FastPAD Commands

FastPAD Command Introduction

The FastPAD commands are a set of commands concerned with configuring a FastPAD multiplexer for interconnection via your IPX network. FastPADs are interconnected via IPX Frame Relay Service PVCs. FastPAD/IPX interconnection requires the use of an FTC front card and FTI back card on the IPX. The FastPAD is connected to the FTI card installed in the IPX. The FRP/FRI cards provide the adaptation layer to convert data between Frame Relay format and IPX FastPacket format. In addition, since the Frame Relay/FastPAD connectivity is an option, this option must be enabled for your system software.

The FastPAD acts as a feeder into the IPX. The FastPAD encapsulates this traffic into FastPAD type frames and transmits it over frame relay PVCs. These PVCs are transmitted over a FastPAD trunk that feeds into an IPX frame relay port on an FTC/FTI card set. FastPAD connections are mapped to frame relay virtual circuits within the IPX, switched to the remote IPX, and delivered to the remote FastPAD.

There are five types of FastPAD connections: switched voice connections, permanent voice connections, data connections, frame relay connections, and frame forwarding connections. FAX connections are not a separate connection type. They are transmitted over switched voice or voice connections. When a FAX connection is required, the FastPAD automatically detects the FAX transmission and suppresses the use of any voice compression algorithms. A voice, data, or FAX connection from one FastPAD must always terminate on another FastPAD. Frame relay and frame forwarding traffic may be terminated on another FastPAD or on an FRP in an IPX.

The FastPAD connects to an IPX via an FTC/FTI card set on the IPX, where the FTC is the front card and the FTI is the back card. There are four types of FTI back cards: V.35, X.21, T1, and E1.

Initial FastPAD configuration is performed at the FastPAD with either the StrataView FastPAD, FastPAD FP Tools, or by replacing the FastPAD FlashPak. Following this, the FastPAD composite link (to the IPX) configuration and connection configuration is performed by using the IPX commands described in this appendix.

FastPAD Description Summary

The FastPAD always contains a base card and may also contain expansion cards. The base card is designated “b”, while the expansion cards are designated 1-5 for the FastPAD Micro and 1-8 on the standard FastPAD. The expansion ports can contain either Voice FAX Cards (VFC-03) or Frame Relay Access Modules (FRAM-01).

The base card on the FastPAD Micro supports a composite port for connection to the IPX, one high-speed data port, one low-speed data port, and an NMS port (for a PC running the StrataView FastPAD NMS application). The base card on the standard FastPAD supports a composite port for

connection to the IPX, one high-speed data port, five low-speed data ports, and an NMS port (Figure 17-1). When adding connections to the FastPAD base card ports, the letter “b” is used for slot designation. When adding connections to the FastPAD expansion cards, a number 1 through 8 is used, as applicable.

Voice connections are supported by adding VFC-03 cards. Each VFC-03 card provides the choice of connecting to either a RJ45 or RJ11 connector. On the VFC-03, there are three available modes selectable by software: Off Premise Extension (OPX), Single Line Telephone (SLT), and E & M. The VFC-03 supports Adaptive Transform Coding (ATC) voice compression algorithm. The VFC-03 supports other voice compression algorithms, e.g., CELP. The VFC-01 may not be installed in the same chassis as the VFC-03, and its operating mode must be manually switched between OPX, SLT, and E & M.

The Frame Relay Access Module (FRAM-01) provides three high-speed data ports in addition to the one on the base circuit card. The FRAM has a single DB-68 connector which can be converted to three DB-25 connectors through the use of an adapter cable.

There can be multiple FRAMs, however only one can be configured for a Frame Relay switch. The others can only be used for data connections. On the FRAM used for Frame Relay connections, one port is configured for a composite port, and the other two ports are configured to interface to CPE such as routers with frame relay interfaces, for example (Figure 17-2). One of the ports on the FRAM is used for a composite port since the baseboard composite port data rate is considerably slower. If a FRAM port is defined as the composite port (line interface to the IPX), the base board composite port (line) is disabled.

Figure 17-1 FastPAD Connection Configurations except Frame Relay

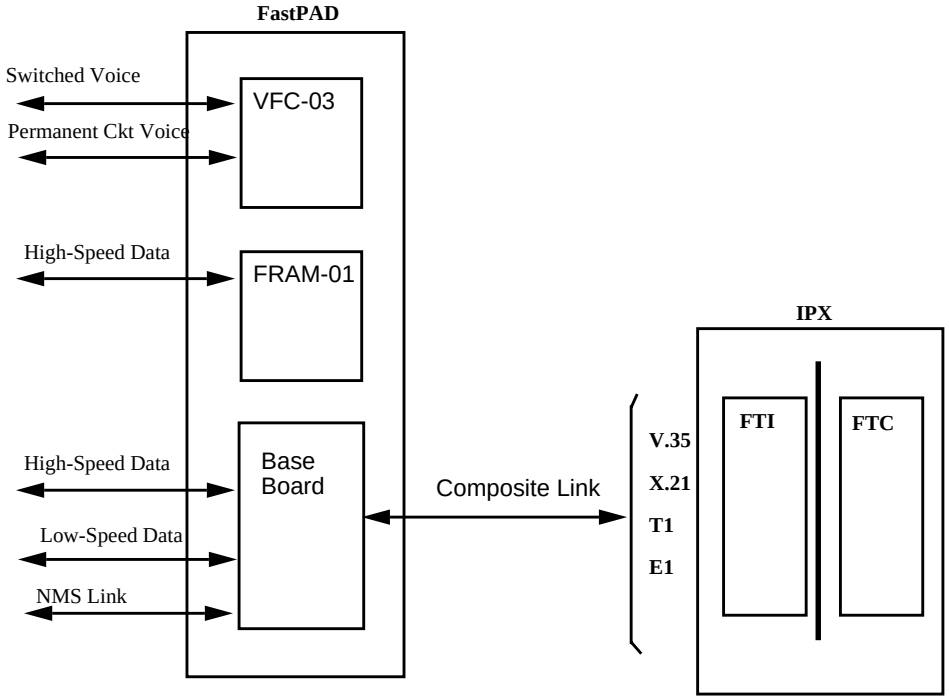
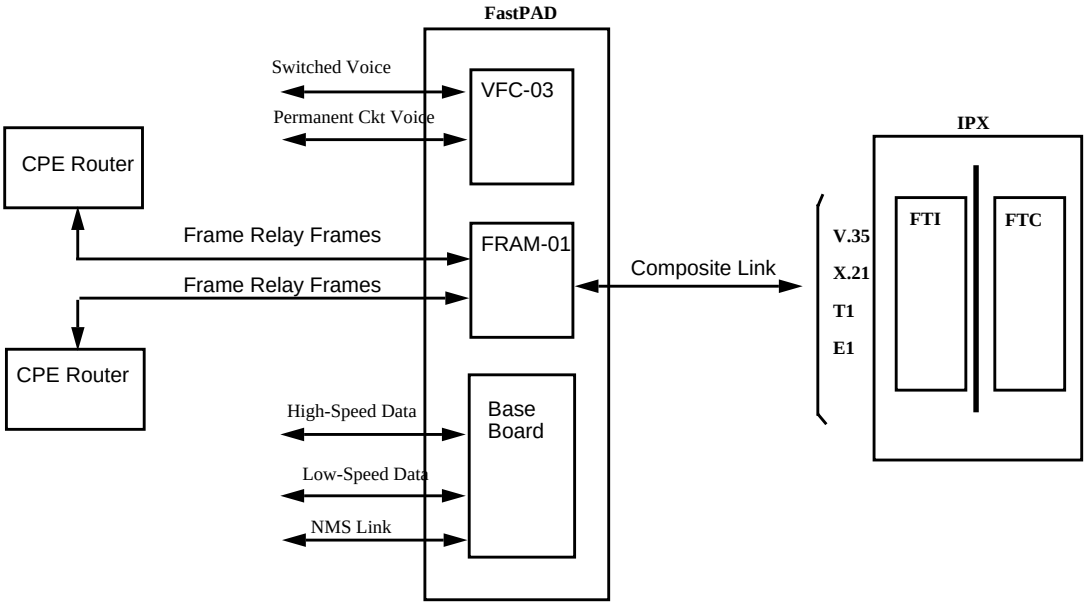


Figure 17-2 FastPAD Connection Configurations including Frame Relay



Configuration Summary

In setting up FastPAD connections across a network, a number of tasks need to be performed. These include the following:

- Install the FTC card.
- Set up Frame Relay parameters for the composite link between the FTC and the FastPAD.
- Configure the V.35 and X.21 ports, as necessary.
- Up and configure the T1/E1 ports, as necessary.
- Configure the composite link between the IPX and the FastPAD.
- Add the FastPAD to the local IPX node.
- Set up the appropriate connections: switched voice, permanent voice, CELP voice, low-speed data, high-speed data, frame relay, or frame forwarding.
- Manage the Bandwidth requirements.

General Considerations

Y-Cable Redundancy

The Y cable redundancy feature is supported for the FTC card, using the **addyred**, **delyred**, **dspyred** and **prtyred** commands. See the Node Commands chapter for details on setting up redundancy. The FTC/FTI card set supports V.35, X.21, T1, and E1 ports by the use of the corresponding four different FTI back cards

Managing FTC T1 and E1 Ports

Logical frame relay ports are collections of DS0 timeslots that function as a port. They support up to 252 connections. The LMI signalling protocol is simultaneously supported on a maximum of 30 logical ports.

The **addftcport** and **delftcport** commands are used to create/delete logical ports. The **addftcport** command associates a line number and DS0 timeslot to a logical port. Any number of contiguous DS0 timeslots are optionally associated to form a logical port with the restriction of channel 16, which is used for signalling for E1. Logical ports are formed with DS0 timeslots configured for either 56 or 64 Kbps. The **cnfftcport** command may be used to configure the port.

Line Management for FTC T1 and E1 Lines

FTC circuit line operations are included in the commands **upln, upcln, dnln,** and **dncln**. An FTI line can be configured as a network clock source with the command **cnfclksrc**.

Unassigned Channel Signaling

Unassigned channel signals are transmitted on a channel which is not mapped to a logical port. Data code values axon and TX apply to the T1 and E1 channels. Signalling values 1111 and 1101 apply to T1/E1 ABCD signaling channels.

IPX and FastPAD Control Setup

The FastPAD can be monitored and managed by the IPX through a control connection. This connection is a frame relay PVC connection between the CC on the IPX and the configuration application on the FastPAD. To configure the control connection:

1. Use the **dspftcport** command to display the FTC port parameters. Verify that the parameters of the FTC port (speed, clocking, port queue depth, ECN queue depth, and update protocol ID) match those of the FastPAD trunk port.
2. Use the **addfp** command to add a FastPAD to the local IPX node. With this command, specify the slot and port of the FTC card connected to the FastPAD, a name for the FastPAD, FastPAD ID, and the source DLCI (used to communicate with the FastPAD).

Initial Setup of FTC card and FastPAD Link

This section describes the steps for setting up the FTC card and FastPAD link.

1. Activating the FTC port providing the link to the FastPAD.

   The ports on the FTC card for V.35 and X.21 interfaces are upped automatically. The ports for T1 and E1 cards must be added using the **addftcport** command. The T1 and E1 ports are configured for logical channels by specifying groups of DS0s. If the port is not up, use the **upftcport** command to up it.

2. Configuring an FTC port with the **cnfftcport** command. If the port is not up, use the **upftcport** command to up it. For Release 8.2 and above, the **cnfftcport** command includes the DE threshold. There are two separate sets of syntax parameters, one for all ports except T1/E1 ports and the other for T1/E1 ports. In summary these are:

   For non-T1/E1 ports (e.g., V.35, X.21)

   ```
   cnfftcport FTC_slot.port  speed  port_type  port_ID  port_Q_depth
         ecnq_thresh  DE_thresh signalling_protocol
   ```

   For T1/E1 ports, after adding the logical ports with the **addftcport** command, configure each port:

   ```
   cnfftcport  FTC_slot.port   txq_depth  ecnq_depth  DE Threshold
         updt_prot_id
   ```

3. The next step is linking the FastPAD to the IPX. Once an FTC port has been configured, the FastPAD can be linked to the IPX using the **addfp** command:

   ```
   addfp FTC_slot.port name ID source_DLCI
   ```

   where name is up to eight characters to identify FastPAD, and ID must match the value entered at the FastPAD front panel (source DLCI = [S x 16] + P).

