Configuring the OC12 POS Line Card

To continue your OC12 POS line card installation, you must configure the OC-12 interface. This chapter contains the following sections:

Using the EXEC Command Interpreter

You modify the configuration of your router through the software command interpreter called the *EXEC* (also called enable mode). You must enter the privileged level of the EXEC command interpreter with the **enable** command before you can use the **configure** command to configure a new interface or change the existing configuration of an interface. The system prompts you for a password if one has been set.

The system prompt for the privileged level ends with a pound sign (#) instead of an angle bracket (>). At the console terminal, use the following procedure to enter the privileged level:

Step 1 At the user-level EXEC prompt, enter the **enable** command. The EXEC prompts you for a privileged-level password as follows:

```
Router> enable

Password:
```

Step 2 Enter the password (the password is case sensitive). For security purposes, the password is not displayed.

When you enter the correct password, the system displays the privileged-level system prompt (#):

```
Router#
```

To configure the new interfaces, proceed to the "Configuring the Interfaces" section on page 4-2.

Configuring the Interfaces

After you verify that the new OC12 POS line card is installed correctly (the STATUS LED goes on), use the privileged-level **configure** command to configure the new interface. Have the following information available:

- IP address, if you plan to configure the interface for IP routing
- MTU size
- Framing mode
- Transmit clock source
- Loopback modes (if testing is required)

If you installed a new OC12 POS line card or if you want to change the configuration of an existing interface, you must enter configuration mode to configure the new interfaces. If you replaced an OC12 POS line card that was previously configured, the system recognizes the new interfaces and brings each of them up in their existing configuration.

For a summary of the configuration options available and instructions for configuring the interface on an OC12 POS line card, refer to the appropriate configuration publications listed in the "Related Documentation" section on page 8.

You execute configuration commands from the privileged level of the EXEC command interpreter, which usually requires password access. Contact your system administrator, if necessary, to obtain password access. (See the "Using the EXEC Command Interpreter" section on page 4-1 for an explanation of the privileged level of the EXEC.)

On power up, the POS interface on a new OC12 POS line card is shut down. To enable the interface, you must enter the **no shutdown** command in configuration mode.

When the POS interface is enabled (taken out of shutdown) with no additional arguments, the interface configuration file parameters use the default values. (See Table 4-1 for parameters and default values.)

Table 4-1 OC12 POS Line Card Configuration Default Values

Parameter	Configuration Commands	Default Value
MTU	**mtu** *bytes* (**no mtu** *bytes*)	4470 bytes
Framing	**pos framing-sdh** (**no pos framing-sdh**)	SONET framing
Loopback internal	**loop internal** (**no loop internal**)	No internal loopback
Loopback line	**loop line** (**no loop line**)	No line loopback
Transmit clocking source	**clock source internal** **clock source line**	Loop timing
Cyclic redundancy checks	**crc 16** **crc 32**	16-bit CRC
SONET payload scrambling	**pos scramble-atm** (**no pos scramble-atm**)	No SONET payload scrambling

Performing a Basic Configuration

This section describes the procedures for performing a basic configuration: enabling an interface (with the **no shutdown** command) and specifying IP routing. You might also need to enter other configuration subcommands, depending on the requirements for your system configuration and the protocols you plan to route on the interface.

In the following procedure, press the **Return** key after each step unless otherwise noted. At any time you can exit the privileged level and return to the user level by entering **disable** at the prompt as follows:

```
Router# disable

Router>
```

Step 1 Enter configuration mode and specify that the console terminal will be the source of the configuration subcommands as follows:

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
```

Step 2 Specify the new interface to configure by entering the **interface pos** subcommand, followed by the interface address of the interface you plan to configure. Table 4-2 gives examples.

Table 4-2 Examples of the interface pos Subcommand

Platform	Command	Example

Cisco 7304 router	**interface pos**, followed by *slot/interface*(slot-number/ interface-port-number)	The example is for the second OC-12 interface of an OC12 POS line card in slot 5.
		`Router(config)# interface pos 5/1`
		`Router(config-if)#`

Step 3 Assign an IP address and subnet mask to the interface (if IP routing is enabled on the system) with the **ip address** configuration subcommand, as in the following example:

```
Router(config-if)# ip address 10.0.0.10 255.255.255.0
```

Step 4 Change the shutdown state to up and enable the interface as follows:

```
Router(config-if)# no shutdown
```

The **no shutdown** command enables the interface and causes the OC12 POS line card to configure itself based on the previous configuration commands sent.

Step 5 Add any additional configuration subcommands required to enable routing protocols and adjust the interface characteristics.

Step 6 After including all of the configuration subcommands to complete your configuration, press **Ctrl-Z**—hold down the **Control** key while you press **Z**—or enter **end** or **exit** to exit configuration mode and return to the EXEC command interpreter prompt.

Step 7 Write the new configuration to NVRAM as follows:

```
Router# copy running-config startup-config
[OK]
Router#
```

This completes the procedure for creating a basic configuration.

Customizing the Configuration

You can change the default values of all configuration parameters to match your network environment. Use the interface subcommands in the following sections if you need to customize the OC12 POS line card configuration:

- Setting the MTU Size, page 4-4
- Configuring Framing, page 4-5
- Setting the Source of the Transmit Clock, page 4-5
- Configuring Cyclic Redundancy Checks, page 4-5
- Configuring SONET Payload Scrambling, page 4-5
- Configuring SONET Delay Triggers, page 4-6

Note The interface subcommands that follow function the same regardless of the platform in which your OC12 POS line card is installed; however, all of these commands require that you first enter the **interface pos** subcommand to select the interface that you want to configure.

In all of the configuration examples that follow, the interface address argument for the **interface pos** subcommand is 3/1 (slot 3, interface 1) for a Cisco 7304 router.

For the appropriate **interface pos sub**command syntax to use for your particular platform, see Table 4-2.

Setting the MTU Size

The default maximum transmission unit (MTU) size is 4470 bytes. To set the MTU size, enter the **mtu** *bytes* command, where *bytes* is a value in the range of 64 through 9216.

```
Router(config)# interface pos 3/1
Router(config-if)# mtu 3000
```

To restore the default of 4470 bytes, enter the **no mtu** command.

Configuring Framing

The default framing setting is SONET. To configure for SDH, enter the **pos framing-sdh** command:

```
Router(config)# interface pos 3/1
Router(config-if)# pos framing sdh
```

To change back to SONET, enter the **no pos framing sdh** command.

Setting the Source of the Transmit Clock

The clocking default specifies that the OC12 POS line card uses the recovered receive (RX) clock to provide transmit (TX) clocking (called *loop timing*). To specify that the OC12 POS line card generates the transmit clock internally, enter the **clock source internal** command:

```
Router(config)# interface pos 3/1
Router(config-if)# clock source internal
```

To restore loop timing, enter the **no clock source internal** command or the **clock source line** command.

Configuring Cyclic Redundancy Checks

The cyclic redundancy check (CRC) default is for a 16-bit CRC. The CRC is an error-checking technique that uses a calculated numeric value to detect errors in transmitted data. The OC12 POS line card also supports a 32-bit CRC. The sender of a data frame calculates the frame check sequence (FCS). The sender appends the FCS value to outgoing messages. The receiver recalculates the FCS and compares it to the FCS from the sender. If a difference exists, the receiver assumes that a transmission error occurred. To configure an interface for a 32-bit CRC, enter the **crc 32** command:

```
Router(config)# interface pos 3/1
Router(config-if)# crc 32
```

To disable the 32-bit CRC and return the interface to the default 16-bit CRC, enter the **no crc 32**.

Note Both ends of the connection must be set to the same CRC mode.

Configuring SONET Payload Scrambling

SONET payload scrambling applies a self-synchronous scrambler (x^43+1) to the Synchronous Payload Envelope (SPE) of the OC-12 interface to ensure sufficient bit-transition density. The default is for SONET payload scrambling disabled.

Note Both ends of the connection must use the same scrambling algorithm.

You enable SONET payload scrambling by using the **pos scramble-atm** command. (This command has no keywords or arguments.)

To enable SONET payload scrambling, use the following command sequence:

```
Router(config)# interface pos 3/1
Router(config-if)# pos scramble-atm
Router(config-if)# no shutdown
Router(config-if)# end
```

To verify that SONET payload scrambling is enabled on an interface, enter the **show running-config** command. If scrambling is enabled, the following line is displayed in the configuration:

```
pos scramble-atm
```

To disable SONET payload scrambling, use the **no pos scramble-atm** command.

Configuring SONET Delay Triggers

A trigger is an alarm that, when asserted, causes the line protocol to go down. The following sections discuss line triggers and path triggers, which you configure with the **pos delay triggers** command.

```
RTR12410-1(config)#interface pos 1/0
   RTR12410-1(config-if)#pos delay triggers ?
  line  Specify delay for SONET LINE level triggers (S-LOS, S-LOF, L-AIS)
  path  Enable SONET PATH level triggers (P-AIS, P-RDI), with optional delay
RTR12410-1(config-if)#pos delay triggers line ?
  <0-511>  Holdoff time, in msec
  <cr>
```

Line and Section Triggers

The **pos delay triggers line** command is used for Internet router POS interfaces connected to internally-protected Dense Wavelength Division Multiplexing (DWDM) systems. This command is invalid for interfaces that are configured as APS working or protected. Normally, even a few microseconds of line- or section-level alarms brings down the link until the alarm has been clear for ten seconds. If you configure holdoff, this link-down trigger is delayed for 100 ms. If the alarm stays up for more than 100 ms, the link is brought down as it is now. If the alarm clears before 100 ms, the link is not brought down.

By default, the following line and section alarms are triggers for the line protocol to go down:

- Section loss of signal (SLOS)
- Section loss of frame (SLOF)
- Line alarm indication signal (LAIS)

When one or more of these alarms is asserted, the line protocol of the interface goes down without a delay. You can issue the **pos delay triggers line** command to delay triggering the line protocol of the interface. You can set the delay from 50 to 10000 ms. If you do not specify a time interval, the default delay is set to 100 ms.

Path Level Triggers

The following path alarms are not triggers by default. You can configure these path alarms as triggers and also specify a delay.

- Path alarm indication signal
- Path remote defect indication
- Path loss of pointer
- B3 TCA alarms (starting in Cisco IOS Release 12.2(31)SB13

You can issue the **pos delay triggers path** command to configure various path alarms as triggers and to specify an activation delay between 50 and 10000 ms. The default delay value is 100 ms, except for B3 TCA alarms.

Beginning in Cisco IOS Release 12.(31)SB13, B3 TCA alarms will bring the line down immediately regardless of the configured delay time when pos delay path trigger is configured; the configured trigger delay time is not applicable to B3 TCA alarms. If pos delay path trigger is not configured, B3 TCA alarms will not bring the line down. In releases prior to Cisco IOS Release 12.2(31)SB13, B3 TCA alarms are not triggers for the line protocol to go down by default.

The **pos delay triggers path** command can also bring down the line protocol when the higher of the B2 and B3 error rates is compared with the signal failure (SF) threshold. If the SF threshold is crossed, the line protocol of the interface goes down.

The **pos delay triggers path** command was introduced in Cisco IOS Release 12.0(16)S.

Checking the Configuration

After configuring the new interface, use the **show** commands to display the status of the new interface or all interfaces, and use the **ping** command to check connectivity. This section includes the following subsections:

- Using show Commands to Verify the New Interface Status, page 4-7
- Using the ping Command to Verify Network Connectivity, page 4-11

Using show Commands to Verify the New Interface Status

Table 4-3 demonstrates how you can use the **show** commands to verify that new interfaces are configured and operating correctly and that the OC12 POS line card appears in them correctly. Sample displays of the output of selected **show** commands appear in the sections that follow. For complete command descriptions and examples, refer to the publications listed in the "Related Documentation" section on page 8.

Note The outputs that appear in this document may not match the output you receive when running these commands. The outputs in this document are examples only.

Table 4-3 Using show Commands

Command	Function	Example
show version or **show hardware**	Displays system hardware configuration, the number of each interface type installed, Cisco IOS software version, names and sources of configuration files, and boot images	`Router# show version`
show diag *slot*	Displays types of line cards installed in your system and information about a specific line card slot	`Router# show diag 2`

Table 4-3 Using show Commands (continued)

Command	Function	Example
show c7300	Displays types of line cards with status information for each installed line card	`Router# show c7300`
show interfaces pos *slot-number/interface-number*	Displays status information about the OC-12 interface in a Cisco 7304 router	`Router# show interfaces pos 3/1`
show controllers pos *slot-number/interface-number*	Displays all the current interface processors and their interfaces	`Router# show controllers pos 3/1`
show protocols	Displays protocols configured for the entire system and for specific interfaces	`Router# show protocols`
show running-config	Displays the running configuration file	`Router# show running-config`
show startup-config	Displays the configuration stored in NVRAM	`Router# show startup-config`

If an interface is shut down and you configured it as up, or if the displays indicate that the hardware is not functioning properly, ensure that the interface is properly connected and terminated. If you still have problems bringing up the interface, contact a service representative for assistance. This section includes the following subsections:

- Using the show version or show hardware Commands, page 4-8
- Using the show diag Command, page 4-9
- Using the show c7300 Command, page 4-10
- Using the show interfaces Command, page 4-11

Choose the subsection appropriate for your system. Proceed to the "Using the ping Command to Verify Network Connectivity" section on page 4-11 when you have finished using the **show** commands.

Using the show version or show hardware Commands

Display the configuration of the system hardware, the number of each interface type installed, the Cisco IOS software version, the names and sources of configuration files, and the boot images by using the **show version** (or **show hardware**) command.

Note The outputs that appear in this document may not match the output you receive when running these commands. The outputs in this document are examples only.

Cisco 7304 Router

Following is an example of the **show version** command from a Cisco 7304 router with the OC12 POS line card:

```
Router# show version
Cisco Internetwork Operating System Software
IOS (tm) 7300 Software (C7300-JS-M), Version 12.1(10),
Copyright (c) 1986-2002 by cisco Systems, Inc.
```

```
Compiled Thu 29-Nov-01 04:27 by
Image text-base:0x40008970, data-base:0x417EE000

ROM:System Bootstrap, Version 12.1(20010827:230108) [hih-rommon_1_0
104],
Currently running ROMMON from ROM 0
BOOTLDR:7300 Software (C7300-BOOT-M), Version 12.1(1.23.61), CISCO
DEVELOPMENT TEST VERSION

Router uptime is 3 minutes
System returned to ROM by power-on
System image file is
"tftp://223.255.254.254/muck/nlaw/c7300-js-mz.121-99."

cisco 7300 (NSE100) processor (revision B) with 114688K/16384K bytes of
memory.
Processor board ID CHASSIS##16
R7000 CPU at 350Mhz, Implementation 39, Rev 3.2, 256KB L2, 1024KB L3 Cache
4 slot midplane, Version 65.48

Last reset from watchdog nmi
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
PXF processor tmc0 running 'system:pxf/ucode1' v1.4 is active
PXF processor tmc1 running 'system:pxf/ucode1' v1.4 is active
1 FastEthernet/IEEE 802.3 interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)
1 Packet over SONET network interface(s)
509K bytes of non-volatile configuration memory.

31360K bytes of ATA compact flash in bootdisk (Sector size 512 bytes).
31360K bytes of ATA compact flash in disk0 (Sector size 512 bytes).
Configuration register is 0x0
```

Using the show diag Command

Display the types of line cards installed in your system (and specific information about each) using the **show diag** *slot* command, where *slot* is the slot in a Cisco 7304 router.

Note The outputs that appear in this document may not match the output you receive when running these commands. The outputs in this document are examples only.

Cisco 7304 Router

Following is an example of the **show diag** *slot* command for an OC12 POS line card in slot 3 of a Cisco 7304 router:

```
Router# show diag 3

Slot 3/0:

        POS OC12 Single Mode Short Reach Line Card, 1 port
        Line Card state:Active
        Insertion time:00:00:29 ago
        Bandwidth points:1244000
        EEPROM contents at hardware discovery:
        Hardware Revision        :1.0
```

```
Unknown Field (type 0046):00 00
PCB Serial Number        :CAB0541KWHY
Part Number              :73-6113-01
Board Revision           :A0
Fab Version              :02
RMA Test History         :00
RMA Number               :0-0-0-0
RMA History              :00
Deviation Number         :0-0
Product Number           :7300-2OC12POS-MM
Top Assy. Part Number    :68-0000-00
Manufacturing Test Data  :00 00 00 00 00 00 00 00
Field Diagnostics Data   :00 00 00 00 00 00 00 00
Calibration Data         :Minimum:0 dBmV, Maximum:0 dBmV
      Calibration values :
EEPROM format version 4
EEPROM contents (hex):
  0x00:04 FF 40 02 9C 41 01 00 46 00 00 C1 8B 43 41 42
  0x10:30 35 34 31 4B 57 48 59 82 49 17 E1 01 42 41 30
  0x20:02 02 03 00 81 00 00 00 00 04 00 80 00 00 00 00
  0x30:CB 94 37 33 30 30 2D 32 4F 43 31 32 50 4F 53 2D
  0x40:4D 4D 20 20 20 20 87 44 00 00 00 C4 08 00 00 00
  0x50:00 00 00 00 00 C5 08 00 00 00 00 00 00 00 00 C8
  0x60:09 00 00 00 00 00 00 00 00 00 C7 7C F6 44 3F 30
  0x70:00 00 00 00 00 00 00 00 00 00 00 00 05 DC 64 28
  0x80:1E 37 26 07 08 64 32 28 37 26 09 C4 64 32 28 32
  0x90:DD 0C E4 64 32 28 43 24 2E E0 AA 82 64 F4 24 00
  0xA0:00 00 00 00 00 00 F2 E0 FF FF FF FF FF FF FF FF
  0xB0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xC0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xD0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xE0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xF0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
LC Crash History:
This linecard has not crashed since its insertion
```

Using the show c7300 Command

Display the types of line cards installed in your system, their status, and insertion time by using the **show c7300** command.

Note The outputs that appear in this document may not match the output you receive when running these commands. The outputs in this document are examples only.

Cisco 7304 Router

Following is an example of the **show c7300** command for a Cisco 7304 router:

```
Router# show c7300
Slot      Card Type           Status          Insertion time
----      ---------           ------          --------------
0,1       NSE-100             Active          00:20:18 ago
4         4OC3-POS            Active          00:20:17 ago
5         1OC12-POS           Active          00:20:15 ago
```

Using the show interfaces Command

The **show interfaces** command displays status information (including the physical slot and interface address) for the interfaces you specify. All of the examples that follow specify POS interfaces.

Note The outputs that appear in this document may not match the output you receive when running these commands. The outputs in this document are examples only.

Cisco 7304 Router

Following is an example of the **show interfaces** command for an OC12 POS line card in slot 3 of a Cisco 7304 router:

```
Router# show interfaces pos 3/0
POS3/0 is up, line protocol is up
  Hardware is Packet over Sonet
  MTU 4470 bytes, BW 622000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, crc 16, loopback not set
  Keepalive set (10 sec)
  Scramble disabled
  Last input 00:00:07, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue:0/75/0/0 (size/max/drops/flushes); Total output drops:0
  Queueing strategy:fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     1 packets input, 24 bytes
     Received 1 broadcasts, 0 runts, 0 giants, 0 throttles
              0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     1 packets output, 24 bytes, 0 underruns
     0 output errors, 0 applique, 1 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
```

Using the ping Command to Verify Network Connectivity

Using the **ping** command, you can verify that an interface port is functioning properly. This section provides a brief description of this command. Refer to the publications listed in the "Related Documentation" section on page 8 for detailed command descriptions and examples.

The **ping** command sends echo request packets out to a remote device at an IP address that you specify. After sending an echo request, the system waits a specified time for the remote device to reply. Each echo reply is displayed as an exclamation point (!) on the console terminal; each request that is not returned before the specified time-out is displayed as a period (.). A series of exclamation points (!!!!!) indicates a good connection; a series of periods (.....) or the messages [timed out] or [failed] indicate a bad connection.

Following is an example of a successful **ping** command to a remote server with the address 10.0.0.10:

