cursor to the desired command selection and press or enter the number for the command (**2** for **udiagnose** in this example). An explanation of the command will appear. The help screen for the **udiagnose** command is shown in Screen 1-5.

Screen 1-5: Sample Help Screen — udiagnose

```
Help for : UDIAGNOSE

Use this command to: Initiate loop-back diagnostic tests of an AT&T Voice
Data Multiplexer (VDM). The VDM will automatically be removed from and
restored to service. Automatic error recovery is provided in case of
failure. This command will interrupt any calls in progress through the
VDM.

Procedure:

1. Select the UDIAGNOSE command, which will give you a screen form.
   Enter the name of the resource you are testing and press ESC.

2. Review the test information displayed on your screen.

*Press Return to continue*
```

-
4. When you are done viewing the explanation, press The HELP MENU will be displayed. You can then repeat Steps 1 through 3 to continue using help or enter **e** to return to the main menu.

Using Forms

Forms are generated and managed through the INFORMIX Data Base Management System (DBMS). Each form provides instructions for entering, deleting, and moving around the screen.

Form Command Keys

If you enter incorrect information on a form, you can edit the form with *command keys*. Table 1-1 lists the form command key combinations and their functions. The functions listed at the bottom of each form screen vary among forms. Check the list at the bottom of the screen to be sure that the function and command key are correct for the form you are using.

Table 1-1: Form Command Keys and Functions

Command Key	Function	Command Key	Function
Escape	Execute the command	Return	Go to the next field
Delete	Terminate command	Control-x	Delete a character
Control-l	Move the cursor to the right	Control-j	Move the cursor to the next field or row
Control-a	Insert a character	Control-d	Delete the remainder of characters in the field
Control-h	Move the cursor to the left	Control-k	Move the cursor to the previous field or row
Control-p	View the previous page	Control-n	View the next page

**NOTE:**

When using the Hewlett-Packard C1429A PC-101 Enhanced Vectra Keyboard, you must use **Shift** **Esc** in place of **Delete** wherever it says to use **Delete** in this document.

Form Messages

Informational messages will be displayed as you move through the form screens. These messages occur after a user operation (entering information or pressing a control key) and indicate whether the attempt was successful. Other messages indicate the command key to use to proceed.

For example, among the messages that may appear when using the Display Form are the following:

- Enter name of resource to be displayed.
- Unable to display logical name : *logical name*
- Do you want to enter another request? [y,n: +(n)]:
- Command processing.....please wait

Form Default Indicator

A selection of choices is displayed on some forms. The default choice is indicated by the syntax: +(default choice). To select the default, press For example, use the key to choose the default (n) in the following message:

```
Do you want to enter another request [y,n: +(n)]:
```

Form Relational Operators

Some of the forms use relational operators to define selection criteria for search keys. The search key is the information (for example: node name, service address, hardware type, etc.) that is keyed into the form field to define what records will be selected and displayed. If relational operators are used with a form, the following message will be displayed at the bottom of the form:


```
Valid relational operators (NO spaces between an operator and the value):  
>, <, >=, <=, <>, *(Wildcard),?(Wildcard), :(Range), |(Union)
```

Using relational operators allows you to narrow or broaden the scope of your query. You can retrieve many records that fit the criteria, a few records, or a single record. Relational operators are useful if you can't remember the exact name or spelling for a form field entry, or to display a series of related records that have similar names.

Table 1-2 defines the relational operators for search keys and gives examples of how they are used. All relational operators can search with alphabetic and/or numeric characters.

Table 1-2: Table of Relational Operators

Operator	Explanation	Example
>	Greater than the given value	>7 produces all records with a search key greater than 7.
<	Less than the given value	<7 produces all records with a search key less than 7.
>=	Greater than or equal to the given value	>=7 produces all records with a search key greater than or equal to 7.
<=	Less than or equal to the given value	<=7 produces all records with a search key less than or equal to 7.
<>	Less than and greater than	<100>50 produces all records less than 100, but greater than 50.
* (Wildcard)	Match the characters preceding the * with all records that begin with those characters in alpha-numeric order.	sk* produces all records with a search key beginning with sk ; i.e., sk1, sk12 ... skabcde ... skzzzzz.
? (Wildcard)	Match the characters preceding the ? with all records that begin with those characters and are followed by a single character in alpha-numeric order.	sk?a produces all records with four characters with a search key beginning with sk and ending with a ; i.e., sk1a, ska2 ... skaa ... skza.
: (Range)	Match a range of characters.	5:9 produces all records with a search key from 5 through 9 inclusive.
(Alternation) (Union)	Retrieve records for the value before and after the .	groupa groupd produces only records with search keys of groupa and groupd; i.e., not groupb or groupc.

 **NOTE:**
Searches are done in ASCII code order.

Logging Off from a Form

To log off a form screen, you must first return to a menu using the key. Then enter **L** to select the *L LOGOFF* option from the menu.

Available End User Administrator Commands

Table 1-3 lists the commands that you can use if the Service Administrator has included them on your main menu:

Table 1-3: End User Administrator Commands

Command	Explanation	Refer to
help	Get help for End User Administrator commands	Chapter 1
uchange	Change resource parameters	Chapter 2
udiagnose	Run a diagnostic test for a resource	Chapter 2
udispcnn	Display connection information	Chapter 3
udispeia	Display EIA lead status	Chapter 3
udisplay	Display information about a resource	Chapter 3
udmeas	Display performance measurements	Chapter 3
udstat	Display alarm status information	Chapter 3
ulist	List authorized resources	Chapter 3
unetdisp	Monitor network health	Chapter 3
unetstat	Monitor network health and alarms	Chapter 3
uremove	Remove a resource from service	Chapter 2
urepfile	Access reports stored on-line	Chapter 3
ureport call	Generate call summary report	Chapter 3
ureport host	Generate host access report	Chapter 3
ureport inact	Generate inactive ports report	Chapter 3
urestore	Restore a resource to service	Chapter 2
uutils	Get user administration utilities	Chapter 1
uvwlog	View commands log	Chapter 3

Resource Management

2

General

The following is a list of commands that the End User Administrator can use to manage resources:

uchange	Change logical names and their parameters, or change the parameters associated with service addresses or group names.
udiagnose	Run node diagnostic tests for your subnetwork resources.
uremove	Remove from service authorized service addresses, modules, boards, or ports.
urestore	Restore to service authorized service addresses, modules, boards, or ports that have previously been removed from service.

These commands can be used only if they appear on the menu displayed when you log on. To access to any of these commands, move the cursor to the command and press .



NOTE:

Many of these commands interrupt data communications service. Commands which perform changes to ports will remove the ports from service. When a command will affect service, it is noted in the text of the command description in this guide.

uchange

The **uchange** command is entered to change information about logical names, service addresses, and group names. Select **uchange** from the main menu to obtain the Change Resource Description menu as shown in Screen 2-1.

Screen 2-1: Menu for the uchange command

```
-----
                          CHANGE RESOURCE DESCRIPTION
-----

                          SELECTION OF RESOURCE TO BE CHANGED

1 Logical Names           Change Parameters Associated With Logical Names
2 Service Addresses      Change Parameters Associated With Service Addresses
3 Group Names            Change Parameters Associated With Group Names
E EXIT

      Enter Selection [ ]

Enter a selection for resource type you wish to change and press RETURN.
```

Make your selection as described in Chapter 1. At the *Enter Resource Name* prompt enter the logical name, service address, or group name. The system will determine the device type and display the appropriate form for the change.

Change Forms

Once you select a Change Form, the current values of some or all of the fields will be displayed, depending on the form displayed.

On certain forms (i.e., those for changing devices connected to a SAM) the communication protocol field will be populated.

Use the command keys listed at the bottom of the screen to move to the fields you want to change. Be sure each field contains the desired information before you press or . Use the command keys (such as the key) to clear out any unneeded characters.

When you have finished changing all the desired fields press to enter the changes. executes the changes and displays the following:

Warning: if resource is in service, it will temporarily be removed from service to perform change.
Do you want to continue [y, n: +(y)]

If you press the resource will be restored after the change command has been executed. If you enter **n**, the command will stop and processing will not continue.

The change forms are discussed in the following subsections.

⇒ NOTE:
On forms displaying protocol and service type, these fields cannot be changed using these change forms.

Changing Originating Groups

When the form in Screen 2-2 is displayed, the cursor will be positioned at the *Device or Host Name* field. Table 2-1 gives the steps for changing the device or host, and/or the password associated with the group.

Screen 2-2: Change Originating Group Form

```
-----  
CHANGE ORIGINATING GROUP FORM  
-----  
Group Name           Device or   Network  
[                   ] [ Host Name ] [ Access Passwd ]  
  
Password Required  
During  
[                   ]  
  
-----  
ESC = execute command  CTRL-L = cursor right  CTRL-H = cursor left  
DEL = terminate command CTRL-J = next field    CTRL-K = previous field  
CTRL-A = insert        CTRL-X = delete char   CTRL-D = delete rest of line  
  
Enter device or host name associated with group
```

Table 2-1: Change Originating Group Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Device or Host Name	Press <input type="button" value="Return"/> to keep the same group name—or—enter the type of device or host associated with the group.
2	Network Access Password	You may not delete a password. To change the current password enter the new password.
3	Password Required During	If a password is required for a select group, enter select . If it is required for network access, enter network-access . If it is required for both, enter both .

Changing Receiving Groups

When the form in Screen 2-3 is displayed, the cursor will be positioned at the *Group Name* field. Table 2-2 gives the steps for changing the device or host, and/or the password associated with the group.

Screen 2-3: Change Receiving Group Form

```

-----
                          CHANGE RECEIVING GROUP FORM
-----
Group Name      Device or   Host      Round
[      ]      Host Name   Autobaud  Robin Service
[      ]      [      ]    [  ]     [      ]

-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Enter device or host name associated with group
    
```

Table 2-2: Change Receiving Group Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Device or Host Name	Press <input type="button" value="Return"/> to keep the same group name or enter the type of device or host associated with the group.
2	Host Autobaud	To match the transmission (baud rate) speed automatically, enter on ; if not, enter off .
3	Round Robin Service	For round robin service, enter the type of service, per_port or per_module . Enter none if round robin service is not used.

Changing 2-Way Groups

When the form in Screen 2-4 is displayed, the cursor will be positioned at the *Device or Host Name* field. Table 2-3 gives the steps for changing the device or host, and/or the password associated with the group.

Screen 2-4: Change 2-Way Group Form

```

-----
                          CHANGE 2-WAY GROUP
-----
Group Name          Device or      Network
[      ]           Host Name      Access Passwd
                               [      ]

Password Required   Round Robin
During              Service
[      ]           [      ]

-----
ESC = execute command   CTRL-L = cursor right   CTRL-H = cursor left
DEL = terminate command CTRL-J = next field     CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char    CTRL-D = delete rest of line

Enter device or host name associated with group
    
```

Table 2-3: Change 2-Way Group Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Device or Host Name	Enter the name of the type of device or host associated with the group.
2	Network Access Password	You may not delete a password. To change the current password, enter the new password.
3	Password Required During	If a password is required for a select group, enter select . If it is required for network access, enter network-access . If it is required for both, enter both .
4	Round Robin Service	For round robin service, enter the type of service, per_port or per_module . Enter none if round robin service is not used.

Changing Service Addresses

When the form in Screen 2-5 is displayed, the cursor will be positioned at the *Service Address* field. Table 2-4 gives the steps for changing information associated with the service address.

Screen 2-5: Change Address Form

```

-----
                                CHANGE ADDRESS
-----
Mnemonic      Numeric
Address       Address   Groups:
[             ] [       ] [         ] [         ] [         ] [         ]

Directory Entry
[             ]

Origination Group Name Security Pattern
[             ]

-----
-
ESC = execute command      CTRL-L = cursor right   CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field     CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char    CTRL-D = delete rest of line

Enter name of group to be associated with service address
    
```

Table 2-4: Change Address Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Groups	Enter the name of the groups (up to four at a time) to be associated with the mnemonic or numeric service address.
2	Originating Group Name Security Pattern	A security pattern can be used to restrict which originating groups have access to the service address. Enter the security group pattern for groups associated with the address.

Changing Speedcall Levels

This form (Screen 2-6) allows the End User Administrator to re-route traffic by changing the destination code (dial string entry) for the service address. To obtain this screen the service address must be configured as a **speedcall address**.

When this form is displayed, the cursor will be positioned at the *Service Address* field. Table 2-5 gives the steps for changing the address (dial string) that network users will see when they request directory assistance.

Screen 2-6: Change Speedcall Level Address Form

```

-----
                                CHANGE SPEEDCALL LEVEL ADDRESS
-----
Mnemonic      Numeric
Address       Address
[           ] [           ]

Dial String Entry
[                                     ]

Display New Dial String as Directory Assistance
[           ]

-----
ESC = execute command      CTRL-L = cursor right   CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char   CTRL-D = delete rest of line

Enter service address

```

Table 2-5: Change Speedcall Level Address Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Dial String Entry	The dial string consists of the complete address (e.g., area, exchange, and local service address, for mnemonic addressing) of a network service. It is used as the destination code for calls requesting the speedcall destination. Network terminal users see this entry when they request directory assistance. Enter up to 55 characters for the dial string.
2	Display New Dial String as Directory Assistance	Enter yes to put the dial string in the directory assistance listing; otherwise, enter no .

Changing a TY12 Connected Terminal or Modem

When the form in Screen 2-7 is displayed, the cursor will be positioned at the first field. Table 2-6 gives the steps for changing terminals or modems connected to the network by TY12 interface modules.

Screen 2-7: Change TY12 Terminal or Modem Form

```

-----
CHANGE TY12 TERMINAL OR MODEM FORM
-----
Logical Name      Service
                  Type          Group      Parity
[      ] [      ] [      ] [      ]

Baud      FC By      FC By      Call      Attention  Attention
Rate     Device     TY         Hold     Character  Action
[      ] [      ] [      ] [      ] [      ] [      ]

Node Echoes  AT&T VDM
[      ]    [      ]

Predefined Destination
[      ]
-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char   CTRL-D = delete rest of line

Logical name of terminal or modem.
    
```

Table 2-6: Change TY12 Terminal or Modem Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the device type modem or terminal .
3	Group	Enter the originating group name.
4	Parity	Enter the parity of the communications protocol device: mark, even, off, odd .
5	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: 75, 110, 150, 300, 1200, 1800, 2400, 4800, 9600, 19200 , or auto .
6	FC By Device	Enter the type of flow control used by the device: xon_xoff, eia , or none .
7	FC By TY	Enter the type of flow control used by the TY12 module: xon_xoff, eia , or none .
8	Call Hold	Enter on to indicate that call hold will be used or off to indicate it will not.
9	Attention Character	The default value for the attention character is displayed. Valid entries are: 2brk (the terminal user presses the <input type="button" value="Break"/> key twice), 1brk (the <input type="button" value="Break"/> key once), del (the <input type="button" value="Delete"/> key), any single character including control characters, or the word none (if no attention character is required). To make an entry for a control character, type a caret (^) and then the letter. For example: enter ^D for an attention character of <input type="button" value="Control-d"/> .
10	Attention Action	The attention character can be used to disconnect the terminal or to give the terminal access to the node's command mode. Press <input type="button" value="Return"/> to have the attention character put the terminal in command mode or enter d for the attention character to disconnect the terminal.
11	Node Echoes	Enter y to have the device display (echo) what is typed on the terminal; otherwise, enter n .
12	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
13	Predefined Destination	Enter the service address for the predefined destination if it exists, or enter none if it does not.

Changing a TY12 Connected Console, Host, or Dialer

When the form in Screen 2-8 is displayed, the cursor will be positioned at the first field. Table 2-7 gives the steps for changing hosts, consoles, or dialers connected to the network by TY12 interface modules.

Screen 2-8: TY12 Change Console, Host, or Dialer Form

```
-----
                          CHANGE CONSOLE, HOST, OR DIALER FORM
-----
Logical Name      Service
[                ] Type      Group      Parity
[                ] [        ] [          ] [        ]
Baud      FC By   FC By   AT&T
Rate      Device  TY      VDM
[ ]      [ ]     [ ]     [ ]
-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char   CTRL-D = delete rest of line
Enter logical name
```

Table 2-7. TY12 Change Console, Host, or Dialer Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the device type console , host , or dialer .
3	Group	Enter the receiving group name.
4	Parity	Enter the parity of the device used in communications protocol: mark , even , off , or odd .
5	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: 300, 1200, 9600, ext, or auto .
6	FC By Device	Enter the type of flow control used by the device xon_xoff , eia , or none .
7	FC By TY	Enter the type of flow control used by the TY12 module: xon_xoff , eia , or none .
8	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; otherwise, enter no .

**NOTE:**

The autobaud feature, **auto**, cannot be used with a dialer.

Changing a TY12 Connected 2-Way Device

When the form in Screen 2-9 is displayed, the cursor will be positioned at the first field. Table 2-8 gives the steps for changing devices connected to the network by TY12 interface modules.

Screen 2-9: Change 2-Way Device Form

```

-----
                          CHANGE 2-WAY DEVICE FORM
-----
Logical Name      Service
[                ] [ Type          ] [ Group          ] [ Parity          ]

Baud   Rcv Baud   FC By      FC By      Call
Rate   Rate      Device     TY          Hold
[ ]    [ ]       [ ]       [ ]         [ ]

Attention  Attention
Character  Action      Node Echoes  AT&T VDM
[ ]       [ ]       [ ]          [ ]

Predefined Destination
[ ]

-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Logical name of 2-way device

```

Table 2-8: TY12 Change 2-Way Device Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Group	Enter the originating or 2-way group name.
3	Parity	Enter the parity of the device used in communications protocol: mark, even, off, or odd.
4	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: 300, 1200, 9600, ext, or auto.
5	Rcv Baud Rate	Enter the receiving baud rate for the device; the values (for asynchronous ports) when set to auto are: 300, 1200, 9600, or ext.
6	FC By Device	Enter the type of flow control used by the device: xon_xoff, eia, or none.
7	FC By TY	Enter the type of flow control used by the TY12 module: xon_xoff, eia, or none.
8	Call Hold	Enter on to indicate that call hold will be used or off to indicate it will not.
9	Attention Character	The default value for the attention character is displayed. Valid entries are: 2brk (the <input type="button" value="Return"/> key twice), 1brk (the <input type="button" value="Break"/> key once), del (the <input type="button" value="Delete"/> key), any single character including control characters, or the word none (if no attention character is required). To make an entry for a control character, type a caret (^) and then the letter.
10	Attention Action	The attention character can be used to disconnect the terminal or to give the terminal access to the node's command mode. Press <input type="button" value="Return"/> to have the attention character put the terminal in command mode or enter d to have the attention character disconnect the terminal.
11	Node Echoes	Enter y to have the device display (echo) what is typed on the terminal; otherwise, enter n .
12	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; otherwise, enter no .
13	Predefined Dest	Enter the service address for the predefined destination if it exists, or none if it does not.

Changing a TY6 Connected Terminal or Modem

When the form in Screen 2-10 is displayed, the cursor will be positioned at the first field. Table 2-9 gives the steps for changing terminals or modems connected to the network by TY6 interface modules.

Screen 2-10: Change TY6 Terminal or Modem Form

```

-----
                          CHANGE TY6 TERMINAL OR MODEM FORM
-----
Logical Name      Service
[                ] [                ] [                ] [                ]
                  Type
Baud              Device  TY      Call      Attention  Attention  Node
Xany              Rate    Xon    Xon    Hold      Character  Action     Echoes
[                ] [                ] [                ] [                ] [                ] [                ] [                ] [                ]
Predefined Destination
[                ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Logical name of terminal or modem.

```

Table 2-9: Change TY6 Terminal or Modem Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the device type modem or terminal .
3	Group	Enter the originating group name.
4	Parity	Enter the parity of the device used in communications protocol: mark, even, off, or odd .
5	Xany	Enter on if any character will "xon" the node; enter off if it will "xoff" the node.
6	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud— <i>or</i> —enter one of the following: 75, 110, 150, 300, 1200, 1800, 2400, 4800, 9600, 19200 , or auto .
7	Device Xon	Enter on to indicate the device sends the TY module xons or enter off if the device sends xoffs.
8	TY Xon	Enter on to indicate the TY module sends the device xons; or off if it sends xoffs.
9	Call Hold	Enter on to indicate that call hold will be used or off to indicate it will not.
10	Attention Character	Displays the default value for the attention character. Valid entries: 2brk (<input type="button" value="Break"/> key twice), 1brk, del (<input type="button" value="Delete"/>), any single character including control characters, or the word none (no attention character required). To enter a control character, type a caret (^) followed by the letter.
11	Attention Action	The attention character can be used to disconnect the terminal or to give the terminal access to the node's command mode. Press <input type="button" value="Return"/> to have the attention character put the terminal in command mode or enter d to have the attention character disconnect the terminal.
12	Node Echoes	Enter y to have the device display (echo) what is typed on the terminal; otherwise, enter n .
13	Predefined Destination	Enter the service address for the predefined destination if it exists, or enter none if it does not.

Changing a TY6 Connected Console, Host, or Dialer

When the form in Screen 2-11 is displayed, the cursor will be positioned at the first field. Table 2-10 gives the steps for changing hosts, consoles, or dialers connected to the network by TY6 interface modules.

Screen 2-11: Change Console, Host, or Dialer Form

```

-----
                          CHANGE CONSOLE, HOST, OR DIALER FORM
-----
      Logical Name      Service
      [                ] Type          Group      Parity
      Baud              Device TY
      Rate              Xon          Xon
      [ ]              [ ]          [ ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line
Enter logical name

```

Table 2-10: Change Console, Host, or Dialer Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the device type console, host, dialer .
3	Group	Enter the receiving group name.
4	Parity	Enter the parity of the device used in communications protocol: mark, even, off, odd .
5	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: console or host: 75, 110, 300, 1200, 2400, 2800, 4800, 9600, 19200 ; dialer: 300, 1200, 2400, 4800, 9600 .
6	Device Xon	Enter on to indicate the device sends the TY module xons or enter off if the device sends xoffs.
7	TY Xon	Enter on to indicate the TY module sends the device xons or enter off if the TY module sends xoffs.

Changing a TY6 Connected 2-Way Device

When the form in Screen 2-12 is displayed, the cursor will be positioned at the first field. Table 2-11 gives the steps for changing devices connected to the network by TY6 interface modules.

Screen 2-12: Change 2-Way Device Form

```

-----
                          CHANGE 2-WAY DEVICE FORM
-----
Logical Name      Service
[                ] Type          Group      Parity
[                ] [                ] [                ] [                ]

Xany             Baud      RCV      Device  TY      Call      Attention Attention Node
[ ] [            ] [            ] [            ] [            ] [            ] [            ] [            ] [            ]
[ ] [            ] [            ] [            ] [            ] [            ] [            ] [            ] [            ]

Predefined Destination
[                ]

-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char  CTRL-D = delete rest of line

Logical name of 2-way device.

