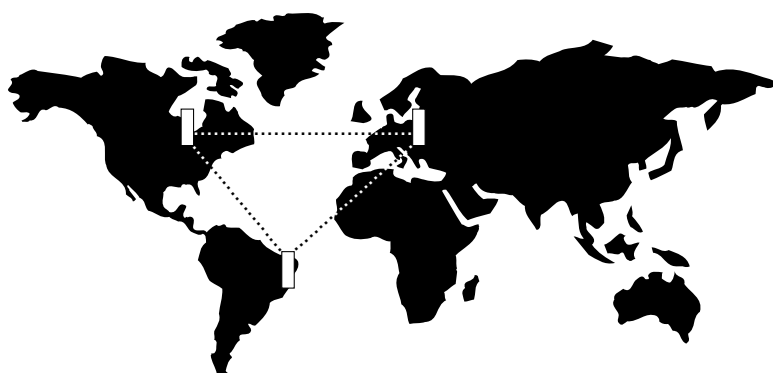# Setting Up Trunks

This chapter describes the commands that pertain to trunks. The contents in this chapter are as follows:

- Introduction
- A table showing the supported combinations of nodes, card sets, and line types
- Descriptions of trunk-related procedures:
    - Setting up a trunk
    - Setting up a virtual trunk
    - Reconfiguring a trunk
    - Removing a trunk
    - Displaying or printing a trunk configuration
    - Specifying trunk redundancy
    - Using subrate trunk interface control templates
- A list of commands in this chapter with beginning page number
- Descriptions of the trunk commands

Introduction

After *node* configuration, the *trunks* have to be activated. Trunks are intra-node communication links in a network. A trunk can connect any combination of IPX, IGX, or BPX nodes. Trunk characteristics are:

- Physical line type: T1 (including fractional), E1 (including fractional), Subrate, E3, T3, or OC3 (STM1).

- Communication technology: Asynchronous Transfer Mode (ATM) or StrataCom FastPackets.

Trunks require specific front and back card combinations in each node. The following table shows the communication technology for each node type, card combination, and line type.

Table 5-1

Node Type	Front Card	Back Card	Line Types	Technology
IPX	NTC	BC-T1	T1, T1 Fractional	FastPacket
IGX	NTM	BC-T1	T1, T1 Fractional	FastPacket
IPX	NTC	BC-E1	E1, E1 Fractional	FastPacket
IGX	NTM	BC-E1	E1, E1 Fractional	FastPacket
IPX	NTC	BC-SR	Subrate	FastPacket
IGX	NTM	BC-SR	Subrate	FastPacket
IPX	NTM	BC-Y1	Y1	FastPacket
IGX	NTM	BC-Y1	Y1	FastPacket
IPX	AIT	BC-T3, BC-E3	T3, E3	ATM
IGX	BTM	BC-T3, BC-E3	T3, E3	ATM
BPX	BNI	LM-3T3, LM-3E3	T3, E3	ATM
BPX	ASI	LM-2T3	T3, E3 (with external adapter)	ATM
BPX	BNI-155, BNI-155E	2OC3-SMF or 2OC3-MMF	OC3 (STM1)	ATM
BPX	ASI-155, ANI-155E	2OC3-SMF or 2OC3-MMF	OC3 (STM1)	ATM

Setting Up a Trunk

Prior to executing the commands in this section, node setup must be complete (see Chapter 4). Also, the front and back cards that support the proposed line type and communication technology must reside in the slot intended for the trunk.

1 Use the **uptrk** command to up the trunk. This command activates the card so it can begin generating framing. It also determines whether the trunk is physical-only or a virtual trunk. The third place digit signals that the trunk is virtual.

Each node can have a combined maximum of 32 virtual and physical trunks. The BNI-T3 or E3 can support up to 32 virtual trunks on 1 or both physical ports. A BNI-OC3 line can support up to 11 virtual trunks. Note that, like regular trunks, virtual trunks can carry high-priority traffic.

The **uptrk** command must execute at each end of the trunk. When the trunk is up at only one end, the node detects it as being in an alarm state (see **dsptrks**). Upping the trunk at both ends clears the alarm.

2   Use the **cnftrk** command to override trunk default values. The **cnftrk** command is mandatory for virtual trunks but optional for physical trunks. For virtual trunks, the VPI must be changed to a non-0 value before execution of **addtrk**.

If **cnftrk** is used, identical changes must take place at both ends of the trunk. To display existing trunk parameters, use the **dsptrkcnf** command. The configurable parameters are listed for each card type in the following table. (The possibilities are PKT for FastPackets, ATM cells, BNI if the trunk is a BNI card, or ALL.) Not all of these parameters apply to the BPX. The BPX parameters are in a list that follows the table.

Once the trunk is configured and after the trunk is added (**addtrk**), certain parameters can be re-specified. For example, a period of trunk usage may reveal a need to change parameters to optimize trunk usage. Refer to the forthcoming section called "Reconfiguring a trunk" for details.

3   Use the **addtrk** command to add the trunk. Adding the trunk makes the trunk a usable resource, so connections can be added (**addcon**) for carrying traffic. Add a trunk at only one end of the trunk.

(To add an interface shelf in a tiered network, use **addshelf**. See Chapter 4.)

Setting Up a Virtual Trunk

This section describes how to set up a virtual trunk using a BPX cloud. Virtual trunking is a purchased feature, so StrataCom must enable it on each node you intend to use virtual trunking. Also, firmware levels on ASI and BNI cards must be current. For more information on virtual trunking, see the *System Manual*.

Step 1   Set up cables as follows: in the cloud network, physically connect an ASI port to each BNI port that is likely to carry virtual trunks.

Step 2   For each ASI port connected to a BNI virtual trunk port, use the following configuration sequence:

upln *slot.port*

upport *slot.port*

cnfport *slot.port*, and set the *shift* parameter to "N" for *no shift*.

Step 3   Execute **addcon**. In the cloud network, add a virtual path ASI connection for each end of the virtual trunk that is to be routed through the cloud. An example of the syntax for this is:

addcon joker 5.1.1.* swstorm 6.2.10.*

where 5.1 and 6.2 are ASI ports hooked up and configured for virtual trunking. DACS connections are acceptable. Note that the third number is the VPI, which must correspond to the virtual trunk VPI configured with **cnftrk** in step 4. The CBR/VBR parameter must also correspond to the Virtual Trunk Type of the virtual trunk. For T3, set PCR to 96000 and CDTV to 24000 for the connection so that the ASI does not drop cells. StrataCom recommends these values based on testing.

Step 4   Configure BNI trunks. Take this step if the ATM cloud provider has assigned the VPC. On BNIs that connect to the cloud's ASI ports, configure the virtual trunks, as follows:

uptrk *slot.port.vtrk* (If the cloud is already configured, the alarm on the virtual trunk should clear.)

cnftrk *slot.port.vtrk*

When you use **cnftrk**, make sure the virtual trunk type and VPI correspond to the existing ASI Virtual Path connections.

addtrk *slot.port.vtrk*

The parameters *slot.port.vtrk* on a BNI card can have the following values:

- Slot can be 1–6, 9–14.
- Port is the physical port number, which can be 1–3 for T3/E3 or 1–2 for OC3/STM1.

