NT4K00LA   **323-3001-520**

SONET Products

AccessNode

Performance Monitoring Procedures

Issue 2.0   June 1999

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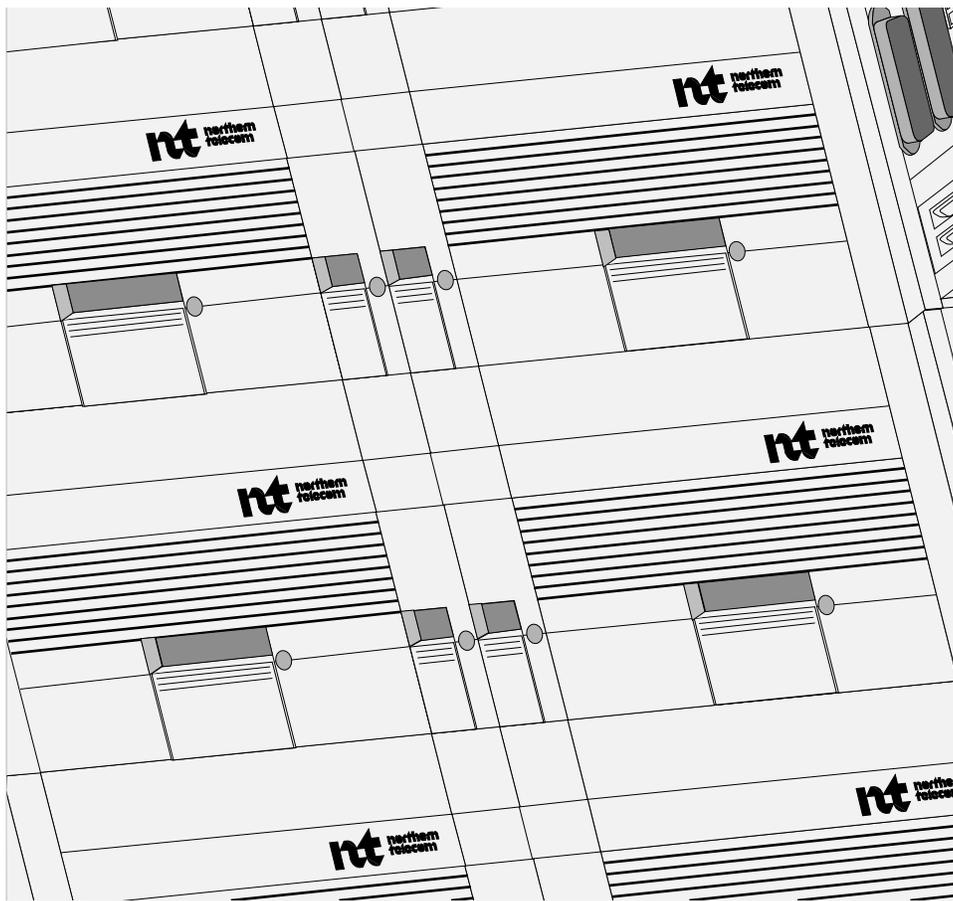
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Performance Monitoring Procedures

Document number: 323-3001-520
Document release: Issue 2.0
Date: June 1999

Publication history

June 1999

Standard AN17 release of the document, Issue 2.0. Changes include support for Universal Edge 9000 (UE9000) in the SYSMON CI tool.

February 1999

Standard AN16 release of the document, Issue 1.0. Changes include the following:

- ANX line expansion
- DMS-x interface to APC-100
- performance monitoring

June 1998

AN15 standard 01.01 release of the document. This release includes information on the DMS Access feature. Chapter 5 (VLCM performance monitoring) is new for AN15.

September 1997

AN14 standard 01.01 release of the document. This release includes STS-1 tributaries for AN14.

July 1996

AN12 standard 01.01 release of the document.

November 1995

AN11 standard 02.01 release of the document.

April 1995

AN10 standard release of the document.

December 1994

AN08 standard release of the document.

November 1994

AN07 reissue of standard.

April 1994

AN07 standard release of the document.

May 1993

FWP06 standard release of the document.

Contents

Call tracing tools   4-1

VLCM performance monitoring   5-1

Index   6-1

About this document

This document has all the procedures related to performance monitoring invoked from the network element user interface (NEUI).

> *Note 1:* This book does not cover performance monitoring for AccessNode Express (ANX) systems. For ANX system performance monitoring, see *AccessNode Express Commissioning and OAM&P*, 323-3051-220, in the *AccessNode Express* volume.
>
> *Note 2:* Procedures for AccessNode troubleshooting performance alerts are documented in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A. Procedures for ANX troubleshooting performance alerts are documented in *AccessNode Express Alarm and Trouble Clearing Procedures*, 323-3051-543, in the *AccessNode Express* volume.

The operations controller (OPC) procedures in this document (although CMT-based) can be performed from a graphical terminal; however, you must substitute the CMT keystrokes that are provided in the procedures with the graphical equivalent. Refer to the Graphical Reference card that is provided in the sleeve of this volume for more information. In addition, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Commands, parameters, and response conventions for procedures are described in *Data Administration Procedures,* 323-3001-304, in *Operations Administration, and Provisioning,* Volume 4A.

Audience

This document is written for maintenance technicians and Northern Telecom technicians to use as a guide for monitoring system performance.

How to use this document

Look up a task in the following table and proceed to the specified page.

Task	See
Learn about performance monitoring	*Performance Monitoring Description*, 323-3001-105, in *Description*, Volume 2A
Overview of performance monitoring	page 1-1
Managing performance monitoring at the OPC	page 2-1
Performance monitoring procedures	page 3-1
Call tracing tools	page 4-1
VLCM performance monitoring	page 5-1

Procedures for troubleshooting performance alerts are documented in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance,* Volume 5A.

References in this document

This document refers to the following documents.

Description, Volume 2A

- *Performance Monitoring Description*, 323-3001-105

Operations, Administration, and Provisioning, Volume 4A

- *Network Element User Interface Description,* 323-3001-300
- *OPC User Interface Description*, 323-3001-301
- *Data Administration Procedures,* 323-3001-304

Operations, Administration, and Provisioning, Volume 4B

- *Provisioning and Operations Procedures*, 323-3001-310

Maintenance, Volume 5A

- *Alarm and Trouble Clearing Procedures*, 323-3001-543

AccessNode Express Volume

- *Commissioning and OAM&P*, 323-3051-220

Overview of performance monitoring

This chapter has the general information required before starting performance monitoring.

> *Note 1:* This book does not cover performance monitoring using the TL1 interface. For information on using TL1 for performance monitoring, see *AccessNode TL1 Interface Description,* 323-3001-190 in the AccessNode documentation suite (separately-bound).

> *Note 2:* This book does not cover performance monitoring for AccessNode Express (ANX) systems. For ANX system performance monitoring, see *AccessNode Express Commissioning and OAM&P*, 323-3051-220, in the *AccessNode Express* volume.

> *Note 3:* Procedures for AccessNode troubleshooting performance alerts are documented in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance,* Volume 5A. Procedures for ANX troubleshooting performance alerts are documented in *AccessNode Express Alarm and Trouble Clearing Procedures*, 323-3051-543, in the *AccessNode Express* volume.

Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12

The group number you enter in a command string depends on the shelf type and function, the mapper type, and its slot location. Table 1-1 on page 1-2 summarizes the group and slot associations for the different mappers and shelves.

> *Note:* The tables in this chapter do not imply that all slots are available for your configuration. For details about the capacity for each configuration, refer to the *Mapper Layouts Planning Guide*, 323-3001-154, in the *Engineering, Configuration, and Ordering Guide*, Volume 1.

Table 1-1
Group and slot association matrix

Mapper and shelf function		Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
DS1	DS1-fed ABM	G1	G2	P	G4	G5	G6			■	■									■
	ABM FCOT or FCOT_BLSR	G1	G2	P	G4	G5	G6	G7	G8	■	■									■
	TBM FCOT			G3	G4					■	■	G5	G6	P	G8	G9	G10	G11	G12	■
	TBM FCOT_BLSR	G1	G2	G3	G4					■	■	G5	G6	P	G8	G9	G10	G11	G12	■
	TBM TN_BLSR	G1	G2	G3	G4					■	■	G5	G6	G7	G8	G9	G10	G11	G12	P
DS3	ABM	P	S	G1		G2		G3		■	■									
	TBM FCOT	P	S							■	■	G1		-		G3		G4		
	TBM FCOT_BLSR or TN_BLSR	P	S							■	■	G1		G2*		G3		G4		
STS-1	TN_BLSR		S	P						■	■	G1		G2		G3		G4		
OC-3	ABM tributary	G3		G4		G1S		G2S		■	■									
	TBM tributary	G3		G4		G1S		G2S		■	■	G5		G6		G7		G8		
	Feeder	■	■	■	■	■	■	■	■	G1	G2	■	■	■	■	■	■	■	■	■
OC-12	Feeder	■	■	■	■	■	■	■	■	G1	G2	■	■	■	■	■	■	■	■	■
OC-12 VTBM	Feeder	■	■	■	■	■	■	■	■	G1	G2	■	■	■	■	■	■	■	■	■
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

* For DS3 TBM FCOT_BLSR fiber-fed shelves, this group is available only if no DS1s are provisioned for that shelf.

Group and slot associations for DS1, DS3, and STS-1 I/O cards

For some tasks, you must also know the slot numbers of the input and output cards. Refer to the following tables to determine which the I/O slot(s) for the mapper you need.

If you are provisioning this equipment	For this shelf type	Then see
DS1 equipment	ABM	Table 1-2
	TBM	Table 1-3
DS3 equipment	ABM	Table 1-4
	TBM	Table 1-5
STS-1 equipment	TBM	Table 1-6

For DS1, DS3, and STS-1 circuit packs, Tables 1-2 through 1-6 show the association between circuit packs in the lower level of the common equipment shelf and input/output cards in the upper level.

For example, DS1 circuit pack group G1 refers to the group of modules including the working DS1/VT mapper circuit pack in slot 1 and its corresponding DS1 input and output cards in slots 30 and 32, respectively. Similarly, DS1 circuit pack group P refers to the group of modules including the protection DS1/VT mapper circuit pack in slot 3 and the DS1 protection bridge cards in slots 34 and 36.

DS1 I/O numbers

Table 1-2 lists the DS1 circuit pack groups for the access bandwidth manager (ABM) shelf functions. It also shows the association between mappers in the lower level of the shelf, and input cards and output cards in the upper level.

Table 1-2
ABM DS1 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	-
RFT RFT_BLSR FCOT FCOT_BLSR	Group	g1*	g2*	P*	g4*	g5*	g6*	g7	g8											
	Input slot	30*	31*	34p*	35*	38	39	42	43											
	Output slot	32*	33*	36p*	37*	40	41	44	45											

Note 1: * DS1 equipment allowed in a DS1-fed ABM shelf.

Note 2: The symbol "p" in the DS1 input and output slots denotes a protection bridge card.

Note 3: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Table 1-3 lists the DS1 circuit pack groups for the different transport bandwidth manager (TBM) shelf functions. It also shows the association between mappers in the lower level of the shelf, and input cards and output cards in the upper level.

Table 1-3
TBM DS1 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
FCOT	Group			g3	g4							g5	g6	P	g8	g9	g10	g11	g12	
	Input slot			34	35							38	39	42p	43	46	47	50	51	
	Output slot			36	37							40	41	44p	45	48	49	52	53	
FCOT_BLSR	Group	g1*	g2*	g3	g4							g5	g6	P	g8	g9	g10	g11	g12	
	Input slot	30*	31*	34	35							38	39	42p	43	46	47	50	51	
	Output slot	32*	33*	36	37							40	41	44p	45	48	49	52	53	

—continued—

Table 1-3 (continued)
TBM DS1 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TN_BLSR	Group	g1*	g2*	g3	g4							g5	g6	g7	g8	g9	g10	g11	g12	P
	Input slot	30*	31*	34	35							38	39	42	43	46	47	50	51	-
	Output slot	32*	33*	36	37							40	41	44	45	48	49	52	53	-

Note 1: * FCOT_BLSR and TN_BLSR shelves can contain two additional DS1 working groups (compared to an FCOT) when DS3 protection mappers are not used in slots 1 and 2. The two additional DS1 working groups are g1 (slots 1, 30, 32) and g2 (slots 2, 31, 33).