```

Table 2-11: TY6 Change 2-Way Device Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Group	Enter the 2-way group name.
3	Parity	Enter the parity of the device used in communications protocol: mark, even, off, or odd.
4	Xany	Enter on if any character will "xon" the node; enter off if it will "xoff" the node.
5	Baud Rate	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: 75, 110, 150, 300, 1200, 2800, 2400, 4800, 9600, 19200, or auto.
6	RCV Baud	Press <input type="button" value="Return"/> to enter the current transmitting baud or enter one of the following: 75, 110, 150, 300, 1200, 2800, 2400, 4800, 9600, or 19200.
7	Device Xon	Enter on to indicate that the device sends the TY module xons or off if it sends xoffs.
8	TY Xon	Enter on to indicate that the TY module sends the device xons or off if the module sends xoffs.
9	Call Hold	Enter on to indicate that call hold will be used or off to indicate it will not.
10	Attention Character	The default value for the attention character is displayed. Valid entries are: 2brk (the <input type="button" value="Break"/> key twice), 1brk (the <input type="button" value="Break"/> key once), del (the <input type="button" value="Delete"/> key), any single character including control characters, or the word none (if no attention character is required). To make an entry for a control character, type a caret (^) followed by the letter.
11	Attention Action	The attention character can be used to disconnect the terminal or to give the terminal access to the node's command mode. Press <input type="button" value="Return"/> to have the attention character put the terminal in command mode or enter d to have the attention character disconnect the terminal.
12	Node Echoes	Enter y to have the device display (echo) what is typed on the terminal; otherwise, enter n .
13	Predefined Destination	Enter the service address for the predefined destination if it exists, or enter none if it does not.

Changing Asynchronous Terminals Connected to a SAM

When the form in Screen 2-13 is displayed, the cursor will be positioned at the first field. Table 2-12 gives the steps for changing asynchronous terminal devices connected to the network through a Synchronous/Asynchronous Multiplexer (SAM).

Screen 2-13: Change SAM Async Modem, Terminal or 2-Way Device Form

```

-----
CHANGE SAM ASYNC MODEM, TERMINAL OR 2-WAY DEVICE FORM
-----
Logical Name      Service
                  Type
[                ] [                ] [                ] [                ] [                ]
-----
Baud Rate        Rcv Baud Rate    FC By Device     FC By Sam        Xany             Call Hold        AT&T VDM        Attention
[                ] [                ] [                ] [                ] [                ] [                ] [                ] [                ] [                ]
-----
Attention Action  Node Echoes        NRZI Signaling    Permanently Active    Bits Per Character  Number Of Stop Bits
[                ] [                ] [                ] [                ] [                ] [                ] [                ] [                ]
-----
Predefined Destination
[                ]
-----
ESC = execute command    CTRL-L = cursor right    CTRL-H = cursor left
DEL = terminate command  CTRL-J = next field      CTRL-K = previous field
CTRL-A = insert          CTRL-X = delete char     CTRL-D = delete rest of line

Enter logical name of resource.

```

Table 2-12: Change SAM Async Modem, Terminal or 2-Way Device Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the type of device to be changed. Asynchronous device types are: modem , 2way , or terminal .
3	Group Name	Enter the originating or 2-way group name.
4	Parity	Enter the device parity used in communications protocol: mark , even , off , or odd .
5	Baud Rate	Enter the transmitting baud rate for the device: 75 , 110, 300, 1200, 1800, 2400, 4800, 9600, 19200, or auto .
6	Rcv Baud Rate	Enter the receiving baud rate for the device; values (for asynchronous ports) when set to auto are: 75 , 110 , 300 , 1200 , 2400 , 9600 , or 19200 .
7	FC By Device	Enter the type of flow control used by the device: xon_xoff , eia , or none .
8	FC By SAM	Enter the type of flow control used by the SAM: xon_xoff , eia , or none .
9	Xany	Enter on if any character will "xon" the node; enter off if it will "xoff" the node.
10	Call Hold	If the call hold feature will be used, enter on ; if not, enter off .
11	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
12	Attention Character	The default value for the attention character is 2brk (the <input type="button" value="Break"/> key twice). Valid entries are: 1brk (the <input type="button" value="Break"/> key once), del (the <input type="button" value="Delete"/> key), any single character including control characters, or the word none (if no attention character is required). To make an entry for a control character, type a caret (^) followed by the letter.
13	Attention Action	The attention character string can be used to disconnect the device or to give the terminal access to the node's command mode. Press <input type="button" value="Return"/> to have the attention character access the command mode or enter d to have the attention character disconnect the device.
14	Node Echoes	Enter y to have the device display (echo) what is typed on the terminal; otherwise, enter n .

Table 2-12: Change SAM Async Modem, Terminal or 2-Way Device Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
15	NRZI Signaling	Press <input type="button" value="Return"/> if non-return to zero inverted (NRZI) signaling is not used on the port. If NRZI signaling is used, enter y .
16	Permanently Active	If the established connection will remain connected when the Data Terminal Receive (DTR) EIA lead changes, enter yes ; otherwise, enter no .
17	Bits Per Character	Press <input type="button" value="Return"/> if the parity is odd or even and the number of bits in each transmitted character is 7; or if the parity is off and the number of bits is 8. Otherwise enter the number of bits to be transmitted per character: 5, 6, 7, or 8 .
18	Number Of Stop Bits	For ports with predefined destinations, press <input type="button" value="Return"/> if the baud rate is ≤ 110 and the bit is sent twice to indicate the end of transmission, or if the baud rate is ≥ 300 and the bit is sent once to indicate the end of transmission. The only values for this field are 1 or 2 .
19	Predefined Destination	Enter the service address for the predefined destination if it exists, or none if it does not.

Changing Asynchronous Host Ports Connected to a SAM

When the form in Screen 2-14 is displayed, the cursor will be positioned at the first field. Table 2-13 gives the steps for changing asynchronous host devices connected to the network through a SAM.

Screen 2-14: Change SAM Async Console or Host Form

```

-----
                          CHANGE SAM ASYNC CONSOLE OR HOST FORM
-----
Logical Name      Service      Protocol      Receiving      Parity
[      ]         [      ]         [      ]         [      ]         [      ]
                                     Type
                                     Name

Baud      FC By      FC By      AT&T
Rate      Device    Sam        VDM
[  ]     [      ]  [      ]   [  ]

NRZI      Permanently  Bits Per    Number Of
Signaling  Active         Character   Stop Bits
[  ]      [      ]  [  ]       [  ]

-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char   CTRL-D = delete rest of line

Enter logical name

```

Table 2-13: Change SAM Async Console or Host Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Service Type	Enter the type of device to be changed. Asynchronous device types are: console or host .
3	Receiving Group Name	Enter the receiving group name.
4	Parity	Enter the parity of the device used in the communications protocol: mark, even, off or odd .
5	Baud Rate	Enter the transmitting baud rate for the device: 75, 110, 300, 1200, 1800, 2400, 4800, 9600, 19200 , or auto .
6	FC By Device	Enter the type of flow control used by the device: xon_xoff, eia , or none .
7	FC By SAM	Enter the type of flow control used by the SAM: xon_xoff, eia , or none .
8	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; otherwise, enter no .
9	NRZI Signaling	Press <input type="button" value="Return"/> if NRZI signaling is not used on the port; otherwise, enter y .
10	Permanently Active	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; if it will not, enter no .
11	Bits Per Character	Press <input type="button" value="Return"/> if the parity is odd or even and the number of bits in each transmitted character is 7, or if the parity is off and the number of bits is 8; or enter the number of bits to be transmitted per character, 5, 6, 7, or 8 .
12	Number Of Stop Bits	For ports with predefined destinations, press <input type="button" value="Return"/> if the baud rate is ≤ 110 and the bit is sent twice to indicate the end of transmission, or if the baud rate is ≥ 300 and the bit is sent once to indicate the end of transmission. The only values for this field are 1 or 2 .

Changing Synchronous Terminals Connected to a SAM

When the form in Screen 2-15 is displayed, the cursor will be positioned at the first field. Table 2-14 gives the steps for changing synchronous terminals connected to the network through a SAM.

Screen 2-15: Change SAM Sync Terminal Form

```

-----
                          CHANGE SAM SYNC TERMINAL FORM
-----
Logical Name      Service Type  Protocol      Originating
[                ] [          ] [            ] [          ]
                                     Group Name
                                     [          ]
                                     Baud Rate
                                     [          ]

Code Set          NRZI
[                ] [          ]
                                     Signaling
                                     [          ]
                                     AT&T VDM
                                     [          ]
                                     Predefined Destination
                                     [                ]

Cable            Buildout      Permanently
Type             Value          Active
[              ] [          ] [          ]

-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char   CTRL-D = delete rest of line

Enter logical name

```

Table 2-14: Change SAM Sync Terminal Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Protocol	Enter the synchronous data communications protocol to be used on the port: uscope, bisync, hdlc, ddcmp, or sdhc .
3	Originating Group Name	Enter the originating group name.
4	Baud Rate	Press <input type="button" value="Return"/> if the transmitting baud rate for the data communications equipment (DCE) is 9600; otherwise, enter one of the following DCE transmission speeds for the port: 75, 110, 300, 1200, 2400, 4800 .
5	Code Set	If the protocol is BISYNC, enter the code set, ascii or ebcdic used for the port. If the protocol is not BISYNC, use the command keys to go to the next field to be changed.
6	NRZI Signaling	Press <input type="button" value="Return"/> if NRZI signaling is not used on the port; otherwise, enter y .
7	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
8	Predefined Destination	Enter the service address for the predefined destination.
9	Cable Type	If the SAM is located at your company's premises, enter the type of cable attached to the port: dte or dce .
10	Parity	Enter the type of parity checking to be done for the port: even, odd, or off .
11	Buildout Value	This value is the number of data bytes, 1–254, to be collected before synchronous transmission begins. Press <input type="button" value="Return"/> if the number is 254; otherwise, enter the number of bytes.
12	Permanently Active	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; if it will not, enter no .

Changing Synchronous Host Ports Connected to a SAM

When the form in Screen 2-16 is displayed, the cursor will be positioned at the first field. Table 2-15 gives the steps for changing synchronous hosts connected to the network through a SAM.

Screen 2-16: Change SAM Sync Host Form

```

-----
                          CHANGE SAM SYNC HOST FORM
-----
Logical Name      Service Type  Protocol      Buffer          Receiving
[                ] [host      ] [             ] [Flushing     ] [Group Name   ]
                                     NRZI
Baud Rate        Code Set     Signaling     AT&T VDM
[                ] [          ] [             ] [             ]
Cable            Parity      Buildout      Permanently
Type            [          ] Value         Active
[                ] [          ] [             ] [             ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Logical name of terminal.

```

Table 2-15: Change SAM Sync Host Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Protocol	Enter the synchronous data communications protocol on the port: bisync, hdlc, sdhc .
3	Buffer Flushing	Press <input type="button" value="Return"/> if buffer flushing is not used; enter enable or disable if it is used.
4	Receiving Group Name	Enter the receiving group name.
5	Baud Rate	Press <input type="button" value="Return"/> if the transmitting baud rate for the DCE is 9600; if it is not, enter the DCE transmission speed for the port: 110, 300, 1200, 2400, 4800 .
6	Code Set	If the protocol is BISYNC, enter the code set, ascii or ebcdic used for the port. If the protocol is not BISYNC, use the command keys to go to the next field to be changed.
7	NRZI Signaling	Press <input type="button" value="Return"/> if NRZI signaling is not used on the port; if it is used, enter y .
8	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
9	Cable Type	If the SAM is located at your company's premises, enter the cable type attached to the port: dte or dce .
10	Parity	Enter the type of parity checking done for the port: even, odd, or off .
11	Buildout Value	This value is the number of data bytes, 1-254, collected before synchronous transmission begins. Press <input type="button" value="Return"/> if the number of bytes is 254; if not, enter the number of bytes.
12	Permanently Active	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; otherwise, enter no .

Changing Asynchronous TSM8 Terminals

When the form in Screen 2-17 is displayed, the cursor will be positioned at the first field. Table 2-16 gives the steps for changing asynchronous terminals connected to the network by TSM8 interface modules.

Screen 2-17: Change Async TSM8 Terminal Form

```

-----
                          CHANGE ASYNC TSM8 TERMINAL FORM
-----
Logical Name      Service      Originating      Paddleboard
[      ]      Type      Protocol      Group Name      Baud Rate      Type
[      ]      [      ]      [      ]      [      ]      [      ]      [      ]

          Bits Per      Number Of
AT&T VDM      Character      Stop Bits
[      ]      [      ]      [      ]

Parity      Port Duplex      Switch Carrier      Permanently Activated
[      ]      [      ]      [      ]      [      ]

Predefined Destination
[      ]
-----
ESC = execute command      CTRL-L = cursor right      CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field      CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char      CTRL-D = delete rest of line

Enter logical name

```

Table 2-16: Change Async TSM8 Terminal Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Originating Group Name	The originating group is the local group name associated with specified ports. Originating groups associated with TSM8 interface modules may not contain ports from any other modules. Enter the originating group name.
3	Baud Rate	Press <input type="button" value="Return"/> to enter the current baud or enter one of the following: 75, 110, 150, 300, 1200, 2400, 4800, 9600, or 19200.
4	Paddleboard Type	Enter the type of I/O distribution board used to interface with the host: dce or dte .
5	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
6	Bits Per Character	Press <input type="button" value="Return"/> if the parity is 8 (default) or enter the number of bits transmitted per character, 5, 6, 7, or 8.
7	Number Of Stop Bits	For ports with predefined destinations, press <input type="button" value="Return"/> if the baud rate is ≤ 110 and the bit is sent twice to indicate the end of transmission, or if the baud rate is ≥ 300 and the bit is sent once to indicate the end of transmission. The only values for this field are 1 or 2 .
8	Parity	Enter the type of parity checking done for the port: even, odd, or none.
9	Port Duplex	Enter the transmission type, half (half duplex transmission) or full (full duplex transmission).
10	Switch Carrier	If the paddleboard type is DCE and duplex is full , enter yes if the port is connected to a host that supports a multi-drop line. This means DCD (data carrier detect) will be raised only when data is transmitted. If you choose the default value, no , DCD will always be high.
11	Permanently Active	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; otherwise, enter no .
12	Predefined Destination	Enter the service address for the predefined destination or enter none if there is no predefined destination.

Changing Synchronous TSM8 Terminals

When the form in Screen 2-18 is displayed, the cursor will be positioned at the first field. Table 2-17 gives the steps for changing synchronous terminals connected to the network by TSM8 interface modules.

Screen 2-18: Change Sync TSM8 Terminal Form

```

-----
                          CHANGE SYNC TSM8 TERMINAL FORM
-----
Logical Name      Service      Protocol      Originating      Baud Rate
[      ]        Type          [      ]      Group Name       [      ]
                [      ]

Paddleboard      AT&T VDM      Code Set      External          Pipelining
Type             [      ]      [      ]      Pipelining        Level
[      ]        [      ]      [      ]      [      ]          [      ]

                Permanently
Duplex           Activated
[      ]        [      ]

Predefined Destination
[      ]

-----
ESC = execute command      CTRL-L = cursor right      CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field        CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char       CTRL-D = delete rest of line

Enter logical name

```

Table 2-17: Change Sync TSM Terminal Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Originating Group Name	Originating groups (local group names associated with specified ports) associated with TSM8 interface modules may not contain ports from any other modules. Enter the originating group name.
3	Baud Rate	Press <input type="button" value="Return"/> to enter the current baud or enter one of the following bauds: 2400, 4800, 9600, 19200, 48000, 56000, or 64000.
4	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
5	Code Set	Enter the code set for the port, ebcdic or ascii .
6	External Pipelining	External pipelining may be chosen for BISYNC, HDLC, or SDLC. This means the transmitting TSM8 port will send data to the external device/host before receiving the complete block (frame) from the receiving TSM8. Press <input type="button" value="Return"/> to enable external pipelining or enter disable to disallow it.
7	Pipelining Level	The pipelining level tells how quickly the transmission will begin after data from the network is received by the TSM8 module. Enter high, medium, or low .
8	Duplex	Enter the transmission type, half or full .
9	Permanently Activated	If the an established connection will remain connected when the DTR EIA lead changes, enter yes ; if it will not, enter no .
10	Predefined Destination	Enter the service address for the predefined destination.

Changing Asynchronous TSM8 Hosts

When the form in Screen 2-19 is displayed, the cursor will be positioned at the first field. Table 2-18 gives the steps for changing asynchronous hosts connected to the network by TSM8 interface modules.

Screen 2-19: Change Async TSM8 Host Form

```

-----
                                CHANGE ASYNC TSM8 HOST FORM
-----
Logical Name      Service      Receiving      Paddleboard
                  Type         Protocol      Group Name     Baud Rate     Type
[                ] [          ] [          ] [          ] [          ] [          ]

AT&T VDM         Bits Per      Number Of      Switch         Multipoint
[                ] [          ] [          ] [          ] [          ] [          ]

Parity           Duplex        Permanently     Channels
[                ] [          ] [          ] [          ] [          ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Enter logical name

```

Table 2-18: Change Async TSM8 Host Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Receiving Group Name	Enter the receiving group name.
3	Baud Rate	Press <input type="button" value="Return"/> to enter the current baud or enter one of the following bauds: 75, 110, 150, 300, 1200, 2400, 4800, 9600, or 19200.
4	AT&T VDM	If an AT&T VDM is connected to the line, enter yes if not, enter no .
5	Bits Per Character	Press <input type="button" value="Return"/> if the number of bits transmitted per character is 8 (default) or enter the number of bits transmitted per character, 5, 6, or 7.
6	Number Of Stop Bits	For ports with predefined destinations, press <input type="button" value="Return"/> if the baud rate is ≤ 110 and bit is sent twice to indicate the end of transmission, or if the baud rate is ≥ 300 and the bit is sent once to indicate the end of transmission. The only values for this field are 1 or 2.
7	Switch Carrier	If the paddleboard type is DCE and duplex is full , enter yes if the port is connected to a host that supports a multi-drop line. This means DCD will be raised only when data is transmitted. If you choose the default, no , DCD will always be high.
8	Multipoint Bridging	If the protocol is bisync or sdlc , enter the type of multipoint bridging used, broadcast (data broadcast to all channels associated with the port because the addresses of the control units are not known to the TSM8 module), or fanout (addresses of the control units can be determined from the protocol). Press <input type="button" value="Return"/> if the protocol is not bisync or sdlc ; enter broadcast or none .
9	Parity	Enter the type of parity checking done for the port: even, odd, or none.
10	Duplex	Enter the transmission type, half or full
11	Permanently Activated	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; if it will not, enter no .
12	Channels Per Port	Enter the number of active channels assigned to the ports being configured, 1-50.

Changing Synchronous TSM8 Hosts

When the form in Screen 2-20 is displayed, the cursor will be positioned at the first field. Table 2-19 gives the steps for changing synchronous hosts connected to the network by TSM8 interface modules.

Screen 2-20: Change Sync TSM8 Host Form

```

-----
                          CHANGE SYNC TSM8 HOST FORM
-----
Logical Name      Service      Protocol      Receiving      Baud Rate
[                ] Type        [            ] Group Name    [            ]
[                ] [          ] [            ] [            ] [            ]

Paddleboard      AT&T VDM      Code Set      External      Buffer      Pipelining
Type             [          ] [            ] Pipelining    Flushing     Level
[                ] [          ] [            ] [            ] [            ] [            ]

Duplex           Permanently    Switch        Multipoint     Channels
[                ] Activated      Carrier       Bridging      Per Port
[                ] [          ] [            ] [            ] [            ]

-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char   CTRL-D = delete rest of line

Enter logical name

```

Table 2-19: Change Sync TSM8 Host Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	Logical Name	Enter the logical name of the device to be changed.
2	Receiving Group Name	Enter the receiving group name.
3	Baud Rate	Press <input type="button" value="Return"/> to enter the current baud or enter one of the following bauds: 2400, 4800, 9600, 19200, 48000, 56000, or 64000.
4	Code Set	Enter the code set for the port, ebcdic or ascii .
5	AT&T VDM	If an AT&T VDM is connected to the line, enter yes ; if not, enter no .
6	External Pipelining	External pipelining may be chosen if the protocol is bisync , hdlc , or sdhc . This means that the transmitting TSM8 port will send data to the external device or host before receiving the complete block (frame) from the receiving TSM8. Press <input type="button" value="Return"/> to enable external pipelining or enter disable to disallow external pipelining.
7	Buffer Flushing	Press <input type="button" value="Return"/> if buffer flushing is not used; enter enable or disable if it is used.
8	Pipelining Level	The pipelining level tells how quickly the transmission will begin after data from the network is received by the TSM8 module. Enter high , medium , or low .
9	Duplex	Enter the transmission type, half or full .
10	Permanently Activated	If the established connection will remain connected when the DTR EIA lead changes, enter yes ; if it will not, enter no .
11	Switch Carrier	If the paddleboard type is DCE and duplex is full , enter yes if the port is connected to a host that supports a multi-drop line. This means DCD will be raised only when data is transmitted. If you choose the default, no , DCD will always be high.
12	Multipoint Bridging	If the protocol is bisync or sdhc , enter the type of multipoint bridging used, broadcast (data broadcast to all channels associated with the port because the addresses of the control units are not known to the TSM8 module), or fanout (addresses of the control units can be determined from the protocol). Press <input type="button" value="Return"/> if the protocol is not bisync or sdhc ; enter broadcast or none .
13	Channels Per Port	Enter the number of active channels assigned to the ports being configured, 1-50 .

Possible Error Messages

You will get an error message if you enter an invalid or unacceptable field value. Error messages indicate the problem and a course of action. In most cases, you will have to re-enter a valid field value to complete the desired **uchange** transaction.

1. *Command terminating due to error condition.* An error is causing the command to terminate. The error condition was displayed in a previous error message. You will be prompted to correct the problem.
2. *Warning: <logical name> has not been changed.* This indicates that the logical names cited in the message text were not changed. The reason the resource was not changed should be obvious from a previously displayed error message.
3. *Warning: unable to log command in log database.* This message indicates that the execution and status of execution of the command were not logged. The command was, however, executed.
4. *Access to <logical name> denied; enter another name, or press delete key to terminate command.* You did not have access to the logical name entered. Select another name or contact the Service Administrator.
5. *Cannot access file for sequence patterns; command terminating. Contact the Service Administrator.* The command cannot be executed without a patterns file. Contact the Service Administrator to remedy the situation.
6. *Cannot open pattern file <file name>; command terminating.* The command cannot be executed without a patterns file. Contact the Service Administrator to remedy the situation.
7. *Warning: cannot close file <file name>.* Cannot close pattern file. Contact the Service Administrator.
8. *Warning: pattern file <file name> not removed. Contact the Service Administrator for manual removal.* The pattern file used for execution of a certain a node command could not be removed upon command completion. The command will still execute, but the Service Administrator should be contacted.
9. *Database returned unknown object type <type> for <logical name>; command terminating. Contact the Service Administrator.* The database has returned an object type not known to CCS. The object type stored for the particular resource may be in error, in which case the Service Administrator will need to update the CCS database.
10. *Invalid object type <type> for <logical name>; valid types: host, or terminal.* You are attempting to change an object that cannot be changed through the **uchange** command. If the object type stored in the database is not the correct one for the given logical name, you should contact the Service Administrator.

11. *Error message from node: <text of message from node>.* An error message was received from the node. You should follow the instructions in the message.
12. *Invalid or missing parameter message from node: <text of message from nodes0.* An error message was received from the node indicating an invalid or missing parameter. Follow the instructions in the message.
13. *Unknown message from node follows; Contact the Service Administrator <text of message from node>.* An error message that is not known to CCS was received from the node. The text of the message follows. Contact the Service Administrator.
14. *Cannot terminate command at this point.* You attempted to terminate command (with a signal) at a point that is not allowed. This command cannot be terminated.
15. *Not enough information in the database to process request <logical name> (error = gid).* The information indicated logical name is not sufficient to process the request. Try command with another logical name or contact the Service Administrator.
16. *Unknown name: <name> enter another name.* The name you entered is not known to the system. Try command with another logical name.
17. *Form for command cannot be accessed; command terminating. Contact the Service Administrator.* The form associated with this command could not be accessed. This could be due to a number of problems. The Service Administrator should be contacted to remedy the situation. The problem could affect all the commands in forms entry mode.
18. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
19. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
20. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
21. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
22. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
23. *Unable to link to node <nodename> to process the request for <string>.* The caller was unable to communicate with the node to which the logical name, group name, or service address refers. Contact the Service Administrator.