Vtrk is the virtual trunk number, which can be 1–32 for T3/E3 or 1–11 for OC3/STM1.

Reconfiguring a Trunk

This section describes how to change trunk parameters after the trunk has been added. After trunk is added, some parameters can be reconfigured without first deleting the trunk (**deltrk**). These parameters appear in the list that follows. All other changes to trunk parameters must follow trunk deletion. Instructions for changes these parameters follow the list.

The parameters that are changeable *without* first deleting the trunk are:

- PCC restrict
- Pass sync
- Loop clock
- Statistical reserve
- Bursty data peak speed
- Bursty data peak average frame
- Idle Code
- User traffic
- Connection channels (virtual trunks only)

To display the current trunk parameters, use the **dsptrkcnf** command. If all the parameters to be changed can be done **without** deleting the trunk, execute just the **cnftrk** command. Use **cnftrk** at *both* ends of the trunk.

To change parameters that require trunk deletion:

Step 1 Delete the trunk using **deltrk**. Execute **deltrk** at one end of the trunk.

Step 2 Execute **cnftrk** to reconfigure parameters. Use **cnftrk** at both ends of the trunk.

Step 3 Execute **addtrk** to add the trunk. Do so at only one end of the trunk.

Remove a Trunk

To remove a trunk between two nodes:

Step 1 Use the **deltrk** command to delete the trunk. If both ends of the trunk are reachable, perform this command at one end of the trunk only. Otherwise, this command must be performed at both ends. Connections using the deleted trunk that cannot be rerouted are automatically deleted.

Step 2 Use the **dntrk** command to down the trunk. Execute **dntrk** at both ends of the trunk.

Display and print trunk configuration

The network trunk configuration can be displayed on the screen or printed on the printer in a one step process by using any one of the following commands.

- **dsptrks**—Displays the current trunk configuration and alarm status at a node.

- **prttrks**—Prints the current trunk configuration and alarm status at a node.

- **dspnw**—Displays all trunks for each node in a domain.

- **prtnw**—Prints all trunks for each node in a domain.

Setting Up ATM Trunk Redundancy

ATM trunk redundancy is the T3 and E3 trunk redundancy supported by the AIT and BTM cards on the IPX and IGX, respectively. Redundancy of one of these T3 or E3 trunks can exist between either an AIT and BPX or a BTM and a BPX. The connected BPX card is the BNI. Trunk redundancy cannot exist between IPXs and IGXs. Also, virtual trunking and trunk redundancy are incompatible. This redundancy uses the standard trunk cables rather than a Y-cable. (For all service card sets other than the AIT and BTM, redundancy is managed through the general Y-cable redundancy commands **addyred**, **delyred**, and **dspyred**).

Trunk redundancy depends on the applicable commands, trunk cards in adjacent card slots, and the standard trunk cable. The trunk redundancy commands execute only on the IPX or IGX. The BPX does not require information regarding this feature. ATM redundancy is managed through the following commands.

- **addtrkred**—Sets up redundancy for a pair of AIT or BTM cards.

- **deltrkred**—Deletes redundancy for a current redundant pair.

- **dsptrkred**—Displays all redundant ATM trunk pairs

Using subrate trunk interface control templates

Subrate trunks use an Interface Control Template that specifies the configuration of an output control lead. The template defines which output lead is to be configured and whether the lead is asserted, inhibited, or follows a specified input source. A template for a subrate trunk can be configured individually or copied from the template of another subrate trunk.

Subrate trunk interface control templates are managed through the following commands.

- **cnftrkict**—Configures an interface control template for a subrate trunk.

- **cpytrkict**—Copies the template from one subrate trunk and applies to another trunk.

- **dsptrkict**—Displays the interface control template for a specifies line.

- **prttrkict**—Prints the interface control template for a specifies line.

Summary of Commands

The following list shows the full name and starting page for the description of each trunk command.

Table 5-2

Mnemonic	Description	Page
addtrk	Add trunk	5-7
addtrkred	Add trunk redundancy	5-9
cnftrk	Configure trunk	5-11
cnftrkalm	Configure trunk alarm	5-17
cnftrkict	Configure trunk interface control template	5-19
cpytrkict	Copy trunk interface control template	5-21
deltrk	Delete trunk	5-23
deltrkred	Delete trunk redundancy	5-25
dntrk	Down trunk	5-27
dspcons	Display Connections, BPX/ATM Connections Only	5-29
dspnw	Display network	5-31
dsptrkbob	Display trunk breakout box	5-34
dsptrkcnf	Display trunk configuration	5-36
dsptrkict	Display trunk interface control template	5-39
dsptrkred	Display trunk redundancy	5-41
dsptrks	Display trunks	5-43
dsptrkstats	Display trunk statistics	5-45
prtnw	Print network	5-47
prttrkict	Print trunk interface control template	5-49
prttrks	Print trunks	5-50
uptrk	Up trunk	5-51

addtrk

Adds a trunk between two nodes. It must be executed at one of the nodes terminating the line. A trunk must be "added" to the network before it can be used for traffic. Before a trunk can be added to the network, the line must be activated, or "upped", at both ends of the connection using the **uptrk** command. The **addtrk** command only has to be entered at one end of the connection. A trunk must be free of major alarms before it can be added. If the addtrk command is used to join two previously separate networks, the local node verifies that all node names in both networks are unique before the trunk is added. In the following situations, the **addtrk** command cannot be executed:

- Another node is simultaneously attempting to change the network topology by adding or deleting a trunk.

- Another node is notifying all nodes that it has been renamed.

- Another node is currently adding or deleting a connection in the network with the **addcon** or **delcon** command.

- There is an unreachable node in the network.

- Two networks are to be joined, and the node names are not unique across both networks

When using the **addtrk** command, exercise caution when adding a new node to a network or one network to another network. With these particular operations, the user IDs and passwords may be replaced by those in the other network. Consult StrataCom ISC before performing these operations.

Full Name
Add trunk to the network

Syntax
addtrk <slot.port>[.vtrk]

Related Commands
deltrk, dsptrks, uptrk

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
addtrk 7

Description
Add trunk between node beta slot 7 and node alpha slot 10.

System Response

```
beta            TRM   YourID:1         IPX 32    8.2    Mar. 3 1996 15:04 MST

PLN  Type       Current Line Alarm Status              Other End
7    E1/32      Clear - Line OK                         alpha.10
9    T1/24      Clear - Line OK                         gamma.10
13   T1/24      Clear - Line OK                         alpha.14
15   T1/24      Clear - Line OK                         gamma.15
20   T3/3       Major - AIT Missing                     -




Last Command: addtrk 7


Next Command:
```

Table 5-3   addtrk – Parameters

Parameter	Description
slot.port	Specifies the slot and port number of the trunk to add.

Table 5-4   addtrk – Optional Parameters

Parameter	Description
vtrk	Specifies the virtual trunk number. The maximum on a node is 32. T he maximum on a T3 or E3 line is 32. The maximum on an OC3/STM1 line is 11.

addtrkred

Configures an ATM trunk on an AIT or BTM card set with redundancy by specifying a backup trunk to the primary trunk. This redundancy scheme requires two sets of ATM cards and two T3 or E3 cables. After a primary trunk failure clears, the trunk traffic automatically returns to the primary card set and T3 or E3 line.