Note 2: The symbol "p" in the DS1 input and output slots denotes a protection bridge card.

Note 3: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

—end—

DS3 I/O numbers

Table 1-4 lists the DS3 circuit pack groups for the ABM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input/output cards in the upper level.

Table 1-4
ABM DS3 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	-
RFT	Group	P	S	g1	—	g2	—	g3	—											
RFT_BLSR	I/O slots	—	—	34		38		42												
FCOT		—	—	35		39		43												
FCOT_BLSR		—	—	36		40		44												

Note 1: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 2: The symbol "P" in slot 1 denotes a protection mapper; the symbol "S" in slot 2 denotes a protection switch card.

Table 1-5 lists the DS3 circuit pack groups for the TBM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input/output cards in the upper level.

Table 1-5
TBM DS3 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
FCOT	Group	P	S	—	—							g1	—	g2*	—	g3	—	g4	—	—
FCOT_BLSR	I/O slots	—	—									38		42*		46		50		
TN_BLSR		—	—									39		43*		47		51		
		—	—									40		44*		48		52		

Note 1: * This group is available for FCOT_BLSR shelves that have no DS1s provisioned.

Note 2: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 3: The symbol "P" in slot 1 denotes a protection mapper; the symbol "S" in slot 2 denotes a protection switch card.

STS-1 I/O numbers

Table 1-6 lists the STS-1 circuit pack groups for the TBM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input/output cards in the upper level.

Table 1-6
TBM STS-1 interface, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TN_BLSR	Group	—	S	P	—							g1	—	g2	—	g3	—	g4	—	—
	I/O slots	—	—									38		42		46		50		
		—	—									39		43		47		51		
		—	—									40		44		48		52		

Note 1: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 2: The symbol "P" in slot 3 denotes a protection mapper; the symbol "S" in slot 2 denotes a protection switch card.

Managing performance monitoring at the OPC

This chapter describes how to enable and disable the collection of performance statistics at the operations controller (OPC).

Performance statistics are collected by network elements within an OPC span of control (SOC). When performance monitoring enabled, the OPC collects statistics from the individual network elements and makes them available for analysis at an operations support (OS) location through TL1. If performance statistics are not required to be reported through TL1, then the collection at the OPC should be disabled. Performance monitoring at the individual network elements is not affected by this feature.

OPC PM Database

The OPC PM database stores 32 bins of 15-minute counts (8 hours of historical data) as well as the daily counts for the current day and the 7 most recent days (8 daily bins in total) for all PM parameters for all network elements in the OPC's span of control (see). The 15-minute counts for the 15-minute period just ended ("previous" 15-minute bin as defined by standards) are retrieved from all network elements on the OPC's span of control every 15 minutes.

The daily bin is calculated as the summation of all 15-minute bins received by the OPC, and is not retrieved directly from the network elements. If one or more 15-minute counts retrieved from the network element is flagged as suspect (invalid data flag is set), the suspect flag is set for the corresponding daily bin. If one or more 15-minute counts cannot be retrieved from the network element, for example because the association is down, the corresponding daily count is not incremented and the suspect flag is set. The daily count is calculated as soon a s a new 15-minute count is received on the OPC. Once a suspect flag is set, it remains set until that bin is flushed out of the database, that is, in 8 hours for the 15-minute counts and 8 days for the daily counts, or until the corresponding count is cleared.

Note: If counts cannot be retrieved during a cycle, the OPC attempts to retrieve the missed counts in subsequent cycles provided they are still available at the network element. If the bins are retrieved in a subsequent interval, both the 15-minute and daily bins are updated accordingly.

The OPC maintains timestamps for all bins accumulated in Greenwich Mean Time (GMT). A new daily bin is started on the OPC at midnight GMT. This means that the concept of a "day" is standardized for all time zones. Note that the network elements continue to start their daily bins at midnight local network element time, so that if a user compares the daily count retrieved via one of the interfaces to the daily count retrieved via the network element user interface, the two values will probably differ.

Table 2-1
Bin Types Maintained in the PM Database on the OPC

Data Maintained	Bin Type	Number of Bins	Time Period Covered
Historical 15-minute PM counts	15 minute	32	8 hours
Current daily PM counts	1 day	1	1 day
Historical daily PM counts	1 day	7	7 days

PM Parameters Collected

The PM parameters which are monitored are grouped by facility type and location. The parameters which are monitored are shown in the Table 2-2.

Table 2-2
PM Parameters Collected

| Facility Type | Near End | | Far End |
	Receive PM Parameters	Transmit PM Parameters	Receive PM Parameter
DS1 Line	1) ES 2) SES 3) CV		
DS1 Path	1) ES 2) SES 3) CV 4) UAS 5) SAS 6) FC		
VT1.5 Path	1) ES 2) ALS 3) FC		
DS3 Line	1) ES 2) SES 3) CV		
DS3 Path	1) ES 2) SES 3) CV 4) UAS 5) AISS 6) SEFS	1) ES 2) SES 3) CV 4) UAS 5) AISS 6) SEFS	
STS1 Line	1) ES 2) SES 3) CV 4) UAS 5) BES 6) BSES 7) BCV		
—continued—			

Table 2-2 (continued)
PM Parameters Collected

	Near End		Far End
STS1 Path (available only at VTM based network elements)	1) ES 2) SES 3) CV 4) UAS 5) FC		1) ES 2) SES 3) CV 4) UAS 5) FC
OC3 Line	1) ES 2) SES 3) CV 4) UAS 5) FC		
OC3 Section	1) ES 2) SES 3) CV 4) SEFS		
OC12 Line (Far-end available only at VTM based network elements)	1) ES 2) SES 3) CV 4) UAS 5) FC		1) ES 2) SES 3) CV 4) UAS 5) FC
OC12 Section	1) ES 2) SES 3) CV 4) SEFS		
Protection switching counts direction not applicable (available only at NWK based network elements)	1) AutoReq 2) AutoComp 3) AutoDur 4) UserReq 5) UserComp 6) UserDur		
Physical PM parameters	1) OPR	1) LBC	
—end—			

Enabling performance monitoring

When you enable performance monitoring, collection of PM data occurs for all facilities supported by the OPC. However, in order for reporting of these statistics to occur, you must also turn performance monitoring ON for the individual facility you want. Up to 15 minutes may pass before these changes are seen because performance statistics are collected and reported every 15 minutes.

A log (GEN555) is produced by the OPC when you change the performance-monitoring status at the OPC.

Changes to the performance-monitoring status are not updated on the backup OPC until data synchronization between the primary OPC and backup OPC occurs.

If the performance-monitoring status is changed on the primary OPC and the backup OPC becomes active before data synchronization occurs, the status reverts to its previous state until the primary OPC regains control of the span. Automatic data synchronization occurs nightly. In addition, the user can synchronize the data manually.

Changes to the performance monitoring status are preserved during software upgrades.

When performance monitoring is disabled at the OPC, any performance statistics not yet sent from network elements during the previous collection period continue to be transmitted to operations support systems by means of Transaction Language 1 (TL1), if this link is operational.

STS-1 path performance monitoring data at the DS1 mapper circuit pack can be collected at the OPC. STS-1 path-related statistics are available only at the network element (NE).

Chapter contents

This chapter contains the following tasks which can be performed at any time.

Procedure	Task	See
Procedure 2-1	Querying the status of performance monitoring at the OPC	page 2-7
Procedure 2-2	Enabling performance monitoring at the OPC	page 2-8
Procedure 2-3	Disabling performance monitoring at the OPC	page 2-9
—continued—		

Procedure	Task	See
Procedure 2-4	Removing performance monitoring statistics on the OPC database	page 2-10
Procedure 2-5	Turning performance monitoring ON or OFF for facilities	page 2-11
	—end—	

Requirements

Before starting these procedures, you must:

- obtain the password of a user account with permission to select the UNIX shell. These accounts include root, slat, and admin for the active OPC and root or standby for the inactive OPC.

- be familiar with the user interface. If you are not familiar with the OPC user interface screen layouts, commands, and menu hierarchies, see *OPC User Interface Description*, 323-3001-301, *Operations, Administration, and Provisioning*, Volume 4A. If you are not familiar with the NE user interface screen layouts, commands, and menu hierarchies, see *Network Element User Interface Description*, 323-3001-300, *Operations, Administration, and Provisioning*, Volume 4A.

   Note 1: This book does not cover performance monitoring using the TL1 interface. For information on using TL1 for performance monitoring, see *AccessNode TL1 Interface Description,* 323-3001-190 in the AccessNode documentation suite (separately-bound).

   Note 2: This book does not cover performance monitoring for AccessNode Express (ANX) systems. For ANX system performance monitoring, see *AccessNode Express Commissioning and OAM&P*, 323-3051-220, in the *AccessNode Express* volume.

Procedures for AccessNode troubleshooting performance alerts are documented in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance,* Volume 5A. Procedures for ANX troubleshooting performance alerts are documented in *AccessNode Express Alarm and Trouble Clearing Procedures*, 323-3051-543, in the *AccessNode Express* volume.

Procedure 2-1
Querying the status of performance monitoring at the OPC

Use the following procedure to determine whether or not performance monitoring is enabled at the OPC.

Action

Step	Action
	Note: In some of the following steps, you must execute UNIX commands. Type bold text exactly as shown, at the "OPC>" prompt. Press the return key when you see the ↵ character.
1	Log in to the OPC and open the UNIX shell.
	If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.
	The "OPC>" prompt appears.
2	Type the following command:
	npcstate -q↵
	A message indicates whether performance monitoring is currently enabled or disabled.
3	Exit the UNIX shell by entering:
	exit ↵
	The UNIX shell is terminated and the session manager appears.
	—end—

Procedure 2-2
Enabling performance monitoring at the OPC

Use the following procedure to enable the collection of all performance statistics from network elements by the OPC. When performance monitoring is enabled, the OPC collects performance statistics from the individual network elements and makes them available for analysis at an operations support (OS) location through TL1.

Action

Step	Action
	Note: In some of the following steps, you must execute UNIX commands. Type bold text exactly as shown, at the "OPC>" prompt. Press the return key when you see the ↵ character.
1	Log in to the OPC and open the UNIX shell.
	If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.
	The "OPC>" prompt appears.
2	Type the following command:
	npcstate -e↵
	The "OPC>" prompt appears.
3	If you want to confirm that you have enabled performance monitoring, type:
	npcstate -q↵
	A message confirms that performance monitoring is enabled.
4	Exit the UNIX shell by entering:
	exit ↵
	The UNIX shell is terminated and the session manager appears.
	—end—

Procedure 2-3
Disabling performance monitoring at the OPC

Use the following procedure to disable the collection of performance statistics from network elements by the OPC. When performance monitoring is disabled, no performance statistics are collected by the OPC from the network elements. Any performance monitoring thresholds are inactive.

Action

Step	Action
	Note: In some of the following steps, you must execute UNIX commands. Type bold text exactly as shown, at the "OPC>" prompt. Press the return key when you see the ↵ character.
1	Log in to the OPC and open the UNIX shell.
	If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.
	The "OPC>" prompt appears.
2	Type the following command:
	npcstate -d↵
	The "OPC>" prompt appears.
3	If you want to confirm that you have disabled performance monitoring, type:
	npcstate -q↵
	A message confirms that performance monitoring is disabled.
4	Exit the UNIX shell by entering:
	exit ↵
	The UNIX shell is terminated and the session manager appears.
	—end—

Procedure 2-4
Removing performance monitoring statistics on the OPC database

Use the following procedure to remove performance monitoring history statistics from the OPC database. Removing history may be helpful when the network elements commissioned to be under the preview of a particular OPC are changed with some other network elements, or when the configuration of network elements attached to an OPC has changed.

You can delete the history information for one or more network elements.