Errors from StarKeeper II NMS Doorway

The following errors are returned from the *StarKeeper II* NMS doorway process which communicates with the nodes:

*Processing error, command terminating; contact the Service Administrator.
(CSE_EMQID: bad msg qid.)*

*Processing error; try command again.
(CSE_ENODE: error on node name.)*

*Processing error; try command again.
(CSE_ECMD: invalid command pointer.)*

*Processing error; try command again.
(CSE_EOPF: cannot open patterns file.)*

*Processing error; try command again.
(CSE_ETMP: bad format for patterns file.)*

*Processing error; try command again.
(CSE_ECPL: bad patterns file.)*

*Processing error, command terminating; contact the Service Administrator.
(CSE_ELGN: cannot access user's login.)*

*Processing error; try command again.
(CSE_EFFB: format error in sending fielded buffer.)*

*Processing error; try command again.
(CSE_EFSB: error in sending fielded buffer.)*

*Processing error; try command again.
(CSE_EFRB: error in receiving fielded buffer.)*

*Processing error; try command again.
(CSE_ECNN: link error.)*

*Processing error; command again.
(CSE_ECNS: link error.)*

*Processing error; command again.
(CSE_EECHO: bad response from doorway.)*

*Processing error; try command again.
(CSE_ELOGG: doorway transmission error.)*

*Processing error; try command again.
(CSE_EADC: doorway timeout.)*

*Processing error; try command again.
(CSE_ETOD: doorway timeout.)*

*Processing error; try command again.
(CSE_ETOP: parser timeout.)*

*Processing error; try command again.
(CSE_ETOK: node timeout.)*

*Processing error; try command again.
(CSE_EIFB: init error in receiving buffer.)*

*Processing error; try command later.
(CSE_ECNB: node busy.)*

*Processing error; try command later.
(CSE_ECND: node unavailable.)*

*Processing error; try command again.
(CSE_EDIS: doorway disconnect failed.)*

*Processing error, try command again.
(CSE_EMTL: bad node message length.)*

*Processing error, try command again.
(CSE_EMFB: error adding node message to receiving buffer.)*

*Processing error; try command again.
(CSE_ESNF: sending buffer not fielded.)*

*Processing error; try command again.
(CSE_ERNF: receiving buffer not fielded.)*

*Processing error; try command again.
(CSE_ECTL: command too long.)*

*Processing error, command terminating; contact the Service Administrator.
(CSE_HDIR: bad \$HOME.)*

*Processing error; try command again.
(CSE_FPAR: cannot open parser file.)*

*Processing error; try command later.
(CSE_TODQ: CNMS_send to doorway queue timeout.)*

*Processing error; try command later.
(CSE_TOPQ: CNMS_send to parser queue timeout.)*

*Processing error; try command again.
(CSE_ABRT: bad patterns file.)*

*Processing error; try command later.
(CSE_NCON: node unavailable.)*

udiagnose

The **udiagnose** command runs node diagnostic tests on authorized resources. In *StarKeeper II* NMS the type of diagnostic tests allowed depends on the type of module (refer to Table 2-20).

Table 2-20: Resource Types and Tests – udiagnose

Resource Type	Diagnostic Tests	Resource Type	Diagnostic Tests	Resource Type	Diagnostic Tests
TY6 ports and X.25 ports	internal_port external_port remote_modem	TY12 ports and SAM ports	internal_port external_port remote_modem vdm_ckloop	TSM8 ports	internal_port external_port local_modem remote_modem

⇒ NOTE:
To run these tests, the resource must be taken out of service.

Select the **udiagnose** command from the main menu to obtain the Diagnose Form screen shown in Screen 2-21. Table 2-21 gives the steps for diagnosing resources. Use the command keys listed at the bottom of the screen to edit your entries.

Screen 2-21: Diagnose Form

```

-----
                        DIAGNOSE FORM
-----
LOGICAL NAME      DIAGNOSTIC TEST TYPE  AT&T VDM      BAUD RATE      RESOURCE TYPE
[                ] [                ] [    ]        [    ]         [                ]
[                ] [                ] [    ]        [    ]         [                ]
[                ] [                ] [    ]        [    ]         [                ]
[                ] [                ] [    ]        [    ]         [                ]
[                ] [                ] [    ]        [    ]         [                ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-A = insert        CTRL-X = delete char
                        CTRL-D = delete rest of line

Enter name of resource to be diagnosed
    
```

Table 2-21: Diagnose Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	LOGICAL NAME	Enter the logical name of the resource to be diagnosed. The corresponding resource type will appear in the <i>RESOURCE TYPE</i> field.
2	DIAGNOSTIC TEST TYPE	The valid test types for the resource are given at the bottom of the screen. Enter the full name of the test, or an abbreviation: internal_port or ip , external_port or ep , remote_modem or rm , vdm_ckloop or vdm .
3	AT&T VDM	If you entered remote_modem , you must indicate if an AT&T VDM is being used. Enter yes if it is, no if it is not.
4	BAUD RATE	If you entered remote_modem , the cursor will move to this field and display the following: <i>Enter baud rate. Use this field when autobaud is set.</i> If autobaud was set for the port, enter the baud rate for the test; otherwise, press <input type="button" value="Return"/> and the baud will automatically be assigned.

You may enter up to five resources at one time to be diagnosed. When all the appropriate fields are filled in, press to begin the diagnostics. The following message will appear:

```
Warning: resource will temporarily be removed from service
to perform diagnostic test. Do you want to continue? [y,n:
+(y)]:
```

- Press if you want the diagnostic test to continue. The resource will be taken out of service and the diagnostic messages will be displayed.
- Enter **n** if you do not want to run the diagnostic tests for the resource. The resource will not be taken out of service.

This warning message is repeated before the diagnostics are run for each resource being diagnosed. After all diagnostics are run, the ports are restored to service (if they were taken out of service to run the diagnostic tests) and the Diagnose Form reappears. You can then run more diagnostics.

Although it is not necessary to remove the port from service (the system does this as part of the diagnostic procedure), you can use **uremove** to save time when running a series of tests on the port. If you use the **uremove** command to take the ports out of service, you must use the **urestore** command when the tests are complete to restore service to the resources.

The diagnostic messages displayed with the **udiagnose** command are the same ones returned to the node's console. Screen 2-22 gives an example of a possible output for two ports that are being diagnosed with the **vdm_ckloop** test.

Screen 2-22: Sample Diagnostic Test Message

```
Request(s) being processed:

Resource 4622(ty6) has been removed from service for diagnosing.

Running diagnostic for 4622(ty6) ...

Diagnostic Message:
  LOOP AROUND COMPLETED SUCCESSFULLY
End of diagnostic message.

Restoring resource 4622(ty6) to service.

Press RETURN to continue. <RETURN>
Continuing...

Resource 4623(ty12) has been removed from service for diagnosing.

Running diagnostic for 4623(ty12) ...

Diagnostic Message:
  PLACE MODEM IN LOOP-AROUND MODE
Diagnostic test cannot run until hardware change is made.
Reconfigure hardware and run diagnose again.
End of diagnostic message.

Restoring resource 4623(ty12) to service.
```

Possible Error Messages

If you violate one of the stated entry requirements by providing an invalid or unacceptable field value, the system will respond with an error message. These messages indicate the error that was made and the course of action to be taken. For **udiagnose**, the error messages are as follows:

1. *Cannot find form for udiagnose—consult Administrator.* The program cannot find the form specification—there is probably an error in the user's environment.
2. *Unknown name: <logical name>; enter another name.* The CCS data base has no information for the logical name given in the list of resources authorized to the end-user.
3. *<name>: cannot diagnose entire <resource type> module.* The logical name entered represents an entire module, whereas diagnostic tests can only be run on ports for most resource types.
4. *Cannot allocate <sending / receiving> buffer.* A space allocation error occurred in the allocation of the buffers used to communicate with the node.

5. *Error in accessing data base (err_no), consult Administrator.* An error occurred in accessing the configuration data base; the data base is inconsistent or some information is missing.
6. *Data base not found (err_no), consult Administrator.* The command was unable to locate the configuration data base. Contact the Administrator.
7. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
8. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
9. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
10. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
11. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
12. *Unable to link to node <nodename> to process request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *Changing Synchronous TSM8 Hosts* earlier in this chapter.

uremove

The **uremove** command is used to remove a subnetwork resource from service. This command can:

- Remove ports to block network or host access from originating ports
- Remove ports to prevent access to receiving ports
- Remove ports to help with troubleshooting and diagnostic procedures
- Remove service addresses to block access to network services. (This means that there is no need to remove host ports from service).

The **uremove** command can only be used for service addresses and logical names associated with the following resource types:

- SAM boards, modules, and ports

- TSM8 modules and ports
- X.25 modules and ports
- TY12 modules and ports
- TY6 modules and ports
- modules on a BNS 2000 MPC (formerly called the MPC15).

Select **uremove** from the main menu to obtain the menu for the **uremove** command. The Remove Resource Description menu is shown in Screen 2-23.

Screen 2-23: Menu for the uremove command

```
-----  
                          REMOVE RESOURCE DESCRIPTION  
-----  
                          SELECTION OF RESOURCE TO BE REMOVED  
1 Logical Names          Remove Resources Associated With Logical Names  
2 Service Addresses     Remove Service Addresses From Service  
E EXIT  
  
    Enter Selection [ ]  
  
Enter a selection for resource type you wish to remove and press RETURN
```

Select logical names or service addresses and make your selection as described in Chapter 1. The Remove Form (Screen 2-24) will be displayed. Table 2-22 gives the steps for removing resources from service.

Screen 2-24: Remove Form

```

-----
                                REMOVE FORM
-----
                                NAME                                RESOURCE TYPE
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
                                [                                ]
-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char  CTRL-D = delete rest of line

Enter name of resource to be removed
    
```

Table 2-22: Remove Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	NAME	Enter the logical name or service address of the resource to be removed from service. The corresponding resource type will automatically appear in the field to the right. You may repeat this procedure to remove up to ten resources. After entering the names of all the resources to be deleted, press <input type="button" value="Escape"/> to execute the uremove command.
2	Warning: A large number of users may have their services disrupted. Do you wish to continue? [y/n; +(n)]:	This is a warning message. To remove all the terminals associated with the module or concentrator, press <input type="button" value="Return"/> . Enter n if you do <i>not</i> want to remove the terminals from service.

Possible Error Messages

An error message will be displayed if you enter an invalid or unacceptable field value. Error messages indicate the problem and a course of action. In most cases, you will have to re-enter a valid field value to complete the desired **uremove** transaction.

1. *Command terminating due to error condition.* This indicates the error condition causing this command termination was previously displayed as an error message. You will be prompted to correct the problem.
2. *Cannot remove or restore an entire module (<logical name>); must be done on a port.* This indicates that the **uremove** command cannot be applied to an entire module. You must specify a port.
3. *Warning: <logical name> has not been removed from service.* This indicates that the logical name entered in the message text was not removed. If you entered more than one logical name to be removed, the command will continue.
4. *Warning: unable to log command in log database.* This indicates that the execution and status of execution of the command were not logged. The command was executed, however.
5. *Access to <logical name> denied; enter delete key to terminate.* This indicates that you did not have access to the logical name entered. Enter an authorized name, or contact the Service Administrator.
6. *Unknown object type <type> for <logical name>; consult Service Administrator.* This indicates that the object type stored in the configuration database is not known to CCS. Contact the Service Administrator.
7. *Error message from node: <text of message from node>.* This indicates that you should follow the instructions given in the message.
8. *Unknown message from node; contact the Service Administrator. <text of message from node>.* This indicates that an error message unknown to CCS was received from the node. The text of the message follows. Contact the Service Administrator.
9. *Cannot terminate command at this point.* This indicates that you attempted to terminate the command (with a signal) at a point that is not allowed. Continue entering the command correctly.
10. *Not enough information in the database to process the request <logical name> (error=gid).* This indicates that the information entered is not sufficient to process the request. Try a command with another logical name, or contact the Service Administrator.
11. *Unknown name: <name> enter another name.* This indicates that the name you entered is not known to your group or subnetwork. You should try a command with another logical name.

12. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
13. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
14. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
15. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
16. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
17. *Unable to link to node <nodename> to process the request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *Changing Synchronous TSM8 Hosts* earlier in this chapter.

urestore

The **urestore** command is used to restore a subnetwork resource to service. The **uremove** and **urestore** commands can be used together to fix some network problems such as hung ports. **urestore** can only be used for service addresses and logical names associated with the following resource types:

- SAM boards, modules, and ports
- TSM8 modules and ports
- X.25 modules and ports
- TY12 modules and ports
- TY6 modules and ports
- modules on a BNS-2000 MPC

Select **urestore** from the main menu to obtain the menu for the **urestore** command. The Restore Resource Description menu is shown in Screen 2-25.

Screen 2-25: Menu for the urestore command

```
-----  
RESTORE RESOURCE DESCRIPTION  
-----  
  
SELECTION OF RESOURCE TO BE RESTORED  
  
1 Logical Names      Restore Resources Associated With Logical Names  
2 Service Addresses Restore Service Addresses From Service  
E EXIT  
  
Enter Selection [ ]  
  
Enter a selection for resource type you wish to restore and press RETURN
```

Select logical names or service addresses and make your selection as described in Chapter 1. The Restore Form (Screen 2-26) will be displayed. Table 2-21 gives the steps for removing resources from service.

Screen 2-26: Restore Form

```
-----  
RESTORE FORM  
-----  
  
NAME                                RESOURCE TYPE  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
[ ]                                  [ ]  
-----  
ESC = execute command    CTRL-L = cursor right  CTRL-H = cursor left  
DEL = terminate command  CTRL-J = next field    CTRL-K = previous field  
CTRL-A = insert          CTRL-X = delete char   CTRL-D = delete rest of line  
Enter name of resource to be restored
```

Table 2-23: Restore Form Entry Procedure

Step	Field	Entry (press <input type="button" value="Return"/> to complete entry)
1	NAME	Enter the logical name or service address of the resource to be restored to service. The corresponding resource type will automatically appear in the field to the right.
2	enter resource name	You may repeat this procedure to restore up to ten resources. After you have entered the names of all the resources to be deleted, press <input type="button" value="Escape"/> to execute the urestore command.

Possible Error Messages

An error message will be displayed if you enter an invalid or unacceptable field value. Error messages indicate the problem and a course of action. In most cases, you will have to re-enter a valid field value to complete the desired **urestore** transaction.

1. *Command terminating due to error condition.* This indicates that the error condition causing command termination was previously displayed as an error message. You are prompted to correct the problem.
2. *Cannot remove or restore an entire module (<logical name>); must be done on a port.* This indicates the **urestore** command cannot be applied to an entire module. You must specify a port.
3. *Warning: <logical name> has not been restored to service.* This indicates that the logical name entered in the message text was not restored. If you entered more than one logical name to be restored, the command will continue.
4. *Warning: unable to log command in log database.* This indicates that the execution and status of execution of the command were not logged. The command was executed, however.
5. *Unknown object type <type> for <logical name>; consult Service Administrator.* This indicates that the object type stored in the configuration database is not known to CCS. Contact the Service Administrator.
6. *Error message from node: <text of message from node>.* This indicates that you should follow the instructions given in the message.
7. *Invalid or missing parameter message from node: <text of message from node>.* This indicates that an error message was received from the node indicating entry of an invalid parameter or a missing parameter. Follow the instructions given in the message.

8. *Unknown message from node; contact the Service Administrator.* <text of message from node>. This indicates that an error message unknown to CCS was received from the node. The text of the message follows. Contact the Service Administrator.
9. *Cannot terminate command at this point.* This indicates that you attempted to terminate a command (with a signal) at a point that is not allowed. Continue with command entry.
10. *Not enough information in the database to process the request <logical name> (error=gid).* This indicates that the information on the logical name entered is insufficient to process the request. Try another logical name, or contact the Service Administrator.
11. *Unknown name: <name> enter another name.* This indicates that the name you entered is not known to your group or subnetwork. Try another logical name.
12. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
13. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
14. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
15. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
16. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
17. *Unable to link to node <nodename> to process the request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *Changing Synchronous TSM8 Hosts* earlier in this chapter.

General

CCS provides End User Administrators with the ability to monitor their own network resources. The following is a list of commands that you can use to gather information about your resources:

udispcnn	Display data about the current activity of a port or module in your subnetwork.
udispeia	Display data about the current status of Electronic Industries Association (EIA) RS-232-C leads for asynchronous ports on modules in your subnetwork.
udisplay	Display parameters associated with logical names, service addresses, and group names.
udmeas	Display traffic, performance, and utilization measurements for a port or module in your subnetwork.
udstat	Display data about the service and alarm status of modules in your subnetwork.
ulist	List all the logical names, service addresses, and/or group names in your subnetwork.
unetdisp	Monitor health of resources on your subnetwork.
unetstat	Monitor health of resources and associated alarms for resources on your subnetwork.
urepfile	Download or select and display stored report files for your subnetwork.
ureport call	Produce a call summary report for your subnetwork resources.

- ureport host** Produce a host access report for your subnetwork resources.
- ureport
inact** Produce an inactive ports report for your subnetwork resources.
- uvwlog** View the transaction record for the subnetwork being managed.

The available commands are displayed on the menu once you log on. To access the commands, use the space bar or arrow keys to move the cursor to the command selection, or enter the number or letter of the selection.



NOTE:

These commands are *display only* type commands. They report data about the subnetwork and its associated resources. They will not affect service or resources in your subnetwork.

udispconn

The **udispconn** command is entered when you want to determine the current activity on a particular module or port within your subnetwork. It will display the connections on modules connected to the node.

When you select **udispconn** from the main menu, you will receive the following prompt:

```
Do you wish to display connections associated with a logical  
name or a Node group name ('quit' to quit) [(l/g): +(l)]:
```

Enter **1** to display by logical name, or **g** to display by group name. Respond to the appropriate prompts as shown in the following examples:

- Logical Name example—
Please enter logical name or 'quit' to quit: port1
- Node Group Name example—
Please enter Node group name or 'quit' to quit:dkcnms

If there is no call activity on the port or module you will get the following message:

```
*****Displaying Connections for port1*****
***** There are no active connections for the end point
***** associated with this logical name.
```

Screen 3-1 shows a display for a logical name, **port1**, which is associated with a port. Screen 3-2 shows a display for a logical name, **module10**, which is associated with a module. Screen 3-3 shows a display for a group called **dkcnms**. The form fields are the same for both logical name and group name displays. Table 3-1 gives an explanation of the fields found on the **udispconn** display.

If the module or port is "talking" to another device, the left side of the screen will show information about the originating port device and the right side of the screen will show the information for the receiving port device.

Screen 3-1: Sample udispconn Output for a Logical Name Associated with a Port

```
***** Displaying Connections for port1 *****
MODULE: 24
-----
CH/  BRD  GROUP  PKTS  STATE  MOD  CH/  BRD  GROUP  PKTS
PT   PT   GROUP  SEG  CNT   MOD  PT   PT   GROUP  SEG  CNT
-----
12   brrec  6756  I_TALK  25  7   bnjr  1992

Do you wish to display connections associated with a logical name or
a Node group name ('quit' to quit) [(l/g): +(l)]:
```

Screen 3-2: Sample udispcnnc Output for a Logical Name Associated with a Module

```

*****Displaying Connections for module10*****
MODULE: 4
-----
CH/ BRD  GROUP    PKTS   STATE   MOD   CH/ BRD  GROUP    PKTS
PT                               PT                               SEG CNT
-----
-----
1      *****  27435   ACTIVE
2      dkcns  5849   TALKING   25    6      bnjr   19316
3      dkcns  10     TALKING   0     2      bnjr   N/A
4      dkcns  1856   TALKING   25    7      bnjr   6327
5      dkcns  25     SERVING
6      dkcns  9      SERVING
214   dkcns  19578  TALKING   25    1005   bnjr   8842

Do you wish to display connections associated with a logical name or
a Node group name ('quit' to quit) [(l/g): +(l)]:

```

Screen 3-3: Sample udispcnnc Output for a Group

```

*****Displaying Connections for dkcncms *****
GROUP: dkcncms
-----
MOD      CH/   BRD   PKTS   STATE   MOD   CH/   BRD   GROUP   PKTS
          PT      SEG  CNT
          PT
-----
4        2      6410  TALKING  25     6      bnjr  21073
4        3      10    TALKING  0      2      bnjr  N/A
4        4      2032  TALKING  25     7      bnjr  6882
4        5      25    SERVING
4        6      9     SERVING
4        214   23042 TALKING  25    1005   bnjr  10383

Do you wish to display connections associated with a logical name or
a Node group name ('quit' to quit) [(l/g): +(l)]:
    
```

Table 3-1: udispcnnc Display Fields

Field	Explanation
MOD	The number identifying the node slot (address) where the module resides.
CH/PT	The number identifying the port or channel number of the module or port.
BRD	The number identifying the board on the SAM.
GROUP	The name of the originating, receiving, trunk or two-way group associated with the module or port.
PKTS/ SEG CNT	The number of packets or segment counts generated by the module and channel.
STATE	The current status of the module at the module address; i.e., the present communications activity for the module or port.

When you have finished with a display, enter a new logical name or group name or enter **q** to return to the main menu.