Trunk redundancy applies to two trunks. These are a T3 or E3 trunk between:

- An AIT (IPX) and a BNI on a BPX

- A BTM (IGX) and a BNI on a BPX

Specify trunk redundancy at the IPX or IGX only. Primary and backup card sets must be in adjacent slots.

Full Name

Add ATM trunk redundancy

Syntax

addtrkred <primary trunk> <secondary trunk>

Related Commands

deltrkred, dsptrkred

Attributes

Privilege	1–4
Jobs	No
Log	Yes
Node	IPX, IGX
Lock	Yes

Example 1

addtrkred 4 5

Description

Add bandwidth redundancy for the primary ATM trunk in slot 4 with backup from the ATM trunk in slot 5.

System Response

```
beta            TRM   YourID:1         IPX 32    8.2    Mar. 3 1996 15:15 MST

ATM LineBackup ATM Line
45
```

```
Last Command: addtrkred 4 5


Next Command:
```

Table 5-5   addtrkred – Parameters

Parameter	Description
primary trunk	Specifies the slot number of the primary trunk card set.
secondary trunk	Specifies the slot number of the secondary trunk card set as backup.

cnftrk

A trunk has a default configuration after it is *upped* with **uptrk**. Beyond this default configuration, the **cnftrk** command permits configuration of trunk parameters. This command must be used at both ends of a trunk.

In the display for **cnftrk**, the current value for each parameter appears on screen. At the command lime prompt for each parameter, the current or default value appears in parentheses and stays the same if you press the Return key without typing any characters. Configurable parameters depend on the trunk type. If a displayed parameter is not available, it appears in half-tone.When you create or edit a job with the **addjob** or **editjob** command, respectively, prompts appear for line format and line options when you specify **cnftrk** in the job.

The parameters RCV Trunk Rate and XMT Trunk Rate apply to standard, physical ATM trunks. These parameters allow a throttling down from the maximum line rate for the trunk type. For ATM trunks terminating on an IPX AIT or an IGX BTM, the RCV Trunk Rate must be adjusted downward to prevent overloading of the bus. In this situation, the rate should be no more than half the total bus bandwidth. (The total is 80,000 cells per second.) The rate could be less if significant numbers of T1 or E1 trunks exist on the same node.

Increments for RCV Trunk Rate and XMT Trunk Rate can be as small as 1 cps (although the node may round up or down). Note that, because a corresponding amount of throttling back must be specified at the other end, **cnftrk** execution must happen at both ends of the trunk. Therefore, if RCV Trunk Rate is 40,000 cps on the near end, XMT Trunk Rate must be 40,000 cps on the far end of the trunk.

The default value for XMT Trunk Rate is the maximum rate for the back card type. This rate can be throttled down to any number of cells per second that is less than or equal to the physical port rate. If E3 or T2 is selected, the bandwidth is reduced from the T3 rate.

The implementation of XMT Trunk Rate on a virtual trunk differs from the implementation on a physical trunk. On a physical trunk, XMT Trunk Rate limits the rate at which the back card physically generates cells. For a virtual trunk, XMT Trunk Rate does not limit the rate at which the back card generates cells: the line rate stays at the maximum for the line type. However, XMT Trunk Rate is the maximum transmission rate allowed on a virtual trunk. The provider of the virtual trunk service assigns the value for XMT Trunk Rate to the user, and this is the value that must be specified using **cnftrk**.

For configuring an NTC or NTM trunk, the Subrate interface and Subrate data rate fields are configurable only if the back card is a BC-SR. The choices for interface type are V.11, X.21, V.35, or RS449. The data rate is set to match the subrate facility and must be in the range 64 Kbps to 1.920 Mbps.

The DS0 map is used to define fractional E1 and T1 trunks. It consists of a repeating set of specifications in the form <x[-y[a]]>, where "x" and optional "y" are DS-0 numbers 0 to 23, and the optional "a" indicates *alternating*. The value of "y" must be greater than that of "x." The values of both "x" and "y" cannot be less than 0 or greater than the maximum number of DS-0s for the line type. In the DS-0 map for unframed E1, use 0-31. For framed E1, use 1-31. For 30 DS-0 E1, use 1-15, 17-31. Normally, the parameters are set after the trunk has been upped but before it has been added to the network with the **addtrk** command.

The section titled "cnftrk–parameters" in this definition shows required trunk parameters. Virtual trunk parameters are in the section titled "cnftrk - optional parameters." To aid in selecting trunk parameters on a BPX, which are a subset of the total trunk parameters, a list of BPX trunk parameters follows:

Pass Sync	Statistical Reserve
Idle Code	Restrict CC Traffic
Link Type	HCS Masking
Cable Length	Valid Traffic Classes
Transmit Rate	Virtual Trunk VPI (virtual trunks only)
Payload Scramble	Virtual Trunk Type (virtual trunks only)
Loop Clock	Connection Channels (virtual trunks only)

Certain parameters can be reconfigured after adding a trunk. Refer to the section "Reconfiguring a trunk."

Full Name
Configure trunk

Syntax
cnftrk <*slot.port*>[.*vtrk*] <options for HSSI | E1 | T1 | E3 | T3 | OC3 | E2 | HSSI | SR >

Related Commands
addtrk, dsptrkcnf

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
cnftrk 8

Description
Configure trunk 8 (an NTC-T1). Enter the parameters to be configured when prompted.

System Response

```
sw91            TN    StrataCom      IPX 8    8.2      May  22 1996 16:55 GMT

PLN 8 Configuration   T3/636 [96000 cps]   AIT slot: 8
Clock Rate:           --                   Idle code:              7F hex
Transmit Trunk Rate:  96000 cps            Restrict PCC traffic: No
Rcv Trunk Rate:       1000 pps             Link type:            Terrestrial
Subrate interface:    --                   Line framing:           --
Subrate data rate:    --                      coding:              --
Line DS-0 map:        --                      CRC:                 --
Pass sync:            Yes                     recv impedance:  --
Loop clock:           No    cps              cable type:
Statistical Reserve:  992                        length:  0-225 ft.
Header Type:          STI                  HCS Masking:            Yes
Gateway Type:         BAM                  Payload Scramble:       No
VPI Address:          0                    End supp BData:         Yes
VCI Address:          0                    End supp FST:           Yes


This Command: cnftrk 8


Trunk Rcv Rate (1) (x1000pps) :
```

Example 2

cnftrk 1.1

Description

Configure trunk 1.1 (an ATM T3).

System Response

```
batman          TN    StrataCom      BPX 15   8.2      Date/Time Not Set

TRK  1.1 Config       T3  [96000 cps]   BNI-T3 slot:  1
                                        Restrict CC traffic:   No
Transmit Rate:        96000             Link type:            Terrestrial
Subrate interface:    --                Line framing:           --
Subrate data rate:    --                   coding:              --
Line DS-0 map:        --                   CRC:                 --
Pass sync:            Yes                   recv impedance:  --
Loop clock:           No                   cable type:
Statistical Reserve:  992   cps               length:  0-225 ft.
Idle code:            7F hex            HCS Masking:            Yes
Connection Channels:  1771             Payload Scramble:       No
Valid Traffic Classes:                 Frame Scramble:         --
        V,TS,NTS,FR,FST,CBR,VBR,ABR    Virtual Trunk Type:     --
                Virtual Trunk VPI:     --
          Virtual Trunk Service: --

This Command: cnftrk 1.1


Transmit Rate [T2=14490, E3=80000, T3=96000, OC3 = 353208](96000):
```

Example 3

cnftrk 13.1.1

Description

Configure trunk 13.1.1 (a virtual trunk on an ATM T3).