Note Once communications have been established between the IPX and a FastPAD, the FastPAD is locked. The FastPAD may be unlocked with a power reset or reboot. Communications must be re-established after changes have been made locally on the FastPAD. This can be done with the **restartfp** command.

Line Management

The **upln** and **dnln** commands are used to bring the line up and down, respectively.

Feeder Management

1 Managing the FastPAD

— The **dspfp** command displays the status of the cards in a FastPAD including expansion cards.

— The **resetfp** command resets the FastPAD. This should be done with caution, as traffic is interrupted.

2 Configuring FastPAD Data Ports

Two commands are used to configure FastPAD data ports. These are **cnfdclk** and **cnfict**. **cnfdclk** sets the data mode (transparent, H/SDLC, or asynchronous) and the clock mode (internal or external). **cnfict** allows limited control lead mapping from one data port to another.

Note The **cnfdclk** and **cnfict** commands are used to configure the parameters most often changed by the user. The superuser command **cnffpport** allows changing of all FastPAD data port parameters.

---

3 Configuring FastPAD Voice Ports and Channels

Two commands are used to configure FastPAD voice ports and connections. These are **cnfvchtp** and **cnfchgn**. The **cnfvchtp** command defines interface type, signalling, SLT timeout period, and DTME detect timeout. The **cnfchgn** command configures the input gain and output gain values.

Note The **cnfvchtp** and **cnfchgn** commands are used to configure the parameters most often changed by the user. The superuser command **cnffpport** allows changing of all voice channel parameters.

---

4 Configuring and Displaying FastPAD Frame Relay Ports. Frame Relay connections can be made between a FastPAD and another FastPAD via FTCs over an IPX network, or between a FastPAD via an FTC over an IPX Network to an FRP termination on an IPX. FastPAD frame relay ports are configured on the FRAM-01 card. Typically, of the three ports on the FRAM-01 card, up to two may be connected to Frame Relay routers, and the third is used as the composite link to the IPX. Multiple FRAM-01 cards may be installed, but only one may be configured with Frame Relay ports for Frame Relay connections. Applicable commands for configuring and displaying FastPAD Frame Relay ports on a FRAM-01 are: **cnffrport**, **dspfrport**, **upfrport**, and **dnfrport**. Their syntax is summarized in the following:

```
cnffrport  FTC_slot.port.FP_slot.port  [port_speed  rcv_clk_type
      xmt_clock_type  signalling_protocol  protocol_parameters
      data_coding

dspfrport  FTC_slot.port.FP_slot.port

upfrport   FTC_slot.port.FP_slot.port

dnpfrport  FTC_slot.port.FP_slot.port
```

Setting Up FastPAD Switched Voice Connections

Before two FastPADs can establish switched voice connections, they must be paired or associated to each other. Once paired, a PVC is created within the two FastPADs. Switched voice connections or sessions are established over this PVC. Each switched voice session does not have a dedicated PVC. Any FastPAD voice channel that has not been assigned a dedicated or permanent voice connection can be used for a switched voice connection. To set up a FastPAD switched voice connection:

1. First configure the voice channel at each FastPAD. The channel is expressed as FTC_slot.port where FTC_slot is the FTC card slot and port is the FTC port connected to the FastPAD. The configurable parameters and their associated commands are as follows:

   cnfchgn Configures the channel gain. This command allows the gain inserted in the receive and transmit directions to be adjusted to between -31 dB to +6 dB in 1 dB increments.

   cnfchutl Configures the channel utilization. See the Routing and Bandwidth commands chapter.

   cnfvfpchtp Configures the FastPAD voice channel interface type. This command configures the telecommunications interface type.

2. Use the **addcon** command.

Setting Up FastPAD CELP 8K or CELP 4.8K Voice Connections

Rel. 8.2 supports CELP-based voice connections that terminate on a pair of VCF03s and CELP-based switched voice connections between a pair of FastPADs. The compression type, e.g., CELP 8k is not configurable from the IPX.

FastPAD Data Rate Summary

FastPAD Data Traffic

The base board low-speed data ports support the following:

- Asynchronous rates between 300 and 9600 bps
- Synchronous data rates between 1.2 and 19.2 kbps
- DCE RS-232 Interface

The base board high-speed data port supports the following:

- Synchronous data rates between 1.2 and 64 kbps
- DCE or DTE compatibility
- RS-232, RS-449, V.34, and V.11 interfaces

The optional FRAM high-speed ports support the following:

- Synchronous data rates between 1.2 and 512 kbps
- DCE or DTE compatibility
- RS-232, RS-449, V.35, and V.11 interfaces
- Frame Relay Traffic (one port used for connection to IPX, two used for connection to CPE)

Setting Up FastPAD Permanent Voice Connections

To set up a permanent FastPAD voice connection, you merely pair two FastPAD voice channels.

1 First configure the voice channel at each FastPAD. For permanent voice connections, the channel is expressed as FTC_slot.port.FP_slot, where FTC_ slot is the FTC card slot; port is the FTC port connected to the FastPAD; and FP_slot is the voice expansion card slot on the FastPAD. The configurable parameters and their associated commands are as follows:

cnfchgn Configures the channel gain. This command allows the gain inserted in the receive and transmit directions to be adjusted to between -31 dB to +6 dB in 1 dB increments.

cnfchutl Configures channel utilization. See the Routing and Bandwidth Commands chapter.

cnfvfpchtp Configures the FastPAD voice channel interface type. This Command configures the telecommunications interface type.

2 Use the **addcon** command. The above configuration must have been completed at each end before the connection can be added.

Setting Up FastPAD Data Connections

To set up a permanent FastPAD data connection, perform the following tasks.

1 First configure the data channel at each FastPAD. The channel is expressed as FTC_slot.port.FP_slot.port, where FTC_slot is the FTC card slot; port is the FTC port connected to the FastPAD; FP_slot is the card slot on the FastPAD; and port is the data channel on the FastPAD card. The configurable parameters and their associated commands are as follows:

cnfcondsc Configures the connection descriptor.

cnfdclk Configures the clocking for the data channel.

cnfict Configures the interface control template that determines the output lead behavior for data channels. Output leads can be configured as steady state (on or off) or can be programmed to follow an input lead. For the FastPAD, there is only one template–the active template.

cnfchutl Configures channel utilization. See the Routing and Bandwidth Commands chapter.

2 Use the **addcon** command. The above configuration must have been completed at each end before the connection can be added.

Setting Up Normal Frame Relay Connections

The FastPAD, in conjunction with the IPX, provides frame relay connections of CPE (routers, bridges, packet switches, etc.) via PVCs. The CPE is connected to the FRAM-01 card that supports Frame Relay. The FTI back card (V.35, X.21, T1, or E1) performs the adapter layer function to convert between the FastPAD special frame format and FastPackets.

The CPE transmits data to the FRAM-01 based upon the core functions of Q.922 (LAPD). The FastPAD scans the first two octets of the DLCI and forwards the frame to the destination CPE via the IPX.

For adding/deleting connections, the following commands are used:

- addcon
- delcon

1 Use the **addcon** command to add the desired frame relay connections to the FRAM-01 card, using the appropriate frame class and configuring the bandwidth parameters as applicable.

addcon local_chan(s) node chan class [frp_bw avoid]

chan(s) = FTC_slot.port.FP_slot.port.DLCI

frp_bw = MIR/MIR VC-Q/VC_Q PIR/PIR Cmax/Cmax ECNQ_thresh/ECNQ_thresh
QIR/QIR FST %util/%util

Note These parameters have the same value options as defined for the **cnffrcls** command currently supported for FRP ports.

---

delcon channel(s)

channels = FTC_slot.port.FP_slot.port.DLCI

2 For a large number of connections with similar bandwidth configuration, it may be useful to use the **cnffrcls** command to set up a class of frame relay bandwidth parameters applicable to these connections. See also **dspfrcls**.

Frame Forwarding Connections

Frame forwarding connections allow the connection of non-frame relay frames (HDLC and SDLC). Frame forwarding for FastPAD to FastPAD may be configured on either the FastPAD base card or FRAM-01 expansion card. However, for Rel. 8.2, frame forwarding from FastPAD to FRP is limited to the data ports on the FRAM-01 expansion card.

NOTE: The FTC port ID cannot be changed to a different value if a frame forwarded connection exists between the attached FastPAD and an FRP. This is because the FTC port ID is used as a unique identifier in the FTC card's logical connection entry.

Managing Bandwidth

The following commands assist in managing bandwidth to achieve satisfactory traffic patterns.

cnfcos Specifies a class of service (COS) for a data or voice channel. The COS is a number from 0 to 15 that determines the channel's priority for rerouting in a trunk fails.

cnfpref Specifies preferred routing for intra-domain connections. This command can be used to assist in balancing the load on the network's trunks.

dsprts, prtrts Displays/prints the current connection routing information. Used in conjunction with the **cnfpref** command. The display of the connection routes terminates at the IPX.

dncon, upcon Temporarily downs/ups connections of a specified COS, thus releasing bandwidth for other services. Often it is possible to down some voice connections to provide more bandwidth for data and frame relay connections.

Monitoring Alarms and Statistics

1. Displaying Alarms. The **dspalms** command display includes failed connections and card failures. Line alarms are mapped to FTC port/FastPAD alarms. LMI failures show minor alarms on connections.
2. Statistics: For Release 8.2, FastPAD level statistics are not integrated in the IPX's statistics collections. The FTC card does collect statistics on the PVCs associated with the feeder channels within the IPX. The following statistics are available:

   Frames received and transmitted, packets received and transmitted, bytes received and transmitted, receive and transmit frames discarded, receive and transmit packets discarded, and receive and transmit bytes discarded.

   Applicable commands are: **cnfchstats**, **dspchstats**, **clrchstats**, **dspchstatscnf**, **dspchstathist**. The format is the same as in previous releases, except that the target frame relay port is specified as:

   FTC_slot.port.FP_slot.port.DLCI

General FastPAD Information

FastPAD Data Types

There are three data channel types and one Frame Relay Type on the FastPAD (Figure 17-3).

Table 17-1 Port and Channel Types

Port Type	Transparent	H/SDLC	Asynchronous	Frame Relay
Base-board low speed	Yes	Yes	Yes	No
Base-board high speed	Yes	Yes	No	No
FRAM high speed	No	Yes	No	Yes

Transparent: The transparent mode is used for synchronous data applications. In order to reduce bandwidth utilization on the Composite Link, the FastPAD suppresses repeating patterns. After a synchronous data frame is built, the FastPAD searches for repeating patterns within the frame. The first occurrence of a repeating pattern of at least five in length is reduced to three octets and the smaller frame if sent out across the Composite Link. This process is called Run Length Compression (RLC).

H/SDLC: High-level Data Link Control (HDLC) and Synchronous Data Link Control (SDLC)_ are synchronous data protocols. SDLC is a subset of HDLC that was developed for use on SNA networks. The FastPAD recognizes HDLC frames and arranges them into 65 byte segments to be packetized into frame relay frames. All HDLC frames are separated by hexadecimal 7E flags. The FastPAD suppresses inter-HDLC frame idle flags to reduce utilization on the composite link.

Async: In asynchronous mode, the data channel protocol is preset to 8-bit characters with no parity and one stop bit, which cannot be changed. However, 7-bit protocols with parity can be used and the FastPAD forwards the parity bit as the eighth data bit. In order to reduce bandwidth use, frames are not generated during idle periods, and start and stop bits are not included in the frame. There is a configurable time period that the FastPAD waits to receive data from an asynchronous device before sending a frame that is 66 bytes long. This ensures propagation through the network with minimal delay.