Action

Step	Action
	Note: In some of the following steps, you must execute UNIX commands. Type bold text exactly as shown, at the "OPC>" prompt. Press the return key when you see the ↵ character.
1	Log in to the OPC and open the UNIX shell. If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A. *The "OPC>" prompt appears.*
2	Type the following command: **npcstate -r \<neid\> [\<neid\>\<neid\>...] ↵** *A message notifies you that the system has entered the program and removed performance monitoring history for the network element which you specified.* *The "OPC>" prompt appears.*
3	Exit the UNIX shell by entering: **exit ↵** *The UNIX shell is terminated and the session manager appears.*

—end—

Procedure 2-5
Turning performance monitoring ON or OFF for facilities

Use the following procedure to turn performance monitoring ON or OFF for facilities supported by the OPC. If performance monitoring is enabled, performance data is reported for all facilities on which you have turned performance monitoring ON.

Unless you specify otherwise, performance monitoring defaults to OFF for all facilities.

Action

Step	Action
	Note: In some of the following steps, you must execute UNIX commands. Type bold text exactly as shown, at the "OPC>" prompt. Press the return key when you see the ↵ character.
1	Log in to the OPC and open the UNIX shell.
	If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.
	The "OPC>" prompt appears.
2	Enter:
	opcui.↵
	The OPC user interface appears, with a list of available toolsets.
3	Use your arrow keys to navigate through the list of tools and select OPC PM Coll Filter, located in the OPC Admin toolset.
4	Enter:
	keypad **0**↵
	The OPC PM Collection window appears, showing a list of facilities and their performance monitoring states.
5	Use your up and down arrow keys to select the facility you want to turn ON or OFF. The facility is highlighted by your cursor.
6	Select edit by entering:
	2.↵
	A dialog box appears, allowing you to turn the facility ON or OFF.
7	Use your left and right arrow keys to toggle the state of the facility to either ON or OFF.

—continued—

Procedure 2-5 (continued)
Turning performance monitoring ON or OFF for facilities

Step	Action
8	Enter:
	keypad 0↵
9	Exit the screen by entering:
	6.↵
	A dialog box prompts you to confirm your changes.
10	Select Yes.
	A message confirms the results of your action, and your changes are saved.
11	Exit the UNIX shell by entering:
	exit ↵
	The UNIX shell is terminated and the session manager appears.

<div align="center">—**end**—</div>

Performance monitoring procedures

This chapter describes performance monitoring procedures for facilities and equipment on the following AccessNode systems.

- point-to-point
- DS1 fed (DFA)
- single-ended
- bidirectional line-switched rings (BLSR)
- TransportNode bidirectional line-switched rings (TN BLSR)

DS1, DS3, OC-3 (both transport and tributary), OC-12, STS-1 path (OC-12), VT1.5 path (DS1), and STS-1 tributaries (STS-1 tribs) performance statistics are accessed through the network element user interface (NEUI). They are automatically updated on the screen.

Note 1: Due to the nature of unframed signals, unframed signals cannot have meaningful performance-monitoring information gathered. Although data will appear on performance-monitoring screens, it must be disregarded in the case of unframed signals.

Note 2: Performance monitoring is suspended when a facility is out-of-service (OOS). If a facility is put OOS, all associated performance parameters stop incrementing, and threshold crossover alerts (TCAs) are no longer generated.

Note 3: Performance monitoring is not supported on DS1 facilities and ISDN services that terminate on a GR-303 MVI switch.

Note 4: Performance monitoring for AccessNode Express is not covered in this section. See *AccessNode Express Commissioning and OAM&P, 323-3051-220,* in the *Access Node Express* volume.

Note 5: Performance monitoring through the TL1 interface is not covered in this section. See *AccessNode TL1 Interface Description, 323-3001-190* in the AccessNode documentation suite (separately-bound).

Chapter contents

This chapter contains all the procedures for equipment, facility, and protection performance monitoring. Each procedure is based on a specific performance-monitoring task. To help identify the task you want to perform, the following tables list procedures by the type of task.

Table 3-1
Procedures for displaying performance-monitoring information

Table 3-2
Procedures for setting and changing performance-monitoring parameters

Table 3-3
Procedures for enabling and disabling performance-monitoring features

Table 3-4
Procedures for performing timed performance-monitoring measurements

Procedure	Task	Page
3-5	Starting the facility performance statistics untimed interval clock	3-18
3-22	Starting the untimed interval clock for protection-switching statistics	3-65

Table 3-5
Procedures for monitoring equipment performance

Procedure	Task	Page
3-1	Displaying the performance-monitoring screen	3-10
3-2	Displaying the active alarms and alerts	3-11
3-13	Displaying the optical-equipment performance statistics	3-48
3-14	Displaying the optical-equipment performance thresholds	3-50
3-15	Changing the report type on all the optical-equipment performance thresholds	3-52
3-16	Changing the optical-equipment performance threshold status	3-54
3-17	Changing the optical-equipment performance threshold value	3-56
3-18	Enabling all the optical-equipment performance threshold alarms and alerts	3-58
3-19	Disabling all the optical-equipment performance threshold alarms and alerts	3-60
3-24	Displaying a truncated value in full precision	3-69
3-25	Displaying the equipment performance-monitoring thresholds	3-71

Table 3-6
Procedures for monitoring facility performance

Table 3-7
Procedures for monitoring protection switching

Table 3-8
Procedures for managing threshold crossing alert (TCA) capping

Table 3-9
Complete list of procedures

VTBM rings

The term virtual tributary bandwidth manager (VTBM) is used to distinguish between bidirectional line-switched rings (BLSR) which use different OC-12 optical interface units.

A VTBM ring uses the following circuit packs in each network element:

- two NT7E05 OC-12 VTBM optical interface circuit packs in the primary transport slots

Optical-equipment performance monitoring

The optical-equipment performance thresholds are shown in the form of laser bias current (LBC) and optical power received (OPR). The LBC is provided for customers to indicate laser performance and provide an early indication of laser degradation. The OPR contains a measure of the average optical power of the received signal. If required, these performance statistics can be used to activate threshold alarms or alerts.

Note 1: The OPR parameter is only supported on OC-12 VTBM optical interface circuit packs.

Note 2: The OC-12 VTBM intermediate reach circuit pack does not support the LBC parameter.

Note 3: Complete internal hardware monitoring is already performed.

LBC

Laser bias current (LBC) is provided for customer use in the following normalized format (as required in Bellcore technical specifications GR 253-CORE). The initial LBC value is programmed in the circuit pack at manufacturing. LBC is defined by the equation:

$$LBC\ (\%) = \frac{Current\ LBC \times 100}{Initial\ LBC}$$

The LBC is given as a percentage of the initial start-up or reset value. If the value does not change, then the LBC is 100%. If the value increases by one quarter of its initial value, then the LBC is 125%.

If required, this performance statistic can be used to activate threshold alerts or alarms by entering a threshold value to define the upper bound for the percentage of LBC. An alert or alarm is raised any time the percentage of LBC meets or exceeds this threshold value. For NWK optical interface circuit packs, the alert or alarm is not cleared even if the percentage of LBC decreases to below the threshold value after crossing it. The default threshold value is 150%.

Note: Complete internal hardware monitoring is already performed.

OPR

Optical power received (OPR) is provided for customer use in the following normalized format (as required in Bellcore technical specifications GR 253-CORE). The initial OPR value is obtained when a signal is acquired. The OPR parameter contains a measure of the average optical power of the received signal. OPR is defined by the equation:

$$\text{OPR (\%)} = \frac{\text{Current OPR x 100}}{\text{Initial OPR}}$$

The OPR is given as a percentage of the initial start-up or reset value. If the value does not change, then the OPR is 100%. If the value decreases by one quarter of its initial value, then the OPR is 75%.

If required, this performance statistic can be used to activate threshold alerts or alarms by entering a threshold value to define the lower bound for the percentage of OPR. An alert or alarm is raised any time the percentage of OPR meets or drops below this threshold value. The default threshold value is 50%.

A threshold T1 is given as the maximum LBC or OPR before a threshold alarm is activated. When the LBC or OPR exceeds the threshold, a threshold alarm is set. The NWK circuit pack has a ResetAct menu item in the EP Threshld screen that is specifically designed to clear a threshold crossing alarm or alert. If the current LBC value is below the threshold, using the ResetAct menu item clears the alarm or alert. The alarm is raised again the next time the threshold is crossed.

> *Note 1:* The OC-12 VTBM circuit pack does not require the ResetAct command.
>
> *Note 2:* Laser bias current and optical power received are special metered parameters for which historical counts have no meaning. Each 15-minute bin contains a snapshot of the value of this parameter at the time that PM collection took place. Daily counts are not maintained for these parameters.

There are also two other ways to reset a threshold alarm or alert: turn off and then on the alarm or alert status, or edit the threshold value.

Invalid data flags

The performance-monitoring screen of the network element user interface (NEUI) shows not only the statistics for each parameter, but also an indicator (**.** [period] or? [question mark]) to the right of each value. This indicator, when set to?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid due to one of the following conditions:

- there has been a disruption in the collection of performance monitoring (PM) data
- the PM register has been cleared
- there has been a network element (NE) restart (warm, cold, reload)
- there has been a protection switch
- the NE time of day has changed to an extent that the current PM interval has changed in length by more than 10 seconds
- the facility was placed out of service during the PM interval (performance monitoring is suspended when a facility is OOS)
- a system processor overload condition has caused the PM to be suspended during a portion of the PM interval. See *Performance Monitoring Description*, 323-3001-105, in *Description*, Volume 2A, for a discussion on the effects of system processor loading on performance monitoring.

IDFs are cleared at the start of an interval.

Procedure conventions

All procedures start from the main menu of the NEUI. The following conventions apply in the procedures in this chapter.

Symbol	Meaning
↵	press Return once
NE	network element
.	normal condition
*	performance alert threshold crossed
PM	performance monitoring (command)
Tx	transmit (output)
Rx	receive (input)
unt	untimed interval

Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12

For detailed information on group and slot associations, see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 1-1.

Procedure 3-1
Displaying the performance-monitoring screen

Use this procedure to display an overview of the performance of the network element in context.

Requirements

Before starting this procedure, you must:

- be logged into the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:

perfmon ↵

A screen appears for terminal shelves.

—**end**—

Procedure 3-2
Displaying the active alarms and alerts

Use this procedure to list all the one-line reports for all the alarms and alerts on the network element.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*
2	Display the active alerts and alarms by entering: **listact** ↵ *A screen appears for terminal shelves.*
	—end—

Procedure 3-3
Displaying the facility performance statistics

Use this procedure to display the performance-monitoring error statistics of a facility.

Note 1: Performance monitoring is suspended when a facility is out-of-service (OOS). If a facility is put OOS, all associated performance parameters stop incrementing, and threshold crossover alerts (TCAs) are no longer generated.

Note 2: The performance-monitoring screen of the NEUI shows not only the statistics for each parameter, but also an indicator (. [period] or ? [question mark]) to the right of each value. This indicator, when set to ?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid. See "Invalid data flags" on page 3-8 for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level

- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to display the performance statistics for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-3 (continued)
Displaying the facility performance statistics

Step	Action
3	For a DS1, DS3, or STS-1 tribs facility, enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1 and cannot be changed)

A screen similar to the following appears.

```
                    Critical Major minor warning FailProt Lockout  ActProt  PrfAlrt
          Network View    .     .     .     .        .        .        .        .
                    1      .     .     .     .        .        .        .        .
 FP Stats
  0 Quit           OC12 Performance Statistics       Shelf: 1
  2 Select                                           Unit: OC12 G1
  3                                                       Rx Near
  4 ChgOrign                                  Untimed Start: 12:59  13 Feb 96
  5 Clear                 15Min               Day         Untimed
  6 StartUnt          Curr    Last       Curr    Last      Curr
  7              SectCV    0  .     0  .      0  .     0  ?      0  ?
  8              SectES    0  .     0  .      0  .     0  ?      0  ?
  9              SectSES   0  .     0  .      0  .     0  ?      0  ?
 10              SectSEFS  0  .     0  .      0  .     0  ?      0  .
 11              LineCV    0  .     0  .      0  .     0  ?      0  ?
 12              LineES    0  .     0  .      0  .     0  ?      0  ?
 13              LineSES   0  .     0  .      0  .     0  ?      0  ?
 14              LineUAS   0  .     0  .      0  .     0  ?      0  ?
 15              LineFC    0  .     0  .      0  .     0  ?      0  ?
 16 History
 17 Threshold
 18 Help

   NE 2
 Time  19:45   >
```

Note: The performance statistics for the other direction (DS3 only) are displayed from this screen by entering chgdir, then tx or rx for the direction.