System Response

```
sw97            TN    StrataCom      BPX 15    8.2        July 30 1996 11:45 GMT

TRK 13.1.1 Config  T3        [2867  cps]   BNI-T3 slot:  13
                                           Restrict CC traffic:   No
Transmit Rate:          3000               Link type:             Terrestrial
Subrate interface:      --                 Line framing:          --
Subrate data rate:      --                   coding:              --
Line DS-0 map:          --                 CRC:                   --
Pass sync:              No                   recv impedance:      --
Loop clock:             No                  cable type:
Statistical Reserve:    992   cps                  length:        0-225 ft.
Idle code:              7F hex             HCS Masking:           Yes
Connection Channels:    55                Payload Scramble:       No
Valid Traffic Classes:                    Frame Scramble:         --
        V,TS,NTS,FR,FST,CBR,VBR,ABR       Virtual Trunk Type:    CBR
                                          Virtual Trunk VPI:     0
                                          Virtual Trunk Service: 4

Last Command: cnftrk 13.1.1 3000 N N 992 7F 55 V,TS,NTS,FR,FST,CBR,VBR,ABR N TER
RESTRIAL 0 Y N CBR 0

Next Command:
```

Table 5-6   cnftrk – Parameters

Trunk Option	Type	Description	Possible Entries	Default
slot.port	ALL	The number of the trunk to configure.	Any valid slot and port.	N/A
Trunk Identification	ALL	Displays trunk number, trunk type and bandwidth supplied, and the card type and slot number of the unit supporting the trunk.	T3, E3, T1, E1, FT1, subrate, ATM, NTC, NTM, OC3, STM1.	none
Rcv TRK Rate	ATM	IPX MUXBUS bandwidth (in cps) to allocate to AIT card. Not used for BPX nodes.	0–80,000 cells/sec.	1000
Tx TRK Rate	ATM, BNI	Maximum transmit rate in cells per second (cps) over a trunk. Note that defaults for virtual trunks are 1/32 of the default for T3/E3 and 1/11 of the default for OC3/STM1.	0–96000 cps for T3 0–80000 cps for E3 0–353,208 cps for OC3 0–14490 for T2	96000 for T3 80000 for E3 353,208 for OC3 14490 for T2
Subrate interface	PKT	Subrate physical interface type	X.21 | V.35	X.21
Subrate data rate	PKT	Subrate data rate (Kbps)	64–1920	1920
DS-0 map	PKT	DS-0s to use for FT1 bundle. Optional "a" indicates alternating channels to be used.	x - y[a]	0-31 (E1) 0-23 (T1)

Trunk Option	Type	Description	Possible Entries	Default
Pass sync	ALL	Enables the trunk to pass a clock for network synchronization.	Yes | No	Yes for standard, no for virtual trunks
Loop Clock	ALL	Loop receive clock back to transmit.	Yes | No	No
Statistical Reserve	ALL	This is the trunk bandwidth reserved for internode controller messages.	0–10666	600 for FastPackets 1000 for ATM cells 992 ATM on BNI
Header Type	ATM	Defines the ATM cell header type used: UNI, NNI, or STI. See *System Manual* for a description.	UNI | NNI | STI	STI
Gateway Type	ATM	Defines the type of addressing mode for this trunk. See *System Manual* for a description.	BPX - BPX (BAM) Cloud (CAM) Simple (SAM)	BAM
VPI Address	ATM	Virtual path address in ATM cell. Must be non-0 for a virtual trunk.	0–255	0
VCI Address	ATM	Virtual circuit address in ATM cell.	0–65,535	0
Idle code	ALL	HEX data placed in unused payload space of a packet or ATM cell.	0–FF (hex)	54 (E1) 7F (T1, ATM)
Restrict CC traffic (requires Super User privilege)	ALL	Restrict node controller messages from a trunk. Restricting CC traffic can cause serious problems in a network. Contact the StrataCom ISC before changing it.	Y | N	No
Link type	ALL	Terrestrial or Satellite link.Link Type applies to configuring a route so it can "avoid satellite."	T | S	T
Line framing	PKT	T1 line framing	D4 | ESF	D4
Line coding	PKT	E1 line coding T1 line coding	HDB3 | AMI ZCS | B8ZS	HDB3 ZCS
Line CRC	PKT	E1 CRC-4	Yes | No	No
Recv impedance	PKT	E1 receive impedance	1 = 75W unbalanced 2 = 75W balanced 3 = 120W balanced	1
Cable type and cable length	PKT ATM	Length and type of cable used for trunk. Designates the software configurable line build-out to match the cable length from the IPX or IGX to the DSX cross-connect. For BPX, the choices are 0–450 feet and over 450 feet. Cable type is not selectable for BPX.	1 = 0–220' MAT 2 = 220–440' MAT 3 = 440–655' MAT 4 = 0 -133' ABAM 5 = 133–266' ABAM 6 = 266–399' ABAM 7 = 399–533' ABAM 8 = 533–655' ABAM 1 = 0–133 2 = 255–450'	4 1
HCS Masking	ATM BNI	Mask the ATM cell header checksum to disable error checking. This applies to E3 and OC3 only.	Yes | No	Yes
Payload Scramble	ATM BNI	Scramble the cell payload.	Yes | No	Yes for BNI-E3 No for all others
End supp BData	PKT ATM	Indicates whether the far end of a trunk supports bursty, frame relay data.	Yes | No	No

Trunk Option	Type	Description	Possible Entries	Default
End supp FST	PKT ATM	Indicates whether the far end of the trunk supports ForeSight for frame relay.	Yes | No	No
Gateway Efficiency	ATM	How many packets to stuff into an ATM cell. Does not apply to BNI.	1 | 2 | 3	2

Table 5-7   cnftrk – Optional Parameters

Virtual Trunk Parameter	Type	Description	Possible Entries	Default
Connection Channels	BNI	The maximum number of connection channels per trunk. All virtual trunks on the port share this total. The number of connections added to the port cannot exceed the number of connection channels configured for the port.	BNI-T3/E3: max 1771 BNI-OC3: max 15867	BNI-T3/E3: 1771 BNI-OC3: 15867 For Virtual Trunks: BNI-T3/E3: 55 BNI-OC3: 1442
Valid Traffic Classes	BNI	The valid types of traffic for a virtual trunk. The recommended traffic classes for each virtual trunk types: On a CBR trunk: ATM CBR, NTS, TS, voice. On a VBR trunk: ATM VBR and bursty data A. On an ABR trunk: ATM ABR and bursty data B (ForeSight).	V—voice TS—timestamped NTS—non-timestampped FR—frame relay FST—ForeSight CBR—constant bit rate VBR—variable bit rate ABR—available bit rate	
Virtual Trunk Type	BNI	This choice usually comes from the carrier that provides the ATM cloud.	CBR, VBR, ABR	CBR
Virtual Trunk VPI	BNI	Virtual Trunks must be configured to have a greater-than-0 VPI before connections are added by **addcon**. This value usually comes from the carrier that provides the ATM cloud.	1–255 for T3/E3 1–63 for OC3 (STM1)	

cnftrkalm

Configures alarm reporting for a trunk. When a trunk are upped and added to the network, alarm reporting is enabled, but **cnftrkalm** allows disabling of alarms on upped trunks. This can be useful for trunks that are connected to a node but not yet in service or when a trunk has occasional bursts of errors but still functions. When enabled, alarms cause an output from the ARC or ARM card or an indication to StrataView Plus.

