

9 Configuring POS

With the increasing demands put upon today's networks by the incredible increase in Internet and intranet traffic, networks require an efficient, high performance IP infrastructure. Synchronous Optical Network (SONET), available since 1986, is the ANSI standard (T1.105-1988) for synchronous data transmission over optical fiber. The international counterpart of SONET is called Synchronous Digital Hierarchy (SDH). SONET/SDH includes standards that provide for a line rate up to a maximum of 9.953 Gbps (OC-12c).

With Packet-Over-SONET (POS), the critical features that IP offers can take advantage of existing SONET/SDH networks. Alcatel's POS interface modules use either High-Level-Data Link Control (HDLC) or Point-to-Point Protocol (PPP) encapsulation, a standard method for communicating between PPP connections, to transmit data over SONET/SDH links. By utilizing POS technology, IP packets are able to travel over non-homogenous networks. Alcatel's POS interface cards also provide support for the Layer 3 switching, multicast and broadcast traffic, and QoS features found in the OmniCore routing switch. These features allow the transmission of mission-critical and time-sensitive applications such as voice, video, and other data streams.

The Alcatel POS OC-3c and OC-12c interface modules also eliminate unnecessary overhead associated with such technologies as ATM by using HDLC or PPP encapsulation into SONET/SDH frames. This provides a seamless bridge between the two technologies.

◆ Note ◆

Please note that OmniCore POS HDLC is not CISCO compatible.

The following POS configuration rules must be followed in order for POS to be implemented on the OmniCore routing switch:

- Each POS interface must be in its own VLAN.
- No other interface can belong to the same VLAN as the POS interface.
- A POS interface cannot operate in the default VLAN (VLAN 1).

POS Commands

The major POS commands in the OmniCore CLI are listed in the following table. Other commands are available for fine-tuning your POS configuration. To see a complete list of these commands or for more information regarding the commands used in this chapter, see the *OmniCore CLI Reference Manual*.

POS Commands

Command	Default	Description
pos burst-bandwidth	variable	Sets the egress burst bandwidth allocated for a port
pos crc	crc16	Determines the CRC type.
pos egress-priority bandwidth	variable	Sets the bandwidth allocation for an egress priority queue.
pos egress-priority burst	enable	Enables or disables burst status for an egress priority queue.

POS Commands (Continued)

pos egress-priority de-lower	zero	Sets the percentage of total queue size at which DE (Discard Eligible) PBNs may be discarded from an egress priority queue.
pos egress-priority de-upper	zero	Sets the percentage of total queue size defining the DE (Discard Eligible) PBN upper watermark.
pos encap	hdlc	Defines the POS encapsulation method.
pos framing	sonet	Defines the POS framing method.
pos internal-clock	disable	Enables the internal clock function.
pos loop-line	disable	Enables the loop back function.
pos mtusize	no default	Displays maximum transmission unit (MTU) size.
pos priority	0	Determines the priority value for a port.
pos queuing-mode	wfq	Sets the egress bandwidth queuing mode for a port.
pos scramble-atm	enable	Enables the ATM scrambling function.
pos status	enable	Enables POS operation on a port
pos tagmode	disable	Enables 802.1Q tagging.

Configuring POS

Configuring POS on the OmniCore switch may require several steps. However, depending on your requirements, you may not need to perform all of the steps listed below. On the OmniCore routing switch, POS is enabled by default. Configuring POS consists of the following tasks:

- Enable POS.
- Create an IP VLAN interface.
- (Optional) Set the internal clock function.
- (Optional) Enable IP routing (enabled by default).
- (Optional) Disable the ATM scrambling function.

Follow these steps to configure POS:

1. Enable POS operation for the desired port.

```
OmniCore> pos 5 1 enable
OmniCore> pos 5 1 status show
Admin Status                               :enable
```

2. Create an IP VLAN interface.

The OmniCore routing switch ships with all ports located in the default VLAN (VLAN 1). The example shown describes the creation of an IP interface for VLAN 2.

- a. Create the VLAN. For this example, VLAN 2 with a tag value of 2 is created.

```
OmniCore> vlan 2 tag 2 create
OmniCore> vlan 2
OmniCore/vlan=2> show
Vlan Id                :2
Vlan Current State     :enable
Name                   :VLAN-2
Tag                    :2
Priority                :default
Broadcast Priority     :default
Flood Priority         :default
Oper Status            :up
Port Member List      :
```

- b. Add one POS port to the VLAN. Port 1 on slot 5 with the default VLAN membership is added to VLAN 2 in this example. For more information about VLAN membership, see [Chapter 3, "Configuring VLANs and Priority"](#).

```
OmniCore/vlan=2> member 5 1 default add
OmniCore/vlan=2> portlist show
Port Member List      : 5 - 1
```

- c. Attach an IP interface to the VLAN. An IP interface must be attached to the VLAN so that the network will recognize it. For this example, an interface with an IP address of 10.0.45.45 and a mask value of 255.255.0.0 is created for this example.

```
OmniCore/vlan=2> ip 10.0.45.45 mask 255.255.0.0 create
OmniCore/vlan=2> ip show
IpAddress  Mask      Broadcast  Admin  Encap  Oper
-----
10.0.45.45 255.255.0.0 10.0.255.255 enable ETYPED up
```

3. (Optional) Enable the internal clock function. As with any point-to-point protocol, the clock at one end of the link must be set to internal and the clock at the other end of the link must be set to external.

```
OmniCore/vlan=2> ..
OmniCore> pos 5 1 internal-clock enable
OmniCore> pos 5 1 internal-clock show
Internal Clock      : enable
```

4. (Optional) Enable IP routing if you intend to have the POS VLAN communicate with other IP VLANs. By default, IP routing is enabled.

```
OmniCore> ip routing enable
OmniCore> ip routing show
Routing Status      :enable
```

5. (Optional) Disable the ATM scrambling function if desired. ATM scrambling is enabled by default.

```
OmniCore> pos 5 1 scramble-atm disable
Scramble-ATM        :disable
```