```
Router# ping 10.0.0.10 <Return>
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echoes to 10.0.0.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/15/64 ms
```

```
Router#
```

If the connection fails, verify that you have the correct IP address for the destination and that the device is active (powered on), and repeat the **ping** command.

Using loopback Commands

The loopback test allows you to troubleshoot, detect, and isolate equipment malfunctions by testing the connection between the OC-12 interface and a remote device. The **loop** subcommand places an interface in internal loopback (also called *local loopback*) or line loopback mode, which enables test packets that are generated from the **ping** command to loop through a remote device or a cable. If the packets complete the loop, the connection is good. If not, you can isolate a fault to the remote device or the cable in the path of the loopback test.

Configuring an Interface for Internal Loopback

The default loopback setting is for no loopback. With internal (or local) loopback, packets from the router are looped back in the framer. Outgoing data gets looped back to the receiver without actually being transmitted. Internal loopback is useful for checking that the OC12 POS line card is working. To configure an interface for internal loopback, enter the **loop internal** command:

```
Router(config)# interface pos 3/0
Router(config-if)# loop internal
```

To disable internal loopback, enter the **no loop internal** command.

Configuring an Interface for Line Loopback

The default loopback setting is for no loopback. With line loopback, the receive (RX) fiber is logically connected to the transmit (TX) optical fiber cable so that packets from the remote router are looped back to it. Incoming data gets looped around and retransmitted without actually being received. To configure an interface for line loopback, enter the **loop line** command:

```
Router(config)# interface pos 3/0
Router(config-if)# loop line
```

To disable line loopback, enter the **no loop line** command.

OC12 POS Statistics Counters

The OC12 POS line card maintains counts of certain errors. Each error counter is 32 bits. Errors include the following:

- CRC errors—Packet corrupted in reception
- Giants received—Packet length too large (greater than MTU size)
- Runts—Packet length too small (less than or equal to 4 bytes)
- Ignores—No receive buffers available; receive buffers full

OC12 POS Line Card Error Messages

The only error messages you should see are of the following type and format:

```
%POS-1-INITFAIL: POS4/0 initialization failed

%POS-1-HWFAIL: POS OC12(4) Hardware failure. Primary DDLL not set. Deactivating line card.

%POS-3-FPGAREVNOTSUPPORTED:POS OC12(4) Line card requires fpga revision of (2).Current
fpga revision is (0)

%POS-3-FPGAREVNOTMATCH:POS OC12(4) Line card fpga requires min h/w revision of (0.0)

%POS-1-TRESFAIL:POS OC12(4/0) Failed to obtain PXF resources, error=16, shutting down
interface

%POS-1-HWFAIL:POS OC12(4) Hardware failure. Secondary DLL not set.
```

Note Contact the Technical Assistance Center (TAC) for assistance with these error messages. To contact the TAC, see the "Obtaining Technical Assistance" section on page 9.

CLI-Controlled OIR

Line cards can be removed from the Cisco 7304 router without disrupting data flow by using the **hw-module slot** *slot #* **stop/start** command in EXEC mode. The **hw-module slot** *slot #* **stop** command will stop traffic, shut down all line card interfaces, and deactivate the line card. The **hw-module slot** *slot #* **start** command resets the line card, puts the line card back online, and turns off the OIR LED. To remove and install an active line card in slot 2, proceed as follows:

```
Router# hw-module slot 2 stop
```

When the OIR LED turns green, the line card in slot 2 has been deactivated and can be physically removed and replaced with a new line card (see the "Line Card Removal and Installation" section on page 3-3).

When the new line card is inserted in slot 2 it is automatically reset, put online, and the OIR LED is turned off.