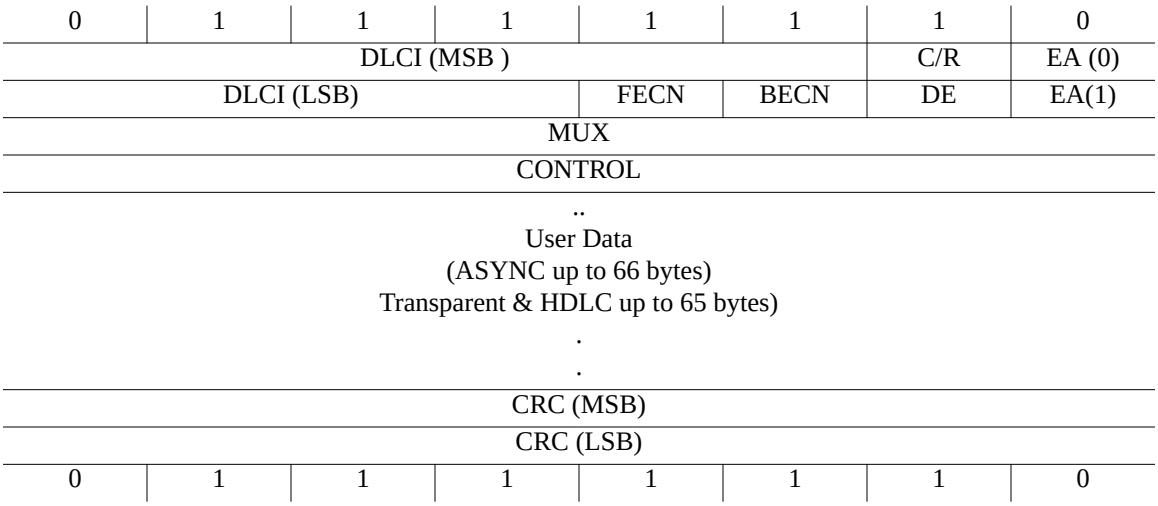
Data Frame Format

The data traffic on the composite link of the FASTPAD is encapsulated into frames. FastPAD frames with synchronous data contain 65 data bytes, and frames with asynchronous data contain data bytes. Data frames may be shorter in some cases. Data frames may be marked as discard eligible.

The composite link can connect a FastPAD to a wide area network (e.g. IPX) or to another FastPAD. The Frame Relay network can be either public or private.

The standard frame relay format is shown in Figure 17-3. The standard frame relay format can be between 5 and 4096 bytes in length. There is at least one hex 7E lag between consecutive frames. On the composite link, the frame lengths used by the FastPAD can have up to 65 bytes of synchronous data, 66 bytes of asynchronous data, or between 5 and 4096 bytes of frame relay connection data.

Figure 17-3 FastPAD Frame Format



Summary of Commands

The commands discussed in the previous sections are summarized in the Table 17-2. The command name, a description, and the page on which more information can be found is included.

Table 17-2 Summary of Commands

Mnemonic	Description
addcon	Add Connection
addfp	Add FastPAD to IPX Node
addfpdial	Add FastPAD Speed Dial Number
addftcport	Add logical T1/E1 port link to FastPAD, using DS0 segments
addextlp	Add external loop. See the “Troubleshooting” chapter.
addrmtlp	Add remote loop. See the “Troubleshooting” chapter.
cnfchgn	Configure Gain Insertion for Channel(s)
cnfchpri	Configure FRP channel priority for a connection, supporting SNA applications
cnfchutl	Configure channel utilization for a channel. See the “Optimize Traffic Routing” chapter.
cnfcondsc	Configure Connection Descriptor.
cnfcos	Configure class of service. Sets priority for rerouting a connection. See the “Optimize Traffic Routing” chapter.
cnfdclk	Configure Data Clock
cnffrcls	Configure frame class parameters for FastPAD to FastPAD or FastPAD to FRP frame relay connections via FRAM-01 card.
cnffrcon	Configure FastPAD to FastPAD or FastPAD to FRP frame relay connections via FRAM-01 card.
cnffrport	Configure Frame Port for FastPAD to FastPAD or FastPAD to FRP frame relay connections via FRAM-01 card.
cnfftcport	Configure FTC Port
cnfict	Configure Interface Control Template
cnfpref	Configures preferred route. See the “Optimize Traffic Routing” chapter.
cnfvchtp	Configure FastPAD Voice Channel Type
cpyict	Copy Interface Control Template
delcon	Delete Connection
delfp	Delete FastPAD from IPX or IGX Node
delftcport	Delete logical T1/E1 port
dncon	Down a connection. See the “Optimize Traffic Routing” chapter.
dnfrport	Down Frame Port on FRAM-01 for FastPAD to FastPAD or FastPAD to FRP frame relay connections, using syntax FTC_port.slot.FP_slot.port
dnftcport	Down FTC port for link to FastPAD composite port using syntax FTC_slot.port.
dnln	Down an FTC line
dspchcnf	Display Channel Configuration
dspcon	Display Connection
dspcons	Display Connections
dspfp	Display FastPAD Card Information

Mnemonic	Description
dspfps	Display Information for All FastPADs
dspfrcls	Display frame class parameters for FastPAD to FastPAD or FastPAD to FRP frame relay connections via FRAM-01 card.
dspfrport	Display Frame Port configuration on FastPAD FRAM-01.
dspftcport	Display FTC Port Configuration
dspict	Display Interface Control Template
dsprts	Displays routes used by connections at a node. See the “Optimize Traffic Routing” chapter.
prtchcnf	Print Channel Configuration
prtcons	Print connection(s)
prtict	Print Interface Control Template
resetfp	Reset FastPAD: do a cold boot and allow deletion of all PVCs.
restartfp	Restart FastPAD(s)
tstcon	Test Connection with a test pattern. See the “Troubleshooting” chapter.
tstdelay	Test round trip delay. See the “Troubleshooting” chapter.
tstport	Test Port, executing port loopback test. See the “Troubleshooting” chapter.
upcon	Up a connection that has been downed. See the “Optimize Traffic Routing” chapter.
upfrport	Up Frame Port on FRAM-01 for FastPAD to FastPAD or FastPAD to FRP frame relay connections, using syntax FTC_port.slot.FP_slot.port
upftcport	Up FTC port for link to FastPAD composite port using syntax FTC_slot.port.
upln	Up an FTC line.

addcon

Adds channel connections between entities in the network. The same command with differing syntax may be used to add voice connections, data connections, frame relay connections or FastPAD voice, switched voice, or data connections. This command establishes channel connections between entities in the network. This format of the command adds a FastPAD voice, switched voice or data connection. The same command with differing syntax can be used to add different types of network connections. After a connection is added with the **addcon** command, the connection is routed automatically by the system.

The node where the **addcon** command is entered is considered the "owner" of the added connections. The concept of ownership is important because automatic rerouting and preferred routing information for a connection must be entered from the node that owns the connection. See the **cnfpref** and **cnfcos** commands for more information on automatic rerouting. Before a connection is added, the proposed connection appears on the screen and you are asked to confirm the addition.

Switched Voice:	addcon FTC_slot.port node FTC_slot.port type [BW] [%utl]
	where BW = MIR
Auto-Dial Voice:	addcon FTC_slot.port.FP_slot node FTC_slot.port.FP_slot type
Data:	addcon FTC_slot.port.FP_slot.port node FTC_slot.port.FP_slot.port rate
Frame: [params]	addcon FTC_slot.port.FP_slot.port.DLCI node FTC_slot.port.FP_slot.port.DLCI

Full Name

Add a connection

Syntax

addcon parameters optional parameters

Related Commands

delcon, dncon, dspcon, dspcons, upcon

Attributes

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

Example 1

addcon 31.1.8 IPX 31.2.8 atc12

Description

Add a voice connection from FastPad port 31.1.8 to 31.2.3 with ATC12 compression. When prompted, type “y” to add the connection.

System Response

```
IPX        TRM  SuperUser     IPX 32   8.2    Date/Time Not Set

 Local     Remote     Remote                          Route
 Channel   NodeName   Channel   State  Type   Compression  Code Avoid COS O
 31.1.8    IPX        31.2.8    Ok     atc12
 31.2.8    IPX        31.1.8    Ok     atc12




This Command: addcon 31.1.8 IPX 31.2.8 atc12


Add these connections (y/n)?
```

Table 17-3 addcon – Parameters

Parameter	Description
local channel	Specifies the local frame relay channel to connect in the following format: FTC_slot.port — For switched voice connections FTC_slot.port.FP_slot — For voice connections FTC_slot.port.FP_slot.port — For data connections FTCslot.port.FPslot.subport.DLCI — For frame relay connections In these formats, <FTC_slot> indicates the slot of the FTC card on the IPX, <port> is a port on the FTC card, <FP_slot> is the card slot on the FastPAD and <port> is the port or channel of the FastPAD data card. The <FPslot> range includes b and 1 - 8, with b being the base card and 1-8 the expansion cards. On the standard FastPAD, the base card provides six data channels; channels 1-5 are low speed, and channel 7 is high speed. Channel 6 is for NMS. Other expansion data cards (FRAM-01) provide three channels (1 - 3). One of these 3 channels can be use for the composite link. Also, on one FRAM-01 only, two of these channels can be used for Frame Relay connections. See Example 2, Fr Rly. A VFC-03 expansion card provides for voice connections.
node	Specifies the name of the IPX node at the other end of the connection.
remote channel	Specifies the remote FastPAD channel or destination channel of the connection. It is specified in the same format as: FTC_slot.port — For switched voice connections FTC_slot.port.FP_slot — For voice connections FTC_slot.port.FP_slot.port — For data connections FTCslot.port.FPslot.subport.DLCI — For frame relay connections
type	Specifies the type of the connection. For switched voice connections, the type is "s" or "switch" to indicate the PVC is used for switched voice. For voice, type indicates the compression type. The following voice compression types are valid: ATC8, ATC12, ATC16 and CELP8, indicating ATC compression at 8K, 12K, or 16K and CELP compression at 8K. For data connections, the type is the data rate. The following Kbps values are valid: Base board low-speed ports: Asynchronous rates between 300 and 9600 bps. Synchronous rates between 1.2 and 19.2 Kbps Base board high-speed ports: Synchronous rates between 1.2 and 64 Kbps FRAM-01 expan. card: Synchronous rates between 1.2 and 512 Kbps Frame Relay Class: 1–10

Table 17-4 addcon – Optional Parameters

Parameter	Description
avoid	Specifies the type of trunk for the connection to avoid. The default is no avoidance. The choices are: **∗s** avoid satellite trunks. **∗t** avoid terrestrial trunks. **∗z** avoid trunks using zero code suppression techniques that modify any bit position to prevent long strings of zeros.
bandwidth	Specifies the amount of bandwidth to dedicate to the voice channel. This parameter is optional and only valid for FastPAD switched voice connections.

Parameter	Description
hop count bumping	Specifies whether to use hop count bumping (adjustment) to improve the quality of the PVC carrying a switched voice connection. Bumping the hop count can lower the delay for the PVC. This parameter is optional and only valid for switched voice connections.
utilization	Specifies a utilization percentage to be used by the IPX for bandwidth assignment. This parameter is optional and only valid for switched voice connections.

addcon – FastPAD Frame Relay and Frame Forwarding Connections

Example 2

addcon 10.1.3.12.1000 beta 11.1.1.12.1001 10

Description

Add a frame relay connection between FastPADs.

