

Shared Interfaces Overview

The basic concepts about and support for shared interfaces are described in the following topics:

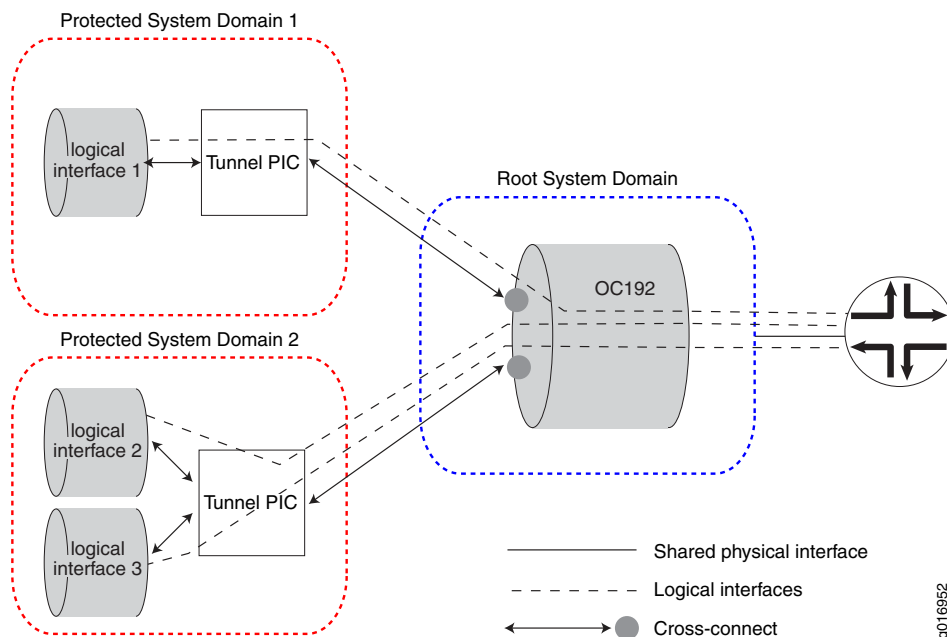
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Shared Interfaces Concepts

A single Physical Interface Card (PIC) can host a physical interface that is shared by different Protected System Domains (PSDs). The shared interface is owned by the Root System Domain (RSD), while logical interfaces configured under it are assigned to and owned by different PSDs. By sharing a single interface among multiple PSDs, the cost of traffic forwarding is reduced and resources can be allocated flexibly at a more granular level.

Any Flexible PIC Concentrator (FPC) that has not been assigned to a specific PSD can be used to host shared interfaces. On the RSD, multiple logical interfaces are configured on the physical interface and each individual logical interface is assigned to a different PSD. On the PSD, each assigned logical interface is configured and peered with an uplink tunnel interface (*ut-fpc/pic/slot*), which transports packets between the PSD and the shared interface on the RSD. See Figure 1 on page 1.

Figure 1: Shared Interfaces





NOTE:

When applied to shared interfaces:

- JUNOS features that are configured under logical interfaces, such as class-of-service (CoS) classifiers and rewrites, firewall filters, and policers, are configured on the PSD.
 - JUNOS features that are configured under physical interfaces, such as drop profiles and schedule maps, are configured on the RSD.
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Traffic Flow on Shared Interfaces

The packets belonging to a shared interface pass between the Packet Forwarding Engine on the PIC in the RSD and the Packet Forwarding Engine on the uplink tunnel PIC in the PSD through a cross-connect in the forwarding fabric.

Traffic flow from the PSD to the RSD over a shared interface is as follows:

1. A packet destined for the shared PIC at the RSD is received on an interface at the PSD and sent to the Packet Forwarding Engine on the PSD's tunnel PIC. (The tunnel PIC is configured to peer with the shared PIC at the RSD.)
2. The packet is sent out of the tunnel interface.
3. The tunnel PIC loops the packet back to the input side of its Packet Forwarding Engine and the packet is sent over the switch fabric to the Packet Forwarding Engine on the shared PIC at the RSD.
4. The packet is then sent out the shared interface.

Traffic flow from the RSD to the PSD is as follows:

1. The Packet Forwarding Engine on the shared PIC at the RSD determines on which logical interface the packet arrived.
2. Based on the RSD configuration, the PSD that is associated with this logical interface is known and the packet is sent over the switch fabric to the tunnel PIC at that PSD.
3. The packet is sent out the tunnel interface.
4. The tunnel PIC loops the packet back to the input side of its Packet Forwarding Engine and the packet is then handled as if it had arrived on a directly-connected PIC.

Supported Platforms and PICs

Table 1 on page 3 lists the PICs that support shared interfaces:

Table 1: PICs Supporting Shared Interfaces

PIC Name	PIC Model Number	First JUNOS Release
Ethernet		
1-port 10-Gigabit Ethernet DWDM	PC-1XGE-DWDM-CBAND	9.4
1-port 10-Gigabit XENPAK	PC-1XGE-XENPAK	9.4
10-port 1-Gigabit SFP	PC-10GE-SFP	9.4
SONET/SDH		
4-port OC48 SONET, SFP	PC-4OC48-SON-SFP	9.3
1-port OC192 SONET, XFP	PC-1OC192-SON-SFP	9.3
4-port OC192 SONET, XFP	PD-4OC192-SON-XFP	9.3
1-port OC768 SONET, SR	PD-1OC768-SON-SR	9.3

**NOTE:**

Only SONET PICs that are installed on an Enhanced Services (ES) FPC on a T320 router or on a T1600 routing node can support shared interfaces.

- Related Topics**
- Control and Forwarding Planes in Separate Chassis
 - JCS 1200 Platform Overview
 - Protected System Domain Overview