Possible Error Messages

If you enter an invalid or unacceptable logical name, the system will respond with an error message. If you get one of these messages, re-enter the logical name or contact your Service Administrator to be sure that the module or port is configured correctly. For **udispconn**, the error messages are as follows:

1. *Logical name does not exist in the logical name table. Contact Administrator.*
2. *Logical name <lname> does not exist for <group id>. Contact Administrator.*
3. *Node group name does not exist in the database. Contact Administrator.*
4. *Module is not in use. Check service state of module, and if necessary use the **urestore** command to restore module to service. Re-enter logical name or contact the Service Administrator.*
5. *Error in accessing database (err_no); consult Service Administrator. An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.*
6. *database not found (err_no); consult Service Administrator. The command was unable to locate the configuration database. Contact the Service Administrator.*
7. *Unknown object type <string> for <string>. The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.*
8. *Access to <name> denied; enter delete key to terminate. You are not authorized for the name given.*
9. *Cannot allocate [sending | receiving] buffer. An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.*
10. *Unable to link to node <nodename> to process request for <string>. The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.*

Errors from StarKeeper II NMS Doorway

The following errors are returned from the *StarKeeper II* NMS doorway:

*Processing error, command terminating; contact Service Administrator.
(CSE_EMQID: bad msg qid.)*

*Processing error; try command again.
(CSE_ENODE: error on node name.)*

*Processing error; try command again.
(CSE_ECMD: invalid command pointer.)*

*Processing error; try command again.
(CSE_EOPF: cannot open patterns file.)*

*Processing error; try command again.
(CSE_ETMP: bad format for patterns file.)*

*Processing error; try command again.
(CSE_ECPL: bad patterns file.)*

*Processing error, command terminating; contact Service Administrator.
(CSE_ELGN: cannot access user's login.)*

*Processing error; try command again.
(CSE_EFFB: format error in sending fielded buffer.)*

*Processing error; try command again.
(CSE_EFSB: error in sending fielded buffer.)*

*Processing error; try command again.
(CSE_EFRB: error in receiving fielded buffer.)*

*Processing error; try command again.
(CSE_ECNN: link error.)*

*Processing error; command again.
(CSE_ECNS: link error.)*

*Processing error; command again.
(CSE_EECHO: bad response from doorway.)*

*Processing error; try command again.
(CSE_ELOGG: doorway transmission error.)*

*Processing error; try command again.
(CSE_EADC: doorway timeout.)*

*Processing error; try command again.
(CSE_ETOD: doorway timeout.)*

*Processing error; try command again.
(CSE_ETOP: parser timeout.)*

*Processing error; try command again.
(CSE_ETOK: node timeout.)*

*Processing error; try command again.
(CSE_EIFB: init error in receiving buffer.)*

*Processing error; try command later.
(CSE_ECNB: node busy.)*

*Processing error; try command later.
(CSE_ECND: node unavailable.)*

*Processing error; try command again.
(CSE_EDIS: doorway disconnect failed.)*

*Processing error, try command again.
(CSE_EMTL: bad node message length.)*

*Processing error, try command again.
(CSE_EMFB: error adding node message to receiving buffer.)*

*Processing error; try command again.
(CSE_ESNF: sending buffer not fielded.)*

*Processing error; try command again.
(CSE_ERNF: receiving buffer not fielded.)*

*Processing error; try command again.
(CSE_ECTL: command too long.)*

*Processing error, command terminating; contact Service Administrator.
(CSE_HDIR: bad \$HOME.)*

*Processing error; try command again.
(CSE_FPAR: cannot open parser file.)*

*Processing error; try command later.
(CSE_TODQ: CNMS_send to doorway queue timeout.)*

*Processing error; try command later.
(CSE_TOPQ: CNMS_send to parser queue timeout.)*

*Processing error; try command again.
(CSE_ABRT: bad patterns file.)*

*Processing error; try command later.
(CSE_NCON: node unavailable.)*

udispeia

The **udispeia** command is used to display the status of EIA RS-232-C leads for logical names associated with asynchronous SAM and TY ports. Leads cannot be displayed for synchronous SAM or AIM ports.

For modules using EIA RS-232-C leads, the display shows the following lead states:

■ DTR ■ DCD ■ CTS ■ RTS

When you select **udispeia** from the main menu, the following prompt is displayed:
Please enter logical name or 'q' to quit:

To display the EIA lead states, enter the logical name of the port:
Please enter logical name or 'q' to quit: **port1**

To display the lead states for asynchronous SAM or TY12 ports, all ports on the module must have the same service state. The *ports* can be either in or out of service for TY12, the SAM *module and board* must be in service. If module ports are in service, DCD or options are not changed. The lead status is requested with no attempt to alter them.

To display lead states for TY6 ports, the port must be out of service. (If a module is using RS-232-C leads and its port is out of service, DCD is lowered, the options are reset to all defaults, DCD is then raised, and the lead status is requested.) Use **uremove** to take resources out of service. The following warning message may be displayed:

WARNING: if the port is in service, normal data transfer may be disrupted. Do you wish to continue? [(y/n) +(y)]:

Enter **y** to continue.

Screen 3-4 shows a display for in-service SAM RS-232-C ports associated with a logical name of **port1** and Table 3-2 gives an explanation of the fields found on the **udispeia** display.

Screen 3-4: Sample udispeia Output for RS-232-C Ports

```

**** Displaying eia for port1 ****

MOD      BOARD  PORT  TYPE      MOD EIA LEADS      DEV EIA LEADS
          DCD-DTR  CTS-RTS  DCD-DTR  CTS-RTS
8.1      1      1      SAM      ON      ON      ON      ON
8.1      1      2      SAM      ON      ON      OFF     OFF
8.1      1      3      SAM      ON      ON      ON      ON

Please enter logical name or 'quit' to quit:
    
```

Table 3-2: udispeia Display Fields

Field	Explanation
MOD	The number identifying the node slot where the module resides (module address).
BOARD	The number identifying the board on the SAM.
PORT	The number identifying the address of an asynchronous SAM or TY port.
TYPE	The type of module.
MOD EIA LEADS	Leads controlled by the module: <i>DCD-DTR</i> —The status of the DCD and DTR leads <i>CTS-RTS</i> —The status of the CTS and RTS leads <i>ON</i> =asserted/raised; <i>OFF</i> =unasserted/lowered
DEV EIA LEADS	Leads controlled by the device: <i>DCD-DTR</i> —The status of the DCD and DTR leads <i>CTS-RTS</i> —The status of the CTS and RTS leads <i>ON</i> =asserted/raised; <i>OFF</i> =unasserted/lowered

When you have finished with a display, enter a new logical name or enter **q** to return to the main menu.

Possible Error Messages

If you enter an invalid or unacceptable logical name or incorrect module/port service state, the system will respond with a message indicating the error. If you get one of these messages, re-enter the logical name or contact your Service Administrator to be sure that the module or port is configured correctly. For **udispeia**, the error messages are as follows:

1. *Could not obtain EIA Leads.* The command processor could not obtain any EIA lead status. Contact Administrator.
2. *Invalid result from port process.* The port process sent an invalid response to the command processor. Contact Administrator.
3. *Unable to communicate with port process.* The **udispeia** command cannot communicate with the node process responsible for the port process. Contact Administrator.
4. *All ports must have the same service state.* All ports on a module must have the same service state. Use the **uremove** or **urestore** commands to change the service state on the module and port and try again.
5. *Slot is empty or wrong hardware module.* The logical name entered with the **udispeia** command is associated with a port other than a TY or SAM port.
6. *Specified ports are in service; normal data transfer may be disrupted.* The SAM, TY12, or TY6 ports associated with the logical name are currently in service. The **udispeia** command can be run on these in-service ports, however, normal data transfer might be disrupted.
7. *Logical name does not exist in the logical name table.* Contact Administrator.
8. *Module is not in use.* Check service state of module, and if necessary use the **urestore** or **uremove** commands to put the module in the appropriate service state. Re-enter logical name or contact the Service Administrator.
9. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
10. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
11. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
12. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.

13. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
14. *Unable to link to node <nodename> to process request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *udispconn* earlier in this chapter.

udisplay

udisplay is used to display information (service addresses, group names, service state, and other data) about the following types of resources in the CCS database:

- groups
- service addresses
- SAM modules, boards, and ports
- TSM8 modules and ports
- TY6 modules and ports
- TY12 modules and ports.

Select **udisplay** from the main menu to obtain the Display Resource Description menu (Screen 3-5).

Screen 3-5: Menu for the udisplay Command

```
-----  
                DISPLAY RESOURCE DESCRIPTION  
-----  
  
                SELECTION OF RESOURCE TO BE DISPLAYED  
  
1 Logical names      Display Parameters Associated with Logical Names  
2 Service addresses Display Parameters Associated With Service  
                   Addresses  
3 Group names       Display Parameters Associated With Group Names  
E  EXIT  
  
    Enter Selection [ ]  
  
Enter a selection for resource type you wish to display and press RETURN
```

Make your selection as described in Chapter 1. You will get the Display Form shown in Screen 3-6. Table 3-3 gives the steps for displaying resources. Use the command keys listed at the bottom of the screen to edit your entries.

Screen 3-6: Display Form

```

-----
                        DISPLAY FORM
-----
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
name [          ]          resource type [          ]
-----
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char  CTRL-D = delete rest of line

Enter name of resource to be displayed
    
```

Table 3-3: Display Form Entry Procedure

Step	Field	Entry
1	name	Enter the logical name of the resource to be displayed. The corresponding resource type will automatically appear in the field to the right. You may repeat this procedure to display up to ten resources. After you have entered the name(s) of all the resource(s) to be displayed, press <input type="button" value="Escape"/> to execute the udisplay command.
2	Do you want the short version of output [y/n: +(n)?]	This message will appear to determine the level of detail of displayed information. Enter y if you want only the information from the <i>StarKeeper</i> II NMS database (short version) to be displayed or enter n if you want the information from the node's database (long version) to be displayed.

The long version display the configuration database information; the short version displays a brief summary from the *StarKeeper* II NMS database. An example of a short version Display Form for a TY6 is shown in Screen 3-7. This short version gives information on resource type and customer group.

Screen 3-7: Sample Short Version Logical Name Display Screen for a TY6

```

Command processing .... please wait.

Logical name: ep1-t6-4-5
Node name:   nj/bank/node6
Resource Type: ty6
Customer group: sigma2

Do you want to enter another request? [y,n: +(n)]:
    
```

An example of the long version (node database) of a logical name display form for the same TY6 module is shown in Screen 3-8.

Screen 3-8: Sample Long Version Logical Name Display Screen for a TY6

```

Logical name: ep1-t6-4-5
Node name:   nj/bank/node6
Resource Type: ty6   Slot Number: 2

Port   Type   DV-XON   Xany      DK-XON   Baud   Attn   Action
-----
  1    term    on       off       off      auto   2brk   c
Parity   Svc.State   Hold      RBaud     Node Echoes
-----
  off      IN          off              y
Group     Predefined Destination
-----
ajd3

Do you want to enter another request [y,n: +(n)]:
    
```

You will be prompted to make another request as shown in Screen 3-8. Enter **y** to obtain the menu from which you can make another selection; enter **n** to return to the main menu.

You can enter up to ten resource names on the Display Form. If you enter more than one, you will be prompted to press to see the additional screens (as shown in Screen 3-9).

Screen 3-9: Sample Short Version Service Address Display Screen

```
Service Address:  edsel
Node name:      nj/mtgem/peanut
CCS group:     banknj

Press RETURN to continue
```

The information given for each display varies based on the following factors:

data source	The short versions use data from the <i>StarKeeper II</i> NMS database. Long versions use data from the node database.
display type	Each display type (logical name, service address, or group name) shows its own data. The group (originating group, receiving group, two-way group, or trunk group) affects which fields are populated.
hardware type	The module or port type (TY12, TSM8, etc.) affects which fields are populated.

Possible Error Messages

You will get an error message if you type an invalid or unacceptable field value. Error messages typically indicate the problem and suggest a course of action. In most cases, you will have to re-enter an acceptable field value to complete the desired **udisplay** transaction.

1. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.

2. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
3. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
4. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
5. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
6. *Unable to link to node <nodename> to process request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *udispcnn* earlier in this chapter.

udmeas

The **udmeas** command is used to generate traffic, performance, and utilization measurement reports for logical names associated with the following resource types:

- special applications (DKAP) modules and channel sets
- SAM64 and SAM504 modules, ports and associated trunk modules
- link modules (SFT and SWT) on a BNS-2000 MPC
- TSM8 and X.25 modules and ports.

Select **udmeas** from the main menu to receive the following prompt:
Please enter logical name or 'q' to quit:

Enter the appropriate logical name. The following prompt will appear:
Please enter the time interval [(current/previous) +(current)]:

You must specify current or previous reporting interval measurements. The *current interval* (default) includes measurements accumulated since the previous scheduled measurement report was generated; or if a report was not scheduled, measurements accumulated since the module was last reset. The *previous interval* includes measurements accumulated prior to the current interval. The following example requests measurements for a module called **module10** during the current interval:

Please enter logical name or 'q' to quit: **module10**
 Please enter the time interval [(current/previous) +(current)]:

Several examples follow:

Measurements	Logical Name	Example
DKAP	dkap9-1	Screen 3-10; Table 3-4
BNS-2000 MPC	mpc15sft	Screen 3-11; Table 3-5
SAM64 (SAMML-connected with a dual link)	sam64-dl	Screen 3-12; Table 3-6
SAM504 (SAMML-connected)	sam504ml	Screen 3-13; Table 3-6
TSM8 port	tsm-20-1	Screen 3-14; Table 3-7
X.25 port	x25-11-2	Screen 3-15; Table 3-8

Screen 3-10: Sample udmeas Output: DKAP Channel Set

```

**** Displaying measurements for dkap9-1 ****
MODULE ADDRESS:  10          97-02-31   18:11  -----> 08:30

PACKETS   PACKETS   HALF FULL   BUFFERS           MIN
FM NODE   TO NODE   FIFO INTRPTS NOT AVAIL  IDLE  IDLE
40246101  85216323  0           0           94%  93%

MODULE ADDRESS:  10  CHANNEL SET:  1
                        <-----CALLS----->
BUFFERS   RECV     TRAN           REJ BY   REJ BY
NOT AVAIL BYTES   BYTES  ACCPTD  DATAKIT  DKAP   ACTIVE  AVERAGE  PEAK
0         0       0       0       0       0       0       0       0
    
```

Table 3-4: udmeas Display Fields: DKAP Channel Set Measurements

Field	Entry
MODULE ADDRESS	The address of the DKAP module for which measurements have been displayed.
PACKETS FM NODE	The number of URP packets (including status packets) received from the node.
PACKETS TO NODE	The number of URP packets (including status packets) transmitted to the node.
HALF FULL FIFO INTRPTS	The number of half-full, first-in/first-out interrupts the module received during the interval.
BUFFERS NOT AVAIL	The number of times the module or channel set requested a buffer and none was available.
IDLE	The average percentage of time the module was idle during the interval.
MIN IDLE	The minimum percentage of time the module was idle during its busiest five-minute interval.
CHANNEL SET	The number of the channel set for which measurements have been displayed.
BUFFERS NOT AVAIL	The number of times the module or channel set requested a buffer and none was available.
RECV BYTES	The total number of bytes the module received from the network for transmission to the channel set.
TRAN BYTES	The total number of bytes transmitted from the channel set to the network.
CALLS	Specific data on call activity to and from the channel set:
ACCPTD	The number of calls the channel set accepted.
REJ BY DATAKIT	The number of outgoing calls rejected by the node for the channel set.
REJ BY DKAP	The number of incoming calls rejected by the application for the channel set.
ACTIVE	The number of active calls at the time of the report.
AVERAGE	The average number of simultaneous calls.
PEAK	The peak number of simultaneous calls recorded during the interval.

Screen 3-11: Sample udmeas Output: BNS-2000 MPC

```

**** Displaying measurements for mpc15sft ****

97-03-19 13:00 -----> 97-04-31 16:25
MODULE ADDRESS: 17          SPEED:      8.0  Mb
----- PEAK DATA -----
PACKETS      PACKETS      PCT      PEAK INTERVAL
TO NODE      FM NODE      UTIL      START - STOP
134345      43534      100%      02:05 - 02:10
----- TOTALS -----
PACKETS      PACKETS      PCT
TO NODE      FM NODE      UTIL
34509      943      100%
----- NODE LINK ERRORS -----
PARITY      FM NODE      TO NODE      TRANSMSN      LOCAL      REMOTE
ERROR      OVERFLOW      OVERFLOW      ERROR      SYNC      SYNC
2          1          11          0          0          0
----- CONCENTRATOR LINK ERRORS -----
PARITY      FM NODE      TO NODE      TRANSMSN      LOCAL      REMOTE
ERROR      OVERFLOW      OVERFLOW      ERROR      SYNC      SYNC
0          0          0          0          0          0

```

Table 3-5: udmeas Display Fields: BNS-2000 MPC Measurements

Field	Entry
MODULE ADDRESS	The number identifying the node slot that is occupied by the link interface module (LIM). The LIM provides connectivity to the BNS-2000 MPC.
SPEED	The BNS-2000 MPC link bit rate.
PEAK DATA	Data from highest call traffic interval:
PACKETS TO NODE	The number of packets sent, in a 10-minute interval, to the node; or the total number of packets received from the facility.
PACKETS FM NODE	The number of packets received, in a 10-minute interval, from the node; or the total number of packets sent to the facility.
PCT UTIL	The overall percentage of BNS-2000 MPC/link utilization of total traffic data from the node as compared to the maximum total trunk capacity.
PEAK INTERVAL START-STOP	When the BNS-2000 MPC/link utilization reporting started and stopped for the packet interval.
TOTALS	Statistics for all intervals, not just peak interval.
NODE LINK ERRORS	Errors occurring between the node and the link:
PARITY ERROR	The number of parity errors that occurred on an SFT link.
FM NODE OVERFLOW	The number of overflow errors sent from the node.
TO NODE OVERFLOW	The number of overflow errors sent to the node.
TRANSMSN ERROR	The number of transmission errors (CRC errors, parity errors, or Manchester violations) on an SFT; or the number of transmission errors from the BNS-2000 MPC module on an SWT.
LOCAL SYNC	The number of times the local SFT fiber receiver lost synchronization with the remote transmitter.
REMOTE SYNC	The number of times the remote receiver lost synchronization with the local SFT transmitter.
CONCENTRATOR LINK ERRORS	Statistics for errors occurring between the concentrator and the link; see <i>Node Link Errors</i> above for field descriptions.

Screen 3-12: Sample udmeas Output: SAM64 (SAMML-Connected Dual Link)

```

**** Displaying measurements for sam64-dl ****

MODULE ADDRESS: 60.1 SAM (sam64) 97-02-31 12:00 -----> 12:15

----- NODE TRUNK: SAMML, PRIMARY (97-02-31 12:00 ----> 12:15 -----
<----- TRANSMITTED -----> <----- RECEIVED ----->
TOTAL TRUNK PEAK TOTAL TRUNK PEAK CRC FAULTS REMOTE CRC
BYTES UTIL UTIL BYTES UTIL UTIL ERRS ERRORED SECONDS
96629 2% 2% 375639 9% 9% 0 0 0

----- NODE TRUNK: SAMML, SECONDARY (97-02-31 12:00 ----> 12:15 -----
<----- TRANSMITTED -----> <----- RECEIVED ----->
TOTAL TRUNK PEAK TOTAL TRUNK PEAK CRC FAULTS REMOTE CRC
BYTES UTIL UTIL BYTES UTIL UTIL ERRS ERRORED SECONDS
96841 2% 2% 375984 9% 9% 3 0 0

----- SAM -----
TO NODE FM NODE STATUS QUEUE
RETRANS ERRORS OVERFLOW
0 0 0
MODULE ADDRESS: 60.1 PORT MEASUREMENTS FOR BOARD: 1

PORT NO: 1 2
TBUS TRAFFIC 0 1023
FBUS TRAFFIC 0 0
TBUS RETRANS 0 0
FBUS ERRORS 0 0
USART ERRORS 0 0
    
```

Screen 3-13: Sample udmeas Output: SAM504 (SAMML-Connected)

```
**** Displaying measurements for sam504ml ****  
MODULE ADDRESS: 11.2 SAM (sam504) 97-02-31 12:00 -----> 12:15  
  
----- NODE TRUNK: SAMML (97-02-31 12:00 ---> 12:15 -----  
<----- TRANSMITTED -----> <----- RECEIVED ----->  
TOTAL TRUNK PEAK TOTAL TRUNK PEAK CRC  
BYTES UTIL UTIL BYTES UTIL UTIL ERRS  
2290 0% 0% 7021 0% 0% 0  
----- SAM -----  
TO NODE FM NODE STATUS QUEUE  
RETRANS ERRORS OVERFLOW  
0 0 0
```

Table 3-6: udmeas Display Fields: SAM Measurements

Field	Entry
MODULE ADDRESS	The number that specifies the node slot occupied by the trunk module providing connectivity to the SAM.
NODE TRUNK	The measurements associated with the SAM trunk. The report interval of the trunk measurements is printed to determine if the collection of the SAM trunk measurements is appropriately synchronized with the SAM component measurements.
TRANSMITTED TOTAL BYTES TRUNK UTIL PEAK UTIL	Measurements sent from the node to the SAM over the trunk: The number of characters sent or received on the line. The percentage of the line bandwidth being used to send data. The percentage of the line bandwidth being used to send data during the peak five-minute interval.
RECEIVED TOTAL BYTES TRUNK UTIL PEAK UTIL CRC ERRS	The measurements received by the node from the SAM over the trunk: The number of characters received on the line. The percentage of the line bandwidth being used to receive data. The percentage of the line bandwidth being used to receive data during the peak five-minute interval. For a SAMML or SAMSL node trunk, the number of port frames discarded due to cyclic redundancy check errors on the line. For a T1 or HS node trunk, the number of intervals (normally two seconds) during which at least one port frame is discarded due to cyclic redundancy check errors on the line.
FAULTS	The number of times the trunk of a dual-link SAM faulted causing all traffic to be routed over the "good" link.
REMOTE CRC ERRORED SECONDS	The number of cyclic redundancy check errored seconds (a second during which one or more errors occurs) received by the remote link of a dual-link SAM. This also counts the number of seconds a trunk is "dead".
SAM	The measurements for the SAM common equipment.
TO NODE RETRANS	The number of intervals in which data blocks set to the node required retransmission.
FM NODE ERRORS	The number of intervals in which data blocks received from the node contained errors.
STATUS QUEUE OVERFLOW PORT MEASUREMENTS FOR BOARD PORT NO	The number of intervals in which a SAM status queue overflow occurred. The board number for which port measurements are supplied: The number of the port for which measurements are supplied.

Field	Entry
TBUS TRAFFIC	The number of intervals in which one or more traffic characters traveled from the specified port to the node.
FBUS TRAFFIC	The number of intervals in which one or more traffic characters traveled from the node to the specified port.
TBUS RETRANS	The number of intervals in which data blocks required retransmission from the specified port to the node.
FBUS ERRORS	The number of intervals in which data blocks containing errors were received from the specified port.
USART ERRORS	The number of intervals in which the USART associated with the specified port had a parity or framing error.

Screen 3-14: Sample udmeas Output: TSM8 Port

```

**** Displaying measurements for tsm-20-1 ****
MODULE ADDRESS:  20          97-04-19   13:00  -----> 13:52

PACKETS   PACKETS   HALF FULL   BUFFERS           MIN
FM NODE   TO NODE   FIFO INTRPTS NOT AVAIL  IDLE  IDLE
23        62       0           0           98%  98%
MODULE ADDRESS:  20

<-----RECEIVED-----> <-----TRANSMITTED----->
PORT  PORT  TOTAL      TOTAL      TOTAL  BAD      TOTAL      PIPELINE  OTHER
NMBR  UTIL  BYTES     OVERRUNS  ABORTS  CRC'S  BYTES     UNDERRUNS UNDERRUNS
  1    0%   0         0         0      0      0         0         0

```

Table 3-7: udmeas Display Fields: TSM8 Port Measurements

Field	Entry
MODULE ADDRESS	The address of the module for which measurements have been requested.
PACKETS FM NODE	The number of packets received from the node.
PACKETS TO NODE	The number of packets sent to the node.
HALF FULL FIFO INTRPTS	The number of half-full, first-in/first-out interrupts the module received during the interval
BUFFERS NOT AVAIL	The number of times the module requested buffer space and none was available.
IDLE	The average percentage of time the module was idle during the interval.
MIN IDLE	The minimum percentage of time the module was idle during its busiest five-minute interval.
PORT NMBR	The module port number for which measurements have been supplied.
PORT UTIL	The port utilization percentage—the percentage of the total number of characters sent/received by the port for the interval. This value is calculated by taking the ratio of the total number of characters sent and received by the port, to the maximum number of characters that could be received and sent by the port during the interval. Capacity is determined by calculating the maximum number of transmitted and received bytes for the baud rate over the collection interval. For port configured for full duplex, the effective baud rate is double the configured value.