—continued—

Procedure 3-3 (continued)
Displaying the facility performance statistics

Step	Action

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Note 1: The command showval (sv) is a hidden command available on all statistics history and threshold screens to display truncated values in long form (see the procedure "Displaying a truncated value in full precision" on page 3-69).

Note 2: For OC-12 optical interface circuit packs, use the ChgOrign command to monitor the statistics of the other end.

Note 3: For the OC-12 NWK circuit pack, the counts for the unsupported far-end parameters are shown with dashes on this screen.

5   For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

6   For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

—end—

Procedure 3-4
Clearing the facility performance counters

Use this procedure to clear the 1-minute (for OC3 and OC12), 15-minute or 1-day current, history, or both current and history performance counters for the performance-monitoring statistics of a facility.

Note: The untimed performance counter is automatically cleared at the start of the untimed period. See Procedure 3-5 for instructions on starting the untimed interval clock.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to clear the performance counters for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—**continued**—

Procedure 3-4 (continued)
Clearing the facility performance counters

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **STS1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-4 (continued)
Clearing the facility performance counters

Step	Action
5	For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6	For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

Go to step 7.

7	Clear the counters by entering:

clear <count type> ↵

where

<count type>	is **his** (history), **cnt** (current), or **both**

8	Confirm or cancel the change.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

When a counter has been cleared, log report FAC601 is generated. See *Log Report Manual*, 323-3001-840, in *Maintenance*, Volume 5B for more information.

—**end**—

Procedure 3-5
Starting the facility performance statistics untimed interval clock

Use this procedure to restart the current untimed interval used for facility performance analysis.

Note: The untimed performance counter is automatically cleared at the start of the untimed period.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to start the performance statistics untimed interval clock for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—**continued**—

Procedure 3-5 (continued)
Starting the facility performance statistics untimed interval clock

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 **is 1** to **14** DS3 and STS1 is **1** to **3** STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-5 (continued)
Starting the facility performance statistics untimed interval clock

Step	Action

5 For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> is **g1**, **g2**, or **all**
(circuit pack group)

<sts number> is **1** to **12**

<origin> is **near** or **far**
Note: The default is near.

Go to step 7.

6 For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> is **g1** to **g12**, or **all**
(circuit pack group)

<port number> is **1** to **14**

Go to step 7.

7 Start the untimed intervals by entering:

startunt ↵

When the untimed interval clock is successfully started, log report FAC601 is generated. See *Log Report Manual*, 323-3001-840, in *Maintenance*, Volume 5B for more information.

—end—

Procedure 3-6
Displaying the facility performance history

Use this procedure to display the selected error count history for a chosen performance parameter of a selected facility.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to display the performance history for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-6 (continued)
Displaying the facility performance history

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility enter:

facperf \<facility type\> \<unit\> \<port number\> \<direction\> ↵

where

\<facility type\>	is **ds1**, **ds3**, or **sts1**
\<unit\> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
\<port number\>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
\<direction\>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf \<facility type\> \<unit\> [\<origin\>] ↵

where

\<facility type\>	is **oc3** or **oc12**
\<unit\> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
\<origin\>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-6 (continued)
Displaying the facility performance history

Step	Action

5 For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

   where

   <unit>   is **g1**, **g2**, or **all**
   (circuit pack group)

   <sts number>   is **1** to **12**

   <origin>   is **near** or **far**
                        Note: The default is near.

   Go to step 7.

6 For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

   where

   <unit>   is **g1** to **g12**, or **all**
   (circuit pack group)

   <port number>   is **1** to **14**

   Go to step 7.

                    —continued—

Procedure 3-6 (continued)
Displaying the facility performance history

Step	Action
7	Display the facility history by entering:

history ↵
<PM parameters> ↵

where

<PM parameters> are as listed in the following table

DS1 Rx	VT1.5 Rx	DS3 Rx	DS3 Tx	STS-1 Rx near	STS-1 path Rx	OC-3/OC-12 Rx near	OC-12 Rx far
LineCV	PathES	LineCV	PathCV	LineBCV	PathCV	LineCV	LineCV
LineES	PathALS	LineES	PathES	LineBES	PathES	LineES	LineES
LineSES	PathFC	LineSES	PathSES	Line BSES	PathSES	LineFC	LineFC
PathCV		PathCV	PathUAS	LineCV	PathUAS	LineSES	LineSES
PathES		PathES	PathSEFS	LineES	PathFC	LineUAS	LineUAS
PathSES		PathSES	PathAISS	LineSES		SectCV	
PathSAS		PathUAS		LineVAS		SectES	
PathUAS		PathSEFS				SectSES	
PathFC		PathAISS				SectSEFS	

Note: The performance parameters VT1.5 Rx, STS-1 path Rx, OC-12 Rx far, and STS-1 Rx near are available for OC-12 VTBM ring only.

Note 1: The performance-monitoring history screens show information at one point in time. Reselect the screen to update statistics.

Note 2: There is no way to selectively clear a particular parameter value. Performing a Clear command on the Performance History screen clears *all* performance monitoring parameters, not just the parameter in context. For example, if the value in the Parameter field is LineCV, the clear command will affect all parameters, such as LineES, Line SES, and so on, not just LineCV.

—end—

Procedure 3-7
Displaying the facility performance thresholds

Use this procedure to display the performance thresholds for a facility. The status indicates whether the reporting of threshold alerts is enabled or disabled as well as the values of the thresholds.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to display the performance thresholds for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-7 (continued)
Displaying the facility performance thresholds

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>]↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-7 (continued)
Displaying the facility performance thresholds

Step	Action

5   For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6   For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

Go to step 7.

—**continued**—

Procedure 3-7 (continued)
Displaying the facility performance thresholds

Step	Action

7   Display the alert threshold by entering:

threshld ↵

A screen similar to the following appears, showing a single electrical facility threshold alert (DS3 facility shown).

```
                 Critical Major minor warning FailProt Lockout ActProt  PrfAlrt
         Network View    .     .     3     .      .        .       .        .
                 1        .     .     3     .      .        .       .        .
FP Stats
 0 Quit        OC12 PerfMon Thresholds              Shelf: 1
 2 Select                                           Unit: OC12 G1
 3                                                   Rx Near
 4 ChgOrign    Parameter    Report     Threshold 1           Threshold 2
 5 ListAct                  Type    Status  Value        Status   Value
 6 AlmRpt      1 SectCV     PAlrt   Off    <5.34E4 Min>   Off   <5.3E4 Day>
 7            2 SectES      PAlrt   Off    <4.1E4 Hour>   Off   < 648 Day>
 8 ShowVal    3 SectSES     PAlrt   Off    <    5 Unit>   Off   < 100 Day>
 9 ShowThr    4 SectSEFS    PAlrt   Off    <    2 Min>    Off   <  17 Day>
10            5 LineCV      PAlrt   On     <    1 Min>    On    <   1 Hour>
11 Edit       6 LineES      PAlrt   Off    <    1 Min>    On    <   1 Day>
12            7 LinesSES    PAlrt   On     <    1 Min>    On    <   1 Hour>
13            8 LineUAS     PAlrt   Off    <    1 Min>    On    <   1 Hour>
14
15 Stats
16 History     THRESHLD:
17
18 Help
  NE  2
Time  19:45    > ▯
```

—end—

Procedure 3-8
Changing the report type on a facility

Use this procedure to set the report types (alarms or alerts) for a facility. This determines whether a threshold crossing is reported as an alarm or a performance alert.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840 in *Maintenance*, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to change the report type on	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-8 (continued)
Changing the report type on a facility

Step	Action

3 For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4 For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>]↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-1 on page 1-2
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-8 (continued)
Changing the report type on a facility

Step	Action
5	For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6	For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

Go to step 7.

7	Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

8	Open the editing menu by entering:

edit ↵

If you want to change the report type	Then go to
of path reports for DS1, STS-1, or VT1.5	step 9
of line reports for DS3, STS-1 tribs, OC-3, OC-12 near-end, or OC-12 far-end	step 10
of section reports for OC-3 or OC-12 near-end	step 11
of path reports for DS3	step 12

—**continued**—

Procedure 3-8 (continued)
Changing the report type on a facility

Step	Action
9	To change the report type on a DS1, STS-1, or VT1.5, enter: **rpttype <report type>** ↵ where **<report type>** is **palrt** (performance alerts), **alm** (alarms), or blank to toggle Go to step 13.
10	To change the report type of line reports (DS3 input, STS-1 input, OC-3, OC-12 near-end, or OC-12 far-end reports), enter: **lrpttype <report type>** ↵ where **<report type>** is **palrt** (performance alerts), **alm** (alarms), or blank to toggle Go to step 13.
11	To change the report type of section reports (OC-3 or OC-12 near-end reports), enter: **srpttype <report type>** ↵ where **<report type>** is **palrt** (performance alerts) or **alm** (alarms), or blank to toggle Go to step 13.
12	To change the report type of path reports (DS3 reports), enter: **prpttype <report type>** ↵ where **<report type>** is **palrt** (performance alerts) or **alm** (alarms), or blank to toggle
13	The procedure is complete.

—**end**—

Procedure 3-9
Changing the facility performance threshold status

Use this procedure to set the alert and alarm threshold status for a facility to on or off. When the threshold status is set to off, no alarm or alert is reported for that threshold.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840, in *Maintenance*, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to change the facility performance threshold status for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-9 (continued)
Changing the facility performance threshold status

Step	Action

3 For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4 For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all** or as shown in: Table 1-1 on page 1-2 For OC-3 tributaries, the **all** selection cannot be made.
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-9 (continued)
Changing the facility performance threshold status

Step	Action

5   For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6   For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

7   Display the threshold screen by entering:

threshld↵

The threshold screen appears.

—**continued**—

Procedure 3-9 (continued)
Changing the facility performance threshold status

Step	Action

8 Change the facility threshold status by entering:

edit ↵
statust1 <parameter number> [<status>] ↵

or

statust2 <parameter number> [<status>] ↵

where

<parameter number> is as follows:
for DS1 Rx: **1** to **8**
for VT1.5 Rx: **1** to **2**
for DS3 Rx: **1** to **9**
for DS3 Tx: **1** to **6**
for STS-1 Rx: **1** to **7**
for STS-1 path Rx: **1** to **4**
for OC-3, OC-12 Rx near-end: **1** to **8**
for OC-12 Rx far-end: **1** to **4**

<status> is **on** or **off**

9 If **off** was selected in step 8, confirm the change of status by entering:

yes ↵

A screen similar to the following appears, showing that facility threshold 2 status has been changed for an electrical facility (DS3 facility shown).

```
                    Critical Major minor warning FailProt Lockout ActProt PrfAlrt
            Network View    .      .      1      1        .       .       .       .
                            2      .      .      1      1        .       .       .       .
 Edit FP Thr
  0 Quit        OC12 PerfMon Thresholds            Shelf: 1
  2 Select                                         Unit: OC12 G1
  3                                                Rx Near
  4 ChgOrign    Parameter    Report    Threshold 1          Threshold 2
  5 SRptType                 Type      Status  Value         Status  Value
  6 LRptType    1 SectCV     PAlrt     Off <  1772/Timed>    Off <   4430/Day>
  7            2 SectES     PAlrt     Off <   346/Timed>    Off <    864/Day>
  8 StatusT1    3 SectSES    PAlrt     Off <     2/Timed>    Off <      4/Day>
  9 ValueT1     4 SectSEFS   PAlrt     Off <     7/Timed>    Off <     17/Day>
 10 StatusT2    5 LineCV     PAlrt     Off <  1772/Timed>    Off <   4430/Day>
 11 ValueT2     6 LineES     PAlrt     Off <   346/Timed>    Off <    864/Day>
 12 OnAll       7 LineSES    PAlrt     Off <     2/Timed>    Off <      4/Day>
 13 OffAll      8 LineUAS    PAlrt     Off <    10/Timed>    Off <     10/Day>
 14
 15 Stats
 16 History     EDIT:
 17
 18 Help

   NE 2
 Time   19:45   > □
```

—end—

Procedure 3-10
Changing the facility performance threshold value

Use this procedure to set the alert or alarm threshold value for a facility as the number of errors during a unit of time. When this threshold is reached, an alarm or alert might be reported, depending on the report type and whether the status is on or off. When the threshold status is set to off, no alarm or alert is reported for that threshold.