System Response

```
gamma     TRM        YourID:1     Rev: 8.2.X        Mar 1 1997       PST

From          Rem       Rem
            NodeName   Channel       State    Type  Compression Code  COS

10.1.3.3.990   beta      11.1.1.2.991  Downed   fr                 10
11.1.100       beta      11.1.2.2.200  OK       fr                 3
12.1.1.3       beta      10.1          OK       fr                 2




Last Command:  addcon 10.1.3.3.990 beta 11.1.1.2.991 10

Next Command:
```

FastPad to FastPAD frame relay connection:
addcon 10.1.2.3.990 beta 11.1.1.2.991 10

FRP port to FastPAD frame relay connection:
addcon 11.1.100 beta 11.1.2.2.200 3

Frame Forwarding, FastPAD data channel to FRP port:
addcon 12.1.1.12.* beta 10.1.* 2

For frame relay connections, the **addcon** syntax is:

addcon local chan(s) node chan class [optional params = frp_bw avoid]

The frp_bw parameters have the same parameter values options as defined in the **cnffrcl** command for the frp ports. These are:

frp_bw = MIR/MIR VC_Q/VC_Q PIR/PIR Cmax/Cmax ECNQ_thresh/ECNQ_thresh

QIR/QIR %util/%util descr

avoid = s/z

local chan = the local FastPAD frame relay channel with format:

FTCslot.FRCport.FastPADsubslot.FastPADsubport[.DLCI | .*]

node = remote node name

chan = frame relay channel at the other end of the connection and has the following syntax

For FastPAD destination:

FTC_slot.port.FP_slot.port [.DLCI | .*

For FRP destination:

FRP_slot.port [.DLCI | .*

Note If the connection is from FRP port to FastPAD, reverse the chan and local channel parameters in this example.

class = Class of Service

---

addfp

Adds a FastPAD to the IPX network. This enables the local IPX to map the FastPAD to an FTC port and communicate with it over a frame relay PVC to establish a control session. The **addfp** command defines the IPX slot and port to which the FastPAD is connected and assigns the FastPAD a unique name and ID. (The name and ID must be unique to the local node, and ID must match the value entered at the control panel of the FastPAD). This command also assigns a source (FastPAD) DLCI to identify the PVC connection over which the devices communicate. If the port speed and related parameters on the FTC card match those of the composite link of the FastPAD, the IPX establishes a control session with the FastPAD, allowing configuration management to be performed over this session.

addfp FTC_slot.port name ID source_DLCI

Full Name

Add FastPAD to an IPX node

Syntax

addfp parameters

Related Commands

delfp, dspfp

Attributes

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

Example 1

addfp 31.1 FP1 1 17

Description

Add a FastPAD at slot port 31.1, specifying the name FP1, an ID of 1, and a source DLCI of 17.

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

                    FastPADs Information

 Slot.Port  Name      ID  FP_DLCI  Port_ID  Alarm

   31.1     FP1       1     17       0    OK
   31.2     FP2       2     18       0    OK
   31.3     FP3       3     19       0    OK
   31.4     FP4       4     20       0    OK




 Last Command: addfp 31.1 FP1 1 17

 Next Command:
```

Table 17-5 addfp – Parameters

Parameter	Description
slot	Specifies the slot containing the FTC card to which the FastPAD is to be added.
port	Specifies the port number on the FTC card to which the FastPAD is to be added.
name	Specifies the name of the FastPAD to be added to the node. This name must be unique to the local (physically connected IPX) node.
id	Specifies a value to be used as an identifier for the FastPAD. The value can be from 1 to 256 and must match the value entered into the FastPAD from the front panel. This value must be unique to the local (physically connected IPX) node.
source dlci	Specifies the DLCI used by the FastPAD to communicate with the local IPX node.

addfpdial

Adds a speed dial number to the FastPADs map table. The map table is used by the FastPAD to route a FastPAD end user's analog voice connection to the remote FastPAD channel. Number must be between 0 and 9999. If FFFF is specified, then no speed dial is set. For auto-dial voice channels, a specific map must be assigned to the calling channel.

addfpdial FTC_port.slot.FP_port dial number

Full Name

Add FastPAD speed dial number

Syntax

addfpdial parameters

Related Commands

None

Attributes

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

Example 1

addfpdial 31.2.8 777

Description

Add a speed dial number of 777 to FastPAD at 31.2.8

Table 17-6 addfpdial – Parameters

Parameter	Description
channel	Specifies the FastPAD channel to get a speed dial number
dial number	Specifies the phone number used by the local FastPAD. Number must be between 0 and 9999. If FFFF is specified, then no speed dial is set.

addftcport

Adds a logical frame relay port for T1/E1 by entering the slot number of the FTI/FTC and the DS0/timeslots that make up the logical port. The following lists the error/warning messages from this command.

Table 17-7

Messages	Reason for Message
"Slot is out of range"	Line number not correct for FTC T1/E1
"Line must first be upped"	Line is down
"invalid channel range"	Channel number is out of range (T1: 1-24) or (E1: 1–31, no 16)
"Channel is busy"	Channel is already assigned to a logical port
"You cannot use signalling channel 16" (E1)	CAS channel 16 included in logical port (E1)
"Invalid rate"	Entered rate is not 56 or 64 Kbps
"This rate is available for single channel only"	Entered rate is 56 Kbps and multiple channels were specified

Full Name

Add FastPAD port T1/E1

Syntax

addftcport parameters optional parameters

Related Commands

upcln, delftcport, cnfftcport, dspftcport

Attributes

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

Example 1

addftcport 21.9 -15

Description

Add a FTC port from a range of DS0/timeslots.

System Response

```
gamma        TRM   YourID:1       IPX 16    8.2.x    Mar. 15 1997 17:28 CST

Port configuration for FTC 21

From                          Chan        Speed       Interface       State
1                             9-15        448         FRI T1          INACTIVE




Last Command: addftcport 21.9-15

Next Command:
```

Table 17-8 addftcport – Parameters

Parameter	Description
line.channel	Specifies the FTI T1/E1 line number and the logical port number. e.g. addfrport 8.14 (a period separates the line from the logical port number).

Table 17-9 addftcport – Optional Parameters

Parameter	Description
- chan	Specifies that multiple DS0/timeslots should be aggregated into a logical port, e.g. addftcport 8.1 – 5 (a hyphen is used to separate the DS0/timeslots in a from – to range). The lowest DS0/timeslot number becomes the logical port number.
rate	Specifies the rate of a single logical port. By default, multiple ports are all 64 Kbps. A single DSØ/timeslot may be 56 Kbps or 64 Kbps. e.g. addftcport 8.14 56 (if rate is not entered, 64 Kbps is assumed).

cnfchgn

Configures the amount of gain inserted by the IPX mode for the specified FastPAD voice channel. Gain can be configured between +6 dB and -8 dB. The input gain is inserted at the receive side of an FTC line, and is therefore applied before the signal is packetized. The output gain is inserted at the transmit side of a FTC line and is applied after the signal has been depacketized.

Full Name

Configure gain insertion for channels

Syntax

cnfchgn parameters

Related Commands

dspchcnf

Attributes

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

Example 1

cnfchgn 31.1.8 -4 2

Description

Configure an input gain of -4db and an output gain of +2db for FastPAD channel 31.1.8

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

          %     Gain  (db)
Channels Util    In    Out   Interface Type   DTMF  SLT Timeout
31.1.8   100     -4    2     FXS L/S          30


Last Command: cnfchgn 31.1.8 -4 2

Next Command:
```

Table 17-10 cngchgn – Parameters

Parameter	Description
channel(s)	Specifies the FastPAD channel
gain	Specifies the gain, in decibels, to assign to the channel. The range is -8 dB to +6 dB.

cnfcondsc

Assigns a reference description to a connection. The connection descriptor is configured independently at each end of a connection**.** The connection descriptor cannot be deleted in a job, only reconfigured. The **dspcon** and **dspcons +d** commands display the connection descriptor, if one is configured.

Full Name

Configure connection description

Syntax

cnfcondsc parameters

Related Commands

dspcon, dspcons

Attributes

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

Example 1

cnfcondsc 31.2.B.2 Maximillian’s_fax

Description

Give a descriptive name to channel 31.2.B.2. In this example, the name "Maximillian's_fax" is given to the connection 31.2.B.2. If a descriptor is desired for the other end of the connection, the user can "**vt**" to the other end of the connection and use the **cnfcondsc** command on that connection. The same name can be assigned or a different name.

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Conn:  31.2.B.2   IPX        31.1.B.1    16        Desc: Maximillian's_fax


                                    Status: OK


Path:   Route information not applicable for local connections


IPX       FTC:   OK                  IPX       FTC:   OK
        FTI:   OK                      FTI:   OK
        FastPAD: OK                      FastPAD: OK

Last Command: cnfcondsc 31.2.B.2 Maximillian's_fax

Next Command:
```

Table 17-11 cnfcondsc – Parameters

Parameter	Description
channel	Specifies the FastPAD channel to configure.
descriptor	Specifies a string of up to 20 displayable characters starting with anything except a digit. No spaces are allowed.

cnfdclk

Configures the clocking for a FastPAD data channel. The FastPAD supports synchronous and asynchronous traffic. For synchronous traffic, the channel can support internal or external clocking. Asynchronous (character-oriented) traffic is sent as 8 bits, 1 stop bit, and no parity.

Note For a change of port type on an expansion card from frame relay to data (DLC), a prompt appears stating that the FastPAD must be reset. Use the resetfp command to do this.

Full Name

Configure data channel clocking type

Syntax

cnfdclk parameters optional parameters

Related Commands

cnfict

Attributes

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

Example 1

cnfdclk 31.2.B.2 TRANS i

Description

Configure clock for channel 31.2.B.2 for transparent data and an internal clock mode.

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Data Channel:     31.2.B.2
Interface:        RS232      DTE
Clocking:         Internal


          Interface Control Template for Connection while Active

   Lead      Output Value          Lead      Output Value
   DSR       ON                    RTS       N/A
   DCD       ON                    CTS       ON




Last Command: cnfdclk 31.2.B.2 TRANS i


Next Command:
```

Table 17-12 cnfdclk – Parameters

Parameter	Description
channel	Specifies the data channel to configure. Data channels are specified in the format slot.port.subslot.subport, where slot and port are the slot/port of the FTC card, subslot is the FastPAD card slot (1-8 for expansion, b for the base card), and subport is the port/channel on a FastPAD data card. The base card supports six ports/channels (1-5 are low speed, 6 is high speed). Other data cards support three ports/channels (1-3).
data mode	Specifies the data transmission mode as either: • TRANS transparent data transmission • DLC H/SDLC data transmission • ASYNC Asynchronous data transmission
clock type	Specifies a clocking type to assign to each channel. Valid clock types are: • **i** Internal (FastPAD provides transmit/receive clocks.) • **e** External (FastPAD provides transmit/receive clocks.)

cnffrport

Configures the parameters of a frame relay port. When configuring a frame relay port on a FastPAD, the user is prompted for each parameter. Pressing the Return key keeps the current value for the parameter. The screen display is shaded for parameters not configurable for some applications. The data rates for each of the four ports may be mixed and matched freely if the total for all four ports does not exceed the maximum data rate allowed (up to 512 Kbps.).

The rules for assigning data rates to the four ports when using the 1 Mbps FRI are as follows:

1. If a data rate of 672 Kbps or above is used in any port, no other port may be used.
2. If a data rate of between 384 Kbps and 512 Kbps is used in any port, a second port may be used at an available data rate of 512 Kbps or below.
3. If a data rate of 336 Kbps is used in any port, two other ports may used at any available data rates of 336 Kbps or below.
4. If the data rate of any port does not exceed 256 Kbps, all four ports may be used at any available data rates of 256 Kbps or below.