Field	Entry
RECEIVED TOTAL BYTES TOTAL OVERRUNS	The measurements for received data: The total bytes received by the port from the external device or host during the interval. A receiver overrun occurs when frames are being received faster than they can be stored and forwarded.
TOTAL ABORTS BAD CRC's	The number of aborted frames the port received during the interval The number of frames that were received on the port and were discarded to cyclic redundancy check errors.
TRANSMITTED TOTAL BYTES	The measurements for transmitted data: The total bytes transmitted by the port to the external device or host during the interval.
PIPELINE UNDERRUNS	The number of transmitter underruns that occurred on the port due to pipelining. When pipelining is enabled, frames are sent to the transmitter before they are received in their entirety. If the transmitter transmits the partial frame and the remainder is not available for transmission, underrun occurs.
OTHER UNDERRUNS	The number of transmitter underruns (except pipelining) that occurred on the port during the interval. This field is populated when a frame on a link is terminated prematurely because of processor latency. Processor latency can be caused by a configured bit rate higher than that supported by the TSM8, or by noise on the EIA clock leads.

Screen 3-15: Sample udmeas Output: X.25 Port

```

**** Displaying measurements for x25-11-2 ****
MODULE ADDRESS:  11          97-04-19    13:00 -----> 13:52

PACKETS   PACKETS   HALF FULL   BUFFERS           MIN
FM NODE   TO NODE   FIFO INTRPS NOT AVAIL         IDLE  IDLE
246       696      0           0                100%  99%

MODULE ADDRESS:  11          PORT:  2    SPEED:  9600

PORT  BUFFERS
UTIL  NOT AVAIL
  0%  0

<-----RECEIVED-----> <-----TRANSMITTED----->
TOTAL   FRAME   USER      CRC ERROR      TOTAL   FRAME   USER
FRAMES  BYTES   BYTES     FRAMES         FRAMES  BYTES   BYTES
568     2366   0         0              567     2354   0

CALL DATA FOR PORT:  2

LOGICAL   CALL     CALL     ABNORM  AVERAGE  PEAK
CHLS  IN SVC  ACCEPTS  REJECTS  TERMS    CALLS   CALLS
25    0       4       4       3       0

ABNORMAL CALL TERMINATIONS FOR PORT:  2
<-----CLEARING-----><--RESTARTING--> LINK
BUSY  OOO  RPE  RCA  IDES  FSA  IFR  ACB  LPE  NTC  OBT  RPO  LPE  NTC  NTOP  FAIL
0     0   0    0    0    0    0    0    0    0    0    0    0    0    0    4
    
```

Table 3-8: udmeas Display Fields: X.25 Port Measurements

Field	Entry
MODULE ADDRESS	The address of the module for which measurements are supplied.
PACKETS FM NODE	The number of packets received by the module from the node.
PACKETS TO NODE	The number of packets transmitted to the node from the module.
HALF FULL FIFO INTRPTS	The number of half-full, first-in/first-out interrupts.
BUFFERS NOT AVAIL	The number of times a buffer was requested and none were available. The count is for the module or port.
IDLE	The percentage of time during which the module was idle.
MIN IDLE	The minimal percentage of time during which the module was idle.
PORT	The number of the port for which measurements are displayed.
SPEED	The baud rate for which the port has been configured.
PORT UTIL	The port utilization percentage—the ratio to the total number of characters sent and received on the line to the capacity of the line for the measurements interval.
RECEIVED TOTAL FRAMES FRAME BYTES USER BYTES CRC ERROR FRAMES	The measurements for received data: The total number of frames received. The total number of frame bytes received. The number of information frame bytes received. The number of frames received with bad frame check sequences.
TRANSMITTED TOTAL FRAMES FRAME BYTES USER BYTES	The measurements for transmitted data. The total number for frames transmitted. The total number for frame bytes transmitted. The number of information frame bytes transmitted.
CALL DATA FOR PORT	The number of the port for which call data measurements are displayed.
LOGICAL CHLS INSVC	The number of active incoming/outgoing switched virtual circuit calls, plus active permanent virtual circuit channels.
CALL ACCEPTS CALL REJECTS	The number of incoming/outgoing switched virtual circuit calls accepted. The number of incoming/outgoing switched virtual circuit calls rejected.

Field	Entry
ABNORM TERMS	The number of incoming/outgoing switched virtual circuit calls abnormally terminated, including rejected calls.
AVERAGE CALLS	The average number of incoming/outgoing switched virtual circuit calls, plus active permanent virtual circuit channels recorded during the interval.
PEAK CALLS	The peak number of incoming/outgoing switched virtual circuit calls, plus active permanent virtual circuit channels recorded during the interval.
ABNORMAL CALL TERMINATIONS FOR PORT	Measurements which describe the reasons for abnormal call terminations.
CLEARING	Abnormal terminations due to clearing caused by the following:
BUSY	The number of calls terminated because the receiver was busy.
OOO	The number of calls terminated because the receiver was out of order.
RPE	The number of calls terminated because of remote procedure errors.
RCA	The number of calls terminated because the receiver did not accept reverse charging.
IDES	The number of calls terminated because the receiver did not support a function or a facility request.
FSA	The number of calls terminated because the receiver did not accept fast select calls.
IFR	The number of calls terminated because of invalid facility requests.
ACB	The number of calls terminated because of security violations (closed user group security).
LPE	The number of calls terminated because of local procedure errors.
NTC	The number of calls terminated because of network congestion.
OBT	The number of calls terminated because of invalid/unknown called addresses.
RPO	The number of calls terminated because of transit network problems.
RESTARTING	Abnormal terminations due to restarting caused by the following:
LPE	The number of calls terminated because of local procedure errors.
NTC	The number of calls terminated because of network congestion.
NTOP	The number of calls terminated because of network operational restarts.
LINK FAIL	The number of calls terminated because the link went down.

Possible Error Messages

If you enter an invalid or unacceptable logical name, the system will respond with an error message. If you get one of these messages, you should re-enter the logical name or contact your Service Administrator to be sure that the module or port is configured correctly. For **udmeas**, the error messages are as follows:

1. *Measurement not available for <component>.* The module or port is not in service. Restore to service (**urestore**) and try again. Contact Administrator.
2. *Measurements not available yet for module <addr>; try again later.* Measurements were requested before the first five-minute interval collection completed. Wait until the module has been in service for five minutes before retrying the command.
3. *Measurement request for <component> returned error; report will be incomplete.* The module returned an error code instead of the requested measurements. Measurements for the module or port are missing from the report. If the problem persists, contact Administrator.
4. *No measurements available.* A partial display is generated and all measurements for the specified component are unavailable. The values in the fields appear as N/A. The **udmeas** command is not available for the resource.
5. *Slot is empty or wrong hardware module.* The logical name entered with the **udispeia** command is associated with a port other than a TY or SAM port.
6. *Logical name does not exist in the logical name table.* Contact Administrator.
7. *Module is not in use.* Check service state of module, and if necessary use the **urestore** or **uremove** commands to put the module in the appropriate service state. Re-enter logical name or contact the Service Administrator.
8. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
9. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
10. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
11. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.

12. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
13. *Unable to link to node <nodename> to process request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *udispconn* earlier in this chapter.

udstat

The **udstat** command is used to display the following types of information about the status of a logical or physical resource:

- Module information—
 - module type
 - service state
 - hardware error counts
 - last hardware alarm generated by the module
 - last software alarm generated by the module
- Port information—
 - port type (terminal, host, etc)
 - expected service state (port state according to the node)
 - actual service state (port state reported by the module)
 - operating state
 - EIA lead status (use **udispeia** for SAM and TY modules).

The **udstat** command can be run for logical names associated with the following resource types:

- special applications (DKAP) modules and channel sets
- link modules (SFT and SWT) on a BNS-2000 MPC
- SAM boards, modules, and ports
- TSM8 and X.25 modules and ports
- TY6 and TY12 modules.

Select **udstat** from the main menu to receive the following prompt:
Please enter logical name or 'q' to quit:

Enter the logical name for the module or port. You will receive the following prompt:

Report detail type? [(high/low): +(low)]:

You must specify the amount of information desired (low or high detail). The following example requests a low detail status display for a module called **module10**:

Please enter logical name or 'q' to quit: module10

Report detail type? [(high/low): +(low)]:

Several examples of high detail displays follow. The tables associated with the examples list all possible fields.

Status Display	Logical Name	Example
DKAP	dkap9-1	Screen 3-16; Table 3-9
BNS-2000 MPC	mpc15sft	Screen 3-17; Table 3-10
SAM64	sam64-t1	Screen 3-18; Table 3-11
TSM8 port	tsm-20-1	Screen 3-19; Table 3-12
TY12	ty12-8-1	Screen 3-20; Table 3-13
X.25 port	x25-11-2	Screen 3-21; Table 3-14

Screen 3-16: Sample ustat Output: DKAP Channel Set — Low Detail

```

**** Displaying status for dkap9-1 ****

***** MODULE 10 *****
MODULE TYPE      SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
dkap             in service    1                      134
LAST HARDWARE ALARM
Module was reset 97-03-31 15:34
LAST SOFTWARE ALARM
none
ONLINE  ENABLED
yes     yes
***** CHANNEL SET *****
CHNLSET CHNLS  CHNLS  CHNLS  EXPECT  ACTUAL  AVAIL
NO      AVAIL SETUP  DATA XFER  SRVC STATE  SRVC STATE  STATE
1       10    0      0      in service  inservice  avail
2       10    0      0      in service  inservice  avail
    
```

Table 3-9: udstat Display Fields: DKAP Channel Set Status

Field	Entry
ACTUAL STAT1	The actual value of the hardware status byte of the most currently received status packet for the module.
ACTUAL STAT2	The actual value of the software status byte of the most currently received status packet for the module.
ACTUAL SRVC STATE	The actual service state of the channel set.
AVAIL STATE	The availability of the channel set to make or accept calls.
AVG RSP TIME (msec)	The average response time derived by dividing the total module response time by the total number of module transactions.
BAD PACKETS	The number of packets transmitted by the module on a channel that is beyond the module's configured limit.
BILLREC DROPPED	The number of billing records dropped.
CHNLS AVAIL	The number of logical channels currently available for this channel set.
CHNLS DATA XFER	The number of logical channels in the data transfer state.
CHNLSET NO	The number of the channel set.
CHNLS SETUP	The number of logical channels in the call setup state.
EMPTY PACKETS	The number of empty status packets received by the node.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
END BSS	The end of buffer stack space on the module.
END DATA	The end of data on the module.
END TEXT	The end of data on the module.
EXPECT SRVC STATE	The expected service state of the channel set.
EXPECT STAT1	The expected value of the hardware status byte for the module.
EXPECT STAT2	The expected value of the software status byte for the module.
EXPECT TYPE	The expected hardware type in the node's slot.
FIFO RESET	The number of first-in/first-out synchronization problems on the module.

Field	Entry
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FULL PACKETS	The number of full status packets received.
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.
LAST SOFTWARE ALARM	The text, date, and time of the last alarm for the module.
MEMORY END	The end of memory on the interface module.
MEMORY LEFT	The amount of memory left on the interface module.
MODULE RESET	The number of module resets.
MODULE TYPE	The type of node interface module.
NUMBER TRANS	The number of transactions processed since the last reboot of the node.
ONLINE	This field displays yes if the green LED on the module is lit.
RANGE ERRORS	The number of packets with envelope parity errors.
SANITY ERROR	The number of module malfunction alarms.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); or rfs (module ready for service).
SOFTWARE ALARMS	The number of module alarms reported since the last reboot or restore.

Field	Entry
STACK SPACE	The amount of stack space available on the module.
START BUFS	The start of buffer memory on the module.
TIMEOUT MOD	The number of transactions that timed-out at the module since the last reboot or restore.
TIMEOUT SYNCM	The number of transactions that were returned from the module, but were timed-out by a node process, since the last reboot.
TOTAL BUFMEM	The amount of buffer memory still available on the interface module.
TRUNC TRANS	The number of truncated transaction since the last reboot.

Screen 3-17: Sample udstat Output: BNS-2000 MPC—Low Detail

```
**** Displaying status for mpcl5sft ****

***** MODULE 17 *****
CONCENTRATOR TYPE      LINK TYPE
full remote shelf     sft
***** STATUS OF CONC. SHELVES *****
----- SHELF 0 -----
COOLING AMBIENT POWER  5-VOLT
FANS    TEMP    SUPPLY  FUSES
good    good    good    good
LAST ALARM
none
NODE LINK STATUS:
-----
SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
in service     0                110
LAST HARDWARE ALARM
none
ONLINE  ENABLED  AVAIL    SELFTST  DIAGNOS_MODE
yes     yes     yes     no info  inactive
CONCENTRATOR LINK STATUS:
-----
SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
in service     0                72
LAST HARDWARE ALARM
none
ONLINE  ENABLED  AVAIL    SELFTST  DIAGNOS_MODE
yes     yes     yes     no info  inactive
```

Table 3-10: udstat Display Fields: BNS-2000 MPC Status

Field	Entry
ACTUAL STAT1	The actual value of the first hardware status byte of the most recently received status packet for the module.
ACTUAL STAT2	The actual value of the second hardware status byte of the most recently received status packet for the module.
ACTUAL STAT3	The actual value of the third hardware status byte of the most recently received status packet for the module.
ACTUAL STAT4	The actual value of the fourth hardware status byte of the most recently received status packet for the SWT.
AMBIENT TEMP	The ambient temperature status; if a problem exists, this field displays unknown .
AVAIL	For CPM, trunk, and link interface modules, this field indicates, yes or no , whether the module is available. Availability means that the module is on line and administered, the CPM/trunk cable is connected to the proper module, and the protocol is established.
CBUS LOCKUP	For an SFT link, this field displays the CCOM status packet count received. This number indicates that at least one contention bus lockup occurred since the last status packet response.
CHNL OVERFLO	The SWT status packet count received which indicates that a per-channel counter, for a channel on the SWT low priority queue, overflowed since the last status packet response.
CNTRLR LESS ND	Indicates, yes or no , whether the controllerless node features are enabled. When enabled, the SFT operates with enhanced fiber protocol and supports the extended address mode.
CONCENTRATOR TYPE	The type of concentrator for which the display is output, BNS-2000 MPC (MPC15).
CONT STRAP	Indicates whether the hardware contention strap, used with the group contention strap, is in (installed) or out (not installed).
COOLING FANS	Reports the status of the cooling fans good or failure .
DIAGNOS_MODE	Indicates if diagnostics are in progress or inactive on the SFT.
EMPTY PACKETS	The number of empty status packets received by the node since the last status packet response.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
EXPECT STAT1	The expected value of the first hardware status byte for the module.
EXPECT STAT2	The expected value of the second hardware status byte for the module.
EXPECT STAT3	The expected value of the third hardware status byte for the module.
EXPECT STAT4	The expected value of the SWT's fourth hardware status byte.

Field	Entry
EXPECT TYPE	The expected hardware type for the link module.
FIFO RESET	For an SFT, the number of times the hardware failed to send a packet due to an invalid address or invalid packet format. The number of first-in/first-out synchronization problems on the module.
FIFO SYN LOS	For an SFT, the CCOM status packet count received. This number indicates that a first-in/first-out synchronization loss occurred since the last status packet response.
FLOCTRL REQUEST	For an SFT, the status packet count received. This number indicates that at least one transmitter flow control request occurred since the last status packet response.
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FR CMOD BAD PKT	The SWT status packet count received. This number indicates that a maximum of 15 bad packets were received from the concentrator modules since the last status packet response.
FR FIBR BAD PKT	The CCOM status packet count received. This number indicates that a maximum of 15 bad packets were received from the fiber transmitter since the last status packet response.
FR FIBR PARITY	The CCOM status packet count received. This number indicates that at least one parity error was received from the fiber transmitter since the last status packet response.
FULL PACKETS	For an SFT, the number of full status packets received since the last status packet response.
GROUP CONT	This field indicates if the SFT group contention arbitration option is set to on or off .
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.
HPQ EMPTY	This field indicates, yes or no , whether the SWT high priority queue was empty during the status polling cycle.
HPQ LENGTH	This field indicates if the frame termination length setting on the SWT high priority queue is 16 or 64 bytes.
HPQ OCCUPIED	This field indicates (in 1/8 increments), if the amount of data in the high priority queue is 0 to 7/8 bytes.
LAST ALARM	The last alarm generated and recorded.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.

Field	Entry
LINK PRIORITY	For an SWT, indicates if the high mark for the trunk priority scheme is enabled.
LINK TYPE	This field indicates the type of link interface module, sft or swt .
LOCAL SYNC ER	The SFT status packet count received. This number indicates that the local fiber receiver lost synchronization with the remote transmitter at least once since the last status packet response.
LOOPBACK MODE	In the diagnostic mode, indicates if the SFT or SWT loopback test should be directed to the local or remote link. When not in the diagnostic mode, this field displays no . For the CCOM, this field indicates if the module is in the loopback mode .
LOST CARRIER	The CCOM status packet count received. This number indicates a packet coming from the bus was discarded because of congestion on the SWT low priority queue.
LPQ CONGEST	The SWT status packet count received. This number indicates a packet coming from the bus was discarded because of congestion on the SWT low priority queue.
LPQ EMPTY	This field indicates, yes or no , whether the SWT low priority queue was empty during the status polling cycle.
LPQ LENGTH	This field indicates if the frame termination length setting on the SWT low priority queue is 16 , 64 , or 256 bytes.
LPQ OCCUPIED	This field indicates (in 1/8 increments), if the data in the low priority queue on the SWT is 0 to 7/8 .
MANCHES VIOLATE	For an SFT, the CCOM status packet count received. This indicates that at least one Manchester Code violation occurred since the last status packet response.
MODULE RESET	For an SFT, the number of times a module rest occurred.
ONLINE	This field indicates if the module (as reported by the hardware in the status response packet) is on-line or has been taken off-line .
OPERATE STATE	The current operational state of the SFT or CWT module, active , reboot , disconn , or restart .
PROTOCOL MISMATCH	The SFT status packet count received. This number indicates that at least one protocol compatibility error occurred since the last status packet response. This field can also indicate that a cable is not properly connected.
POWER SUPPLY	The status of the power supply is good or failure .
REC ERROR	For an SWT, the RCCM status packet count received. This number indicates receipt of at least one error from the digital trunk interface since the last status packet response.
REMOTE SYNC ER	The SFT status packet count received. This number indicates that the remote receiver lost synchronization with the local SFT transmitter at least once since the last status packet response.

Field	Entry
SELFST	This field indicates if on-board hardware diagnostics have passed or failed their self test when the module is enabled or rebooted. This field will display waiting when the on-board diagnostics are running, but have not yet reported their results.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); rfs (module ready for service); or suspended .
SHELF NUMBER	The number of the shelf which is always 0 .
TO NODE OVERFLO	The number of packet overflows sent to the node.
TRANS ERROR	For an SWT, the RCCM status packet count received. This number indicates that the remote concentrator detected at least one transmission error since the last status packet response.
TRANSMSN ERROR	For an SWT or SFT status packet count received. This number indicates that the USART detected at least one transmission error (receiver overrun, framing error, CRC error, or frame abort message) since the last status packet response.
TTIMING SOURCE	For an SWT the selected source for the terminal timing signal is the DCE transmit clock, dce trn ; the DCE receive clock, dce rec ; the DTE 500 kHz clock, dte ; or ground .
5-VOLT FUSES	The status, good or bad , that indicates whether a shelf fuse has blown.

Screen 3-18: Sample udstat Output: SAM64 Port (T1-Connected) - High Detail

```

**** Displaying status for sam64-t1 ****

***** MODULE 4 *****
MODULE TYPE          TRUNK TYPE
sam64                trkt1
NODE TRUNK STATUS:
-----
SERVICE STATE      HARDWARE ERROR COUNT    SERIAL NUMBER
in service          0                          2743
LAST HARDWARE ALARM:
none
ONLINE  ENABLED CARRIER DSR
yes     yes     yes     yes
SAM TRUNK STATUS:
-----
SERVICE STATE          SERIAL NUMBER
in service              2759
LAST SOFTWARE ALARM:
none
LAST TRUNK FADE START: none
LAST TRUNK FADE END:   none
ONLINE  ENABLED
yes     yes
SAM BOARD STATUS:
-----
BOARD  SERVICE
ADDR  STATE
8      out
SAM PORT STATUS:
-----
PORT  SERVICE  SERVICE
NUMBER TYPE      STATE
1     terminal out
2     host     rfs
3     modem    out
4     console  rfs

```

Table 3-11: udstat Display Fields: SAM Status

Field	Entry
ACTUAL SRVC STATE	The service state of the SAMML port as reported from the module. The possible states are in , out , and disabled .
ACTUAL STAT1	The actual value of the hardware status byte of the most recently received status packet for the module.
ACTUAL STAT2	The actual value of the software status byte of the most recently received status packet for the module.
BAD PACKETS	The number of packets transmitted by the module on a channel that is beyond the limit for which the module is configured.
BKPLN OUT FLAG	This field indicates, yes or no , that a frame was received from the link, but was not yet transmitted to the node backplane.
BOARD ADDR	The address of the board.
CARRIER	For Trunk-T1 or Trunk-HS, this field indicates if the module acknowledges the incoming carrier lead from the modem as asserted, up , or not asserted down .
CARRIER COUNT	For Trunk-T1, Trunk-HS, or SAMSL this field indicates the number of times the carrier failed on the trunk.
CARRIER LOSS	For SAMSL or SAMML, this field indicates, yes or no , if the carrier lead from the modem was asserted at least once during the last SAM status reporting period.
CHNL EXT ST	For SAMML, this field indicates, yes or no , if an external status interrupt is pending on the SAM USART channel.
CHNL RCV	For SAMML, this field indicates, yes or no , if a receive interrupt is pending on the SAM USART channel.
CHNL TASK FLAG	This field indicates, yes or no , if a request to transmit more data is pending.
CHNL XMT	For SAMML, this field indicates, yes or no , if a transmit interrupt is pending on the SAM USART channel.
CRC ERROR	For Trunk-HS or Trunk-T1, this field indicates corrupted data arriving at the module from the trunk line.
CRC/FRM ERR	For SAMML, this field indicates, yes or no , if the SAM USART channel detected a CRC or framing error.
CTS	For SAMML, this field indicates, if the status of clear to send is on or off for the port.
CTS COUNT	For SAMML, the number of times the clear-to-send from the modem was not asserted.
CTS LOSS	For SAMSL, this field indicates, yes or no , if the clear-to-send signal was asserted at least once during the last SAM status reporting period.

Field	Entry
DCD	For SAMML, this field indicates if the status of data carrier detect is no or off for the port.
DISTRIBU BOARD	For Trunk-HS, this field indicates if the I/O distribution board is compatible with a fiber or metallic trunk.
DSR	For Trunk-T1, Trunk-HS, or SAMML, this field indicates if the module acknowledges the incoming dataset ready lead from the modem as asserted, up , or unasserted, down .
DSR COUNT	For Trunk-T1 or Trunk-HS, the number of times the dataset ready lead from the modem dropped.
DTR	For SAMML, this field indicates if the status of data terminal ready is on or off for the port.
EMPTY PACKETS	The number of empty status packets received.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
ENCODE ERROR	For Trunk-T1 or Trunk-HS, this field indicates the encoding errors the module detected coming from the fiber link.
EXPECT SRVC STATE	The service state of the SAMML port as recorded in the database: in , out , or disabled .
EXPECT STAT1	The expected value of the hardware status byte for the module.
EXPECT STAT2	The expected value of the software status byte for the module.
EXPECT TYPE	The expected hardware type in the shelf slot.
FIFO RESET	For a node trunk, the number of times the hardware failed to send a packet due to an invalid address or invalid packet format. The number of first-in/first-out synchronization problems on the module.
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FULL PACKETS	The number of full status packets received since the last status packet response.
GENERATOR ENABLE	For SAMML, this field indicates, yes or no , if the baud rate generator for the port was enabled.
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.