The default and maximum threshold values are provided in *Performance Monitoring Description*, 323-3001-105, in *Description*, Volume 2A.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840, in *Maintenance*, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

• be logged in to the NEUI and be at the main menu level

• be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*
2	Select the facility.

If you want to change the performance threshold value for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-10 (continued)
Changing the facility performance threshold value

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all** (for transport only), or as shown in: Table 1-1 on page 1-2 For OC-3 tributaries, the **all** selection cannot be made.
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-10 (continued)
Changing the facility performance threshold value

Step	Action

5 For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> is **g1**, **g2**, or **all**
(circuit pack group)

<sts number> is **1** to **12**

<origin> is **near** or **far**
Note: The default is near.

Go to step 7.

6 For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> is **g1** to **g12**, or **all**
(circuit pack group)

<port number> is **1** to **14**

7 Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

—**continued**—

Procedure 3-10 (continued)
Changing the facility performance threshold value

Step	Action

8 Change the facility threshold value by entering:

edit ↵
valuet1 <parameter number> <value> <interval> ↵
or
valuet2 <parameter number> <value> <interval> ↵

where

valuet1 **valuet2**	is dependent on parameter selection
<parameter number>	is as follows: for DS1 Rx: **1** to **8** for VT1.5 Rx: **1** to **2** for DS3 Rx: **1** to **9** for DS3 Tx: **1** to **6** for STS-1 Rx: **1** to **7** for STS-1 path Rx: **1** to **4** for OC-3, OC-12 Rx near-end: **1** to **8** for OC-12 Rx far-end: **1** to **4**
<value>	is dependent on parameter selection. See *Performance Monitoring Description*, 323-3001-105, in *Description*, Volume 2A for threshold values.
<interval>	is **min** (available on OC3 and OC12 only)**, 15Min, Day**, or **Unt** (untimed)

—**continued**—

Procedure 3-10 (continued)
Changing the facility performance threshold status

Step	Action

A screen similar to the following appears.

```
                  Critical Major minor warning FailProt Lockout  ActProt  PrfAlrt
          Network View    .     .     1     1        .       .       .        .
                          2     .     .     1     1        .       .       .        .
Edit FP Thr
 0 Quit       DS3 PerfMon Thresholds              Shelf: 1
 2 Select                                         Unit: DS3 G1 Port 1
 3                                                      Rx Near
 4            Parameter    Report   Threshold  1        Threshold 2
 5                         Type    Status  Value        Status  Value
 6 LRptType   1 LineCV     PAlrt    Off <  1772/Timed>   Off <   4430/Day>
 7 PRptType   2 LineES     PAlrt    Off <   346/Timed>   Off <    864/Day>
 8 StatusT1   3 LineSES    PAlrt    Off <     2/Timed>   Off <      4/Day>
 9 ValueT1    4 PathCV     PAlrt    Off <  1772/Timed>   Off <   4430/Day>
10 StatusT2   5 PathES     PAlrt    Off <   346/Timed>   Off <    864/Day>
11 ValueT2    6 PathSES    PAlrt    Off <     2/Timed>   Off <      4/Day>
12 OnAll      7 PathUAS    PAlrt    Off <     7/Timed>   Off <     17/Day>
13 OffAll     8 PathSEFS   PAlrt    Off <     2/Timed>   Off <      4/Day>
14            9 PathAISS   PAlrt    Off <     7/Timed>   Off <     17/Day>
15 Stats
16 History
17
18 Help

  NE 2
Time  19:45   >
```

—end—

Procedure 3-11
Enabling all the facility performance threshold alarms and alerts

Use this procedure to enable the reporting of alarm and alert thresholds for all performance parameters of a facility for the current direction. If these thresholds have been configured as alarms, the alarms are also enabled.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*
2	Select the facility.

If you want to enable all the performance threshold alarms and alerts for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-11 (continued)
Enabling all the facility performance threshold alarms and alerts

Step	Action

3   For a DS1, DS3, or STS-1 tribs facility, enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4   For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>]↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all** (for transport only), or as shown in: Table 1-1 on page 1-2 For OC-3 tributaries, the **all** selection cannot be made.
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-11 (continued)
Enabling all the facility performance threshold alarms and alerts

Step	Action
5	For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6	For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

Go to step 7.

7	Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

8	Enable the facility alarms and alerts by entering:

edit ↵
onall ↵

9	Confirm or cancel the change you specified in the last step.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

—**end**—

Procedure 3-12
Disabling all the facility performance threshold alarms and alerts

Use this procedure to disable the reporting of alarm and alert thresholds for all performance parameters of a facility for the current direction.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to disable all performance threshold alarms and alerts for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4
an STS path facility	step 5
a VT path facility	step 6

—continued—

Procedure 3-12 (continued)
Disabling all the facility performance threshold alarms and alerts

Step	Action

3 For a DS1, DS3, or STS-1 tribs facility, enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx** (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 7.

4 For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>]↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all** (for transport only), or as shown in: Table 1-1 on page 1-2 For OC-3 tributaries, the **all** selection cannot be made.
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

Go to step 7.

—**continued**—

Procedure 3-12 (continued)
Disabling all the facility performance threshold alarms and alerts

Step	Action
5	For an STS path facility, enter:

facperf path sts oc12 <unit> <sts number> [<origin>] ↵

where

<unit> (circuit pack group)	is **g1**, **g2**, or **all**
<sts number>	is **1** to **12**
<origin>	is **near** or **far** *Note:* The default is near.

Go to step 7.

6	For a VT path facility, enter:

facperf path vt ds1 <unit> <port number> ↵

where

<unit> (circuit pack group)	is **g1** to **g12**, or **all**
<port number>	is **1** to **14**

7	Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

8	Disable the facility alarms and alerts by entering:

edit ↵
offall ↵

9	Confirm or cancel the change.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

—**end**—

Procedure 3-13
Displaying the optical-equipment performance statistics

Use this procedure to display the performance statistics of the OC-3 and OC-12 optical equipment.

The optical-equipment performance thresholds are shown in the form of laser bias current (LBC) and optical power received (OPR). For more information on optical-equipment performance monitoring, see "Optical-equipment performance monitoring" on page 3-6.

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM intermediate-reach (IR) circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*

<div align="center">—**continued**—</div>

Procedure 3-13 (continued)
Displaying the optical-equipment performance statistics

Step	Action

2 Select the optical circuit pack group for which you want performance statistics by entering:

eqpperf <equipment type> <unit> ↵

where

<equipment type> is **oc3** or **oc12**

<unit>   is as shown in:
(circuit pack group)   Table 1-1 on page 1-2

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—end—

Procedure 3-14
Displaying the optical-equipment performance thresholds

Use this procedure to display the performance thresholds for the OC-3 and OC-12 optical equipment.

The optical-equipment performance thresholds are shown in the form of laser bias current (LBC) and optical power received (OPR). For more information on optical-equipment performance monitoring, see "Optical-equipment performance monitoring" on page 3-6.

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM intermediate-reach (IR) circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

—continued—

Procedure 3-14 (continued)
Displaying the optical-equipment performance thresholds

Action

Step	Action

1   Display the performance-monitoring screen by entering:

perfmon ↵

The performance-monitoring screen appears.

2   Select the optical circuit pack group for which you want to display performance thresholds by entering:

eqpperf <equipment type> <unit> ↵

where

<equipment type> is **oc3** or **oc12**

<unit> is as shown in:
(circuit pack group) Table 1-1 on page 1-2

3   Display the thresholds by entering:

threshld ↵

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—**end**—

Procedure 3-15
Changing the report type on all the optical-equipment performance thresholds

Use this procedure to set the report types (alarms or alerts) for the OC-3 and OC-12 optical equipment.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840, in *Maintenance*, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

—continued—

Procedure 3-15 (continued)
Changing the report type on all the optical-equipment performance thresholds

Action

Step	Action

1   Display the performance-monitoring screen by entering:

perfmon ↵

The performance-monitoring screen appears.

2   Select the optical circuit pack group for which you want to change the report type by entering:

eqpperf <equipment type> <unit> ↵

where

<equipment type> is **oc3** or **oc12**

<unit>   is as shown in:
(circuit pack group)   Table 1-1 on page 1-2

3   Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

4   Change the report type by entering:

edit ↵
rpttype <report type>↵

where

<report type> is **palrt** (performance alerts) or **alm** (alarms)

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—**end**—

Procedure 3-16
Changing the optical-equipment performance threshold status

Use this procedure to set the OC-3 and OC-12 optical equipment performance threshold status on or off.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840, in Maintenance, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level

- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the optical circuit pack group for which you want to change the threshold status by entering:
	eqpperf <equipment type> <unit> ↵
	where
	<equipment type> is **oc3** or **oc12**
	<unit> is either **all** or as shown in: (circuit pack group) Table 1-1 on page 1-2

—continued—

Procedure 3-16 (continued)
Changing the optical-equipment performance threshold status

Step	Action
3	Display the threshold screen by entering: **threshld** ↵ *The threshold screen appears.*
4	Change the threshold status by entering: **edit** ↵ **statust1 <parameter number> <status>**↵ where **<parameter number>** is **1** for LBC or **2** for OPR **<status>** is **on** or **off**
5	If you turn the status off, you must confirm or cancel the change.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—**end**—

Procedure 3-17
Changing the optical-equipment performance threshold value

Use this procedure to set the OC-3 and OC-12 optical equipment performance threshold status.

When a facility attribute has been successfully changed, log report FAC401 is generated. See *Log Report Manual*, 323-3001-840, in Maintenance, Volume 5B, for more information.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the optical circuit pack group for which you want to change the threshold value by entering:
	eqpperf <equipment type> <unit> ↵
	where
	<equipment type> is **oc3** or **oc12**
	<unit> is as shown in: (circuit pack group) Table 1-1 on page 1-2

—continued—

Procedure 3-17 (continued)
Changing the optical-equipment performance threshold value

Step	Action
3	Display the threshold screen by entering:
	threshld ↵
	The threshold screen appears.
4	Change the threshold value by entering:
	edit ↵
	valuet1 <parameter number> <value> ↵

    where

    <parameter number> is **1** for LBC or **2** for OPR

    <value>   is **1** to **65535** for LBC or OPR

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—**end**—

Procedure 3-18
Enabling all the optical-equipment performance threshold alarms and alerts

Use this procedure to enable the OC-3 and OC-12 optical equipment performance threshold alarms and alerts.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*
2	Select the optical circuit pack group for which you want to enable the alarms and alerts by entering: **eqpperf <equipment type> <unit>** ↵

    where

    <equipment type> is **oc3** or **oc12**

    <unit>   is as shown in:
    (circuit pack group) Table 1-1 on page 1-2

Procedure 3-18 (continued)
Enabling all the optical-equipment performance threshold alarms and alerts

Step	Action
3	Display the threshold screen by entering: **threshld** ↵ *The threshold screen appears.*
4	Enable all the alarms and alerts by entering: **edit** ↵ **onall** ↵
5	Confirm or cancel the change you specified in the last step.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—end—

Procedure 3-19
Disabling all the optical-equipment performance threshold alarms and alerts

Use this procedure to disable the OC-3 and OC-12 optical equipment performance threshold alarms and alerts.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action

1   Display the performance-monitoring screen by entering:

       perfmon ↵

       The performance-monitoring screen appears.

2   Select the optical circuit pack group for which you want to disable the threshold alarms and alerts by entering:

       eqpperf <equipment type> <unit> ↵

          where

          <equipment type> is **oc3** or **oc12**

          <unit>   is as shown in:
          (circuit pack group)   Table 1-1 on page 1-2 (OC-3 or OC-12)
                               Table 1-4 on page 1-5 for an ABM shelf (DS3)
                               Table 1-5 on page 1-6 for a TBM shelf (DS3)

3   Display the threshold screen by entering:

       threshld ↵

       The threshold screen appears.

