



Configure the Network for IOx Applications

- [Connections from Switch to IOx Applications](#) , on page 1
- [Workflow to Connect and Manage the VLAN](#), on page 2

Connections from Switch to IOx Applications

The switch has an additional interface known as AppGigabitEthernet1/1, which can be configured as a standard physical interface in trunk mode for connectivity with IOx applications.

Prerequisites for Establishing a Connection Between Switch and Cisco IOx Applications

- Configure a VLAN ID for the AppGigabitEthernet1/1 interface, regardless of trunk mode.
Ensure that the configured VLAN is not the default VLAN. By default, VLAN 1 serves as the native VLAN and carries untagged packets.
- Assign an IP address to a VLAN interface that is also a member of the AppGigabitEthernet1/1 trunk interface.



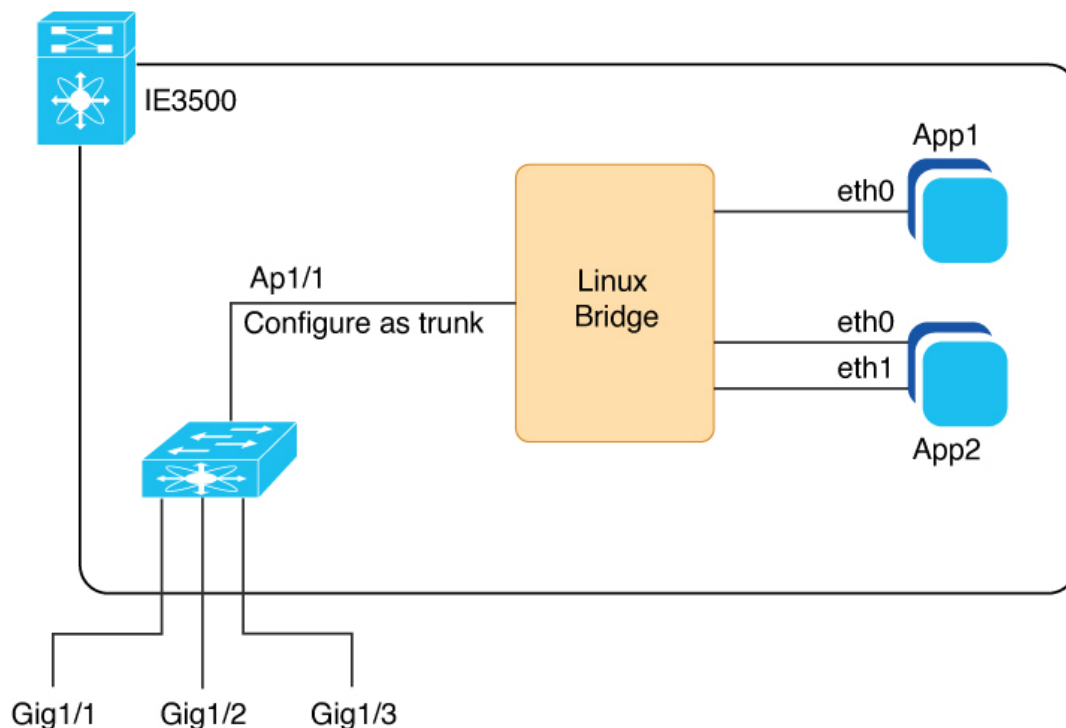
Note

The VLANs on the AppGigabitEthernet1/1 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.

If you intend to use vlan 1 to communicate with the network, then choose a different native VLAN on AppGigabitEthernet1/1.

After configuring the network, enable IOx in the switch. For more information, see [Enable IOx Application in the Switch](#) section.

Figure 1: Connections of IOx Network with Applications



This image depicts the Ethernet and Layer 2 connections within an IOx-enabled network on a Switch. The additional interface, AppGigabitEthernet1/1, 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 AppGigabitEthernet1/1 interface, regardless of its trunk mode configuration. Also, verify that the VLAN is routable throughout the network.

Procedure

-
- Step 1** Enter global configuration mode.
- ```
Device# configure terminal
```
- Step 2** Enter interface configuration mode.
- ```
Device(config)# interface AppGigabitEthernet1/1
```
- 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

### Procedure

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- 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 a minimum of 4GB memory SD card. Use the SD card for IOx and format it as SD Flash to EXT4, or partition the SD card with at least 1 GB designated for IOs and the remaining space for IOx.
- Verify that you have configured the VLAN for the IOx interface.

### Procedure

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

```
Device# partition sdflash: iox
Partitioning IOS:IOX(30%:70%) 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 70 percent of space on the SD card to IOx and 30 percent to IOS as a backup.

**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** 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
```