Field	Entry
LAST FAULT	The time in days, hours, minutes, and seconds since data on the transmission line from the SAMML to the SAM was transferred from the indicated trunk port to the other trunk port. If a fault was not recorded for more than 365 days, >365 appears. If a fault has not occurred, then none appears.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.
LAST SOFTWARE ALARM	The text, date, and time of the last alarm the module issued by and for itself.
LAST TRUNK FADE END	The last time the node reestablished communication with the module.
LAST TRUNK FADE START	The last time the node temporarily lost communication with the module over the trunk.
LOOPBACK MODE	For an Trunk-HS or Trunk-T1, this field indicates, yes or no , if the module is in any of three types of loopback modes.
MODULE RESET	The number of times a module rest occurred.
MODULE TYPE	The type of module that is present according to the status packet information received.
NODE TRUNK STATUS	The portion of the status display that details the status of the node link.
ONLINE	This field indicates, yes or no , if the module (as reported by the hardware in the status response packet) is on-line.
OPERATING STATE	The current operational state of the SAMML port that is reported by the module. For SAMS that are not SAMML-connected with a dual link, the possible states are up and down . For SAMS that are SAMML-connected with a dual link, the possible operating states are: diag_offline (running off-line diagnostics), diag_online (running on-line diagnostics), down (EIA leads are down, the port is out of service, a fault occurred, or diagnostics are running), fault (transmission on user channels from the SAMML to the SAM are rerouted), or up (EIA leads are up, the port is in service, a fault did not occur, or diagnostics are not running).
OPTICAL SIGNAL	For Trunk-HS, this field indicates, yes or no , if the trunk is receiving a valid optical signal.
PORT NUMBER	The number of the port for which status information is displayed.
PORT TYPE	The module to which the port is attached is a sam .
RANGE ERRORS	The count of packets with envelope parity errors transmitted by the module and detected by the switch.

Field	Entry
RECV LOSS	For a SAMSL, this field indicates the data loss in the receive direction.
RCV FIFO OVF	For a SAMML, this field indicates, yes or no , if the SAM USART detected a receiver first in/first out overflow for the port.
RTS	For a SAMML, the status of the request to send is on or off for the port.
RXCHAR AVAIL	For a SAMML, this field indicates, yes or no , if a received character is available from the SAM USART for the port.
RX CRC ENABLE	For a SAMML, this field indicates, yes or no , if the cyclic redundancy check of the receiver was enabled for the port.
RX ENABLE	For a SAMML, this field indicates, yes or no , if the receiver was enabled for the port.
SAM BOARD STATUS	The portion of the status display for each configured board.
SAM PORT STATUS	The portion of the status display for each configured port.
SAM TRUNK STATUS	The portion of the status display for each configured SAM link.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); rfs (module ready for service); or suspended .
SERVICE TYPE	The service connection provided by the port: console, host, modem, terminal , or 2way device.
SOFTWARE RESET	For a SAMSL or SAMML, this field indicates, yes or no , if the module software was reset.
STATUS DURING LAST TRUNK FADE	The status of the remote trunk during the last trunk fade.
SYNCHRO PROBLEM	For a Trunk-HS or Trunk-T1, synchronization problems on the module for incoming data.
SYNC HUNT	For a SAMML, this field indicates, yes or no , if the SAM synchronized hunt status is enabled for the port.
TO NODE OVERFLO	For a Trunk-HS or Trunk-T1, the number of packet overflows sent to the node.
TO NODE PARITY	For a Trunk-HS or Trunk-T1, the number of packet overflows sent to the trunk in which parity errors were introduced, detected, and deleted by the trunk.

Field	Entry
TRANSMSN LOSS	For a SAMSL, the data loss in the transmit direction.
TRUNK TYPE	This field indicates if the SAM is linked with a hs , t1 , samml , or samsl module.
TX BUF EMPTY	For a SAMML, this field indicates yes or no , if the transmit buffer was empty for the port.
TX CRC ENABLE	For a SAMML, this field indicates yes or no , if the transmitter CRC was enabled for the port.
TX UN/EOM	For a SAMML, this field indicates yes or no , if the SAM USART detected a transmit underrun or end of message for the port.
USART REG VALUES	The value of USART registers.
VECTOR STATUS	For a SAMML, this field indicates yes or no , if the vector affected the status for the port. for the port.
XMT FLAG	This field indicates yes or no , if the port is currently in service and is transmitting data.

Screen 3-19: Sample udstat Output for TY12 Module—High Detail

```
**** Displaying status for tsm-10-1 ****

***** MODULE 20 *****
MODULE TYPE      SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
sync8           in service    0                      1674

LAST HARDWARE ALARM:
none

LAST SOFTWARE ALARM:
none
ONLINE  ENABLED
yes     yes

***** MODULE 20 PORT *****
PORT          EXPECT          ACTUAL          OPERATING
TYPE          SRVC STATE      SRVC STATE      STATE
term         in service      in service      up

DCD           DTR             RTS             CTS             DSR
off           on              on              off             off
```

Table 3-12: udstat Display Fields: TSM8 Status

Field	Entry
ACTUAL SRVC STATE	The service state of the port as reported from the module. The possible states are in , out , and disabled .
ACTUAL STAT1	The actual value of the hardware status byte of the most recently received status packet for the module.
ACTUAL STAT2	The actual value of the software status byte of the most recently received status packet for the module.
AVG RSP TIME (msec)	The average response time derived by dividing the total module response time by the total number of module transactions.
BAD PACKETS	The number of packets transmitted by the module on a channel that is beyond the limit for which the module is configured.
BILLREC DROPPED	The number of billing records dropped.
CHNL EXT ST	This field indicates, yes or no , if an external status interrupt are enabled on the TSM8 port USART so it can generate an interrupt when EIA lead transitions occur.
CHANNEL	The physical channels associated with ports having fanout multipoint bridging emulation in effect.
CHNL RCV	This field indicates, yes or no , if a receive interrupt is pending on the TSM8 port USART so it can generate an interrupt when data has been received.
CHNL XMT	This field indicates, yes or no , if a transmit interrupt is pending on the TSM8 port USART so it can generate an interrupt when data has been transmitted.
CRC/FRM ERR	This field indicates, yes or no , if the TSM8 port USART detected a cyclic redundancy check or framing error.
CTS	This field indicates, on or off , on or off , if the status of the port's clear to send lead.
CURRENT BUILDOUT	If external pipelining is enabled , the current pipelining buildout value for the port. The buildout is the number of characters in a partial frame that must be accumulated before the data is forwarded to the transmitter for transmission.
DCD	This field indicates if the status of data carrier detect lead is on or off for the port.
DSR	This field indicates if the status of the dataset ready EIA lead is on or off for the port.
DTR	this field indicates if the status of data terminal ready EIA lead is on or off for the port.
EMPTY PACKETS	The number of empty status packets received.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
END BSS	The end of buffer stack space on the module.

Field	Entry
END DATA	The end of data for the module.
END TEXT	The end of text for the module.
EXPECT SRVC STATE	The service state of the port as recorded in the database: in , out , and disabled .
EXPECT STAT1	The expected value of the hardware status byte for the module.
EXPECT STAT2	The expected value of the software status byte for the module.
EXPECT TYPE	The expected hardware type in the shelf slot.
FIFO RESET	The number of first-in/first-out synchronization problems on the module.
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FULL PACKETS	The number of full status packets received since the last status packet response.
GENERATOR ENABLE	This field indicates, yes or no , if the baud rate generator for the port was enabled.
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.
INITIAL BUILDOUT	If external pipelining is enabled, the port initial pipelining buildout value. This value is the number of characters in a partial frame that must be accumulated before the frame is forwarded to the transmitter.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.
LAST SOFTWARE ALARM	The text, date, and time of the last alarm the module issued by and for itself.
MEMORY END	The end of memory on the interface module.
MEMORY LEFT	The amount of memory left on the interface module.
MODULE RESET	The number of module resets.

Field	Entry
MODULE TYPE	The type of module that is present according to the status packet information received.
MULTIPOINT BRIDGING	This field indicates that fanout multipoint bridging emulation is in effect for a host port.
NUMBER TRANS	The number of transactions processed since the last reboot.
ONLINE	This field indicates, yes or no , if the module (as reported by the hardware in the status response packet) is on-line.
OPERATING STATE	The current operational state of the port: diag_offline (running off-line diagnostics), diag_online (running on-line diagnostics), down (EIA leads are down, the port is out of service, a fault occurred, or diagnostics are running), fault (transmission on user channels from the SAMML to the SAM are rerouted), up (EIA leads are up, the port is in service, a fault did not occur, or diagnostics are not running), or down .
PORT TYPE	The type of service connection provided by the port: terminal or host .
RANGE ERRORS	The count of packets with envelope parity errors transmitted by the module and detected by the switch.
RCV FIFO OVF	This field indicates, yes or no , if the TSM8 port USART detected a receiver first in/first out overflow.
RTS	The status of the request to send EIA lead, on or off , for the port.
RXCHAR AVAIL	This field indicates, yes or no , if a received character is available from the TSM8 port USART.
RX CRC ENABLE	This field indicates, yes or no , if the cyclic redundancy check of the receiver was enabled for the port.
RX ENABLE	This field indicates, yes or no , if the receiver was enabled for the port.
SANITY ERROR	The number of module malfunction alarms.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); rfs (module ready for service); or suspended .
SOFTWARE ALARMS	The number of alarms reported for the module since the last reboot.
STACK SPACE	The amount of stack space available on the module.
START BUFS	The start of buffer memory on the module.

Field	Entry
STATION ADDRESS	A list of addresses for responding stations associated with each logical channel for host ports having fanout multipoint bridging emulation in effect. Station addresses are displayed in hexadecimal notation for all protocols except bisync.
SYNC HUNT	This field indicates, yes (enabled) or no (disabled), if TSM8 synchronized hunt status is enabled for the port.
TIMEOUT MOD	The number of transactions that timed-out at the module since the last reboot or restore.
TIMEOUT SYNCM	The number of transactions that were returned from the module, but were timed-out by a node process, since the last reboot.
TOTAL BUFMEM	The amount of buffer memory still available on the interface module.
TRUNC TRANS	The number of truncated transaction since the last reboot.
TX BUF EMPTY	This field indicates yes or no , if the transmit buffer was empty for the port.
TX CRC ENABLE	This field indicates yes or no , if the transmitter cyclic redundancy check was enabled for the port.
TX UN/EOM	This field indicates yes or no , if the TSM8 port USART detected a transmit underrun or end of message for the port.
VECTOR STATUS	This field indicates yes or no , if the vector affected the status for the port.

Screen 3-20: Sample udstat Output for TY12 Module — High Detail

```
**** Displaying status for ty12-8-1 ****

***** MODULE 21 *****
MODULE TYPE      SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
ty12             in service    0                      22981

LAST HARDWARE ALARM:
none

LAST SOFTWARE ALARM:
none
ONLINE  ENABLED
yes     yes

----- HIGH DETAIL -----
MODULE  FIFO    FM NODE  FM NODE
RESET  RESET  PARITY  OVERFLO
0      0      0      0

SANITY  MISCELL  TO NODE  TO NODE
ERROR  ERROR  OVERFLO  PARITY
0      0      0      0

EXPECT  FULL    EMPTY  ACTUAL  ACTUAL  EXPECT  EXPECT
TYPE  PACKETS  PACKETS  STAT1  STAT2  STAT1  STAT2
ty12  6661    0      1      373    1      360

RANGE  BAD
ERRORS  PACKETS
0      0
```

Table 3-13: udstat Display Fields: TY Status

Field	Entry
ACTUAL STAT1	The actual value of the hardware status byte of the most recently received status packet for the module.
ACTUAL STAT2	The actual value of the software status byte of the most recently received status packet for the module.
BAD PACKETS	The number of packets transmitted by the module on a channel that is beyond the limit for which the module is configured.
EMPTY PACKETS	The number of empty status packets received.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
EXPECT STAT1	The expected value of the hardware status byte for the module.
EXPECT STAT2	The expected value of the software status byte for the module.
EXPECT TYPE	The expected hardware type in the shelf slot.
FIFO RESET	The number of first-in/first-out synchronization problems on the module.
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FULL PACKETS	The number of full status packets received since the last status packet response.
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.
MISCELL ERROR	The number of miscellaneous errors such as FOM checksum errors, unexpected processor traps, and parity errors introduced by the module itself.
MODULE RESET	The number of module resets.
MODULE TYPE	The type of module that is present according to the status packet information received.
ONLINE	This field indicates, yes or no , if the module (as reported by the hardware in the status response packet) is on-line.

Field	Entry
RANGE ERRORS	The count of packets with envelope parity errors transmitted by the module and detected by the switch.
SANITY ERROR	The number of module malfunction alarms.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); rfs (module ready for service); or suspended .
TO NODE OVERFLO	The number of characters that arrived from the terminal (or other asynchronous device) and were dropped because the node's queue was full.
TO NODE PARITY	The number of characters that arrived from the terminal (or other asynchronous device) with bad parity.

Screen 3-21: Sample udstat Output for X.25 Module — High Detail

```

**** Displaying status for x25-11-2 ****
***** MODULE 11 *****
MODULE TYPE      SERVICE STATE  HARDWARE ERROR COUNT  SERIAL NUMBER
x25              in service    3                      1536
LAST HARDWARE ALARM:
Module was reset  97-04-07 05:53
LAST SOFTWARE ALARM:
Packet Level Restart Complete  97-04-08 09:06
ONLINE  ENABLED
yes     yes
----- HIGH DETAIL -----
MODULE  FIFO    FM NODE  FM NODE  SANITY
RESET  RESET    PARITY   OVERFLO  ERROR
3      0        0        0        0
EXPECT FULL    EMPTY   ACTUAL   ACTUAL   EXPECT  EXPECT
TYPE   PACKETS  PACKETS  STAT1    STAT2    STAT1    STAT2
x25    972     0        1        0        1        0
MEMORY  STACK    END      END      END      MEMORY  START  TOTAL
END     SPACE   BSS     DATA   TEXT    LEFT    BUFS   BUFMEM
0x80000 0x2000 0x4c684 0x44f0c 0x35528 0xb7d0  0x67d98 0x14268
BILLREC SOFTWARE NUMBER  TIMEOUT TIMEOUT TRUNC  AVG RSP
DROPPED ALARMS  TRANS  MOD   SYNC  TRANS  TIME (msec)
0        13    23   0    0    0    U/A
RANGE  BAD
ERRORS PACKETS
31     22

```

Table 3-14: udstat Display Fields: X.25 Status

Field	Entry
ACK IN PROG	An X.25 link level acknowledgment in progress.
ACTUAL SRVC STATE	The service state of the port or logical channel as reported from the module. The possible states are in , out , and disabled .
ACTUAL STAT1	The actual value of the hardware status byte of the most recently received status packet for the module.
ACTUAL STAT2	The actual value of the software status byte of the most recently received status packet for the module.
AVAIL CHNLS	The number of channels allocated.
AVG RSP TIME (msec)	The average response time derived by dividing the total module response time by the total number of module transactions.
BAD PACKETS	The number of packets transmitted by the module on a channel that is beyond the limit for which the module is configured.
BILLREC DROPPED	The number of billing records dropped.
CHL	The number for the channel originating or receiving a call to or from the X.25 logical channel.
CLEAR CHNLS	The number of X.25 logical channels in the clearing state.
CTS	This field indicates, on or off , if the status of the port's clear to send lead.
DCD	This field indicates if the status of data carrier detect lead is on or off for the port.
DSR	This field indicates if the status of the dataset ready EIA lead is on or off for the port.
DTR	this field indicates if the status of data terminal ready EIA lead is on or off for the port.
EMPTY PACKETS	The number of empty status packets received.
ENABLED	This field displays yes if the module mode switch is in the ENABLED position.
END BSS	The end of buffer stack space on the module.
END DATA	The end of data for the module.
END TEXT	The end of text for the module.
EXPECT SRVC STATE	The service state of the port as recorded in the database: in , out , and disabled .

Field	Entry
EXPECT STAT1	The expected value of the hardware status byte for the module.
EXPECT STAT2	The expected value of the software status byte for the module.
EXPECT TYPE	The expected hardware type in the shelf slot.
FIFO RESET	The number of first-in/first-out synchronization problems on the module.
FM NODE OVERFLO	The difference between the rate at which information is received at a module and the rate at which the subscriber processes that information.
FM NODE PARITY	The number of packets that have gone to or come from the node with parity errors.
FULL PACKETS	The number of full status packets received since the last status packet response.
GENERATOR ENABLE	This field indicates, yes or no , if the baud rate generator for the port was enabled.
HARDWARE ERROR COUNT	The number of module errors detected since the last reboot.
HOST DONE	The X.25 host is finished monitoring.
INTERNL RTS	The X.25 link level internal request-to-send.
LAST HARDWARE ALARM	The last alarm for the module, based on status packet data.
LAST FR CTL	The last received X.25 link level control frame.
LAST NXT ACK	The previous X.25 link level next acknowledgment.
LAST RFM DATA	The last received X.25 link level data frame.
LAST SOFTWARE ALARM	The last alarm for the module that was issued by the module.
LAST X25 IN	The last X.25 input link level stimulus.
LC NO	The logical channel number.
LC TYPE	The logical channel type, pvc (permanent virtual circuit) or svc (switched virtual circuit).
LOST INTER	An X.25 link level interrupt was lost.

Field	Entry
MEMORY END	The end of memory on the interface module.
MEMORY LEFT	The amount of memory left on the interface module.
MOD	The number for the module originating/receiving a call to/from an X.25 logical channel.
MODULE RESET	The number of module resets.
MODULE TYPE	The type of module that is present according to the status packet information received.
NUMBER TRANS	The number of transactions processed since the last reboot.
NXT ACK	The X.25 link level next acknowledgment.
ONLINE	This field indicates, yes or no , if the module (as reported by the hardware in the status response packet) is on-line.
OPERATING STATE	The current operational state of the port: diag_offline (running off-line diagnostics), diag_online (running on-line diagnostics), down (EIA leads are down, the port is out of service, a fault occurred, or diagnostics are running), fault (transmission on user channels from the SAMML to the SAM are rerouted), up (EIA leads are up, the port is in service, a fault did not occur, or diagnostics are not running), or down .
PAD	This field indicates, yes or no , if the channel is operating as a PAD.
PORT TYPE	The type of service connection provided by the port: terminal or host .
RANGE ERRORS	The count of packets with envelope parity errors transmitted by the module and detected by the switch.
RECV STATE	The X.25 receive state variable.
RTS	The status of the request to send EIA lead, on or off , for the port.
SANITY ERROR	The number of module malfunction alarms.
SEND STATE	The X.25 link level send state variable.
SERIAL NUMBER	The factory-encoded unique number that appears on the node's interface modules.
SERVICE STATE	This field displays the current service state of a module: in service (module restored to service); oos,manual (module manually removed from service); oos,fault,auto (module out of service via the alarm system); rfs (module ready for service); or suspended .
SETUP CHNLS	The number of X.25 logical channels in the call setup state.

Field	Entry
SOFTWARE ALARMS	The number of alarms reported for the module since the last reboot.
STACK SPACE	The amount of stack space available on the module.
START BUFS	The start of buffer memory on the module.
TIMEOUT MOD	The number of transactions that timed-out at the module since the last reboot or restore.
TIMEOUT SYNCM	The number of transactions that were returned from the module, but were timed-out by a node process, since the last reboot.
TOTAL BUFMEM	The amount of buffer memory still available on the interface module.
TRUNC TRANS	The number of truncated transaction since the last reboot.
XFER CHNLS	The number of X.25 channels in the data transfer state.
X121 ADDR	The X.121 address of the originator/receiver of the call to/from the X.25 logical channel.
X25 STATE	The X.25 link-level state number.
X3 PARMAM NO	The X.3 parameter number. If this field is marked with an asterisk, *, the value differs from the X.3 parameter value at call setup.
X3 PARMAM VAL	The X.3 parameter value

Possible Error Messages

If you enter an invalid or unacceptable logical name, the system will respond with an error message. If you get one of these messages, re-enter the logical name or contact your Service Administrator to be sure that the module or port is configured correctly. For **udstat**, the error messages are as follows:

1. *No response from module <addr>; module assumed to be out of service.*
The specified module is not responding to requests for status displays. The module is probably out of service. Restore to service (**urestore**) and try again.
2. *Component <addr> is not in service, status is not available.* The module or port is not in service; its status is unknown. Restore to service (**urestore**) and try again.

3. *Module <addr> is out of service, report will be incomplete.* The specified module was removed from service while attempting to display status information. Restore to service (**urestore**) and try again.
4. *Module status not being collected; no space left.* Status information is not being collected for the module because the system space has been depleted. Contact Administrator.
5. *Status request for <component> <addr> returned error; report will be incomplete.* The module returned status information containing invalid error codes or garbled data. Contact Administrator.
6. *Unable to obtain data.* During the attempt to display status information, the node's command processor was unable to obtain any data from the specified module. Contact Administrator.
7. *DATABASE BEING MODIFIED - TRY AGAIN LATER.* The node's command process cannot continue because the database is being changed. Wait a while and then retry the command.
8. *Slot is empty or wrong hardware module.* The logical name entered with the **udstat** command is associated with a port other than a TY or SAM port.
9. *Logical name does not exist in the logical name table.* Contact Administrator.
10. *Module is not in use.* Check the service state of the module, and if necessary use the **urestore** or **uremove** commands to put the module in the appropriate service state. Re-enter logical name or contact the Service Administrator.
11. *Error in accessing database (err_no); consult Service Administrator.* An error occurred in accessing the configuration database; the database is inconsistent, or some information is missing. Contact the Service Administrator.
12. *database not found (err_no); consult Service Administrator.* The command was unable to locate the configuration database. Contact the Service Administrator.
13. *Unknown object type <string> for <string>.* The object type in the configuration database for the given name is one which the display command does not know. Enter correct type or contact the Service Administrator.
14. *Access to <name> denied; enter delete key to terminate.* You are not authorized for the name given.
15. *Cannot allocate [sending | receiving] buffer.* An error occurred in the allocation of buffers that the sender uses to communicate with the various nodes.
16. *Unable to link to node <nodename> to process request for <string>.* The sender was unable to communicate with the node to which the logical, group, or service address refers. Contact the Service Administrator.

The errors returned from the *StarKeeper II NMS* doorway process are listed in the section *Errors from StarKeeper II NMS Doorway* under *udispconn* earlier in this chapter.

ulist

The **ulist** command is an on-screen display of the system resources in a subnetwork.

Select **ulist** from the main menu to obtain the List Menu (Screen 3-22).

Screen 3-22: Menu for the ulist Command

```
-----  
LIST OF RESOURCES AUTHORIZED TO YOUR CUSTOMER GROUP  
-----  
SELECTION OF RESOURCES TO BE LISTED  
  
1 Logical names      List Resources Associated With Logical Names  
2 Service addresses List Resources Associated With Service Addresses  
3 Group names       List Resources Associated With Group Names  
E EXIT  
  
Enter Selection [1]  
  
-----  
Enter a selection for resource type you wish to display and press RETURN.
```

Make your selection as described in the *Using Menus* subsection of Chapter 1.

