Frame Relay Initial Configuration

Access the configuration process
from the * prompt.
Syntax: **t 6**

Add device.
Syntax: **a dev** *device_type*

Set datalink to frame relay.
Syntax: **s d frame-relay**

Enter the FR configuration process.
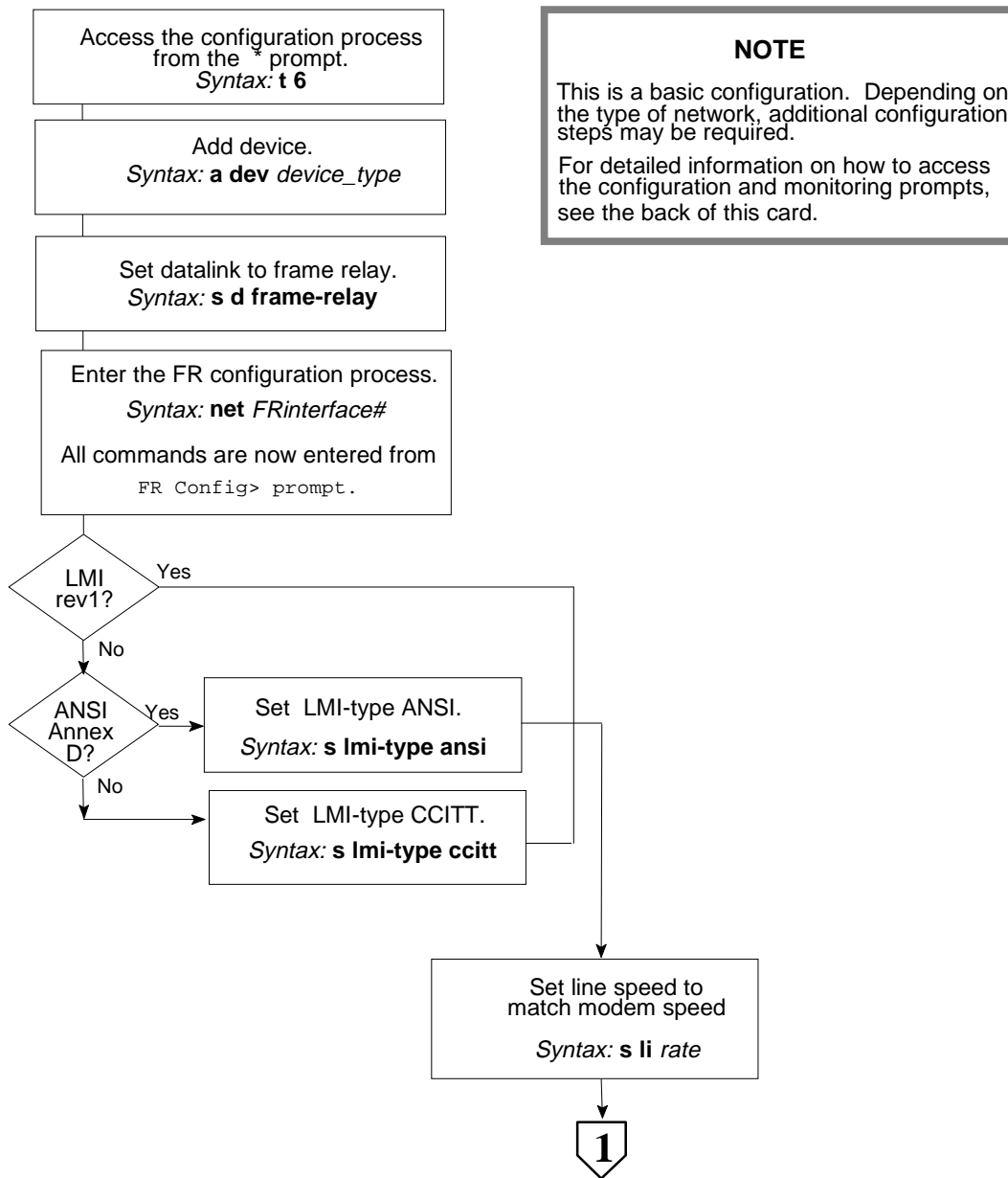*Syntax:* **net** *FRinterface#*

All commands are now entered from
FR Config> prompt.

NOTE

This is a basic configuration. Depending on
the type of network, additional configuration
steps may be required.

For detailed information on how to access
the configuration and monitoring prompts,
see the back of this card.

LMI rev1? — Yes

ANSI Annex D? — No

Set LMI-type ANSI.
Syntax: **s lmi-type ansi** — Yes

Set LMI-type CCITT.
Syntax: **s lmi-type ccitt** — No

Set line speed to
match modem speed
Syntax: **s li** *rate*

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Frame Relay Initial Configuration *(Continued)*

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Add frame relay PVCs.

Syntax: **a pe** *circuit# cir circuit-name*

NOTE

Do not use this command to add a PVC for use by a
PPP-FR pseudo interface. Refer to the procedures in the
Point-to-Point Protocol Over Frame Relay Quick
Reference

Add protocol address mapping.

Syntax: **a pr** *protocol-name . . .*

Configure any other protocols for your router by returning
`Config>` prompt. If all protocols are configured, do the following:

1. Enter **exit** at the `FR Config>` prompt.
2. Press <**Ctrl/p**> to display the OPCON prompt (*).
3. Enter **restart** and respond **yes** to the prompt.