Full Name

Configure trunk alarms

Syntax

cnftrkalm <slot.port>[.vtrk] <e | d>

Related Commands

dspalms, dsptrks

Attributes

Privilege	1–5
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

cnftrkalm 7 d

Description

Disable trunk alarms on trunk 7

System Response

```
beta            TRM   YourID:1        IPX 32   8.2    Mar. 3 1996 15:21 MST

PLN  Type       Current Line Alarm Status              Other End
7    E1/32      Clear - Line OK                        alpha.10
9    T1/24      Clear - Line OK                        gamma.10
13   T1/24      Clear - Line OK                        alpha.14
15   T1/24      Clear - Line OK                        gamma.15
20   T3/3       Major - AIT Missing                      -




Last Command: cnftrkalm 7 d


Next Command:
```

Table 5-8   cnftrkalm – Parameters

Parameter	Description
slot.port	Specifies the trunk number.
e	Enables the alarm.
d	Disables the alarm.

Table 5-9   cnftrkalm – Optional Parameters

Parameter	Description
vtrk	Specifies the virtual trunk number.

cnftrkict

Configures the output lines of an interface control template for a subrate trunk. The following list shows the configurable signals:

Table 5-10

Interface Type	Output Signal	Inputs
X.21	C, I	
V.35	RTS, DTR	CTS, DSR
MIL-188	IS, LL, RL, RS, SF, SS, TR	DM, CS

Full Name
Configure trunk interface control template

Syntax
cnftrkict <line> <output> <source>

Related Commands
dsptrkict, prttrkict

Attributes

Privilege	1–2
Jobs	Yes
Log	Yes
Node	IPX, IGX
Lock	Yes

Example 1
cnftrkict 9 c on

Description
Configure output lead "c" as "on" in the interface control template for subrate trunk 9.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 3 1996 15:15 MST


Packet Line:9
Interface:X.21DTE

Interface Control Template for Trunk Line

LeadOutput ValueLeadOutput Value
C/DTR ON




Last Command: cnftrkict 9 c on


Next Command:
```

Table 5-11   cnftrkict – Parameters

Parameter	Description
line	Specifies the trunk whose interface control template is to be configured.
output	Specifies the output lead to be configured. Configurable output leads vary depending on the type of data interface (X.21, V.35, or MIL-188) used.
source	Specifies how the specified output lead is to be configured. The options are as follows: • On, which means the output lead is asserted • Off, which means the output lead is inhibited • l (lower case L) Output follows a local input lead • Input, which specifies the name of the local input lead that the output lead follows. Input leads vary depending on the type of data interface (X.21, V.35, or MIL-188) supported.

cpytrkict

Copies the interface control template of one trunk to another trunk. Once copied, the control information can be edited with the **cnftrkict** command. See the **cnftrkict** description for more information on configuring the trunk interface control templates.

Full Name

Copy trunk interface control template

Syntax

cpytrkict <source_trunk> <destination_trunk>

Related Commands

cnftrkict, dsptrkict

Attributes

Privilege   1–2

Jobs   Yes

Log   Yes

Node   IPX, IGX

Lock   Yes

Example 1

cpytrkict 9 11

Description

Copy the interface control template for trunk 9 to trunk 11.

System Response

```
beta            TRM   YourID:1         IPX 32    8.2    Mar. 3 1996 15:15 MST


Packet Line:9
Interface:X.21DTE

Interface Control Template for Trunk Line

LeadOutput ValueLeadOutput Value
C/DTR ON




Last Command: cpytrkict 9 11


Enter destination line number:
```

Table 5-12   cpytrkict – Parameters

Parameter	Description
source trunk	Specifies the trunk number of the interface control template information to be copied.
destination trunk	Specifies the trunk number to which the interface control template information will be copied.

deltrk

Deletes a trunk. Because deleting a trunk removes the communication path between two nodes, using **deltrk** may split a network into two separate networks. If **deltrk** execution splits the network, it causes deletion of connections using the deleted trunk.

If both nodes on the trunk are reachable, executing *deltrk* is necessary on only one node. If a trunk is deleted on a node while the node at the other end is unreachable, the unreachable node does not detect the deletion, so be sure to delete the trunk at both nodes in this case.

After deletion, the trunk still carries framing signals and can generate alarms for counting, but no traffic can go across it. To remove the trunk completely, use **dntrk** after the **deltrk** command**.**

In the following situations, the node does not allow **deltrk** to execute:

- Another node is attempting to change the network topology by adding or deleting a trunk.

- Another node is notifying all other nodes that it has a new node name.

- Another node is adding or deleting a channel connection in the network with the **addcon** or **delcon** command.

Full Name
Delete trunk from a network

Syntax
deltrk <slot.port>[.vtrk]

Related Commands
addtrk, dntrk, dspnw, dsptrks uptrk

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
deltrk 7

Description
Delete trunk 7 from the network.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 15 1996 15:02 MST

PLN  Type       Current Line Alarm Status            Other End
7    E1/32      Clear - Line OK                       -
9    T1/24      Clear - Line OK                       gamma.10
13   T1/24      Clear - Line OK                       alpha.14
15   T1/24      Clear - Line OK                       gamma.15
20   T3/3       AIT   - AIT Missing                   -




Last Command: deltrk 7


Next Command:
```

Table 5-13   deltrk – Parameters

Parameter	Description
slot.port	Specifies the physical trunk number.

Table 5-14   deltrk – Optional Parameters

Parameter	Description
vtrk	Specifies the virtual trunk portion of the trunk identifier.

deltrkred

Removes BTM/AIT trunk redundancy. Removing the backup card is possible without causing alarms after **deltrkrd** executes. This command operates on an IPX or IGX node with a redundant AIT or BTM card se.