Full Name

Configure Frame Relay port

Syntax (T1/E1 ports)

cnffrport

Required parameters (left-to-right):

slot.logical port number	prot queue depth
ecn queue threshold	de threshold
signalling protocol	protocol parameters

Optional parameters:

None

Syntax (All other ports)

cnffrport

Required parameters (left-to-right):

slot.port number

Optional parameters:

speed	clocking
port type	port ID
prot queue depth	ECN q_threshold
de_threshold	signalling protocol
protocol parameters	min-flags-bet-frames

Related Commands

upfrport, dnfrport, dspfrport

Attributes

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

Example 1

cnffrport 5.1 256 NORMAL 0 65535 65535 100 2 N

Description

Reconfigure the FR port to 5.1 to change Q depths

System Response

```
D2.ipx5      TRM   YourID:1      IPX 16    8.2   Aug. 4 1997  16:40 PST

Port:      5.1              [ACTIVE  ]
Interface:                  FRI-X21 DCE        Configured Clock:        256                Kbps
Clocking:                   Normal             Measured Rx Clock:       256       Kbps
Port Type                   FR                                          Min Flags/Frames1
Port ID                     0
Port Queue Depth            65535                                       OAM Pkt Threshold3  pkts
ECN Queue Threshold         65535                                       T391 Link Intg Timer6sec
DE Threshold                100                %                        N391 Full Status Poll10cyl
Signalling Protocol         None                                        ForeSight (CLLM)No
Asynchronous Status         No                                          CLLM Status Tx Timer0msec
T392 Polling Verif Timer    15                                          IDE to DE MappingYes
N392 Error Threshold        3                                           Interface Control Template
N393 Monitored Events Count 4                  Lead                     I
Communicate Priority        No                 State                    ON
Upper/Lower RNR Thresh      75%/25%

Last Command: cnffrport 5.1 256 NORMAL 0 65535 65535 100 2 N


Next Command:
```

Example 2

cnffrport 8.1 256 n 12000 10000 100 4 15 3 4 N 75 25 1

Description

Reconfigure an NNI FR port 8.1 to change Q depths

System Description

```
gamma TRM   YourID:1       IPX 16    8.2    Mar. 15 1997 15:51 PST


Port:      8.1     [ACTIVE  ]
Interface:  V35-4   DCE                Configured Clock:       256 Kbps
Clocking:   Normal                     Measured Rx Clock:      256 Kbps
Port ID                 40
Port Queue Depth        12000
ECN Queue Threshold     10000          Min Flags / Frames          1
DE Threshold            100 %          OAM FastPacket Threshold    3 pkts
Signalling Protocol Annex A NNI        Link Integrity Timer (T391) 6 secs
Asynchronous Status     Yes            Full Status Polling (N391) 10 cycles
Polling Verif Timer     15             Interface Control Template
Error Threshold         3              Lead      State
Monitored Events Count  4              CTS       ON
Communicate Priority    No             DSR       ON
Upper/Lower RNR Threshold 75/25 %      DCD       ON


Last Command: cnffrport 8.1 256 normal 12000 10000 100 6 15 3 4 N 75 25 1


Next Command:
```

The results for the update FR parameters as shown are as follows:

Port Queue Depth	65535	Depth of port queue is set at 65,535 bytes.
ECN Queue Depth	65535	Port queue must reach 65,535 bytes before FECN and BECN bits are set.
DE Threshold	100	Port buffer fill must be 100% before dropping DE frames.
Signalling Protocol	2	LMI disabled.
Asynchronous Status	N	No asynchronous messages to user device; wait for polling from user device.
Polling Verify Timer	15	15 seconds heartbeat period.
Error Threshold	3	3 failures trigger port comm failure.
Monitored Events Count	4	4 events are monitored.
Communicate Priority	N	Do not communicate port priority to the user device.
Upper RNR Threshold	75	75% of buffer triggers receiver not ready condition.
Lower RNR Threshold	25	25% of buffer clears a receiver not ready condition.
Minimum Flags/Frame	1	There is only one flag for each FR data frame.

Table 17-13 cnffrport – Parameters

slot.p;ort	Specifies the FRP card slot and port number. (Slot and logical port number for T1/E1)
speed	Specifies the port clock speed in kbps; for a 2.0 Mbps FRP. Speed configured is displayed as Configured Clock. Actual clock rate is displayed as Measured Rx Clock. The available speeds are: 1 port (selected speeds, 56 to 2048 Kbps) 2 ports (selected speeds, 56 to 1024 Kbps) 3 ports (selected speeds, 56 to 672 Kbps) 4 ports (selected speeds, 56 to 512 Kbps) The available clock rates for the 1, 2, 3, and 4 port combinations are provided in the command description.
clocking	Specifies the port clock type (normal/looped) [normal]. There are four combinations of clocking that may be used for the FRI-V.35 and two with the FRI-X.21. Refer to Chapter 2, Frame Relay Interface Card for a description of looped and normal clock modes. Not specified for T1/E1 ports. FRP is DCE with normal clocking (V.35 and X.21) FRP is DCE with looped clocking (V.35 only) FRP is DTE with normal clocking (V.35 and X.21) FRP is DTE with looped clocking (V.35 only)
port type	Specifies the port type as either FR for frame relay or ATM for Asynchronous Transfer Mode. Select ATM when using AIP to interface V.35 circuits to IPX FRP port. Configures alarm reporting and other miscellaneous functions for port.
port ID	Specifies the DLCI associated with the port (0 - 1024) {0}. The IPX uses this number only when adding bundled connections. Otherwise, it can be used by the customer as a network destination number in global addressing. Not specified for T1/E1 ports.
port queue depth	specifies the maximum bytes queued for transmission from the FRP port. The range is from 0–65535. The default is 65535.
ecn queue threshold	specifies the port explicit congestion notification. The range is from 0-65535. The default is 65535. This is the point at which the BECN and FECN bits will be set in the communications to the user device.
de threshold	Specifies the port queue depth above which frames with the Discard Eligibility bit set will be discarded. Valid entries are 0–100%, with a default of 100%. An entry of 100% effectively disables DE for the port.

signalling protocol	Specifies the LMI operation mode. The range is from 0-255. The following values are defined (the default is LMI=2): LMI = 0 LMI is disabled at this port. LMI = 1 Cisco LMI and the asynchronous update process is enabled at this port. Greenwich Mean Time is also enabled LMI = 2 LMI is disabled at this port. LMI = 3 Cisco LMI is enabled at this port, but asynchronous update process is disabled. LMI = 4 Port configured as User-Network Interface using CCITT Q.933 Annex A parameters. LMI = 5 Port configured as User-Network Interface using ANSI T1.617 Annex D parameters. LMI = 6 Port configured as Network-Network Interface using CCITT Q.933 Annex A parameters. LMI = 7 Port configured as Network-Network Interface using ANSI T1.617 Annex D parameters.
asynchronous status	Specifies whether the IPX should send unsolicited LMI update messages as they appear or whether to wait for the polling from the user device. Valid values are y (yes) or n (no)
polling verify timer	Specifies the Link Integrity Verification Timer heartbeat (keep-alive) period with a valid range of 5–30. This should be set to 5 seconds more than the heartbeat time set in the user equipment. Default is 15.
error threshold	Specifies the number of failures in the monitored events that causes the "keep alive" process to report an alarm. It has an accepted range of 0-255 and a valid range of 1–10. A value of zero defaults to 1, and a value more than 10 defaults to 10.
monitored events count	Specifies the number of monitored events for the "keep alive" process. It has an accepted range of 0-255 and a valid range of 1-10. A port communication fail condition is cleared after this number of successful polling cycles. A value of 0 defaults to 1, and a value more than 10 defaults to 10.
communicate priority	Specifies whether the connections SNA priority (H or L) should be communicated to the user device attached to the port. Valid entries are y (yes) or n (no); default is no.
upper/lower RNR threshold	Specifies the receiver not ready thresholds. Upper threshold is the number of receiver not ready indications from the user equipment before alarm is generated for this port. The lower receiver not ready threshold is the number of indications from the user equipment before an alarm is cleared. Valid values are 1-255; defaults to 75 for upper, 25 for lower threshold.
min. flags/frame	Specifies the minimum number of flags between frames. All values greater than 0 are valid and the default is 1.
OAM FastPacket threshold	Specifies the OAM FastPackets are used within the local IPX network to transmit the NNI status from the remote network. This counter allows the user to define the number of dropped OAM packets before setting A-bit transmitted to the user device to 0 to indicate connection failure. This can be set from 0 to 15 packets and the default is 3 packets. A 0 disables this function. Set for both UNI and NNI ports.
link integrity timer (T391)	Specifies the interval to send Status Inquiry messages across the NNI port. This will result in a report of all failed connections. This can be set for 5–30 seconds and the default is 6 sec. Both networks must have the same value set for T391.

full status polling cycle (N391)	Specifies the interval to send the Full Status Report request for all PVCs across the NNI port. This can be set for 1–255 polling cycles and the default is 10 cycles. The Full Status reports the status of all the connections, failed or not, across the NNI.
card type	Specifies the card type (within a job only). This parameter is entered just after slot.port. The valid entries include V.35, X.21, port, and LINE with LINE indicating a T1 or E1 line. This parameter is not required in normal use of the command.
CLLM status Tx Timer	Specifies the interval to send ForeSight congestion messages across the NNI port. Can be set for 40 to 350 ms. and the default is 100 sec. Both networks must be Cisco WAN Switching networks.
IDE to DE mapping	Specifies whether the internal DE bit (IDE) status in the FastPacket or ATM cell should be mapped to the frame relay DE bit at the destination. Selection is YES or NO.
interface control template	Specifies the control leads available on the V.35 and X.21 physical frame relay ports and their status.
channel range	Specifies the DS0s used for the T1 or E1 logical port. Can range from 1 to 1 –31 e.g. 7–12 indicates six DS0s used for the port starting with DS0 #7. Channel range is specified in the addfrport command.
channel speed	Specifies the bandwidth provided for the logical port. Speed is 64 Kbps times the number of DS0s indicated by the Channel Range

cnfftcport

Configures the parameters of an FTC port. When configuring an FTC port, the user is prompted for each parameter. Pressing the Return key keeps the current value for the parameter. The screen display is shaded for parameters not configurable for some applications. The data rates for each of the four ports may be mixed and matched freely provided the total for all four ports does not exceed the maximum composite data rate allowed by the FTC card (2.048 Mbps). Supported data rates are listed below.

Table 17-14 FTC Port Supported Data Rates

Data Rates at 56 Kbps Intervals				Data Rates at 64 Kbps Intervals			
56	112	168	224	64	128	192	256
280	336	392	448	320	384	448	512
504	560	616	672	576	640	704	768
728	784	840	896	832	896	960	1024
952	1008	1064	1120	1088	1152	1216	1280
1176	1232	1288	1344	1344	1408	1472	1536
1400	1456	1512	1568	1600	1664	1728	1792
1624	1680	1736	1792	1856	1920	1984	2048

When using **cnfftcport** in a job, an additional parameter, port type, is entered just after slot.port. Valid entries include V.35, X.21, port, and line, with line indicating a T1 or E1 line. This parameter is not required in normal use of the command.

Note For a change of port type on an expansion card from data (DLC) to frame relay, a prompt appears stating that the FastPAD must be reset. Use the resetfp command to do this.

The data rates for each of the four ports may be mixed and matched freely from the above data rates provided the total for all four ports does not exceed 2048 Kbps. Data rates (Kbps) available when using the 1 Mbps FTI are as follows:

Table 17-15 FTI Port Supported Data Rates

Port Data Rates for 1 Mbps FTI			
1024	512	256	128
896	448	224	112
768	384	192	64
672	336	168	56

When using **cnfftcport** in a job, an additional parameter, card type, is entered just after slot.port. Valid entries include V.35, X.21, T1, and E1. The data rates for each of the four ports may be mixed and matched freely from the above data rates provided the total for all four ports does not exceed 2048 kbps.