Frame Relay Configuration Commands

This section summarizes the frame relay configuration commands. Enter these commands at the `FR config>` prompt. The back of this card tells you how to display this prompt. Enter **?** to list available commands or their options.

add

permanent-virtual-circuit

> Adds PVCs in the range 16 to 1007. The maximum number is approximately 64, but the actual number supported by the interface is affected by the configured size of the receive buffer on the interface.

protocol-address

> Adds statically configured destination protocol addresses to the FR interface. This parameter prompts you for different information depending on the type of protocol that you are adding.

change permanent-virtual-circuit

> Modifies a PVC that was added with the **add permanent-virtual-circuit** command.

disable

cir-monitor

> Disables the circuit monitoring feature that enforces the transmission rate, which was configured using **add permanent-virtual-circuit**.

congestion-monitor

> Disables the varying of a circuit's information rate in response to congestion.

dn-length-field

> Disables the feature which includes a length field in DECnet packets.

lmi

> Disables all management activity.

multicast-emulation

> Disables multicast emulation on each active PVC.

orphan-circuits

> Prohibits the use of nonconfigured circuits at the interface.

protocol-broadcast

> Prohibits protocols such as RIP from functioning over the FR interface.

enable

cir-monitor

> Enables the circuit monitoring feature that enforces the transmission rate configured using **add permanent-virtual-circuit**.

congestion-monitor

> In response to congestion, allows a circuit's information rate to vary between a minimum of 0.25 times the CIR and a maximum of the line speed.

dn-length-field

> Enables the length field to be included in DECnet packets.

lmi

> Enables all management activity.

multicast-emulation

> Enables multicast emulation on each PVC when a protocol multicast is forwarded.

orphan-circuits

> Enables the use at the interface of all nonconfigured circuits.

protocol-broadcast

> Allows protocols like RIP to function over the FR interface.

Frame Relay Configuration Commands (Continued)

list

all

Includes the output of:
list hdlc
list lmi
list permanent-virtual-circuits
list protocol-addresses

hdlc

Displays frame relay HDLC configuration.

lmi

Displays logical management and related configuration information about the FR interface.

permanent-virtual-circuits

Displays all the configured PVCs on the FR interface.

protocol-address

Displays all the statically configured protocol address circuit mappings at the FR interface.

remove

permanent-virtual-circuit

Deletes any configured PVC in the range of 16 to 1007.

protocol-address

Deletes any statically configured protocol address.

set

encoding *type*

Sets the transmission encoding scheme for the interface to NRZ or NRZI.

frame-size *size*

Sets the size of the network layer portion of frames transmitted and received on the data link.

idle *state*

Sets the data-link state to either Flag or Mark.

line-speed *rate*

Sets data transfer rate to match the speed of the connected modem.

lmi-type *management type*

Sets management mode to Rev1, ANSI, or CCITT.

n1-parameter *count*

Sets the number of t1 time intervals that expire before the FR interface queries management for complete PVC status.

n2-parameter *max#*

Sets the number of errors that can occur in the management window monitored by the n3-parameter before the interface resets.

n3-parameter *max#*

Configures the number of monitored management events for measuring the n2-parameter.

p1-parameter *max#*

Configures the maximum number of PVCs supported by the FR interface.

t1-parameter *time*

Configures the interval (in seconds) that the FR interface takes to perform a sequence number exchange with FR management.

transmit-delay

Allows the insertion of a delay between each transmitted HDLC frame.

exit

Returns to the previous prompt level.

Frame Relay Console Commands

To list the frame relay console commands and their options, enter a **?** at the `FR>` prompt.
The back of this card tells you how to display the `FR>` prompt.

clear

Removes all statistics from the FR interface.

disable

cir-monitor

Disables CIR monitoring.

congestion-monitor

Disables congestion monitoring.

enable

cir-monitor

Enables CIR monitoring.

congestion-monitor

Enables congestion monitoring.

list

circuit *pvc#*

Displays detailed information for the specified PVC.

lmi

Displays statistics relevant to the logical management on the FR interface.

permanent-virtual-circuits

Displays information for all configured PVCs on the FR interface.

all

Displays circuit, management, and PVC statistics on the FR interface.

set circuit

Assigns values to a PVC for the committed information rate (CIR), committed burst rate, and excess burst rate.

exit

Returns to the previous prompt level.

Accessing the CONFIG Process

Use the CONFIG process to display and change the current configuration in static RAM (SRAM).
To display the CONFIG prompt (Config>):

1. After the router boots, the console displays the * prompt. Enter **status** to display the pid (process ID) of CONFIG, which is usually 6.
2. Enter **talk** and the pid (6) for CONFIG. This displays the following information:

```
Gateway user configuration
Config>
```

If the Config> prompt does not appear, press **Return** again. You can now enter the configuration commands.

3. When you are done entering the configuration commands, do the following to make the new configuration active:

   a. Press **Ctrl/P** after the Config> prompt.

```
Config> ^p
*
```

   b. Enter **restart** after the * prompt.

   c. Respond **yes** to the following prompt:

```
Are you sure you want to restart the gateway? (Yes or No): yes
```

The new configuration is loaded when the console displays the following information:

```
Copyright 1995–1996 Digital Equipment Corp.

MOS Operator Control
*
```

Accessing the CGWCON Process

Use the CGWCON (also known as GWCON) process to monitor protocols, network interfaces, and system messages. You cannot access the CGWCON process if the router is in configuration–only mode (the prompt is Config only>). To display the CGWCON prompt (+):

1. After the router boots, the console displays the * prompt. Enter **status** to display the pid (process ID) of CGWCON, which is usually 5.
2. Enter **talk** and the pid (5) for CGWCON. This displays the CGWCON prompt (+). You can now enter the monitoring commands.

To return to the * prompt, press **Ctrl/P**.