Configure the Network for IOx Applications

Connections from IE9300 Switch to IOx Applications

The IE9300 switch has an additional interface known as Ap1/0/1, which can be configured as a standard physical interface in trunk mode for connectivity with IOx applications.

Prerequisites for Establishing a Connection Between IE9300 Switch and Cisco IOx Applications

- Configure a VLAN ID for the Ap1/0/1 interface, regardless of trunk mode.

- Assign an IP address to an IE9300 VLAN interface that is also a member of the Ap1/0/1 trunk interface.

Note   The VLANs on the Ap1/0/1 trunk interface should match VLANs (including management VLANs) that carry data traffic between applications on IOx. For example, if VLAN 10 carries traffic between application and network, including management IP traffic, use the same VLAN for managing applications.

After configuring the network, enable IOx in the switch. For more information, see Enable IOx Application in the Switch section.

Figure 1: Connections with IE9300 IOx Network with Applications
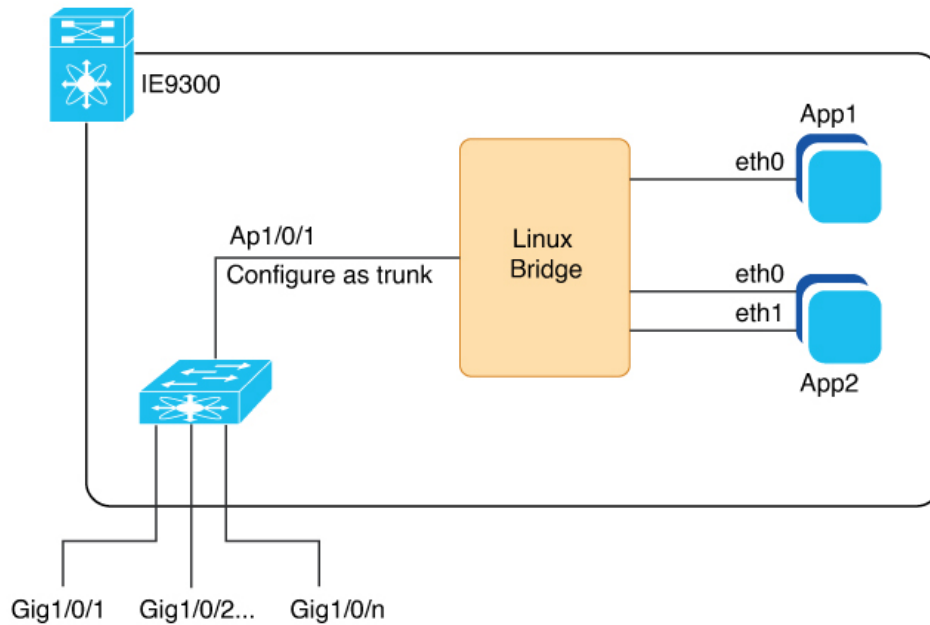
This image depicts the Ethernet and Layer 2 connections within an IOx-enabled network on a Cisco Catalyst IE9300 Rugged Series Switch. The additional interface, Ap1/0/1, is internally connected to a Linux bridge and is configured as a trunk to support multiple IOx applications.

The IOx applications can maintain several Ethernet connections and be assigned to any VLAN as required.

See Deployment of IOx Application Using the IOS-XE CLI for an illustration showing a sample network configuration in this guide.

Workflow to Connect and Manage the VLAN

To connect and manage the VLAN, complete all these procedures in given order:

Configure a VLAN for the IOx Interface

Note   VLAN ID must be configured on the Ap1/0/1 interface, regardless of its trunk mode configuration. Also, verify that the VLAN is routable throughout the network.

Step 1   Enter global configuration mode.

```
Device# configure terminal
```

Step 2   Enter interface configuration mode.

```
Device(config)# interface Ap1/0/1
```

Step 3 Configure allowed VLANs on the trunk.

```
Device(config-if)#switchport trunk allowed vlan 10
```

Step 4 Configure the interface to operate in trunk mode.

```
Device(config-if)#switchport mode trunk
```

Step 5 Exit interface configuration mode.

```
Device(config-if)#end
```

Configure an SVI address for the VLAN

Step 1 Enter global configuration mode.

```
Device# configure terminal
```

Step 2 Enter VLAN interface configuration mode.

```
Device(config)# interface vlan 10
```

Step 3 Assign an IP Address to the VLAN Interface.

```
Device(config-if)#ip address 192.168.0.1 255.255.255.0
```

Step 4 Exit interface configuration mode.

```
Device(config-if)#end
```

Enable IOx Application in the Switch

Before you begin

- Verify that you have at least 1 GB on the SD card. If you have a 4 GB SD card partition for IOx, you can format up to 74 percent of the card.

- Verify that you have configured the VLAN for the IOx interface.

Step 1 Format the SD card IOx partition with EXT4 filesystem.

```
Device# partition sdflash: iox
Partitioning IOS:IOX(34%:66%) Default
Partition command reloads the switch, Continue?[confirm]
Please make sure to back-up "sdflash:" contents
Partition operation will destroy all data in "sdflash:". Continue? [confirm]
```

Note The partition command allocates 66 percent of space on the SD card to IOx and 34 percent to IOS as a backup.

After you enter the partition command, the switch reloads.

Step 2   Enter global configuration mode.

```
Device# configure terminal
```

Step 3   Enable IOx.

```
Device(config)#iox
Warning: Do not remove SD flash card when IOx is enabled or errors on SD device could occur.
*Feb 21 12:49:18.310: %UICFGEXP-6-SERVER_NOTIFIED_START: R0/0: psd: Server iox has been notified
to start
*Feb 21 12:49:48.165: %IM-6-IOX_ENABLEMENT: R0/0: ioxman: IOX is ready.
```

Step 4   Enable the web server.

```
Device(config)# ip http secure-server
```

Step 5   Create a user account for access.

```
Device(config)# username admin privilege 15 password 0 secret
```

Step 6   Save the configuration and returns to privileged EXEC mode.

```
Device(config)# end
```

Verify the IOx Infrastructure

Verify that the IOx infrastructure is ready to use, as shown here.

```
Device#show iox-service
IOx Infrastructure Summary:
---------------------------
IOx service (CAF) : Running
IOx service (HA) : Running
IOx service (IOxman) : Running
IOx service (Sec storage) : Running
Libvirtd 5.5.0 : Running
Dockerd v19.03.13-ce : Running
```