Full Name

Configure FTC port

Syntax (T1/E1 ports)

cnfftcport Required parameters (left-to-right):

slot.logical port number	port queue depth
ecn queue threshold	de threshold
signalling protocol	protocol parameters

Optional parameters:

None

Syntax

cnfftcport Required parameters:

slot.port number

Optional parameters (left to right):

speed	clocking
port ID (between 16–991)	port queue depth
de_threshold	ECN q_threshold
signalling protocol	asynchronous status
polling verify timer	error threshold
monitored events count	communication priority
upper/lower RNR threshold	min flags/frames

Related Commands

upftcport, dnftcport, dspftcport

Attributes

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

Example 1

cnfftcport 3.1.1 256 NORMAL 0 65535 65535 100 2 N

Description

Reconfigure the FTC port to change Q depths

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Port:      31.1            [ACTIVE  ]
Interface:  FTI-V35 DCE                  Configured Clock:    256 Kbps
Clocking:   Normal                       Measured Rx Clock:   256 Kbps
Port Type                  FR       Min Flags / Frames          1
Port ID                    4
Port Queue Depth           65535       OAM Pkt Threshold           3 pkts
ECN Queue Threshold        65535       T391 Link Intg Timer        6 sec
DE Threshold               100 %     N391 Full Status Poll       10 cyl
Signalling Protocol   STRATA LMI       ForeSight (CLLM)            No
Asynchronous Status          No       CLLM Status Tx Timer        0 msec
T392 Polling Verif Timer     15       IDE to DE Mapping           Yes
N392 Error Threshold         3        Interface Control Template
N393 Monitored Events Count  4          Lead    CTS    DSR    DCD
Communicate Priority         No         State   ON     ON     ON
Upper/Lower RNR Thresh  75%/ 25%

Last Command: cnfftcport 31.1  256  NORMAL 0 65535  65535  100  2  N


Next Command:
```

The results for the update FR parameters as shown are as follows:

Port Queue Depth	65535	Depth of port queue is set at 65,535 bytes.
ECN Queue Depth	65535	Port queue must reach 65,535 bytes before FECN and BECN bits are set.
DE Threshold	100	Port buffer fill must be 100% before dropping DE frames.
Signalling Protocol	2	LMI disabled
Asynchronous Status	N	No asynchronous messages to user device; wait for polling from user device.
Polling Verify Timer	15	15 seconds heartbeat period
Error Threshold	3	3 failures trigger port comm failure
Monitored Events Count	4	4 events are monitored
Communicate Priority	N	Do not communicate port priority to the user device.
Upper RNR Threshold	75	75% of buffer triggers receiver not ready condition
Lower RNR Threshold	25	25% of buffer clears a receiver not ready condition
Minimum Flags/Frame	1	There is only one flag for each FR data frame.

Table 17-16 cnfftcport – Parameters

slot.port	Specifies the FRP card slot and port number. (Slot and logical port number for T1/E1)

Table 17-17 cnfftcport – Optional Parameters

speed	Specifies the port clock speed in kbps; for a 2.0 Mbps FRP. Speed configured is displayed as Configured Clock. Actual clock rate is displayed as Measured Rx Clock. The available speeds are: 1 port (selected speeds, 56 to 512 Kbps) 2 ports (selected speeds, 56 to 512 Kbps) 3 ports (selected speeds, 56 to 512 Kbps) 4 ports (selected speeds, 56 to 512 Kbps) The available clock rates for the 1, 2, 3, and 4 port combinations are as follows: 56 64 72 96 112 384 512
clocking	Specifies the port clock type (normal/looped) [normal]. There are four combinations of clocking that may be used for the FRI-V.35 and two with the FRI-X.21. Refer to Chapter 2, Frame Relay Interface Card for a description of looped and normal clock modes. Not specified for T1/E1 ports. FRP is DCE with normal clocking (V.35 and X.21) FRP is DCE with looped clocking (V.35 only) FRP is DTE with normal clocking (V.35 and X.21) FRP is DTE with looped clocking (V.35 only)
port ID	Specifies the DLCI associated with the port (16-991).
port queue depth	specifies the maximum bytes queued for transmission from the FRP port. The range is from 0–65535. The default is 65535.
ecn queue threshold	specifies the port explicit congestion notification. The range is from 0-65535. The default is 65535. This is the point at which the BECN and FECN bits will be set in the communications to the user device.
de threshold	Specifies the port queue depth above which frames with the Discard Eligibility bit set will be discarded. Valid entries are 0–100%, with a default of 100%. An entry of 100% effectively disables DE for the port.
signalling protocol	Specifies the LMI operation mode. The range is from 0-255. The following values are defined (the default is LMI=2): LMI = 0 LMI is disabled at this port. LMI = 1 Port configured as Network-Network Interface using ANSI T1.617 Annex D parameters. LMI = 2 Cisco LMI is enabled at this port.
asynchronous status	Specifies whether the IPX should send unsolicited LMI update messages as they appear or whether to wait for the polling from the user device. Valid values are y (yes) or n (no)
polling verify timer	Specifies the Link Integrity Verification Timer heartbeat (keep-alive) period with a valid range of 5–30. This should be set to 5 seconds more than the heartbeat time set in the user equipment. Default is 15.
error threshold	Specifies the number of failures in the monitored events that causes the “keep alive” process to report an alarm. It has an accepted range of 0–255 and a valid range of 1–10. A value of zero defaults to 1, and a value more than 10 defaults to 10.

monitored events count	Specifies the number of monitored events for the “keep alive” process. It has an accepted range of 0–255 and a valid range of 1–10. A port communication fail condition is cleared after this number of successful polling cycles. A value of 0 defaults to 1, and a value more than 10 defaults to 10.
communicate priority	Specifies whether the connections SNA priority (H or L) should be communicated to the user device attached to the port. Valid entries are y (yes) or n (no); default is no.
upper/lower RNR threshold	Specifies the receiver not ready thresholds. Upper threshold is the number of receiver not ready indications from the user equipment before alarm is generated for this port. The lower receiver not ready threshold is the number of indications from the user equipment before an alarm is cleared. Valid values are 1–255; defaults to 75 for upper, 25 for lower threshold.
min. flags/frame	Specifies the minimum number of flags between frames. All values greater than 0 are valid and the default is 1.

cnfict

Sets the interface control template signals for a FastPAD data channel. The signals that can be set using **cnfict** are RTS, CTS, DSR and DCD.

Full Name

Configure interface control template

Syntax

cnfict parameters optional parameters

Related Commands

cpyict, dspict, prtict

Attributes

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

Example 1

cnfict 31.1.B.7 act dcd r

Description

Configure port 31.1.B.7 with the active interface control template as remote for DCD following RTS

System Response

```
IPX         TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Data Channel:     31.1.B.7
Interface:        RS232      DTE
Clocking:         Internal
Framing:          DLC


        Interface Control Template for Connection while Active

   Lead      Output Value            Lead      Output Value
   DSR       ON                      RTS       N/A
   DCD       Remote RTS              CTS       ON




Last Command: cnfict  31.3.B.7  act  dcd  r


Next Command:
```

Table 17-18 cnfict – Parameters

Parameter	Description
channel	Specifies the FastPAD data channel whose interface control template to configure in the format: slot.port.subport.subslot
template	Specifies the interface control template to configure for the channel. The only valid template for a FastPAD data channel is the ACTIVE template. It is specified as “a”.
output	Specifies the output lead to configure. Valid output leads are RTS, CTS, and DCD. on The output lead is asserted. off The output lead is inhibited.

Table 17-19 cnfict – Optional Parameters

Parameter	Description
delay	Specifies the time in milliseconds that separates the "off" to "on" lead transitions. Delay is valid only when the output lead is CTS and the input lead is local RTS. "On" to "Off" lead transitions are not subject to this delay.
source	Specifies how the lead is to be configured and has the format: on | off | local | remote input delay Delay is an optional parameter. The following lists the valid source choices: on The output lead is asserted. off The output lead is inhibited. l (for local) indicates that the output follows a local lead. r (for remote) indicates that the output follows a remote lead.

Parameter	Description
input	Specifies the time in milliseconds that separates the "off" to "on" lead transitions. Delay is valid only when the output lead is CTS and the input lead is local RTS. "On" to "Off" lead transitions are not subject to this delay.

cnfvchtp

This command configures an interface signalling type for a FastPAD voice channel. The following interface types are supported:

- E & M
- FXS
- FXO
- AC-15

Any of the five E & M signalling types are supported, as well as four-wire and two-wire facilities. FXS indicates the FastPAD emulates a single line telephone. It operates in loop start mode and provides loop to the connected device. FXO indicates the FastPAD emulates a central office. It operates in loop start or ground start mode and provides loop current and ring voltage to the attached device. AC-15 indicates the European signalling mode. This mode is similar to E & M. Both the A and B types are supported. This command also sets Dual Tone Multi Frequency detect period.

Full Name

Configure voice FastPAD channel type

Syntax

cnfvchtp parameters optional parameters

Related Commands

None.

Attributes

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

Example 1

cnfvchtp 31.1.4 FXS * * 1

Description

Configure FastPAD voice channel for interface type FXS and a DTMF value of 1

System Response

```
alpha        TRM   YourID:1       IPX 16    8.2    Mar. 16 1997 1:06 PST

          %    Gain (dB)
Channels  Util   In  Out    Interface Type    DTMF    SLT Timeout
14.1      N/A    7    5     FXS  L/S          1


Last Command: cnfvchtp 31.1.4  FXS * * 1


Next Command:
```

Table 17-20 cnfvchtp – Parameters

Parameter	Description
channel	Specifies the FastPAD channel for which to configure the interface type where channel is specified in the format: slot.port.subslot
interface type	Specifies the interface type to assign to the channel. This specifies the operational mode of the channel. The possible values are: • E & M — indicates E & M signalling mode. This choice is followed by two parameters: the type of E & M signalling [1-5] and the type of wiring [2w/4w]. • FXS — indicates single line telephone mode. This choice is followed by the type of start signalling [LOOP/GND]. • FXO — indicates off premise extension mode. • AC-15 — indicates the AC-15 European signalling mode. This choice is followed by signalling type [A/B].

Table 17-21 cnfvchtp – Optional Parameters

Parameter	Description
dtmf detect	Specifies whether the FastPAD sends DTMF in-band as a voice-wave signal or detects DTMF codes control frame for transmission and regenerates is detected.
slt timeout	Specifies the timeout period for single line telephone mode. Valid only with FXS ground start.

cpyict

Copies all control template information associated with a specified FastPAD data channel to another. Once copied, the control template information may be edited with the **cnfict** command. See the **cnfict** command for more information on interface control templates.

Full Name

Copy interface control template

Syntax

cpyict parameters

Related Commands

cnfict, dspict

Attributes

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

Example 1

cpyict 31.1.B.1 31.1.B.2

Description

Copy the interface control template from channel 31.1.B.1 to channel 31.1.B.2

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Data Channel:     31.1.B.2
Interface:       RS232      DTE
Clocking:         Internal


        Interface Control Template for Connection while Active

   Lead      Output Value          Lead      Output Value
   DSR        ON                  RTS       N/A
   DCD        OFF                  CTS       ON




Last Command: cpyict 31.1.B.1 31.1.B.2


Next Command:
```

Table 17-22 cpyict – Parameters

Parameter	Description
source channel	Specifies the channel whose interface control template information to copy in the format slot.port.subport.subslot
destination channel	Specifies he channel that will receive the copied interface control template information in the format: slot.port.subport.subslot.

delcon

Deletes a FastPAD connection. All FastPAD connection types can be deleted with this command, including switched voice, voice and data connections. When you enter the **delcon** command, a prompt appears asking you to confirm the deletion. Connections can be deleted from the IPX node at either end of the connection. Do not delete a connection when the node at the other end of the connection is unreachable. The unreachable node will not recognize the deletion. It is especially important not to delete a connection to an unreachable node and then connect that channel to another node. Channel connections are added to the network with the **addcon** command.

Full Name

Delete connections

Syntax

delcon parameters

Related Commands

addcon, dspcon, dspcons

Attributes

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

Example 1

delcon 31.1.B.1

Description

Delete connection 31.1.B.1. The connections to delete are highlighted, and a prompt appears asking you to confirm the deletion. Respond with “y” for yes. Connection 25.1 is deleted.

System Response

```
Local      Remote     Remote                          Route
Channel    NodeName   Channel    State  Type   Compression  Code Avoid COS O
31.1       IPX        31.3       Ok     session
31.1       IPX        31.2       Ok     session
31.1.B.1   IPX        31.2.B.2   Ok     16
31.1.8     IPX        31.2.8     Ok     atc12
31.2       IPX        31.1       Ok     session
31.2.B.2   IPX        31.1.B.1   Ok     16
31.2.8     IPX        31.1.8     Ok     atc12
31.3       IPX        31.1       Ok     session
```

This Command: delcon 31.1.B.1

Delete these connections (y/n)?

Table 17-23 delcon – Parameters

Parameter	Description	
channel(s)	Specifies the FastPAD channel to delete. Channel is specified in the following format:	
	slot.port	For switched voice connections
	slot.port.subslot	For permanent voice connections
	slot.port.subslot.subport	For data connections
	FTC_slot.port.FPslot.subport.DLCI	For frame relay connections, where subslot and subport refer to FastPAD.

delfp

Deletes a FastPAD from the IPX network. The FastPAD to delete is specified by its unique name (assigned using the **addfp** command).

Full Name

Delete connection group

Syntax

delfp parameters

Related Commands

addfp, dspfp

Attributes

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

Example 1

delfp 31.1

Description

Delete FastPAD 31.1.