Full Name

Delete ATM trunk redundancy

Syntax

deltrkred <backup ATM trunk number>

Related Commands

addtrkred, dsptrkred

Attributes

Privilege	1–4
Jobs	No
Log	Yes
Node	IPX, IGX
Lock	Yes

Example 1

deltrkred 5

Description

Remove ATM trunk redundancy for the card set in slot 5.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 15 1996 15:15 MST
```

ATM LineBackup ATM Line

```
78
```

```
Last Command: deltrkred 5
```

```
Next Command:
```

Table 5-15   deltrkred – Parameters

Parameter	Description
Backup trunk number	Specifies of the ATM card set assigned as the backup.

dntrk

Downs a trunk, after which the line no longer has framing nor statistics gathering. Before it can be downed with **dntrk**, a trunk must be removed from the network with **deltrk** (or **delshelf** in a tiered nets).

Full Name

Down trunk

Syntax

dntrk <slot.port>[.vtrk]

Related Commands

addtrk, deltrk, uptrk, dsptrks

Attributes

Privilege	1–2
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

dntrk 9

Description

Deactivate trunk 9

System Response

```
beta            TRM   YourID:1       IPX 32    8.2    Mar. 3 1996 10:53 MST

From Type       Current Line Alarm Status           Other End
13   T1/24      Clear - Line OK                      alpha.14
15   T1/24      Clear - Line OK                      gamma.15
20   T3/3       Major - AIT Missing                  -




Last Command: dntrk 9


Next Command:
```

Table 5-16   dntrk – Parameters

Parameter	Description
slot.port	Specifies the physical trunk.

Table 5-17   dntrk – Optional Parameters

Parameter	Description
vtrk	Specifies a virtual trunk number (applies to BNI only). T3/E3 range is 1–32. OC3 range is 1–11.

dspcons

Displays a summary of connections on an IPX, IGX, or BPX. The fields displayed in the **dspcons** screens are the following:

- Local Channel The connection's channel at this node.

- Remote NodeName The name of the node at the other end of the connection.

- Remote Channel The connection's channel at the remote node.

- State The state of the connection(s) as follows:

  OK Not routed, but trying

  Down Downed (not supported for ATM connections)

  OK(Dn) Waiting for onhook to occur to allow courtesy down to

  take place or connection(s) which have been courtesy

  downed using the **dncon** command (not supported for

  ATM connections)

- Compress IPX or IGX-only. Shows the type of compression, if any.

- Code IPX or IGX-only. Shows the line coding for the connection.

- Type The type of connection (CBR = constant bit rate for voice, VBR = variable bit rate for frame relay or synchronous data rate, ATFR = frame relay to ATM interworking, ATFST = frame relay to ATM interworking with ForeSight).

- Rate The bandwidth assigned the connection in cells/sec (ATM) or Kbits/sec (other).

Full Name

Display connections for ATM connections on a BPX node.

Syntax

dspcons [start_channel] [nodename] [state] [type] [+d]

Related Commands

addcon, delcon

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dspcons

Description
Display ATM connections on a BPX.

System Response

```
sw53            TN    StrataCom      BPX 15    8.2        April 24 1996 22:57 GMT

 Local           Remote      Remote                           Route
 Channel         NodeName    Channel       State  Type        Avoid COS O
 4.1.2.1         sw53        4.3.2.1        Ok     atfst
 4.1.2.2         sw53        4.3.2.2        Ok     atfst
 4.1.2.3         sw53        4.3.2.3        Ok     atfst
 4.1.2.4         sw53        4.3.2.4        Ok     atfst
 4.1.2.5         sw53        4.3.2.5        Ok     atfst
 4.1.2.6         sw53        4.3.2.6        Ok     atfst
 4.1.2.7         sw53        4.3.2.7        Ok     atfst
 4.1.2.8         sw53        4.3.2.8        Ok     atfst
 4.1.2.9         sw53        4.3.2.9        Ok     atfst
 4.1.2.10        sw53        4.3.2.10       Ok     atfst
 4.1.2.11        sw53        4.3.2.11       Ok     atfst
 4.1.2.12        sw53        4.3.2.12       Ok     atfst
 4.1.2.13        sw53        4.3.2.13       Ok     atfst

 This Command: dspcons


 Continue?
```

Table 5-18   dspcons – Optional Parameters

Parameter	Description
slot.port.VPI.VCI slot.port.DLCI	Specifies the connection after which the display begins. Without a starting channel specification (the default), the display begins with the first connected channel.

dspnw

Displays the network topology in tabular form. Alarms appear in a column, and added trunks (by **addtrk**) appear to the right to the node name. Each trunk entry shows the local back card slot number and the node name and back card slot number on the other end of the line. Note the following conventions:

- ~ indicates that the trunk is a satellite line.

- Flashing entry indicates a failed line.

- Blinking node name indicates a node executing downloader software.

If the network has more nodes and trunk connections than are currently on the screen, a "Continue?" prompt appears. Press the Return key to display other parameters, or enter "n" to exit the command.

Full Name
Display network

Syntax
dspnw [+b | -b] [+z | -z]

Related Commands
dspnds, prtnw

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dspnw

Description
Display the network topology in tabular form.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2      Mar. 15 1996 15:15 MST


NodeName    Alarm   Packet Line       Packet Line        Packet Line
alpha               10- 7/beta        14- 13/beta
beta        MAJOR   7- 10/alpha       9- 10/gamma        13- 14/alpha
                    15- 15/gamma
gamma       MAJOR   10- 9/beta        15- 15/beta




Last Command: dspnw


Next Command:
```

The display shows a network containing the nodes alpha, beta, and gamma. The word "Major" on the right of "gamma" and "beta" (see Alarm column) indicates the existence of alarm conditions such as loss of signal.

The "10-9/beta" listed to the right of node gamma indicates that trunk 10 on node gamma connects to node beta as trunk 9. The "7-10/alpha" listed to the right of node beta indicates that trunk 7 on node beta connects to node alpha as trunk 10. If the two trunk numbers are separated by an tilde (~) in place of a dash (-), the display is indicating a satellite. The following illustrates a map of this network.

Figure 5-1   dspnw Example

Table 5-19   dspnw – Optional I Parameters

Parameter	Description
+b	Display only the lines that support bursty data.
-b	Display only the lines that do no support bursty data.
+z	Display only the lines that use ZCS encoding.
-z	Display only the lines that do not use ZCS encoding.

dsptrkbob

Displays the state of all inputs from subrate line equipment to an IPX or IGX and the state of all outputs from the node to the subrate line equipment. Display updates can occur at an optional, user-specified interval. Otherwise, the display remains on-screen until Delete is pressed or the display times out. The system default for updating the display is every 5 seconds. In the case of a disabled trunk, its number appears in dim, reverse video. See **cnftrkict** for configuration details.

Full Name

Display trunk breakout box

Syntax

dsptrkbob <line> [interval]

Related Commands

cnftrkict, dsptrkict

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX

Lock   Yes

Example 1

dsptrkbob 9

Description

Display the breakout for subrate trunk 9.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    April 15 1996 15:15 MST


Packet Line:9
Interfaces:X.21DTE

Inputs from Line EquipmentOutputs to Line Equipment
LeadPinStateLeadPinStateLeadPinStateLeadPinState
RxD4/11IdleTxD2/9Active
I/DSR5/12OnC/DTR3/10On
S/RxC6/13Active




Last Command: dsptrkbob 9


Hit DEL key to quit:
```

Table 5-20   dsptrkbob – Parameters

Parameter	Description
trunk	Specifies the subrate trunk.

Table 5-21   dsptrkbob – Optional Parameters

Parameter	Description
interval	The number of seconds between updates of the breakout box display. The range is 1–60.

dsptrkcnf

Displays trunk configuration. The parameter values that **dsptrkcnf** displays have been set with **cnftrk** or are default values.

Full Name
Display trunk configuration

Syntax
dsptrkcnf <slot.port>[.vtrk]

Related Commands
cnftrk

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1
dsptrkcnf 8

Description
Display the configuration for trunk 8. Trunk 8 is an NTC/BC-T1 trunk.

System Response