               —continued—

Procedure 3-19 (continued)
Disabling all the optical-equipment performance threshold alarms and alerts

Step	Action
4	Disable all the alarms and alerts by entering:
	edit ↵
	offall ↵
5	Confirm or cancel the change you specified in the last step.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

Note 1: The OPR parameter is only supported on the OC-12 VTBM optical interface circuit pack. On the NEUI, a dash "-" is displayed for circuit packs that do not support the OPR parameter.

Note 2: The OC-12 VTBM IR circuit pack does not support the LBC parameter. On the NEUI, a dash "-" is displayed for circuit packs that do not support the LBC parameter.

—**end**—

Procedure 3-20
Displaying the protection-switching statistics

Use this procedure to display STS-1, DS3, OC-3, or OC-12 protection-switching statistics for the current and last minute, hour, day, and untimed interval.

The protection-switching screen of the NEUI shows not only the statistics for each parameter, but also an indicator (**.** [period] or ? [question mark]) to the right of each value. This indicator, when set to ?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid. For more information on IDFs, see "Invalid data flags" on page 3-8.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the circuit pack group for which you want to display the protection-switching statistics by entering:
	protswit <service type> <unit> ↵

where

<service type>	is **ds3**, **sts-1**, **oc3**, or **oc12**
<unit> (circuit pack group)	is as shown in: Table 1-1 on page 1-2 (OC-3 or OC-12) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3)

—end—

Procedure 3-21
Clearing the protection-switching counters

Use this procedure to clear the history or current protection-switching counters, or both, for the DS3, STS-1, OC-3, or OC-12 switching statistics.

The protection-switching screen of the NEUI shows not only the statistics for each parameter, but also an indicator (. [period] or ? [question mark]) to the right of each value. This indicator, when set to ?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid. For more information on IDFs, see "Invalid data flags" on page 3-8.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The performance-monitoring screen appears.*
2	Select the circuit pack group for which you want to clear the protection-switching counters by entering: **protswit \<service type\> \<unit\>** ↵ where

<table>
<tr><td>**\<service type\>**</td><td>is **ds3**, **sts-1, oc3**, or **oc12**</td></tr>
<tr><td>**\<unit\>**
(circuit pack group)</td><td>is as shown in:
Table 1-1 on page 1-2 (OC-3 or OC-12)
Table 1-4 on page 1-5 for an ABM shelf (DS3)
Table 1-5 on page 1-6 for a TBM shelf (DS3)</td></tr>
</table>

—continued—

Procedure 3-21 (continued)
Clearing the protection-switching counters

Step	Action
3	Clear the protection-switching counter or counters by entering:
	clear <count type> ↵
	where
	<count type> is **his** (history), **cnt** (current), or **both**
4	Confirm or cancel the change you specified in the last step.

If you want to	Then enter
confirm the change	**yes** ↵
cancel the change	**no** ↵

—**end**—

Procedure 3-22
Starting the untimed interval clock for protection-switching statistics

Use this procedure to restart the current untimed interval clock for the DS3, STS-1. OC-3, or OC-12 protection-switching statistics.

The protection-switching screen of the NEUI shows not only the statistics for each parameter, but also an indicator (. [period] or ? [question mark]) to the right of each value. This indicator, when set to ?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid. For more information on IDFs, see "Invalid data flags" on page 3-8.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:

perfmon ↵

The performance-monitoring screen appears.

—**continued**—

Procedure 3-22 (continued)
Starting the untimed interval clock for protection-switching statistics

Step	Action
2	Select the circuit pack group for which you want to start the untimed interval clock by entering: **protswit <service type> <unit>** ↵ where

              <service type>   is **ds3**, **sts-1, oc3**, or **oc12**

              <unit>   is as shown in:
(circuit pack group) Table 1-1 on page 1-2 (OC-3 or OC-12)
Table 1-4 on page 1-5 for an ABM shelf (DS3)
Table 1-5 on page 1-6 for a TBM shelf (DS3)

| **3** | Start the untimed interval clock by entering:

startunt ↵ |

<div align="center">—end—</div>

Procedure 3-23
Displaying the protection-switching history

Use this procedure to display the switch/count history of a given DS3, OC-3, or OC-12 circuit pack group.

The protection-switching screen of the NEUI shows not only the statistics for each parameter, but also an indicator (**.** [period] or ? [question mark]) to the right of each value. This indicator, when set to ?, is an invalid data flag (IDF). When set, the IDF indicates that the displayed value may be invalid. For more information on IDFs, see "Invalid data flags" on page 3-8.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the circuit pack group for which you want to display the switch-count history by entering:
	protswit <service type> <unit> ↵

where

<service type>	is **ds3**, **sts-1, oc3**, or **oc12**
<unit> (circuit pack group)	is as shown in: Table 1-1 on page 1-2 (OC-3 or OC-12) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3)

—continued—

Procedure 3-23 (continued)
Displaying the protection-switching history

Step	Action

3   Display the history statistics by entering:

history <history parameter> ↵

where

<history parameter> is

AutoReq, **AutoComp**, **AutoSw**, **UserReq**,
UserComp, or **UserSw** for a ring ADM shelf
AutoReq, **AutoComp**, **UserReq**, or
UserComp for a terminal or linear ADM shelf

A screen similar to the following appears, showing the protection-switching history of a circuit pack group (DS3 shown).

```
                Critical Major minor warning  FailProt Lockout ActProt PrfAlrt
        Network View     •       •     1      2       •        •       •       *
          1 St.John's    •       •     1      1       •        •       •       •
PS History
 0 Quit     DS3 Switch History                    Shelf: 1
 2 Select                                         Unit: DS3  G2
 3
 4 Clear        Last 32  15Min:               Parameter: AutoReq
 5
 6 AutoReq     1- 6:       0 ?        0 ?      0 ?       0 ?      0 ?        0 ?
 7 AutoComp    7-12:       0 ?        0 ?      0 ?       0 ?      0 ?        0 ?
 8 AutoSw     35-18:       0 ?        0 ?      0 ?       0 ?      0 ?        0 ?
 9 UserReq    19-24:       0 ?        0 ?      0 ?       0 ?      0 ?        0 ?
10 UserComp   25-30:       0 ?        0 ?      0 ?       0 ?      0 ?        0 ?
11 UserSw     31-32:       0 ?        0 ?
12           Last 7 Days:
13            1- 4:        0 ?        0 ?      0 ?       0 ?
14            5- 7:        0 ?        0 ?      0 ?
15 Stats
16
17
18 Help
  NE 1
Time  17:35  >
```

—end—

Procedure 3-24
Displaying a truncated value in full precision

Use this procedure to display all performance monitoring thresholds for the facility in context in full precision (without scientific notation and truncation).

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the facility.

If you want to display the performance-monitoring thresholds for	Then go to
a DS1, DS3, or STS-1 tribs facility	step 3
an OC-3 or OC-12 facility	step 4

—**continued**—

Procedure 3-24 (continued)
Displaying a truncated value in full precision

Step	Action

3 For a DS1, DS3, or STS-1 tribs facility, enter:

facperf <facility type> <unit> <port number> <direction> ↵

where

<facility type>	is **ds1**, **ds3**, or **sts1**
<unit> (circuit pack group)	is either **all**, or as shown in: Table 1-2 on page 1-4 for an ABM shelf (DS1) Table 1-3 on page 1-4 for a TBM shelf (DS1) Table 1-4 on page 1-5 for an ABM shelf (DS3) Table 1-5 on page 1-6 for a TBM shelf (DS3) Table 1-6 on page 1-6 for a TBM shelf (STS-1)
<port number>	for DS1 is **1** to **14** for DS3 and STS1 is **1** to **3** for STS-1 tribs is **1** to **3**
<direction>	for DS3 is **rx** or **tx**; (rx is the default for DS1 and STS-1, and cannot be changed)

Go to step 5.

4 For an OC-3 or OC-12 optical facility, enter:

facperf <facility type> <unit> [<origin>] ↵

where

<facility type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is either **all** (for transport only), or as shown in: Table 1-1 on page 1-2 For OC-3 tributaries, the **all** selection cannot be made.
<origin>	for OC-12 is **near** or **far** *Note:* The default is near.

5 Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

6 Show the value in full precision by entering:

showval ↵

The showval screen appears. The showval (sv) command can also be used on history and statistics screens.

—end—

Procedure 3-25
Displaying the equipment performance-monitoring thresholds

Use this procedure to display all equipment performance monitoring thresholds currently enabled (status set to ON) for the equipment or facility in context.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level

- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The performance-monitoring screen appears.
2	Select the circuit pack group for which you want to display the equipment performance-monitoring thresholds by entering:
	eqpperf <service type> <unit> ↵

where

<service type>	is **oc3** or **oc12**
<unit> (circuit pack group)	is as shown in: Table 1-1 on page 1-2

—continued—

Procedure 3-25 (continued)
Displaying the equipment performance-monitoring thresholds

Step	Action

3 Display the threshold screen by entering:

threshld ↵

The threshold screen appears.

4 Show the performance monitoring thresholds by entering:

showthr ↵

A screen similar to the following appears, showing the performance monitoring thresholds.

```
                    Critical Major minor warning FailProt Lockout  ActProt  PrfAlrt
          Network View    .      .     1     1       .        .        .        .
                           2      .     .     1     1       .        .        .        .
 FP Threshld
  0 Quit        OC12 PerfMon Thresholds            Shelf: 1
  2 Select                                         Unit: OC12 G1
  3                                                     Rx Near
  4              Parameter    Report   Threshold  1       Threshold 2
  5 ListAct                    Type    Status  Value      Status  Value
  6 AlmRpt      1 SectCV      PAlrt    Off <  1772/Timed>  Off <   4430/Day>
  7             2 SectES      PAlrt    Off <   346/Timed>  Off <    864/Day>
  8 ShowVal     3 SectSES     PAlrt    Off <     2/Timed>  Off <      4/Day>
  9 ShowThr     4 SectSEFS    PAlrt    On  <  1772/Timed>  Off <   4430/Day>
 10             5 LineCV      PAlrt    Off <   346/Timed>  Off <    864/Day>
 11 Edit        6 LineES      PAlrt    Off <     2/Timed>  Off <      4/Day>
 12             7 LineSES     PAlrt    Off <     7/Timed>  Off <     17/Day>
 13             8 LineUAS     PAlrt    Off <     2/Timed>  Off <      4/Day>
 14
 15 Stats
 16 History     ShowThr
 17            All OC12 PerfMon Thresholds
 18 Help       Unit      Parameter  Dir Type   Unit      Parameter  Dir Type
   NE 2        G1        SectSEFS   RX  T1
 Time  16:45   > []
```

—end—

Procedure 3-26
Viewing status of TCA capping

Use this procedure to determine whether threshold crossover alert (TCA) capping is enabled or disabled and to view the current cap values for the various time intervals. If TCA capping is enabled, it is enabled for all facilities supported by the OPC.

TCA capping defaults to disabled, with default cap values of 100 for all time intervals.

Note: The PMCAPCI tool is supported only through RLOGIN and through direct connection to the HMI port on the network element. You cannot use PMCAPCI when the user interface is accessed from another NE through the "SelectNE" command.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering: **perfmon** ↵ *The Active PM Thresholds screen appears.*
2	Enter: **pmcapci** ↵
3	Enter: **help** ↵ *A help screen appears, displaying the current state of PM capping. It also lists the default settings for time intervals, as well as available commands.*

—continued—

Procedure 3-26 (continued)
Viewing status of TCA capping

Step	Action
4	Enter: **status** ↵ *The screen displays the current provisioned status of PM TCA capping on the NE, showing whether it is currently ON or OFF, and lists the cap values for each interval.*

<center>**—end—**</center>

Procedure 3-27
Enabling TCA capping

Use this procedure to enable threshold crossover alert (TCA) capping. When TCA capping is enabled on the NE, it is enabled for all facilities supported by the OPC. The system stops generating threshold crossover alerts once cap values for the time intervals has been reached.