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

                    FastPADs Information

 Slot.Port  Name      ID  FP_DLCI  Port_ID  Alarm

   31.1     FP1       1     17        0    OK
   31.2     FP2       2     18        0    OK
   31.3     FP3       3     19        0    OK
   31.4     FP4       4     20        0    OK




This Command: delfp 31.1


Delete FastPAD (y/n)?
```

Table 17-24 delfp – Parameters

Parameter	Description
slot.port	Specifies the location of the FastPAD to be removed.

Table 17-25 delfp – Optional Parameters

Parameter	Description
name	Specifies the name of the FastPAD to be removed.

delftcport

The following information applies only to FTC T1/E1 applications. Deletes logical FTC ports and unassigns associated DSØ/timeslots. The unassigned DSØ/timeslots may be recombined with the **addftcport** command to create new logical ports. Logical port numbers range from 1 to 24 for T1 lines and 1 to 31 (16 reserved) for E1 lines. The port screen (normally seen with the **dspftcport** command) will be displayed regardless of successful port deletion. The screen will display defined port numbers for the specified line. Error messages are displayed when the procedure is incorrect. The following lists the error/warning messages of this command.

Table 17-26

Messages	Reason for Message
"Slot is out of range"	Line number not correct for FRP T1/E1
"Port does not exist"	Logical port number does not exist
"You must first down the port"	Logical port is up
"You must first down the port"	Specified port is not first DSØ/timeslot of logical port

Full Name

Delete FTC (T1/E1)

Syntax

delftcport parameters

Related Commands

addfrport, dspfrport, dnfrport

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX
Lock	Yes

Example 1

delfrport 8 .1

Description

Delete FTC port 8.1

System Response

alpha TRM YourID:1 IPX 16 8.2.Z Mar. 15 1997 17:28 CST

Port configuration for FRP 8

From	Chan	Speed	Interface	State
1	9-15	448	FTI T1	ACTIVE
20	20-24	320	FTI T1	ACTIVE

Last Command: delftcport 8.1

Next Command:

Table 17-27 delftcport – Parameters

Parameter	Description
slot	Specifies the FTC T1 or E1 line (cabinet slot) number of the port to delete
port	Specifies the logical port number of the port to delete.

dnfrport

Downs the specified FastPAD FRAM-01 frame relay port. All connections must be removed from the port before the port can be deactivated.

Full Name

Down Frame Relay port

Syntax

dnfrport parameters

Related Commands

cnffrport, dspfrport, upfrport

Attributes

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

Example 1

dnfrport 6.3

Description

Down frame relay port 6.3

Table 17-28

Parameter	Description
slot	Specifies the slot number of the frame relay card with the port to down.
port	Specifies the port number to down on the specified frame relay card.

dnftcport

Downs (deactivates) the specified FTC port. All connections must be removed from the port before the port can be deactivated.

Full Name

Down FTC port

Syntax

dnftcport parameters

Related Commands

cnfftcport, dspftcport, upftcport

Attributes

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

Example 1

dnftcport 31.1

Description

Down (deactivate) FTC port 3.1

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Port:       31.1             [INACTIVE]
Interface:  FTI-V35 DCE                    Configured Clock:    64 Kbps
Clocking:   Normal                         Measured Rx Clock:   0 Kbps
Port Type                   FR       Min Flags / Frames          1
Port ID                     4
Port Queue Depth            65535    OAM Pkt Threshold           3 pkts
ECN Queue Threshold         65535    T391 Link Intg Timer        6 sec
DE Threshold                100 %    N391 Full Status Poll       10 cyl
Signalling Protocol   STRATA LMI     ForeSight (CLLM)            No
Asynchronous Status         No       CLLM Status Tx Timer        0 msec
T392 Polling Verif Timer    15       IDE to DE Mapping           Yes
N392 Error Threshold        3        Interface Control Template
N393 Monitored Events Count 4        Lead   CTS   DSR   DCD
Communicate Priority        No       State  ON    ON    ON
Upper/Lower RNR Thresh  75%/ 25%

Last Command: dnftcport 31.1


Next Command:
```

Table 17-29 dnftcport – Parameters

Parameter	Description
slot	Specifies the slot number of the FTC to down.
port	Specifies the port number to down on the specified FTC card.

dspchcnf

Displays configuration details for FastPAD voice and data channels:

- FastPAD Voice channels display:
  Channel, Percentage Utilization, Gain In and Out, and the Interface Type.
- FastPAD Data channels display:
  Channel, Percentage Utilization, and the Type, i.e., data rate.

If the channel specified is a FastPAD voice channel, the display includes configuration details for all voice channels on the FTC port starting with the specified channel. If the channel specified is a data channel, the display includes configuration details for all channels on the specified FTC port starting with the specified channel.

Full Name

Display channel configuration

Syntax

dspchcnf parameters

Related Commands

prtchcnf

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX
Lock	No

Example 1

dspchcnf 31.1.8

Description

Display configuration values for channel 31.1.8

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

        %     Gain  (db)
Channels Util    In    Out   Interface Type   DTMF  SLT Timeout
31.1.8   100     -4    2     FXS L/S          30


Last Command: dspchcnf 31.1.8

Next Command:
```

Table 17-30 dspchcnf – Parameters

Parameter	Description	
start channel	Specifies the channel with which to start the display in the format:	
	slot.port.subport	For FastPAD voice connections
	slot.port.subport.subslot	For FastPAD data connections

dspcon

Displays connection information for a specified channel. The information displayed includes:

- Channel numbers for both the local and remote ends of the connection.
- Node names at both ends of the connection.
- Type (“s” for switched and “v” for voice) or data rate of the connection.
- Compression type (ATC, CELP, Negotiated).
- Routing restriction.
- Class of service (COS) of the connection.
- Connection route listing the end nodes and any intermediate nodes.
- Preferred route for the connection (if configured).
- Status of the cards associated with the connection. The status that may be displayed includes:

OK	Connection OK
FAILED	Connection failed

- Connection descriptor (if configured).
- Status of the “Feeder” connection. This is the connection between the FastPAD and the FTC. A failure is indicated as “End Point: Feeder Fail”.

Full Name

Display connections

Syntax

dspcons parameters

Related Commands

addcon, delcon, dspcons

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX
Lock	No

Example 1

dspcon 31.1.8

Description

Display voice connection information for FTC channel 31.1.8

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Conn:  31.1.8     IPX        31.2.8      atc12



                                   Status: OK

Path:   Route information not applicable for local connections



IPX      FTC:   OK                IPX      FTC:   OK
       FTI:   OK                      FTI:   OK
       FastPAD: OK                    FastPAD: OK

Last Command: dspcon 31.1.8

Next Command:
```

Table 17-31 dspcon – Parameters

Parameter	Description	
channel	Specifies the FastPAD channel for which to display connection details. The command displays connection information for one channel at a time. You cannot specify a set of channels. <channel> is specified in the following formats:	
	slot.port	For switched voice connections
	slot.port.subslot	For permanent voice connections
	slot.port.subslot.subport	For data connections
	FTCslot.FTCport.subslot.subport.DLCI	For frame relay connections, where subslot and subport refer to FastPAD.

dspcons

Displays a summary of the connections on an IPX node. The fields displayed in the **dspcons** screens are as follows:

Table 17-32 dspcons Display Fields

Fields	Description
Local Channel	The connection's channel at this node.
Remote Node Name	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) are as follows **State** — **Description** OK — routed Down — downed OK(Dn) — waiting for onhook to occur to allow courtesy down to take place for connection(s) that have been courtesy downed using the **dncon** command. Failed — unrouted, but trying
Type	The type of connection (v = voice, fr = frame relay. data rate in kbps for data).
Route Avoid	The type of lines to avoid when routing (satellite lines, terrestrial lines, lines with zero code suppression).
Compression	The type of compression applied to the connection (ATC8, ATC12, ATC16, CELP8).
COS	The Class Of Service.
Owner	The end of the connection in control of re-routing.
Descriptor	The connection descriptor string (if +d option specified).
Loopback	A connection with a local loopback is indicated by a right parenthesis symbol between the "Local Channel" and "Remote NodeName" columns. A connection with a remote loopback is indicated by a right parenthesis symbol before the channel number in the "Remote Channel" column.

Full Name

Display connections

Syntax

dspcons optional parameters

Related Commands

addcon, delcon, dspcon

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX
Lock	No

Example 1

dspcons 31.1.8

Description

Displays all connections starting with 31.1.8, in this case voice connections.

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2    Date/Time Not Set

Conn:  31.1.8     IPX         31.2.8      atc12



                                    Status: OK


Path:   Route information not applicable for local connections



IPX      FTC:   OK                IPX      FTC:   OK
       FTI:   OK                      FTI:   OK
       FastPAD: OK                    FastPAD: OK

Last Command: dspcon 31.1.8


Next Command:
```

Table 17-33 dspcons – Optional Parameters

Parameter	Description
start channel	Specifies the channel to begin the display. <start channel> is specified in one of the following formats: slot.port.DLCI — frame relay channel remote node.groupname — frame relay group connection If no starting channel is specified, the display begins with the first connected channel. All FastPAD connections are shown as part of frame relay connections on the IPX.
node name	Specifies that only connections to this remote node from the local note be displayed. If no "nodename" is designated, connections from the local node to all other nodes are displayed
connection type	Specifies that only connections of this type be displayed. If no "connection type" is designated, all connections appear. Valid connection types are: **-f** Displays all FastPAD and frame relay connections. **+d** **+g** When you enter the connection type on the command line, it must be preceded with a hyphen, "**-**".
+d	Specifies that the display show the connection string in place of the usual compression and ownership fields.

dspfp

Displays the header identifying the shelf slot and port of the specified FastPAD and a listing of the cards within that FastPAD. The header contains a blinking “off line” indicator when the FastPAD is unreachable. The card listing includes the base card and all expansion slot cards within FastPAD. A revision level and status field are included for each card. The status field values are as follows:

- Active Card in use.
- Empty No card installed in slot.
- Failed Card failed.
- Standby Card in standby mode

Full Name

Display FastPAD card information

Syntax

dspfp parameter

Related Commands

addfp, delfp, dspfps

Attributes

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

Example 1

dspfp 31.1

Description

Display 31.1 card information

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set


              FastPAD FP1      at shelf 31.1
   Card
   Type       Status

 B  BASE       Active              | Lock Status:   Locked
 1  Empty                          | Composite Link: BASE.8
 2  Empty
 3  Empty
 4  VFC-01     Active(SWITCHED)
 5  Empty
 6  Empty
 7  Empty
 8  VFC-01     Standby


Last Command: dspfp 31.1


 Next Command: dspftcport
```

Table 17-34 dspfp – Parameters

Parameter	Description
slot.port	Specifies the slot and port for which information will be displayed.

dspfps

Displays a list of all FastPADs connected to an IPX node. The list includes the FastPAD name, ID, source DLCI, destination DLCI and alarm status (OK, Minor or Major). A FastPAD/IPX connectivity is added or deleted with the **addfp** and **delfp** commands respectively.

Full Name

Display information for all FastPADs

Syntax

dspfps

Related Commands

addfp, delfp, dspfp

Attributes

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

Example 1

dspfps

Description

Display card information for all FastPADs

System Response

```
cc7          VT    SuperUser      IPX 32    8.2     Mar. 21 1997 15:39 PST

                    FastPADs Information

 Slot.Port  Name       ID  FP_DLCI  Port_ID  Alarm

   31.2     cc7FP      5       53        0  OK


Last Command: dspfps

Next Command:
```

dspfrport

Displays one of three choices; the state of all frame relay ports in a FastPAD, general information on all ports on the FRAM-01 card used for frame relay connections, or detailed status on a single specified frame relay port. The more specific the port address in the command, the more detail is provided. The following are examples of the **dspfrport** command:

dspfrport FTC_slot.port	displays all frame relay ports in a FastPAD
dspfrport FTC_slot.port.FPslot	displays the port states at the FastPAD card level
dspfrport FTC_slot.port.FPslot.port	detailed display of the designated FastPAD FRAM-01 port

The following provides a list of displayed port parameters for a single port. A full description of these parameters is provided in the **cnffrport** command.