```
sw91            TN    StrataCom      IPX 8    8.2       May  22 1996 16:09 GMT

PLN 6 Configuration   T3/3   [1000  pps]   AIT slot: 6
Clock Rate:           --                    Idle code:            7F hex
Transmit Trunk Rate:  96000 cps            Restrict PCC traffic: No
Rcv Trunk Rate:       1000 pps             Link type:            Terrestrial
Subrate interface:    --                   Line framing:         --
Subrate data rate:    --                       coding:           --
Line DS-0 map:        --                       CRC:              --
Pass sync:            Yes                       recv impedance:   --
Loop clock:           No    pps               cable type:
Statistical Reserve:  992                          length:       0-225 ft.
Header Type:          STI                   HCS Masking:          Yes
Gateway Type:         BAM                   Payload Scramble:     No
VPI Address:          0                     End supp BData:       Yes
VCI Address:          0                     End supp FST:         Yes


Last Command: dsptrkcnf 6


Next Command:
```

Example 2

dsptrkcnf 1.1

Description

Display the configuration for trunk 1.1 (an ATM trunk).

System Response

```
batman          TN    StrataCom      BPX 15   8.2       Date/Time Not Set

TRK  1.1 Config       T3    [96000 cps]   BNI-T3 slot:  1
                                          Restrict CC traffic:  No
Transmit Rate:        96000               Link type:            Terrestrial
Subrate interface:    --                  Line framing:         --
Subrate data rate:    --                      coding:           --
Line DS-0 map:        --                      CRC:              --
Pass sync:            Yes                      recv impedance:   --
Loop clock:           No                      cable type:
Statistical Reserve:  992   cps                    length:      0-225 ft.
Idle code:            7F hex              HCS Masking:           Yes
Connection Channels:  1771                Payload Scramble:      No
Valid Traffic Classes:                   Frame Scramble:        --
        V,TS,NTS,FR,FST,CBR,VBR,ABR      Virtual Trunk Type:    --
SVC Channels:         0                   Virtual Trunk VPI:     --
SVC Bandwidth:        0     cps           Virtual Trunk Service: --

Last Command: dsptrkcnf 1.1


Next Command:
```

Example 3
dsptrkcnf 13.3.1

Description
Display the configuration for virtual trunk 13.3.1.

System Response

```
sw97            TN    StrataCom      BPX 15   8.2        June 22 1996 07:34 GMT

TRK 13.3.1 Config  T3        [2867  cps]  BNI-T3 slot:  13
                                          Restrict CC traffic:   No
Transmit Rate:         3000              Link type:             Terrestrial
Subrate interface:     --               Line framing:          --
Subrate data rate:     --                 coding:              --
Line DS-0 map:         --               CRC:                   --
Pass sync:             No                 recv impedance:      --
Loop clock:            No                 cable type:
Statistical Reserve:   992   cps                 length:        0-225 ft.
Idle code:             7F hex           HCS Masking:           Yes
Connection Channels:   55              Payload Scramble:      No
Valid Traffic Classes:                 Frame Scramble:        --
        V,TS,NTS,FR,FST,CBR,VBR,ABR    Virtual Trunk Type:    CBR
                                       Virtual Trunk VPI:     1
                                       Virtual Trunk Service: 3

Last Command: dsptrkcnf 13.3.1


Next Command:
```

Table 5-22   dsptrkcnf – Parameters

Parameter	Description
slot.port	Specifies the physical slot and port number of the trunk.

Table 5-23   dsptrkcnf – Optional Parameters

Parameter	Description
vtrk	Specifies the virtual trunk number. The maximum value on a node is 32. The maximum on a T3 or E3 line is 32. The maximum for user traffic on an OC3/STM1 trunk is 11. (See also the section called "Setting Up a Virtual Trunk" at the front of this chapter.)

dsptrkict

Displays interface control information for the subrate trunks. The displayed information includes:

- Specified line.

- Associated leads and their status (i.e., on or off)

- Whether output follows a local input.

- Name of the local or remote input lead that the output lead follows.

To see a list of configurable outputs, and information on how to configure an output, see the **cnftrkict** command. Disabled trunks have their trunk number displayed in dim, reverse video on the screen.

Full Name
Display trunk interface control templates

Syntax
dsptrkict <line>

Related Commands
cnftrkict, prttrkict

Attributes

Privilege	1–2
Jobs	No
Log	No
Node	IPX, IGX
Lock	No

Example 1
dsptrkict 9

Description
Display subrate for the trunk 9 interface control template.

System Response

```
beta            TRM   YourID:1        IPX 32   8.2  Mar. 15 1996 15:15 MST


Packet Line:9
Interface:X.21DTE

Interface Control Template for Trunk Line

LeadOutput ValueLeadOutput Value
C/DTR ON




Last Command: dsptrkict 9


Next Command:
```

dsptrkred

Displays the backup and primary cards for ATM trunks. It is used for information purposes such as auditing nodes for configurations.

Full Name

Display ATM trunk redundancy

Syntax

dsptrkred [trunk]

Related Commands

addtrkred, deltrkred

Attributes

Privilege   1–4

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1

dsptrkred

Description

Display all ATM trunks with redundancy.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 15 1996 15:15 MST

ATM LineBackup ATM Line
45
78
```

```
Last Command: dsptrkred


Next Command:
```

Table 5-24   dsptrkred – Optional Parameters

Parameter	Description
ATM trunk number	Specifies the slot number of the primary or backup ATM card set to display. Without this optional entry, the screen displays all primary and backup ATM trunks.

dsptrks

Displays basic trunk information for all trunks on a node. This command applies to both physical only and virtual trunks. The displayed information consists of:

- Trunk number, including the virtual trunk number if applicable

- Line type (E1, T3, or OC3, for example)

- Alarm status

In addition, for trunks that have been added to the network with the **addtrk** command, the information includes the node name and trunk number at the other end. Trunks that have a "–" in the Other End column have been upped with **uptrk** but not yet added on both ends with **addtrk**. For disabled trunks, the trunk numbers appear in reverse video on the screen.

Full Name
Display trunks

Syntax
dsptrks

Related Commands
addtrk, deltrk, dntrk, dspclns, uptrk

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dsptrks

Description
Display information on the trunk configuration and alarm status for the trunks at a node. The trunk numbers with three places represent virtual trunks.

System Response

```
sw53           TN    StrataCom      BPX 15   8.2   April 24 1996 23:03 GMT

TRK   Type    Current Line Alarm Status          Other End
 1.1 T3      Clear - OK                          sw89(IPX/AF)
 1.2 T3      Clear - OK                          -
 1.3 T3      Clear - OK                          -
 2.1.1OC3    Clear - OK                           -
 3.1 T3      Clear - OK                          sw92(IPX/AF)
 3.2 T3      Clear - OK                          sw91(IPX/AF)
 3.3 T3      Clear - OK                          sw90(IPX/AF)
 4.1 T3      Clear - OK                          sw24(IPX/AF)
 4.2 T3      Clear - OK                          swstorm/1.1
 4.3 T3      Clear - OK                          sw25(IPX/AF)
13.1 T3(E3) Clear - OK                           -
13.2.1  T3     Clear - OK                         -
13.2.2  T3     Clear - OK                         -
13.2.3 T3     Clear - OK                          -


Last Command: dsptrks


Next Command:
```

dsptrkstats

Displays the trunk port status, ATM cell loss counts, cell payload errors, and cell header errors for the specified trunk port. The table that follows lists the other statistics. By including the optional *clear* parameter, **dsptrkstats** execution clears these statistics.