The forms obtained from this menu are used to define the criteria for the resource information you want listed. For each of the three forms, enter as much information as you need to define your search. If you do not enter information into any of the fields, you will get all the logical names, service addresses, or groups (depending on the form selected). Relational operators may be used to further define your selection criteria. An explanation of these relational operators can be found in Table 1-2 in Chapter 1.

Select the criteria for the display, to obtain a form listing the resources.

Each page of the screen display will show up to ten resources.

If there are more than 100 resources in the displayed list, press to view the next 100 resources.

⇒ NOTE:
 You will not be able to go back to the previous 100 resources after pressing unless you return to the List Menu.

Use the command keys to page through the display, follow the instructions in the messages at the bottom of the screens to list more resources, or press to return to the main selection form.

Listing Logical Names for Resources

Screen 3-23 shows an example of the List Logical Names Request Form. Use this screen to select your criteria for displaying information about resources associated with logical names. Valid relational operators and command keys are shown at the bottom of the screen. Table 3-15 describes the selection criteria fields included on this screen.

Screen 3-23: List Logical Names Request Form

```

-----
LIST LOGICAL NAMES REQUEST FORM
-----
Criteria

Node Name      : [                ]
Logical Name   : [                ]
Hardware Type  : [                ]
Location       : [                ]
-----
Valid relational operators (NO space between the operator and the value):
>, <, >=, <=, <>, Wildcard (* and ?), Range(:), Union( | )

Cursor Control and Editing Keys:
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char   CTRL-D = delete rest of line

Enter criteria for full node names; e.g. "*rop09" or "*/toybox/rop09"
    
```

Table 3-15: Selection Criteria Fields for Logical Name Displays

Field	Entry
Node Name	Enter the name of the node that you want the display to include.
Logical Name	Enter the logical name(s) that you want the display to include.
Hardware Type	Enter the hardware type(s) associated with the logical names.
Location	Enter 1 to specify only logical names that are associated with resources located in the CO or enter 2 to specify only logical names that are associated with resources located on the CP. To see logical names associated with all resources on the node, leave this field blank.

Enter your selection criteria, if any, and press to execute the command. Screen 3-24 shows the List of Resources -- Logical Names form that results from the request form.

Screen 3-24: List of Resources — Logical Names Form

```

-----
                LIST OF RESOURCES -- LOGICAL NAMES
-----
Logical Name      Location  Hardware Type          Node Name

[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
[                ] [        ] [          ] [                ]
-----
Display control:  CTRL-K = previous row      CTRL-J = next row
                  CTRL-P = previous page    CTRL-N = next page
                  DEL      = terminate listing

ESC = done viewing
    
```

Listing Service Addresses for Resources

Screen 3-25 shows an example of the List Service Address Request Form. Use this screen to select your criteria for displaying information about resources associated with service addresses. Valid relational operators and command keys are shown at the bottom of the screen. Table 3-16 describes the selection criteria fields included on this screen.

Screen 3-25: List Service Address Request Form

```

-----
LIST SERVICE ADDRESS REQUEST FORM
-----
Criteria

Node Name      : [ ]
Mnemonic Service Address : [ ]
Numeric Service Address : [ ]

-----
Valid relational operators (NO space between the operator and the value):
>, <, >=, <=, <>, Wildcard (* and ?), Range(:), Union( | )

Cursor Control and Editing Keys:
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command    CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert            CTRL-X = delete char   CTRL-D = delete rest of line

Enter criteria for full node names; e.g. "*rop09" or "*/toybox/rop09"

```

Table 3-16: Selection Criteria Fields for Service Address Displays

Field	Entry
Node Name	Enter the name of the node(s) that you want the display to include.
Mnemonic Service Address	Enter the mnemonic service address(es) (<i>network/area/exchange/local service address</i>) that you want the display to include.
Numeric Service Address	Enter the numeric (X.121) service address(es) (<i>data network identification code/service region/service area/endpoint number</i>) that you want the display to include.

Enter your selection criteria, if any, and press to execute the command. Screen 3-26 shows the List of Resources - Service Addresses Form that results from the request form.

Screen 3-26: List of Resources - Service Addresses Form

```

-----
                        LIST OF RESOURCES -- SERVICE ADDRESSES
-----
Mnemonic          Numeric          Node Name
Address           Address
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
[                 ]                 [                 ]
-----
Display control:  CTRL-K = previous row      CTRL-J = next row
                  CTRL-P = previous page   CTRL-N = next page
                  DEL      = terminate listing
ESC = done viewing

```

Listing Group Names for Resources

Screen 3-27 shows an example of the List Group Names Request Form. Use this screen to select your criteria for displaying information about resources associated with group names. Valid relational operators and command keys are shown at the bottom of the screen. Table 3-17 describes the selection criteria fields included on this screen.

Screen 3-27: List Group Names Request Form

```

-----
                        LIST GROUPS REQUEST FORM
-----
                        Criteria

Node Name   : [           ]
Group Name  : [           ]
Group Type  : [ ]

-----
Valid relational operators (NO space between the operator and the value):
>, <, >=, <=, <>, Wildcard (* and ?), Range(:), Union( | )

Cursor Control and Editing Keys:
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char  CTRL-D = delete rest of line

Enter criteria for full node names; e.g. "*rop09" or "*/toybox/rop09"

```

Table 3-17: Selection Criteria Fields for Group Name Displays

Field	Entry
Node Name	Enter the name of the node(es) that you want the display to include.
Group Name	Enter the group name(es) that you want the display to include.
Group Type	Enter o to specify only originating groups— <i>or</i> —enter r to specify only receiving groups— <i>or</i> —enter b for both (two-way groups)— <i>or</i> —enter t for a trunk group. If you do not make an entry, all group types will be selected.

Enter your selection criteria, if any, and press to execute the command. Screen 3-28 shows the List of Resources -- Group Names Form that results from the request form.

Screen 3-28: List of Resources - Group Names Form

```

-----
                        LIST OF RESOURCES -- GROUP NAMES
-----
Group Name      Type*          Node Name

[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]
[      ]      [ ]      [                               ]

Group Types*
"T" ==> Trunk, "B" ==> Two way, "O" ==> Originating, "R" ==> Receiving
-----
Display control: CTRL-K = previous row      CTRL-J = next row
                  CTRL-P = previous page     CTRL-N = next page
ESC = done viewing
    
```

Possible Error Messages

You will get an error message if you enter an invalid or unacceptable field value. Error messages typically indicate the problem and suggest a course of action. In most cases, you will have to re-enter a valid field value to complete the desired **ulist** transaction.

1. *Environment problem - Get group id failed. Contact Service Administrator.*
2. *StarKeeper II NMS database not found. Contact Service Administrator.*
3. *Form for command cannot be accessed, command terminated.*
4. *Warning: unable to log command in StarKeeper II NMS database.*

unetdisp

The **unetdisp** command is used to select and produce a graphical representation (mask) of the health of subnetwork elements. Masks are created by the Service Administrator to meet the network display needs for your subnetwork.

Select **unetdisp** from the main menu to obtain the unetdisp Mask Selection Form shown in Screen 3-29. This form allows you to select the mask name for the graphical display you want produced.

Screen 3-29: Sample unetdisp Mask Selection Form

```

-----
UNETDISP MASK SELECTION FORM
-----
Selected Mask
[          ]

Masks Available
[async      ]
[conc       ]
[dk.ii.db12 ]
[mpc15      ]
[mpc7       ]
[nodes      ]
[route.287  ]
[sam504     ]
[sam64      ]
[sam8       ]
-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-X = delete char   CTRL-D = delete rest of line
CTRL-A = insert         Enter name of mask to be used in display

```

To produce a graphical display of the subnetwork using the `unetdisp` Mask Selection Form, type in the name of the selected mask in the *Selected Mask* field and press

After you choose the mask name, a graphical representation of your subnetwork elements will appear. If you have questions about the display, contact the Service Administrator. This display is dynamic; it will change along with the subnetwork resources represented. To clear the display press or enter **q**.



NOTE:

The key, **print**, **q**, and **quit** are the allowed commands for **unetdisp**. If any other command is entered the following will be displayed:

Security violation: cannot execute command

Possible Error Messages

If you enter an invalid or unacceptable mask name, the system will respond with an error message. If you get one of these messages, re-enter the mask name or contact your Service Administrator to be sure that the `netdisp` mask template files are configured correctly. For **unetdisp**, the error messages are as follows:

1. *netdisp directory not found.*
2. No masks found in `netdisp` directory.
3. Too many masks.
4. Form not found.
5. Security violation: cannot execute command.

unetstat

The **unetstat** command is used to select and produce a graphical representation of the health of subnetwork elements and to see alarm messages associated with those resources. Masks are created by the Service Administrator to meet the network display needs for your subnetwork.

Select **unetstat** from the main menu to obtain the unetstat Mask Selection Form shown in Screen 3-30. This form allows you to select the mask name for the graphical display and its associated alarms that you want to view.

Screen 3-30: Sample unetstat Mask Selection Form

```

-----
                        UNETSTAT MASK SELECTION FORM
-----

Selected Mask
[                ]

                        Masks Available
                        [async          ]
                        [conc           ]
                        [dk.ii.dbl2     ]
                        [mpc15          ]
                        [mpc7           ]
                        [nodes           ]
                        [route.287      ]
                        [sam504         ]
                        [sam64          ]
                        [sam8           ]

-----
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Enter name of mask to be used in display

```

To produce a graphical display of the subnetwork using the unetstat Mask Selection Form, type in the name of the selected mask in the *Selected Mask* field and press

After you choose the mask name, a graphical representation of the health of your subnetwork elements will be displayed. If you have questions about the display, contact the Service Administrator. This display is dynamic; it will change along with the subnetwork resources represented. This mask will be displayed until you enter **stat** to view the alarms. **stat** can be used with a **-m** option to display alarms in multiple line format. The alarm messages will then be displayed until you enter **maskp** to return to the network display mask.

Enter **q** to quit or press to return to the menu.



NOTE:

The key, **print**, **q**, and **quit** are the allowed commands for **unetstat**. If any other command is entered the following will be displayed:

```
Security violation: cannot execute command
```

Possible Error Messages

If you enter an invalid or unacceptable mask name, the system will respond with an error message. If you get one of these messages, re-enter the mask name or contact your Service Administrator to be sure that the netdisp mask template files are configured correctly. For **unetstat**, the error messages are as follows:

1. *netdisp directory not found.*
2. No masks found in netdisp directory.
3. Too many masks.
4. Form not found.
5. Security violation: cannot execute command.

urepfile

The **urepfile** command is used to access online report files. These reports are created by the Service Administrator to meet the reporting needs of your subnetwork.

Select **urepfile** from the main menu to obtain the List Report File Form shown in Screen 3-31. This form allows you to select the file name of the report that you want produced.

Screen 3-31: Sample List Report File Form

```

-----
                        LIST REPORT FILE FORM
-----
File Name                Description                Created                Will be
-----                -----                -----                -----
[sam5041 ] [Weekly report for SAM 504                ] [03/02/97] [03/09/97]
[sam5042 ] [Daily report for SAM 504                ] [03/05/97] [03/06/97]
[sam5043 ] [Monthly report for SAM 504                ] [03/01/97] [04/01/97]
[sam641  ] [Monthly report for SAM 64                ] [03/01/97] [04/01/97]
[sam642  ] [Weekly report for SAM 64                ] [03/02/97] [03/09/97]
[tsm81   ] [Monthly report for TSM8                ] [03/01/97] [04/01/97]
[tsm82   ] [Weekly report for TSM8                ] [03/02/97] [03/09/97]
[ty121   ] [Weekly report for TY12                ] [03/02/97] [03/09/97]
[ty122   ] [Daily report for TY12                ] [03/05/97] [03/06/97]
[ty62    ] [Weekly report for TY6                ] [03/02/97] [03/09/97]
-----
Display control:  CTRL-K = previous row                CTRL-J = next row
                  CTRL-P = previous page                CTRL-N = next page
                  ESC   = done viewing                DEL   = terminate

Move cursor to selection and press ESC.

```

Use the command keys listed at the bottom of the screen to scroll through the available report file names; then move the cursor to the file name for a particular report and press to display or download the report. After you choose the report file name, you will get the following prompt:

Report for screen or download to PC? [s, d, q: +(s)]:

Enter **s** for an on-screen display. Enter **d** to download the file to a PC. Enter **q** to quit.

If you choose the screen option, you will get the following prompt:

Display in page or scroll mode? [p, s, q: +(p)]:

Enter **p** to view the output page by page. Enter **s** to scroll through the output. Enter **q** to quit. The following is a sample of the messages that appear when a file is being downloaded:

```
Kermit Receive

Type <Esc> to abort ...

      Receiving File           Bytes      Corrected Errors      Time
      -----
      reporta                  119              0              0:00

8-bit quoting; block check: LRC; pkt size: 1200
```

The Service Administrator will have set up the system so that stored reports are automatically produced and removed regularly.



CAUTION:

*If you choose the download option and you are not using a PC you may encounter problems. Before you choose the download option, be sure the disk in your PC does not contain a file with the same name as the report file name. If you accidentally use the **d** option when you are **not** working on a PC you must wait until you are returned to a prompt before continuing.*

Possible Error Messages

The following error conditions can occur when trying to access a report (**urepfile**).

1. *There is no HOME directory.* The system cannot find your UNIX home directory or no report directory has been assigned. Contact the Service Administrator.
2. *There are no report files available.* The Service Administrator has not created or scheduled reports to be associated with the login that you are using. Contact the Service Administrator.
3. *Could NOT create link for download or Could NOT delete link from download.* The appropriate permissions for downloading a file to a PC were not set. Be sure that flow control is enabled on all network elements; PC, host, modem, node, etc. Contact your Network Administrator.

ureport call

The **ureport call** command is used to produce a Call Summary Report. This report contains information about the volume and duration of calls from your subnetwork resources. This information can be used for tracking network activity.

Select **ureport call** from the main menu to obtain the Call Summary Report Request Form shown in Screen 3-32. This form allows you to select the criteria for the information in the report. Table 3-18 gives the steps for requesting a Call Summary Report. After you have entered report selection criteria, press to generate the Call Summary Report.

Screen 3-32: Call Summary Report Request Form

```
-----
CALL SUMMARY REPORT REQUEST FORM
-----

Date Requested      : ]
Time Requested     : ]
Originating Group Names : ]

-----
Valid relational operators (NO space between the operator and the value):
>, <, >=, <=, <>, Wildcard (* and ?), Range(:), Union( | )
(NOTE: Wildcard can only be used to enter criteria for group names)

Cursor Control and Editing Keys:
ESC = execute command   CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command CTRL-J = next field    CTRL-K = previous field
CTRL-A = insert         CTRL-X = delete char   CTRL-D = delete rest of line

Enter criteria for date (mm/dd/yy); useful operators: ":" range or "|" union.
```

Table 3-18: Call Summary Report Request Form Entry Procedure

Step	Field	Entry
1	Date Requested	Enter criteria for the date(s) for which you want the report. For example, 03/16/1997 for March 16, 1997, or >03/16/97 for all dates after March 16, 1997. If no entry is made, all dates with call activity will be included.
2	Time Requested	Enter the time criteria for which you want the report. This is based on a 24-hour clock. For example, 9:17 gives all call activity between 9:00 a.m. and 5:00 p.m. on the specified day(s). If no entry is made, all times with call activity will be included.
3	Originating Group Names	Enter the group names criteria for which you want the report. You may enter a single group name, a list of groups separated by commas, or use relational operators. For example, gorig02,guucp or gorig02 guucp can be used to get the call activity for originating groups named gorig02 and guucp . If no entry is made, then the report will include all originating groups associated with your subnetwork. Press <input type="button" value="Escape"/> to request the report.

* The StarKeeper II NMS has been updated for the "year 2000," i.e., 99 represents 1999; 00 represents 2000; 05 represents 2005, etc.

Screen 3-33 shows a Call Summary Report for all calls between **April 20, 1997** and **April 23, 1997** for originating groups **gorig02** and **guucp**.

Screen 3-33: Sample Call Summary Report

```

StarKeeper(R) II NMS CCS REPORT SYSTEM
CALL SUMMARY REPORT
Printed: 97-04-23 16:50:33
Reported for: - Customer group sigma1
              - Period between "04/20/1997" and "04/23/1997"
              - 1 -
LOGICAL      | ORIG.   | DESTINATION   | PDD   | NMBR | DURATION | PACKETS
NAME         | GROUP  |              |      |     | (hours) |
-----
201-123-4567 | gorig02 | kaiser        | no    | 1    | 3.23    | 266
-----
                |         | nj/mtgem/diamond |      | 1    | 0.19    | 683
-----
                |         | goodnode     |      | 1    | 0.03    | 145
-----
                |         | TOTAL for 201-123-4567 |      | 3    | 3.45    | 1094
-----
CCS00301612 | samst1  | samsh1       | yes   | 1    | 0.01    | 119
-----
                |         | TOTAL for CCS00301612 |      | 1    | 0.01    | 119
-----
CCS00301415 | samst1  | samsh2       | yes   | 1    | CONT    | 119
-----
                |         | TOTAL for CCS00301415 |      | 1    | CONT    | 119
-----
                |         | Total for sigma1      |      | 5    | 3.46    | 1213
-----
Press RETURN to continue
Do you want to enter another request ? <y or n> : n

```

The following fields appear on the Call Summary Report:

- LOGICAL NAME* The logical name for the resource initiating the call.
- ORIG. GROUP* The name of the originating group initiating the call.
- DESTINATION* The node name of the host receiving the call.
- PDD* The port is configured as a predefined destination (PDD).

<i>NMBR</i>	The number of calls made between the specified originating group and host.
<i>DURATION</i>	The amount of time that the call was connected, in hours.
<i>PACKETS</i>	The number of data packets sent during the call.

The *PDD* field will display **yes** to indicate that the port is configured as a PDD. PDD records may appear for all supported modules. The following will appear for a continuing PDD call on a SAM connected port:

- the *DURATION* field will display *CONT* to indicate that the call has not been terminated.
- the *ORIG GROUP* and *DESTINATION* fields will display *N/A* to indicate that the *StarKeeper II* NMS database does not contain a record of the calls origination, but the call has not yet been terminated.

Possible Error Messages

If enter an invalid or unacceptable field value, the system will respond with an error message. These messages indicate the error and suggest a course of action. For **ureport call**, the error messages are as follows:

1. *CCSADM variable not set, set variable for Administrator interface to CCS. Contact Administrator.*
2. *Environment problem (73) - Get group id failed. Contact Administrator.*
3. *StarKeeper II NMS data base not found. Contact Administrator.*
4. *Form for command cannot be accessed; command terminated. Contact Administrator.*
5. *Warning: unable to log command in StarKeeper II NMS data base. Contact Administrator.*
6. *Incompatibility between functions; command terminating; contact Administrator.*
7. *Error in module table.* Request Administrator to enter module information for modules which are part of your subnetwork.
8. *Data base error, command terminating; contact Administrator.* Possible conflict of modules information in the node configuration and *StarKeeper II* NMS configuration tables. Request Administrator to resolve conflict.
9. *Error in accessing data base; sqlcode = <number>.* Report error code to your Administrator.
10. *Module type error in module table.* Hardware type conflict between module table and logical name table. Data base error, command terminating; contact Administrator.

11. *Error <number> occurred, command terminating, report error code to your Administrator.*
12. *Data base StarKeeper II NMS not found -- check environment variable DBPATH; contact Administrator.*

ureport host

The **ureport host** command is selected when you want to produce a Host Access Report. This report contains connection and measurement information for your subnetwork receiving resources. This information can be used for determining call attempts and failures, percent of ports utilized, peak connections for receiving groups, and reasons for call failures.

When you select **ureport host** from the main menu, you will obtain the Host Access Request Form shown in Screen 3-34. This form allows you to select the criteria for the information to be presented in the report. Table 3-19 gives the steps for requesting a Host Access Report. After you have entered report selection criteria, press to generate the Host Access Report.

Screen 3-34: Host Access Report Request Form

```

-----
                        HOST ACCESS REPORT REQUEST FORM
-----
Report Type (daily, weekly, monthly): [      ]

Dates Requested: [      ]      Beginning hour(0-23): [  ]
                  [      ]      Ending hour   (1-24): [  ]
                  [      ]
                  [      ]

          Node Name                      Receiving Group Name
1. [      ]                             [      ]
2. [      ]                             [      ]
3. [      ]                             [      ]
4. [      ]                             [      ]
5. [      ]                             [      ]

ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char  CTRL-D = delete rest of line

Enter type of report being requested
  
```

Table 3-19: Host Access Report Request Form Entry Procedure

Step	Field	Entry
1	Report Type	You must enter the type of summary date, period of time, and interval, that you want the report to cover: daily , weekly , or monthly . For example, if you want a report to list host access summarized by each week, enter weekly .
2	Dates Requested*	Enter the dates that you want included in the report in mm/dd/yy format. You will be asked if the date is the start of the range. Follow the prompts to specify a range of dates and then press <input type="button" value="Return"/>
3	Beginning Hour or Ending Hour	You must then enter the beginning and ending time. These are based on a 24-hour clock. The default is from 0 hour (midnight) to 24 hours (the following midnight). Enter the beginning hour; then enter the ending hour.
4	Node Name	A node name is required to make the request unambiguous when two nodes have the same receiving group name. For example: if the "nomad" receiving group is associated with more than one node, then to receive data from a particular nomad group, you must enter the node name for the group in the "Node Name" field. Enter the node name(s) of the receiving group(s) to be included in the report and then press <input type="button" value="Return"/> If you want to search for the group name among all nodes, leave this field blank and press <input type="button" value="Return"/>
5	Receiving Group Name	Enter all for all groups in your subnetwork or enter the name(s) of the group(s) to be included in the report. Duplicate group names may require you to enter the node name to eliminate the ambiguity. You can repeat this step for up to five receiving groups. Then press <input type="button" value="Escape"/> to generate the Host Access Report.

Assuming a daily report was requested on node **nj/lot/node/06** and group **nomad**, for **April 13** between **12** and **20 hours**, Screen 3-35 shows what might be displayed upon execution of Host Access Report.

Screen 3-35: Sample Host Access Report

StarKeeper(R) II NMS CCS REPORT SYSTEM
HOST ACCESS REPORT

Printed: 97-04-14 10:58:13

Report Type : Daily

* = data is incomplete for this interval

- 1 -

Reported for : 04/13/97

NODE NAME	RECV. GROUP	INTRVL.	PEAK CONN	%PRT UTIL	CALL ATTPS	TOTL FAIL	CONT FAIL	SEC FAIL	OTHER FAIL
nj/bank/node6	nomad	12-13	10	0	88	1	1	0	0
nj/bank/node6	nomad	13-14	11	100	55	2	0	2	0
nj/bank/node6	nomad	14-15	9	10	37	4	1	0	3
nj/bank/node6	nomad	16-17	10	100	74	4	1	0	3
nj/bank/node6	nomad	17-18	13	4	79	0	0	0	0
nj/bank/node6	nomad	18-19	10	100	39	1	0	1	0
nj/bank/node6	nomad	19-20	8	100	43	0	0	0	0

Press RETURN to continue

The following fields appear on the Host Access Report:

<i>NODE NAME</i>	The name for the node through which the host devices will be accessed.
<i>RECV. GROUP</i>	The receiving group name to which the accessed host belongs.
<i>INTRVL</i>	The time interval (hour) being reported.
<i>PEAK CONN</i>	The peak connections; maximum number of connections to the receiving group host device(s) during the interval.
<i>%PRT UTIL</i>	The percentage of available host ports utilized during the time interval.
<i>CALL ATTPS</i>	The number of calls that were attempted during the interval.
<i>TOTAL FAIL</i>	The number of calls (of those calls attempted) which failed to be connected during the specified interval.
<i>CONT FAIL</i>	The number of calls which failed to be connected due to contention problems.
<i>SEC FAIL</i>	The number of calls which failed to be connected due to security problems.
<i>OTHER FAIL</i>	The number of calls which failed to be connected due to reasons other than contention or security problems.