Table 17-35

Parameters	Description
Port number	Polling Verification Timer
DLCI number	Error Threshold
State: Active or inactive	Monitored Events Count
Interface Type: V.35 or X.21, DCE or DTE	Priority Communicated
Configured clock speed in kbps	The lead states in the Interface Control Template
Measured clock speed in kbps	Receiver Not Ready Thresholds
The port VC queue depth in bytes	Flags per frame
The VC queue ECN threshold in bytes	OAM FastPacket Threshold (for NNI ports)
The DE threshold	Link Integrity Timer (for NNI ports FRP rev. F/H or above)
The Signalling Protocol	Full Status Polling cycle (for NNI ports)
Asynchronous Status	The lead states in the Interface Control Template

Full Name

Display Frame Relay port

Syntax

dspfrport

Related Commands

cnffrport, upfrport, dnfrport

Attributes

Privilege	1–2
Jobs	No
Log	No
Node	IPX
Lock	?

Example 1

dspfrport

Description

Display the port status of the FRPs in the node

System Response

```
alpha        TRM   YourID:1       IPX 16    8.2    Mar. 15 1997 15:48 PST

FRP Port States
Port  ID   State
9.1   0    ACTIVE
9.2   0    ACTIVE
9.3   0    INACTIVE
9.4   0    INACTIVE




Last Command: dspfrport


Next Command:
```

Example 2

dspfrport 8

Description

Display the port statuses for the FRP in slot 8

System Response

```
D2.ipx6       TRM   YourID:1       IPX 16    8.2.B1    Aug. 12 1997 13:47 PST

Port configuration for FRP 8

Port   ID      Speed     Interface          State       Protocol     Port Type
1      0       256       FRI-V35 (DCE)      ACTIVE      None         FR
2      0       256       FRI-V35 (DCE)      ACTIVE      None         FR
3      0       256       FRI-V35 (DCE)      FAILED      Annex A UNI  FR
4      0       256       FRI-V35 (DCE)      ACTIVE      Annex D UNI  FR



Last Command: dspfrport 8

Next Command:
```

Example 3

dspfrport 5.1

Description

Display the port statuses for the frame relay port 5.1

System Response

```
D2.ipx5       TRM   YourID:1       IPX 16    8.2    Aug. 4 1997  16:39 PST

Port:       5.1             [ACTIVE  ]
Interface:     FRI-X21 DCE     Configured Clock:     256     Kbps
Clocking:     Normal     Measured Rx Clock:     256     Kbps
Port Type     FR          Min Flags / Frames     1
Port ID     0
Port Queue Depth     65535          OAM Pkt Threshold3pkts
ECN Queue Threshold     65535          T391 Link Intg Timer     6          sec
DE Threshold     100     %     N391 Full Status Poll     10     cyl
Signalling Protocol     None          ForeSight (CLLM)     No
Asynchronous Status     No          CLLM Status Tx Timer     0     msec
T392 Polling Verif Timer     15          IDE to DE Mapping     Yes
N392 Error Threshold     3          Interface Control Template
N393 Monitored Events Count     4          Lead     I
Communicate Priority     No          State     ON
Upper/Lower RNR Thresh  75%/ 25%

Last Command: dspfrport 5.1

Next Command:
```

dspftcport

Displays one of three choices; the state of all FTC ports in a node, general information on all four ports on a specified FTC card, or detailed status on a single specified FTC port. The more specific the port address in the command, the more detail is provided. The following are examples of the **dspftcport** command:

dspftcport displays states of all FTC ports in the node

dspftcport 8 displays the port states for FTC in slot 8

dspftcport 8.1 displays the configuration for port 1 of the FTC in slot 8

Parameters displayed by the **dspftcport** command are listed below:

Table 17-36

Parameters	Description
Speed	The port clock speed in Kbps. Speed configured is displayed as Configured Clock. Actual clock rate is displayed as Measured Clock. The available speeds are 19.2 Kbps, 38.4 Kbps, 56 Kbps, 64 Kbps, 128 Kbps.
Clocking	The port clock type (normal/looped) [normal].
Port queue depth	The maximum bytes queued for transmission from the FTC. Range is 0 to 65535. Default is 65535.
ECN queue threshold	The maximum bytes queued for transmission from the FTC. Range is 0 to 65535. Default is 65535.
Update protocol ID	The lead states in the Interface Control Template
Measured clock speed in kbps	The update protocol supported. The default is 2. The following values are defined as follows: 0 None. 1 ANSI T1.617 Annex D 2 LMI Revision 1

Full Name

Display FTC port configuration

Syntax

dspftcport

Related Commands

cnfftcport, upftcport, dnftcport

Attributes

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

Example 1

dspftcport

Description

Display the port status of the FTCs on the node

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

FTC Port States
Port  ID   State     Type
31.1  0    ACTIVE    FR
31.2  0    ACTIVE    FR
31.3  0    ACTIVE    FR
31.4  0    ACTIVE    FR




 Last Command: dspftcport

Next Command:
```

Example 2

dspftcport 31.1

Description

Display the status of FTC port 31.1, slot 31, port 1.

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Port:       31.1             [ACTIVE  ]
Interface:  FTI-V35 DCE                    Configured Clock:    64 Kbps
Clocking:   Normal                         Measured Rx Clock:   64 Kbps
Port Type                  FR       Min Flags / Frames          1
Port ID                    0
Port Queue Depth           65535    OAM Pkt Threshold           3 pkts
ECN Queue Threshold        65535    T391 Link Intg Timer        6 sec
DE Threshold               100 %    N391 Full Status Poll       10 cyl
Signalling Protocol   STRATA LMI    ForeSight (CLLM)            No
Asynchronous Status        No       CLLM Status Tx Timer        0 msec
T392 Polling Verif Timer   15       IDE to DE Mapping           Yes
N392 Error Threshold       3        Interface Control Template
N393 Monitored Events Count   4          Lead   CTS   DSR   DCD
Communicate Priority       No           State  ON    ON    ON
Upper/Lower RNR Thresh  75%/ 25%

Last Command: dspftcport 31.1


Next Command:
```

dspict

Displays interface control template information for FastPAD data channels. The displayed information includes:

- The specified channel.
- The type of template: a or ACTIVE is the only valid for FASTPADs.
- The associated output leads and their status:

  ON
  OFF
  Following a local input
  Following a remote input

The input being followed, where applicable, is specified. Any RTS to CTS delay is also shown.

Full Name

Display interface control template

Syntax

dspict parameters

Related Commands

cnfict, cpyict

Attributes

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

Example 1

dspict 31.1.8.1 a

Description

Display the active interface control template for channel 31.1.8.1

System Response

```
IPX        TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Data Channel:     31.1.8.1
Interface:        RS232      DCE
Clocking:         External


          Interface Control Template for Connection while Active

   Lead      Output Value              Lead      Output Value
   DSR       ON                        RTS       N/A
   DCD       Remote RTS                CTS       Local RTS
                              CTS Delay  12 (x10 msec)




Last Command: dspict 31.1.8.1 a


Next Command:
```

Table 17-37 dspict – Parameters

Parameter	Description
channel	Specifies the channel in the format slot.port.subslot.subport
template	Specifies the control template to display for the channel. There is only one template available for FastPAD data channels: “a” for the ACTIVE template.

prtchcnf

Prints the configuration details for FTC channels. This command uses the same syntax, and prints the same information as is displayed using the **dspchcnf** command. See the **dspchcnf** command for syntax and output information.

Full Name

Print channel configurations

Syntax

prtchcnf parameters (see the **dspchcnf** command)

Related Commands

dspchcnf

Attributes

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

prtcons

Prints a summary of connections terminated at the IPX node. This command uses the same syntax and prints the same information as is displayed using the **dspcons** command. See the **dspcons** command for syntax and output information.

Full Name

Print connection

Syntax

prtcons parameters optional parameters (see the **dspcons** command)

Related Commands

dspcons

Attributes

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

prtict

Prints a data channel's interface control template. This command uses the same syntax, and prints the same information as is displayed using the **dspict** command. See the **dspict** command for syntax and output information.

Full Name

Print interface control template

Syntax

prtict parameters (see the **dspict** command)

Related Commands

dspict

Attributes

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

resetfp

This command reboots a FastPAD.

Full Name

Reset FastPAD

Syntax

resetfp parameters

Related Commands

addfp, delfp, dspfp, dspfps

Attributes

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

Example 1

resetfp 31.1

Description

Restart port 31.1 on the FTC card

Table 17-38 resetfp – Parameters

Parameter	Description
slot.port	Specifies the slot and the port of the FTC card connecting the FastPAD.

restartfp

This command restarts a FastPAD to IPX control session. A control session is first established when a FastPAD is added to the node and the port speed and parameters match. Once a control session is established, the FastPAD can be configured and managed by commands issued at an IPX node.

Full Name

Restart FastPAD session establishment

Syntax

restartfp parameters

Related Commands

addfp, delfp, dspfp, dspfps

Attributes

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

Example 1

restartfp 31.1

Description

Restart port 31.1 on the FTC card

Table 17-39 restartfp – Parameters

Parameter	Description
slot.port	Specifies the slot and the port of the FTC card connecting the FastPAD whose session is to be reestablished.

upfrport

Activates a single port on an FRP. If the port has not been configured, the default configuration values are used to configure the port.

Full Name

Up Frame Relay port

Syntax

upfrport parameter

Related Commands

dnfrport, cnffrport

Attributes

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

Example 1

upfrport 9.2

Description

Activate port 2 on the FRP in slot 9

System Response

```
alpha        TRM   YourID:1       IPX 16    8.2    Mar. 15 1997 15:51 PST

Port:       9.2              [ACTIVE  ]
Interface:  FRI-V35 DTE                  Configured Clock:   256 Kbps
Clocking:   Normal                       Measured Rx Clock:    0 Kbps
Port ID                    4
Port Queue Depth          65535       OAM Pkt Threshold           3 pkts
ECN Queue Threshold       65535       T391 Link Intg Timer        6 sec
DE Threshold              100 %       N391 Full Status Poll       10 cyl
Signalling Protocol       None        ForeSight (CLLM)            No
Asynchronous Status       No          CLLM Status Tx Timer        0 msec
T392 Polling Verif Timer  15          Interface Control Template
N392 Error Threshold      3           Lead       State
N393 Monitored Events Count  4        RTS        ON
Communicate Priority      No          DTR        ON
Upper/Lower RNR Thresh  75%/ 25%
Min Flags / Frames        1

Last Command: upfrport 9.2


Next Command:
```

Table 17-40 restartfp - parameters

Parameter	Description
slot	Specifies slot number of the FRP card containing the port to be upped.
port	Specifies the port to be upped. Range is 1-4.

upftcport

Activates a single port on an FTC. If the port has not been configured, the default configuration values are used to configure the port.

Full Name

Up FTC port

Syntax

upftcport parameter

Related Commands

dnftcport, cnfftcport

Attributes

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

Example 1

upftcport 31.1

Description

Activate port 1 on the FTC in slot 31

System Response

```
IPX          TRM   SuperUser      IPX 32    8.2     Date/Time Not Set

Port:       31.1             [ACTIVE  ]
Interface:  FTI-V35 DCE                    Configured Clock:    64 Kbps
Clocking:   Normal                         Measured Rx Clock:   0 Kbps
Port Type                  FR       Min Flags / Frames          1
Port ID                    6
Port Queue Depth           65535    OAM Pkt Threshold           3 pkts
ECN Queue Threshold        65535    T391 Link Intg Timer        6 sec
DE Threshold               100 %    N391 Full Status Poll       10 cyl
Signalling Protocol   STRATA LMI    ForeSight (CLLM)            No
Asynchronous Status        No       CLLM Status Tx Timer        0 msec
T392 Polling Verif Timer   15       IDE to DE Mapping           Yes
N392 Error Threshold       3        Interface Control Template
N393 Monitored Events Count   4          Lead    CTS    DSR    DCD
Communicate Priority       No           State   ON     ON     ON
Upper/Lower RNR Thresh  75%/ 25%

Last Command: upftcport 31.1


Next Command:
```

Table 17-41 upftcport - parameters

Parameter	Description
slot . port	Specifies slot and port number on the FTC card to be upped.