TCA capping defaults to disabled, with default cappings set at 100 for all time intervals.

Note: The PMCAPCI tool is supported only through RLOGIN and through direct connection to the HMI port on the network element. You cannot use PMCAPCI when the user interface is accessed from another NE through the "SelectNE" command.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The Active PM Thresholds screen appears.
2	Enter:
	pmcapci ↵
3	Enter:
	cap ↵
	The Active PM Thresholds screen displays the available parameters that can be set.

—continued—

Procedure 3-27 (continued)
Enabling TCA capping

Step	Action
4	Enter: **enable** ↵ *A message confirms that your command was successful.*

<div align="center">**—end—**</div>

Procedure 3-28
Disabling TCA capping

Use this procedure to disable threshold crossover alert (TCA) capping. When TCA capping is disabled, all TCA cap values become inactive, and all TCAs generated by the system are reported by the OPC.

TCA capping defaults to disabled, with default cappings for all time intervals set at 100.

Note: The PMCAPCI tool is supported only through RLOGIN and through direct connection to the HMI port on the network element. You cannot use PMCAPCI when the user interface is accessed from another NE through the "SelectNE" command.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The Active PM Thresholds screen appears.
2	Enter:
	pmcapci ↵
3	Enter:
	cap ↵
	The Active PM Thresholds screen displays the available parameters that can be set.
4	Enter:
	disable ↵
	A message confirms that your command was successful.

—end—

Procedure 3-29
Setting TCA cap values

Use this procedure to set threshold crossover alert (TCA) cap values for various time intervals.

TCA capping defaults to disabled, with default cap values of 100 for all time intervals.

Note: The PMCAPCI tool is supported only through RLOGIN and through direct connection to the HMI port on the network element. You cannot use PMCAPCI when the user interface is accessed from another NE through the "SelectNE" command.

Requirements

Before starting this procedure, you must:

- be logged in to the NEUI and be at the main menu level
- be familiar with the VT100-type NEUI (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A)

Note: To exit a partially entered command and to terminate field definition displays, type abort.

Action

Step	Action
1	Display the performance-monitoring screen by entering:
	perfmon ↵
	The Active PM Thresholds screen appears.
2	Enter:
	pmcapci ↵
3	To see the current status of TCA settings, enter:
	status ↵
	The screen displays the current provisioned status of PM TCA capping on the NE, showing whether it is currently enabled or disabled, and lists the cap values for each interval.

—continued—

Procedure 3-29 (continued):
Setting TCA cap values

Step	Action

4   Enter:

cap <*time interval> <cap value>*↵

where

<time interval>   Enter the time interval to which you want to apply a cap value.

min for 1-minute time interval

15min for 15-minute time interval

Day for day time interval

Unt for untimed interval

<cap value>   The cap value you want to set for the selected time interval. For all time intervals, this must be a value between **0** and **65535**.

A message confirms that your command was successful.

5   To verify the status of all of your changes, enter:

status ↵

The screen shows all of the current TCA cap settings.

—**end**—

Procedure 3-30
Removing active TCAs

You can remove active TCAs (threshold crossover alerts), when the number of TCAs generated by the network element reaches capping values. If you do not remove some TCAs, subsequent TCAs are no longer reported. Lowering TCAs can cause TCA capping to be re-asserted, which allows additional TCAs to be raised. When TCAs reach the capping limit, TCA capping is again asserted.

The assertion and de-assertion of TCA capping generates a log.

You can de-assert TCA capping in several ways:

- resetting associated data bins to 0 via the "clear" or "StartUnt" command
- disabling thresholds or changing provisioned threshold values
- putting facilities with active TCAs out of service
- deleting facilities for which there are TCAs active
- Cold and Reload Starts

For more information on these tasks, refer to the specific procedures.

—**end**—

Call tracing tools

This chapter describes how to use the System Monitor (SYSMON) command interpreter (CI) tool to display the following information:

- call processing activity by shelf
- line card activity and services by line card
- port communication links
- DS0 and DS1 paths
- the states of common equipment cards

This chapter also describes how to use the PORT CI tool to display information about data communications channels, control networks, and path protection switching.

Chapter contents

This chapter includes the following tasks:

Procedure	Task	See
4-1	Opening SYSMON	page 4-2
4-2	Displaying call processing activity	page 4-3
4-3	Displaying line card information	page 4-4
4-4	Displaying port information	page 4-7
4-5	Displaying a path	page 4-9
4-6	Displaying the state of common equipment cards	page 4-12

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 4-1
Opening SYSMON

This procedure describes how to open the System Monitor (SYSMON) command interpreter (CI) tool.

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Network Element (NE) Login Manager tool.
	For directions, see *OPC User Interfaces Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.
	The NE Login Manager screen appears.
2	Log in to the network element.
	The Network Element User Interface (NEUI) screen appears.
3	At the prompt, enter the following:
	quit all ↵
	The CI prompt appears.
4	Open the SYSMON CI tool by entering:
	sysmon↵
	The SYSMON CI tool loads, and the SYSMON CI prompt appears.

<div align="center">—end—</div>

Procedure 4-2
Displaying call processing activity

This procedure describes how to use SYSMON to display call processing statistics. You can display statistics for one shelf or all shelves in an AccessNode or AccessNode Express (ANX). AccessNode shelves can be either copper distribution shelves (CDS) or Universal Edge 9000 (UE) shelves.

Requirements

Before you begin this procedure, you must know the type of switch (proprietary or MVI) with which the shelf interfaces.

Action

Step	Action
1	Open the SYSMON CI tool.
	For directions, see "Opening SYSMON" on page 4-2.
2	Display call processing statistics by entering:

cpstats <interface> <function> <shelftype> <shelf> ↵

where

<interface>	type of switch interface: **p** (proprietary) or **m** (MVI)
<function>	**shelf** or **all**
<shelf type>	**ue** or **cds** or **anx**
<shelf>	shelf number: **1** to **7** for UE; **1** to **7** for CDS; **1** to **28** for ANX

SYSMON displays call processing activity for the shelf.

The screen displays a snapshot of the instantaneous lines and services activity of the selected interface and shelf.

The *VT1.5 IDLC Statistics* section displays the instantaneous DS0 channel usage for the IDLC DS1 links of the selected interface and shelf.

The *Collected POTS/COIN stats* section displays the cumulative POTS/COIN traffic counts in the NE for the selected interface since the cpstats statistics were last cleared.

Note: You can enter **cpstats <p** or **m> clear** to reset statistics to zero.

—**end**—

Procedure 4-3
Displaying line card information

This procedure describes how to display the following line card information:

- circuit pack and line termination states
- line card service and status
- system configuration
- path of active line cards

Action

Step	Action
1	Open the SYSMON CI tool.
	For directions, see "Opening SYSMON" on page 4-2.
2	Display line card information by entering:

lcstats \<function\> \<shelftype\> \<shelf\> (\<card\> \<circuit\> \<service type\> \<service\> \<line termination state\>)↵

where

\<function\>	**shelf** or **all**
\<shelf type\>	**ue** or **cds** or **anx**
\<shelf\>	shelf number: **1** to **7** for UE; **1** to **7** for CDS; **1** to **28** for ANX
\<card\>	line card number: **1** to **16** for UE; **1** to **96** for CDS; **1** to **48** for ANX
\<circuit\>	line circuit number: **1** to **24** for UE
\<service type\>	**idlc**, **udlc**, **gr303**, **vlcm**, or **lcm**
\<service\>	provisioned line card service. See Table 4-1 on page 4-6 for a list of valid services by service type.
\<line termination state\>	**oos** or **is**

Note 1: \<card\>, \<circuit\>, \<service type\>, \<service\>, and \<line termination state\> are optional.

Note 2: You can enter **lcstats all** to display the status of all line cards on all shelves for all services on all service types.

—continued—

Procedure 4-3 (continued)
Displaying line card information

Step	Action

SYSMON displays the information you requested. The following sample shows the results of entering "lcstats shelf anx 3."

```
Card LCSevice   Circuit Pk States LT States    CPSrv  Stat  Cfig  S VT DSO
---- --------   ------- --------- ---- ---------- -----  ----  ----  - -- ---
3  1 LSR        .                 .              LPOTS  Idle  IDLC
3  2 MVIPOTS    .                 .    trafbsy    TPOTS  Act   GR303 1  2  10
3  3 LSR        .                 .    trafbsy    LPOTS  Act   IDLC  1  19  3
3  4 MVIPOTS    .                 .    trafbsy    TPOTS  Act   GR303 1  16 15
3  5 NONE       .                 Null            NONE
3  6 MVIPOTS    .                 .              TPOTS  Idle  GR303
3  7 MVIPOTS    .                 .              TPOTS  Idle  GR303
3  8 POTSRT     .                 .    trafbsy    NSS    Act   UDLC
3  9 LSR        .                 .              LPOTS  Idle  IDLC
3 10 MVIPOTS    .                 .    trafbsy    TPOTS  Act   GR303 1  3   9
3 11 LSR        .                 .              LPOTS  Idle  IDLC
3 12 MVIPOTS    .                 .              TPOTS  Idle  GR303
3 13 COIN       .                 .    trafbsy    LCOIN  Act   IDLC  1  19 17
3 14 COIN       .                 .    trafbsy    LCOIN  Act   IDLC  1  4  23
3 15 MVIPOTS    .                 .    trafbsy    TCOIN  Act   GR303 1  3   2
3 16 MVIPOTS    .                 Null            TPOTS  Idle  GR303
3 17 NONE       .                 Null            NONE
3 18 NONE       .                 .              NONE
3 19 LSR        .                 .              LPOTS  Idle  IDLC
3 20 MVIPOTS                                     TPOTS  Idle  GR303
More...
```

—continued—

Procedure 4-3 (continued)
Displaying line card information

Step	Action

Table 4-1 Services by service type

Service type	Service
IDLC	COIN EBS ILCLSR POTS
UDLC	2WireDPO 2WireDPT 2WireETOO 2WireETOS 2WireFXO 2WireFXS 2WireTOS 2WireDX 2WireETO 2WireFXO 2WireTO COINCT COINRT DDS EM ILCPOTS MRD PLAR PLR POTSCT POTSRT TDM UVGCT UVGRT
GR303	MVICOIN MVILRB MVIPOTS MVIUVG GR303_ISDN
VLCM	LCMPOTS LCMCOIN LCMEBS
LCM	LCMPOTS

—end—

Procedure 4-4
Displaying port information

This procedure describes how to display the following information:

- data communications channel (DCC) information and statistics for point-to-point fiber systems

- control network (CNET) information and statistics

- path protection switching (PPS) information and statistics

Two command parameters (info and stats) let you display either general information or statistics. Figure 4-1 shows the information displayed by the info parameter.

Figure 4-1
Info parameter

SC-10184

```
CNET STATUS :
------------
State : -> IS  <-
This station address      : 04-0A-33-32-02-0A
Next station address      : 04-4A-31-91-02-0A
Previous station address  : 04-4A-33-32-02-0A
Last OOS-to-IS state change : 1990/01/01 --- 00:00:02
Last IS-to-OOS state change : 0000/00/00 --- 00:00:00
>
```

Figure 4-2 shows the statistics displayed the stats parameter.

Figure 4-2
Stats parameter

SC-10185

```
CNET Statistics Summary :
------------
Number of received frames     :      985562
Number of transmitted frames  :      537830
Number of TBL errors          :           1
Number of tokens passed       :       39268
Number of tokens failed       :           6
```

—continued—

Procedure 4-4 (continued)
Displaying port information

Action

Step	Action

1 Open the PORT CI tool by entering:

port↵

2 Complete the instructions in the following table:

To display	Do the following:
DCC or CNET information or statistics	Enter: **<system> <command set>**↵ where <system> **DCC** or **CNET** <command set> **info** or **stats**
PPS information	Enter: **pps**↵ Enter: **path <host>** where <host> host number: **1** to **7** Enter: **link <host>** where <host> host number: **1** to **7**

PORT CI displays the information or statistics you requested.