Possible Error Messages

If you enter invalid or unacceptable field values, the system will respond with an error message. These messages typically indicate the error and a course of action. In most instances, the user will have to re-enter an acceptable field value to obtain the desired report.

1. *Data base StarKeeper II NMS not found -- check environment variable DBPATH. The System has failed to locate the StarKeeper II NMS data base. Contact the Administrator. CCSADM variable not set, set variable for Administrator interface to CCS. Contact Administrator.*
2. *Environment problem (73) - Get group id failed. Contact Administrator.*
3. *Form for command cannot be accessed; command terminated. Contact Administrator.*
4. *Warning: unable to log command in StarKeeper II NMS data base. Contact Administrator.*
5. *Incompatibility between functions; command terminating; contact Administrator.*

6. *Data base error, command terminating; contact Administrator.* Possible conflict of modules information in node configuration and *StarKeeper II* NMS configuration tables. Request Administrator to resolve conflict.
7. *Error in accessing data base; sqlcode = <number>.* Report error code to your Administrator.

ureport inact

The **ureport inact** command is selected when you want to produce Inactive Calls Report. This report lists ports with no call activity for the date and time specified. This information can be used for reallocating network resources. When you select **ureport inact** from the main menu, you will obtain the Inactive Ports Request Form shown in Screen 3-36. This form allows you to select the criteria for the information to be presented in the report. Table 3-20 gives the steps for requesting a Inactive Ports Report. After you have entered report selection criteria, press to generate the Inactive Ports Report.

Screen 3-36: Inactive Ports Request Form

```

-----
INACTIVE PORTS REQUEST FORM
-----

Date Requested      : [          ]
Time Requested     : [          ]

-----
Valid relational operators (NO space between the operator and the value):
>, <, >=, <=, <>, Wildcard (* and ?), Range(:), Union( | )

Cursor Control and Editing Keys:
ESC = execute command      CTRL-L = cursor right  CTRL-H = cursor left
DEL = terminate command   CTRL-J = next field   CTRL-K = previous field
CTRL-A = insert           CTRL-X = delete char  CTRL-D = delete rest of line

Enter criteria for date (mm/dd/yy); useful operators: ":" range or "|" union.

```

Table 3-20: Inactive Ports Request Form Entry Procedure

Step	Field	Entry
1	Date Requested*	Enter criteria for the date(s) for which you want the report. For example, 03/16/1997 for March 16, 1997, or >03/16/97 for all dates after March 16, 1997. If no entry is made, all dates with no call activity will be included. Press <input type="button" value="Return"/> .
2	Time Requested	Enter the time criteria for which you want the report. This is based on a 24-hour clock. For example, 9:17 gives all call activity between 9:00 a.m. and 5:00 p.m. on the specified day(s). If no entry is made, all times with no call activity will be included. Press <input type="button" value="Return"/> .

Assuming an Inactive Ports Report was requested for between **April 20, 1997** and **April 23, 1997**, Screen 3-37 shows a sample report that might be displayed for the time range requested.

Screen 3-37: Sample Inactive Ports Reports

```

StarKeeper (R) II NMS CCS REPORT SYSTEM
      INACTIVE PORTS REPORT
Printed: 97-04-23 16:50:33
Period:  between "04/20/1997" and "04/23/1997"
          0:00 - 24:00
          - 1 -
LOGICAL NAME|      SLOT|      SAMML|      CONC|      PORT|      CUSTOMER
              |          |      PORT |      SLOT|          |      GROUP
-----|-----|-----|-----|-----|-----
blclstty12-2|      7|          |          |      2|      blclst
-----|-----|-----|-----|-----|-----
blclstty12-4|      7|          |          |      4|      blclst
-----|-----|-----|-----|-----|-----
blclstty12-5|      7|          |          |      5|      blclst
-----|-----|-----|-----|-----|-----
blclsams504 |     96|          |      1|      1|      blclst
-----|-----|-----|-----|-----|-----
blclsams504 |     96|          |      1|      2|      blclst
-----|-----|-----|-----|-----|-----
chgsamml11-2|     26|      1|      1|      2|      blclst
-----|-----|-----|-----|-----|-----
Press RETURN to continue
Do you want to enter another request ? <y or n> : n
    
```

The following fields appear on the Inactive Ports Report:

- LOGICAL NAME* The logical name belonging to the inactive port.
- SLOT* The slot on the node in which the resource with the inactive port resides.
- SAMML PORT* The specific port on the SAM Multi-port link (SAMML) that connects to the SAM.
- CONC SLOT* The slot on the concentrator or SAM where the resource containing the inactive port resides.
- PORT* The port number of the inactive port.
- CUSTOMER GROUP* The name of the customer group which owns the inactive port.

Possible Error Messages

If you enter an invalid or unacceptable field value, the system will respond with an error message. These messages indicate the error and a course of action. For **ureport call**, the error messages are as follows:

1. *CCSADM variable not set, set variable for Administrator interface to CCS. Contact Administrator.*
2. *Environment problem (73) - Get group id failed. Contact Administrator.*
3. *StarKeeper II NMS data base not found. Contact Administrator.*
4. *Form for command cannot be accessed; command terminated. Contact Administrator.*
5. *Warning: unable to log command in StarKeeper II NMS data base. Contact Administrator.*
6. *Incompatibility between functions; command terminating; contact Administrator.*
7. *Error in module table. Request Administrator to enter module information for modules which are part of your subnetwork.*
8. *Data base error, command terminating; contact Administrator. Possible conflict of modules information in node configuration and StarKeeper II NMS configuration tables. Request Administrator to resolve conflict.*
9. *Error in accessing data base; sqlcode = <number>. Report error code to your Administrator.*
10. *Module type error in module table. Hardware type conflict between module table and logical name table. Data base error, command terminating; contact Administrator.*
11. *Error <number> occurred, command terminating, report error code to your Administrator.*
12. *Data base StarKeeper II NMS not found -- check environment variable DBPATH; contact Administrator.*

uvwlog

The **uvwlog** (view log) command is used to display activity records for commands used within the system. The transaction record contains a history of the use of End User Administrator commands. It can tell you what commands were used by a particular End User Administrator, the time and date a command was used to act on a particular network resource, and other information about the command. The information that you get depends on the criteria you select for your **uvwlog** search.

When you select **uvwlog** from the main menu, you will get the View Log Criteria Form shown in Screen 3-38. Use this screen to define the criteria for displaying information about on-line transactions. Valid relational operators and command keys are shown at the bottom of the screen.

You may enter as much information as you need to define your search. If you do not enter information into any of the fields, you will get all the transactions for all End User Administrator names for all dates and times. It is recommended that you try to narrow your search as much as possible to avoid having to page through an extraordinary amount of records. Relational operators may be used to further define your selection criteria. An explanation of these relational operators can be found in Table 1-2 in Chapter 1. Table 3-21 describes the selection criteria fields included on the screen.

Screen 3-38: View Log Criteria Form

```
-----
VIEW LOG CRITERIA FORM
-----
Criteria

Login:
Group Name:
Command:
Entity:
Status:
Date:
Time:
-----
Note: * and ? are NOT valid in the date field.
Valid relational operators (NO space between an operator & the value):
>, <, >=, <=, <>, *(Wildcard),?(Wildcard), :(Range), |(Alternation)
For scrolling and editing:
CTRL-A = insert char    CTRL-X = delete char    CTRL-D = delete rest of field
CTRL-L = move cursor to right    CTRL-H = move cursor to left
CTRL-J = move cursor to next field    CTRL-K = move cursor to previous field
ESC = execute command    DEL = terminate command

Enter user login.
```

Table 3-21: Selection Criteria Fields for Transaction Records

Field	Entry
Login	Enter the user login(s) for which you want transaction records.
Command	Enter the command(s) that were executed—for example, udiagnose will get you records for all the transactions using the udiagnose command that fit the selected criteria.
Entity	Enter the type of resource(s)—for example, ty* will get you records for all the transactions that involved TY-12 and TY-6 modules that fit the selected criteria.
Status	Enter the execution status (status or error message), if known. If no entry is made, the execution
Date*	Enter the date in the <i>mmdyy</i> format—for example, 020197 will get you all transactions for February 1, 1997 that fit the selected criteria.
Time	Enter the time of the transactions. Time is based on a 24-hour clock. 0=midnight, and 24=the following midnight. For example, 080000:180000 will get you all transactions between 8:00 a.m. and 6:00 p.m. that fit the selected criteria.

Enter your selection criteria, if any, and press to execute the command. Screen 3-39 shows a sample View Log Form. Use the command keys listed to page through the transaction records.

Screen 3-39: View Log Form

```

-----
                        VIEW LOG FORM
-----
                        Retrieved Records (24)
no.  user      group      command      entity      status      date      time
  1  meg        banknj     uvwlog       ulog        SUCCESS     02/26/97  10:11:12
  2  meg        banknj     unetstat     nodesam01   SUCCESS     02/26/97  10:12:28
  3  meg        banknj     uvwlog       ulog        SUCCESS     02/26/97  10:12:51
  4  meg        banknj     udiagnose    goodsam841  CCSERROR    02/26/97  10:27:19
  5  meg        banknj     udiagnose    goodsam841  SUCCESS     02/26/97  10:30:13
  6  cnmsadm    banknj     udiagnose    goodsam841  DKERROR     02/26/97  11:21:18
  7  cnmsadm    banknj     udispconn    mty123      DKERROR     02/26/97  12:13:07
  8  cnmsadm    banknj     udispconn    mty123      DKERROR     02/26/97  13:19:19
  9  cnmsadm    banknj     uvwlog       ulog        INTRRPT     02/26/97  14:12:18
 10  cnmsadm    banknj     udiagnose    BADINPUT    02/26/97  15:23:03
-----
CTRL-K = previous row      CTRL-J = next row
CTRL-P = previous page     CTRL-N = next page
ESC    = done viewing      DEL    = terminate
Another query? [y,n: +(n)]:

```

The screen displays number of retrieved records that satisfy your selection criteria. Use the command keys to page through the output. When you are done viewing press and you will be asked if you want to make another query or press to terminate the command and return to the main menu.

Possible Error Messages

If you enter an invalid or unacceptable field value, CCS will respond with an error message indicating the error and suggesting an action. In most cases, the user will have to re-enter an acceptable value to execute **uvwlog**.

1. *Environment problem (70) - CCS StarKeeper II NMS data base not found. Contact the CCS Administrator.*
2. *Form for command cannot be accessed; command terminating. Contact the Administrator.*
3. *Environment problem (73) - Get group ID failed. Contact the Administrator.*

Glossary

A

area

Part of the destination code used in addressing; similar to a telephone area code. Each area may include multiple exchanges and each *exchange* may include multiple *local service addresses*.

ASCII

American Standard Code for Information Interchange. ASCII represents characters, numbers, punctuation marks, or signals in seven on-off bits plus a *parity* bit.

async

Asynchronous communication/protocol.

asynchronous

Transmission in which the time intervals between data characters can be of unequal length, controlled by start and stop bits at the beginning and end of each character. Compare *synchronous*.

attention action

The function assigned to the *attention character*; disconnect or command mode.

attention character

A character used to enter command mode or to disconnect from the network.

B

block mode

Data that is transferred as a whole (block) rather than in segmented form.

BTAM

Basic Telecommunications Access Method; a type of data communications protocol.

C

call hold

A feature that allows a user to have more than one call active at a time.

call setup

The *node* activity that establishes a virtual circuit connection across the network.

CCITT

See *ITU-T*.

CCS

Customer Control System. A *StarKeeper II* NMS option for a *CO* that allows a network administrator to partition end customers into logical groups (subnetworks) with local administrative control.

chained message

Data records that are assembled into a single, linked output.

clocking

The timing of data bits in a data communications signal.

CO

Central office. An operating telephone company location where call switching is done.

code set

The standard parity code that defines the contents of a data bit. See *ASCII* and *EBCDIC*.

CO-LAN

Central office local area network. A data communications network switched through a *CO*.

concentrator

A communications device that can connect many devices of differing speeds to the *node*.

console

A VDT with a keyboard used as an interface to the node or network management system.

CP

Customer premises.

CPM-422B

Computer Port Module-422B. A multiplexed host interface module on a node.

CPM-HS

A Computer Port Module-High Speed. A multiplexed host interface on a node.

cursor

1. In computer graphics, a movable marker used to indicate position on a display.
2. A displayed symbol that acts as a marker to help the user locate a point in text, in a system command or in storage.
3. A movable spot of light on the screen of a display device, usually indicating where the next character is to be entered, replaced, or deleted.

customer group

A group identifier that corresponds to the user group.

C-VDM

Central office VDM.

D

DCE

Data communications equipment or data circuit-terminating equipment. The equipment that provides the functions required to establish, maintain, and terminate a connection, the signal conversion, and coding required for communications between data terminal equipment and data circuit. DCE may or may not be an integral part of a computer (for example, a modem).

DDCMP

Digital Data Communications Message Protocol. A uniform byte-count standard for the transmission of data between stations in a point-to-point or multipoint data communications system. The method of physical data transfer used may be parallel, serial synchronous, or serial asynchronous.

destination

The name of an endpoint or terminal on the network made up of a mnemonic or numeric *service address*.

diagnostic test

A program used to identify malfunctions within the network.

dialer

A type of service that receives calls and eliminates the need for terminal users to communicate with an autodial modem.

DTE

Data Terminal Equipment. The equipment comprising the data source, the data sink, or both. Equipment usually includes the control logic, buffer store, and one or more input or output devices or computers. DTE may also provide error control, synchronization, and station identification capabilities.

duplex

A type of transmission that permits simultaneous, two-way independent communication on a single channel.

E

EBCDIC

Extended Binary-Coded Decimal Interchange Code (the IBM equivalent to *ASCII*). An eight-bit character code used primarily in IBM equipment, providing for 256 different bit patterns.

EIA

The Electronic Industries Association standard set of signal characters (time, voltage, and current) for connections between data communications devices.

end user

The person at the current site, who sets up calls to and from network resources through a subnetwork managed by *StarKeeper II* NMS.

End User Administrator

The subnetwork administrator designated at the customer site.

error message

A response from a program indicating that a problem has arisen or something

unexpected has happened, requiring attention.

exchange

Part of the node destination code used in the addressing scheme.

F

field

The area on a form where information is input or default values are accepted.

form entry

The use of display screens (as opposed to line-by-line prompting) to execute CCS commands. Form entry allows a user to enter many pieces of information at one time.

G

group

A database component identifying a set of ports or channels that are considered a unit. There are two kinds of groups: local (can include any module except a *trunk*) and trunk (can include only trunk modules).

group name

An identifying label for a database element consisting of a set of ports.

H

HDLC

High Level Data Link Control. A link-layer, bit-oriented synchronous data communications protocol included in the X.25 packet-switching protocol.

High-speed Trunk (HS-TRUNK)

A high-speed *trunk* module in the *node* or in a SAM64/504.

host

A computer that provides services for another computer; also describes a node.

Services can include computation, database access, or application programs.

host computer

A computer attached to a network that provides services such as computation, database access, or special programs system languages.

host connection

A connection in which a *StarKeeper II* NMS host computer is connected to a node by a fiber optic cable.

host name

The name assigned to the workstation at the node and in the software installation to identify it to *StarKeeper II* NMS Core Systems.

HP-UX system

A general-purpose, multi-user, interactive, time-sharing operating system used with your computer.

I

interface

The relationship between communicating modules, usually in the same node; between different computers; and also the method of access between a program and an end user.

interface module

A printed-circuit board providing network access for a specific type of end device.

ITU-T

International Telecommunications Union – Telecommunications. Formerly Consultative Committee for International Telephone and Telegraph (CCITT). An international consultative committee that sets international communications usage standards and protocol recommendations such as: X.3, X.48, X.29, and X.25.

L

LAN

Local area network. A data network with communicating devices and connection media that occupy a single geographic location.

local service address

Part of the addressing scheme that refers to endpoints or a host on a network that receive calls.

logical name

The label assigned to physical resources that correspond to the customer's equipment naming conventions.

logical resource

A software entity not associated with one particular hardware type.

M

mask

The screen that appears when a network display (*unetdisp* or *unetstat*) template file is selected. The mask is usually a graphical representation of network elements.

modem

Modulator-demodulator. A device pair that allows a terminal user to communicate with network services over telephone lines.

multiplexer

A device that allows multiple devices to communicate with *hosts*, public data networks (PDNs), or a data switch.

N

network

1. The interconnection of a number of points (nodes, computers, terminals, etc.) by communications facilities.
2. Part of the addressing scheme that is equivalent to the overall network name. See *area*; *exchange*; *service address*.

network access password

A password assigned to terminal users to prevent unauthorized access to a network.

network address

A *StarKeeper* II NMS representation, input by keyboard characters, of a specified network element. The network address positively identifies the component. Often abbreviated *netaddr*.

network resources

The physical and logical resources on the network that are supported by a network switching node. These network services include host computers, control units, host lines, service addresses, and others.

network switching node

A data switch that provides high speed data communication between different networks and a wide range of computer equipment. The switch can connect LANs into WANs. With this capability, the switch can be used in a single building or a multiple building environment. It can be used to connect central offices for SCC operations and for providing CO-LAN services to customers.

NIPM

Nonchannelized ISDN Packet Mode. An ISDN protocol.

node

See *network switching node*.

NRZI

Non-Return to Zero Inverted. A data communications protocol.

O

originating group

The type of *group* assigned to devices, such as data terminals, that can initiate calls to other devices.

OTC

Operating telephone company. A company providing local or long-distance exchange carrier service.

P

paddle board

The input/output distribution board at the rear of the node or concentrator cabinet that provides external connections to the interface modules.

parity

Addition of non-information bits to data, making the number of ones in each grouping of bits either always odd (for odd parity), or always even (for even parity). This permits detection of a single-bit error in each transmitted or stored character.

PDD

Predefined destination. An administered association of a fixed network destination with an originating end device, resulting in an automatic *call setup* request as soon as the originating device comes on-line.

PDN

Public data network. A type of data communications network.

port

An access point for data entry or exit.
protocol

A formal set of rules governing message exchange between two communicating devices.

protocol

A formal set of rules governing message exchange between two communicating devices.

R

RCV baud rate

The data speed parameter for *two-way* devices using autobaud.

receive group

The type of group assigned to devices, such as host computers, that can receive calls from other devices connected to the *network switching node*.

remote device

An external terminal or host which communicates with a port in a particular network.

resource

Components of a data communications network such as—computers, terminals, lines, ports, and other devices.

round robin

A service that reduces the chance that a user will be repeatedly connected to an inoperative port. The type of round robin service designates how a user's calls will contend for access to ports; by group or by port.

RS-232C

An EIA standard interface for data communications.

R-VDM

Remote-voice/data multiplexer. A VDM located at the CP. Used to send and receive voice and data.

S

SAM

Synchronous/Asynchronous Multiplexer (SAM8/64/504). A *concentrator* that provides switched asynchronous and transparent synchronous services as configurable port options for up to 8, 64, or 504 ports.

SAM8

A concentrator that provides asynchronous and synchronous services as configurable port options for up to 8 ports.

SAM64

A concentrator that provides asynchronous and synchronous services as configurable port options expandable to 64 ports in 32 port increments.

SAM504

A concentrator that provides asynchronous and synchronous services as configurable port options expandable to 504 ports in 32 port increments.

SAMML

SAM Multiport Link. An interface module in a BNS-2000 or *Datakit II* VCS node providing connection to up to 8 *SAMs*.

SDLC

Synchronous Data Link Control. A link-layer, bit oriented protocol, similar to HDLC, used primarily by IBM devices.

SDLC8

Synchronous Data Link Control Module, 8-port. An interface module for SNA/SDLC hosts to the network, used in conjunction with the LAN Communications Systems (LCS100 Network Gateway). Multiple LCSs can originate and receive circuit calls through a CPMML to a single SDLC8 port.

service address

An administered identifier for a destination in the network.

select group

A node feature that allows users to choose the receiving group to which they will connect.

select password

The password that allows use of the *select group* feature of the node.

Service Administrator

The person responsible for setting up CCS terminal users, defining the network resources owned by the customer, and imposing any operative constraints.

service type

A parameter indicating if the channel receives and/or originates calls, and the type of network connection.

slot

The slot number on the backplane of the *network switching node*. For *SAMs*, this refers to the trunk module in the backplane. For *concentrators*, this refers to the link module in the backplane.

speedcall

An alias for an explicit destination address.

SSFT

Standard Fiber Trunk. An *interface module* for an optical fiber connection between two *nodes*, a node and a BNS-2000 MPC.

StarKeeper II Network Management System

A centralized system used to view an entire network and monitor, control, configure, and diagnose any *node* in the network.

SWT

Standard Wire Trunk. An *interface module* for a wire connection between two *nodes* or a node and a *concentrator*.

synchronous

Transmission in which the data characters and bits are sent at a fixed rate with the transmitter and receiver synchronized. Compare *asynchronous*.

T

TCON

A control computer module for the *SAM64* and *SAM504*.

TERM32

The node interface module for the *SAM64* and *SAM504* that enables asynchronous switching and synchronous transport from the same board types.

terminal user

The person at the customer site who sets up calls to and from network resources through a subnetwork managed by *StarKeeper II* NMS.

T1 Trunk

A module in the *SAM64*, *SAM504*, or *VDM-SAM504* that is a counterpart to the *TRUNK-T1* module in the *node*.

trunk

An *interface module* to an optical fiber or wire link between two network *nodes* or between a node and a concentration device.

TRUNK-DDS

An *interface module* to a Digital Data Service transmission facility operating at speeds of 9.6, 19.2, or 56 Kbps between two *nodes*. It supports up to 500 virtual circuits, and can operate as an interface to an analog carrier using modems.

TRUNK-HS

An *interface module* to an optical fiber link between two *nodes* or a node and a *SAM64/504*.

TRUNK-T1

An *interface module* to a T1 transmission facility between two *nodes* or a node and a SAM64/504. See also *T1-TRUNK*.

TSM8

Transparent Synchronous Module eight-port. An *interface module* supporting synchronous or asynchronous communication.

turnkey shutdown

The capability to automatically log off application programs on system shutdown.

two-way group

A two-way group. The type of *group* assigned to devices that can originate and receive calls to and from a node.

TY6

A 6-port asynchronous *interface module*.

TY12

A 12-port asynchronous *interface module*.

U

UNIX system

A general-purpose, multi-user, interactive, time-sharing operating system used with your computer.

V

VDM

Voice/data multiplexer. A device that allows the sending and receiving of simultaneous voice and data transmissions through existing telephone lines.

VDT

Video display terminal. A display device used to monitor and operate the network.

VTAM

Virtual Telecommunications Access Method; a protocol used between a host and remote workstations.

W

WAN

Wide area network. A communications network that can cover an area with a radius of greater than 3 km.

X

XANY

A parameter used with TY modules that determines the character that causes scrolling to resume.

X.25

An *ITU-T* recommendation for a packet-switching protocol.

XON/XOFF

Exclusive on and exclusive off protocols used to implement flow control in a data connection, most often by means of *ASCII* DCI and DC# characters.

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