Table 5-25

Statistics	Description
Cells dropped due to BFrame parity err.	A parity error was detected in one or more of the P bits in the BFrame header or in the BIP-16 parity check for the header causing the cell to be dropped.
Cell header mismatch error count.	A count of cells received by a BNI in this slot.port with an incorrect header address for that card.
First mismatch cell header VPI/VCI.	This displays the VPI/VCI address of the first header mismatch to be received by the card in this slot.port.
BFrame cell data payload error.	A separate BIP-16 parity check is used for the payload data. This number represents the number of errors detected by this parity check. This does not necessarily cause a cell to be dropped.
BFrame cell loss due to admin access.	Internal to the BNI card is an administrative processor. This statistic is a count of the cells that were lost in an internal administrative shuffle.

Full Name

Display trunks statistics

Syntax

dsptrkstats <slot.port> [clear]

Related Commands

cnftrkstats, dsptrkerrs

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	BPX
Lock	Yes

Example 1

dsptrkstats 1.1

Description

Display cell statistics for ATM trunk 1.1.

System Response

```
sw53            TN    StrataCom      BPX 15   8.2      April 24 1996 23:07 GMT

Trunk  1.1      Status: Clear - OK                  Clrd: 07/24/95 17:31:16
Type                               Count
Cells dropped due to BFrame parity err    0
Cell header mismatch error count          0
BFrame cell data payload error            0
BFrame cell loss due to disabled chan     0
BFrame cell count(TX)              8316        non-hipri cells -    52
BFrame cell count(RX)              12452

First mismatch cell masked VPI/VCI        0
First mismatch cell full VPI/VCI          0



Last Command: dsptrkstats 1.1


Next Command:
```

Table 5-26   dsptrkstats – Parameters

Parameter	Description
slot.port	Specifies the physical part of the logical trunk number.

Table 5-27   dsptrkstats – Optional Parameters

Parameter	Description
clear	Directs the system to clear the statistics counters.

prtnw

Prints the network topology table. Alarms print in a column, and added trunks (by **addtrk**) appear to the right to the node name. Each trunk entry shows the local back card slot number and the node name and back card slot number on the other end of the line. Note the following conventions:

- ~   indicates the trunk is a satellite line.

- Flashing entry indicates a failed line.

- Blinking node indicates a node is executing downloader software.

Parameters set Zero Coded Suppression (ZCS) display characteristics. ZCS writes a 1 over the least significant bit of any byte that contains 0s. The purpose is to ensure a minimum occurrence of 1s so that the receiving node can extract timing information. Command uses the same syntax, and prints the same information as is displayed using the **dspnw** command.

Full Name
Print network

Syntax
prtnw [+b | -b] [+z | -z]

Related Commands
dspnw

Attributes

Privilege	1–6
Jobs	Yes
Log	No
Node	IPX, IGX, BPX
Lock	Yes

Example 1
prtnw

Description
Print the network topology.

System Response
(No screen display, just a printout.)

Table 5-28   **prtnw – Parameters**

Parameter	Description
+b	Display only the lines that support bursty data.
-b	Display only the lines that do no support bursty data.
+z	Display only the lines that use ZCS encoding.
-z	Display only the lines that do not use ZCS encoding.

prttrkict

Prints the interface control template of a subrate trunk. For a list of configurable outputs and configuration steps, see the **cnftrkict** description. The printed information includes:

- Specified line.

- Associated leads and their status

- Whether output follows a local input

- Name of the local or remote input lead that the output lead follows

Full Name
Print trunk interface control template

Syntax
prttrkict *<line>*

Related Commands
dsptrkict

Attributes

Privilege	1–2
Jobs	Yes
Log	No
Node	IPX, IGX
Lock	Yes

Example 1
prttrkict

Description
Print network topology.

System Response
(No screen display, just a printout.)

Table 5-29   prttrkict – Parameters

Parameter	Description
line	Specifies the trunk interface control template.

prttrks

Prints the trunk configuration for the node. This command uses the same syntax and prints the same information as the **dsptrks** command. Configuration information for trunks includes the trunk number and the type of line (T3, E3, and so on). For trunks that have been added to the network with the **addtrk** command, the configuration information also includes the node name and trunk number at the other end of the line.

Note the following printout characteristics:

- Those trunks that show a "–" in the "Other End" column, have been *upped* with the **uptrk** command but not yet *added* with the **addtrk** command.

- The Other End column shows the node name and slot number of the other end of the trunk.

- Names of disabled trunk appear as light text in the printout.

Full Name

Print trunks

Syntax

prttrks

Related Commands

dsptrks

Attributes

Privilege   1–6

Jobs   Yes

Log   No

Node   IPX, IGX, BPX

Lock   YEs

Example 1

prttrks

Description

Print trunk configuration for the node.

System Response

(No screen display, just a printout.)

uptrk

Activates (ups) a trunk and, through the presence or absence of the optional *vtrk* parameter, identifies either a physical or virtual trunk. Note that mixing physical and virtual trunks is not allowed, so changing the trunk type between physical and virtual requires the trunk to be down (**dntrk**) before changing.

An activated trunk generates line signalling but does not yet carry live traffic. In this state, the node can monitor the trunk for reliability before the trunk is added with **addtrk**. Once a trunk has shown reliability and is ready to go into service, use **addtrk** to add the trunk to the network. Subsequently, if the trunk must go out of service, use **dntrk**. The **dntrk** command causes the node to reroute any existing traffic if sufficient bandwidth is available.

A trunk cannot be *upped* if the required cards are not available. Furthermore, if an NTC or NTM is executing self-test, a "card in test" message may appear on-screen. If this occurs, re-enter **uptrk**.

Full Name
Up trunk

Syntax
uptrk <slot.port>[.vtrk]

Related Commands
addtrk, dntrk

Attributes

Privilege	1–2
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
uptrk 21

Description
Activate (up) trunk 21—a single-port card, in this case, so only the slot is necessary.

Example 2

uptrk 6.1.1

Description

Activate (up) trunk 6.1.7—a virtual trunk, in this case, which the third digit indicates.

Table 5-30   uptrk – Parameters

Parameter	Description
slot.port	Specifies the slot and port of the trunk to activate. If the card has only one port, the *port* parameter is not necessary. An NTM, for example, has one port.

Table 5-31   uptrk – Optional Parameters

Parameter	Description
vtrk	Specifies the virtual trunk number. The maximum on a node is 32. The maximum on a T3 or E3 line is 32. The maximum for user traffic on an OC3/STM1 trunk is 11 (so more than one OC3/STM1 may be necessary). (See also the section called "Setting Up a Virtual Trunk" at the front of this chapter.)