—**end**—

Procedure 4-5
Displaying a path

This procedure describes how to display the path of a DS0 or DS1 through an AccessNode. You can display paths for the following equipment:

- line cards (LC)
- line interface cards (LIC)
- access interface cards (AIC)
- transport interface cards (TIC)
- communications overhead (COH) bus
- maintenance overhead (MOH) bus
- high-level data link control (HDLC)

Action

Step	Action
1	Open the SYSMON CI tool.
	For directions, see "Opening SYSMON" on page 4-2.
2	Complete the instructions in the following table:

To display a path for the following card:	Do the following:
LC	Enter:
	showpath lc \<shelf type\> \<shelf\> \<card\> \<circuit\> \<channel\>↵
	where
	\<shelf type\> **ue** or **cds** or **anx**
	\<shelf\> shelf number: **1** to **7** for UE; **1** to **7** for CDS; **1** to **28** for ANX
	\<card\> card number: **1** to **16** for UE; **1** to **96** for CDS; **1** to **48** for ANX
	\<circuit\> circuit number: **1** to **24** for UE
	\<channel\> **b1**, **b2**, **d**, or **msg** for UE; **b1**, **b2**, **d**, or **msg** for CDS; **b1**, **b2**, or **d** for ANX
—continued—	

—continued—

Procedure 4-5 (continued)
Displaying a path

| Step | Action |

To display a path for the following card:	Do the following:
LIC	Enter: **showpath lic <shelf type> <shelf> <card>**↵ where <shelf type> **cds** or **anx** <shelf> shelf number: **1** to **7** for CDS; **1** to **28** for ANX <card> card number: **1** to **96** for CDS; **1** to **48** for ANX
AIC	Enter: **showpath aic <tx_or_rx> <transport_or_access> <time slot>**↵ where <tx_or_rx> **tx** or **rx** <transport_or _access> **t** or **a** <time slot> time slot number: **1** to **3239**
TIC	Enter: **showpath tic <sts> <DS1> <DS0>**↵ where <sts> **1** to **3** <DS1> DS1 number: **1** to **28** <DS0> DS0 number: **1** to **24**
COH	Enter: **showpath coh <link>**↵ where <link> link number: **1** to **54**
MOH	Enter: **showpath moh <link>**↵ where <link> link number: **1** to **54**
HDLC	Enter: **showpath hdlc <link>**↵ where <link> link number: **1** to **54**
—continued—	

—continued—

Procedure 4-5 (continued)
Displaying a path

Step	Action

To display a path for the following card:	Do the following:
all cards	Enter: **showpath all \<shelf type>**↵ where \<shelf type> **ue** or **cds** or **anx**
—end—	

SYSMON displays the path you requested. The following example shows the results of the command "showpath lc anx 3 12."

SC-10186

```
No VT connects to the required LC.
No VT connects to the required LC.
LC  3  1 D   TIC 3 15  4 t806 ->a84          ->a468 ->t1644 TIC 1 19 11
No VT connects to the required LC.
No VT connects to the required LC.
TIC 1 19 11 t1644->a468            a1620->t806  TIC 3 15 4 LC 3 1 D
```

—end—

Procedure 4-6
Displaying the state of common equipment cards

This procedure describes how to display the following information about a common equipment card:

- primary and secondary states
- activity
- shelf and slot numbers

Action

Step	Action
1	Open the SYSMON CI tool.
	For directions, see "Opening SYSMON" on page 4-2.
2	Display line card states by entering:
	showcard↵
	SYSMON displays the following information:

SC-10187

```
————— Card States —————        (Aug.,11, 1997 18:03:20)
Card          Primary   Secondary     Activity   Shelf  Slots#
AIC A            •                        –        CE1     13
AIC B            •                        –        CE1     16
DS1 P            •                        –        CE1      3
DS1 G1           •                       Act       CE1      1
DS1 G2           •                       Act       CE1      2
DS1 G4           •                       Act       CE1      4
DS1 G5           •                       Act       CE1      5
DS1 G6           •                       Act       CE1      6
MIC              •                        –        CE1     19
PROC A           •                       Act       CE1     17
PROC B           •                       Stby      CE1     18
TAC              •                        –        CE1     20
TIC A            •                       Pri       CE1     11
TIC B            •                       Sec       CE1     14
TXC G1           •                        –        CE1      9
TXC G2           •                       Act       CE1     10
```

—end—

VLCM performance monitoring

This chapter describes how to use the Virtual Line Concentrating Module (VLCM) command interface (CI) tool to display the following information:

- current status of all VLCM units
- current status of all provisioned VLCM DS1 links

This chapter also describes how to use the VLCM CI to convert AccessNode/AccessNode Express shelf and line card positions to DMS-10NA or APC-100 switch drawer and line card positions

The VLCM CI tool is used only with access bandwidth manager (ABM) shelves and host digital terminals (HDT) that are connected to DMS-10NA or APC-100 switches.

Chapter contents

This chapter includes the following tasks:

Procedure	Task	See
5-1	Opening the VLCM CI tool	page 5-2
5-2	Displaying VLCM unit status	page 5-3
5-3	Displaying DS1 link status	page 5-4
5-4	Converting AccessNode line card positions to VLCM positions	page 5-6
5-5	Setting the load name	page 5-9

If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions for CI tools in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 5-1
Opening the VLCM CI tool

Use this procedure to open the Virtual Line Concentrating Module (VLCM) command interpreter (CI) tool.

Action

Step	Action
1	Log in to the operations controller (OPC) and open the NE Login Manager tool.
	For directions, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.
	The NE Login Manager screen appears.
2	Log in to the network element.
	The Network Element User Interface (NEUI) screen appears.
3	At the prompt, enter the following:
	quit all ↵
	The CI prompt appears.
4	Open the VLCM CI tool by entering:
	vlcmci↵
	The VLCM CI tool loads, and the VLCM CI prompt appears.
	—end—

Procedure 5-2
Displaying VLCM unit status

Use this procedure to display the current state of all provisioned Virtual Line Concentrating Module (VLCM) units on an AccessNode network element.

Action

Step	Action
1	Open the VLCM CI tool.
	For directions, see "Opening the VLCM CI tool" on page 5-2.
2	Display the status of the VLCM units provisioned on an AccessNode network element by entering:

vlcmstatus↵

The VLCM CI displays the status of all the VLCM units provisioned on the AccessNode network element.

```
VLCM NUM     UNIT NUM     STATE       ACTIVITY
---------    ---------    ------      ---------

    1            0          IS         RAISED
    1            1          IS         RAISED
```

Table 5-1 lists and describes the unit status fields.

Table 5-1
vlcmstatus fields

Field	Value	Description
VLCM NUM	1 to 2	The number of the VLCM.
UNIT NUM	0 or 1	The number of the line concentrating module controller (LCMC) on the VLCM.
STATE	 IS OOS WAI	The service state of the LCMC: in service out of service LCMC trying to return to service (RTS)
ACTIVITY	 RAISED NOT RAISED	The status of the LCMC link: link can carry traffic link cannot carry traffic

—end—

Procedure 5-3
Displaying DS1 link status

Use this procedure to display the current state of all provisioned Virtual Line Concentrating Module (VLCM) DS1 links on an AccessNode network element.

Action

Step	Action
1	Open the VLCM CI tool.
	For directions, see "Opening the VLCM CI tool" on page 5-2.
2	Display line card information by entering:

linkstatus <vlcm value>↵

    where

      <vlcm value>   the VLCM: **1** to **2**, or **all**

The VLCM CI displays the status of all the DS1s provisioned as VLCM links on the VLCM. The following sample shows the results if you enter "linkstatus 1".

```
VLCM     LINK    TIC          STATE    SIGNAL/PCM
----     ----    ---          -----    ----------

  1        0     STS 1VT 1    In Ser     signal
  1        1     STS 1VT 2    In Ser     pcm
  1        3     STS 1VT15    In Ser     signal
  1        4     STS 1VT16    In Ser     pcm
```

—continued—

Procedure 5-3 (continued)
Displaying DS1 link status

Step	Action

Table 5-2 lists and describes the DS1 link status fields.

Table 5-2
linkstatus fields

Field	Value	Description
VLCM	1 to 2	The number of the VLCM that the DS1 link is associated with
LINK	0 to 5	The port number of the DMS-10NA switch that the DS1 link is associated with
DS1	STS - [1 to 3] VT - [1 to 28]	The virtual tributary (VT) number of the AccessNode network element that the DS1 link maps to
STATE	 In Ser Not In	The status of the DS1 link: link is working link is not working
SIGNAL/PCM	 signal/rmm signal pcm	Type of traffic the DS1 link carries: voice frequency, signalling traffic, and RMM traffic voice frequency and signalling traffic voice frequency traffic only

—**end**—

Procedure 5-4
Converting AccessNode line card positions to VLCM positions

Use this procedure to convert AccessNode copper distribution shelf (CDS) or AccessNode Express voice module (VM) line card positions to virtual line concentrating module (VLCM) line card positions.

The AccessNode can have up to seven line card drawers called CDSs. Each CDS holds up to 96 line cards, which are numbered from 1 to 96.

The AccessNode Express (ANX) can have up to 28 VM line card drawers. Each VM line card drawer holds up to 48 line cards, which are numbered from 1 to 48.

The DMS-10NA views the AccessNode and the ANX as line concentrating modules (LCM). An LCM can have up to 20 line card drawers, which are numbered from 0 to 19. Each LCM line card drawer holds up to 32 line cards, which are numbered from 0 to 31.

Note: The first line on the voice module is equivalent to LCM 1 0 0 (shelf 1, LSG 0, and line 0, which is reserved for special use on the DMS-100).

—continued—

Procedure 5-4 (continued)
Converting AccessNode line card positions to VLCM positions

Table 5-3 summarizes this mapping.

Note: For more information about mapping VMs in ANX, see *AccessNode Express Commissioning and OAM&P*, 323-3051-220, in the *AccessNode Express* volume.

Table 5-3
AccessNode/ANX to VLCM mapping

Number of	In an AccessNode	In an ANX	In a VLCM
Line card drawers	Up to 7	Up to 28	Up to 20
Line cards in a line card drawer	Up to 96	Up to 48	Up to 32
Numbering of	**By the AccessNode**	**By the ANX**	**By the VLCM**
Line card drawers	1 to 7	1 to 28	0 to 19
Line cards in a line card drawer	1 to 96	1 to 48	0 to 31
Example of mapping AccessNode and ANX line cards on to the VLCM			
Line card drawer	2	4	4
Line card	50	2	17

—continued—

Procedure 5-4 (continued)
Converting AccessNode line card positions to VLCM positions

Action

Step	Action

1   Open the VLCM CI tool.

For directions, see "Opening the VLCM CI tool" on page 5-2.

2   Display the equivalent VLCM line card position of an AccessNode CDS or an ANX VM line card position by entering:

tranlcm <shelf type> <shelf> <slot>↵

    where

<shelf type>	**CDS** or **ANX**
<shelf>	is the AccessNode CDS shelf: **1** to **7** or the ANX VM: **1** to **28**
<slot>	is the AccessNode line card number: **1** to **96** or the ANX line card number: **1** to **48**

The VLCM CI displays the equivalent mapping of the line card on the VLCM. The following sample shows the results if you enter "tranlcm CDS1 1" in this step.

```
 The VLCM number is: 1
 The VLCM drawer is: 0
 The VLCM line is:   0
```

Table 5-4 lists and describes the tranlcm fields.

Table 5-4
tranlcm fields

Field	Description	Value
VLCM number	The number of the VLCM	1 to 2
VLCM drawer	The line card drawer of the LCM	0 to 19
VLCM line	The line card slot in the LCM drawer	0 to 31

—end—

Procedure 5-5
Setting the load name

Use this procedure to set the load name.

When setting the load name, you must make sure the load name you specify is the same load name specified at the switch.If the two names are different, you receive a load mismatch fault at the OPC.

Action

Step	Action
1	Open the VLCM CI tool.
	For directions, see "Opening the VLCM CI tool" on page 5-2.
2	Query the load name at the switch by entering:
	QueryPM
3	Set the load name by typing the following:
	setloadname \<VLCM instance number\> \<unit number\> \<VLCM load name\>

—end—

Index

SONET Products

AccessNode

Performance Monitoring Procedures

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