



# Interface Management

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## About Firepower Interfaces

The Firepower 9300 chassis supports physical interfaces and EtherChannel (port-channel) interfaces. EtherChannel interfaces can include up to 16 member interfaces of the same type.

## Chassis Management Interface

The chassis management interface is used for management of the FXOS Chassis by SSH or Firepower Chassis Manager. This interface is separate from the mgmt-type interface that you assign to the logical devices for application management.

To configure parameters for this interface, you must configure them from the CLI. See also [Changing the Management IP Address](#). To view information about this interface in the FXOS CLI, connect to local management and show the management port:

```
Firepower # connect local-mgmt
```

```
Firepower(local-mgmt) # show mgmt-port
```

Note that the chassis management interface remains up even if the physical cable or SFP module are unplugged, or if the **mgmt-port shut** command is performed.

## Interface Types

Each interface can be one of the following types:

- Data—Data interfaces cannot be shared between logical devices.
- Mgmt—Use management interfaces to manage application instances. They can be shared by one or more logical devices to access external hosts; logical devices cannot communicate over this interface with other logical devices that share the interface. You can only assign one management interface per logical

device. For information about the separate chassis management interface, see [Chassis Management Interface, on page 1](#).

- Cluster—Special interface type used for a clustered logical device. This type is automatically assigned to the cluster control link for inter-unit cluster communications. By default, the cluster control link is automatically created on Port-channel 48.

## Jumbo Frame Support

The Firepower 9300 chassis has support for jumbo frames enabled by default. To enable jumbo frame support on a specific logical device installed on the Firepower 9300 chassis, you will need to configure the appropriate MTU settings for the interfaces on the logical device.

The maximum MTU that is supported for the application on the Firepower 9300 chassis is 9000.

## Guidelines and Limitations for Firepower Interfaces

### Inline Sets for FTD

- Supported for physical interfaces only (both regular and breakout ports); EtherChannels are not supported.
- Link state propagation is not supported.

### Default MAC Addresses

Default MAC address assignments depend on the type of interface.

- Physical interfaces—The physical interface uses the burned-in MAC address.
- EtherChannels—For an EtherChannel, all interfaces that are part of the channel group share the same MAC address. This feature makes the EtherChannel transparent to network applications and users, because they only see the one logical connection; they have no knowledge of the individual links. The port-channel interface uses a unique MAC address from a pool; interface membership does not affect the MAC address.

## Configure Interfaces

By default, physical interfaces are disabled. You can enable interfaces, add EtherChannels, edit interface properties, and configure breakout ports.

### Configure a Physical Interface

You can physically enable and disable interfaces, as well as set the interface speed and duplex. To use an interface, it must be physically enabled in FXOS and logically enabled in the application.

### Before you begin

- Interfaces that are already a member of an EtherChannel cannot be modified individually. Be sure to configure settings before you add it to the EtherChannel.

### Procedure

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**Step 1** Enter interface mode.

**scope eth-uplink**

**scope fabric a**

**Step 2** Enable the interface.

**enter interface** *interface\_id*

**enable**

#### Example:

```
Firepower /eth-uplink/fabric # enter interface Ethernet1/8
Firepower /eth-uplink/fabric/interface # enable
```

**Note** Interfaces that are already a member of a port-channel cannot be modified individually. If you use the **enter interface** or **scope interface** command on an interface that is a member of a port channel, you will receive an error stating that the object does not exist. You should edit interfaces using the **enter interface** command before you add them to a port-channel.

**Step 3** (Optional) Set the interface type.

**set port-type** {**data** | **mgmt** | **cluster**}

#### Example:

```
Firepower /eth-uplink/fabric/interface # set port-type mgmt
```

The **data** keyword is the default type. Do not choose the **cluster** keyword; by default, the cluster control link is automatically created on Port-channel 48.

**Step 4** Enable or disable autonegotiation, if supported for your interface.

**set auto-negotiation** {**on** | **off**}

#### Example:

```
Firepower /eth-uplink/fabric/interface* # set auto-negotiation off
```

**Step 5** Set the interface speed.

**set admin-speed** {**10mbps** | **100mbps** | **1gbps** | **10gbps** | **40gbps** | **100gbps**}

#### Example:

```
Firepower /eth-uplink/fabric/interface* # set admin-speed 1gbps
```

**Step 6** Set the interface duplex mode.

```
set admin-duplex {fullduplex | halfduplex}
```

**Example:**

```
Firepower /eth-uplink/fabric/interface* # set admin-duplex halfduplex
```

**Step 7** If you edited the default flow control policy, it is already applied to interfaces. If you created a new policy, apply it to the interface. See [Configure a Flow Control Policy, on page 7](#).

```
set flow-control-policy name
```

**Example:**

```
Firepower /eth-uplink/fabric/interface* # set flow-control-policy flow1
```

**Step 8** Save the configuration.

```
commit-buffer
```

**Example:**

```
Firepower /eth-uplink/fabric/interface* # commit-buffer
Firepower /eth-uplink/fabric/interface #
```

## Add an EtherChannel (Port Channel)

An EtherChannel (also known as a port channel) can include up to 16 member interfaces of the same type. The Link Aggregation Control Protocol (LACP) aggregates interfaces by exchanging the Link Aggregation Control Protocol Data Units (LACPDU) between two network devices.

The Firepower 9300 chassis only supports EtherChannels in Active LACP mode so that each member interface sends and receives LACP updates. An active EtherChannel can establish connectivity with either an active or a passive EtherChannel. You should use the active mode unless you need to minimize the amount of LACP traffic.

LACP coordinates the automatic addition and deletion of links to the EtherChannel without user intervention. It also handles misconfigurations and checks that both ends of member interfaces are connected to the correct channel group.

### Procedure

**Step 1** Enter interface mode:

```
scope eth-uplink
```

```
scope fabric a
```

**Step 2** Create the port-channel:

```
create port-channel id
```

```
enable
```

**Step 3** Assign member interfaces:

```
create member-port interface_id
```

**Example:**

```
Firepower /eth-uplink/fabric/port-channel* # create member-port Ethernet1/1
Firepower /eth-uplink/fabric/port-channel/member-port* # exit
Firepower /eth-uplink/fabric/port-channel* # create member-port Ethernet1/2
Firepower /eth-uplink/fabric/port-channel/member-port* # exit
Firepower /eth-uplink/fabric/port-channel* # create member-port Ethernet1/3
Firepower /eth-uplink/fabric/port-channel/member-port* # exit
Firepower /eth-uplink/fabric/port-channel* # create member-port Ethernet1/4
Firepower /eth-uplink/fabric/port-channel/member-port* # exit
```

**Step 4** (Optional) Set the interface type.

```
set port-type {data | mgmt | cluster}
```

**Example:**

```
Firepower /eth-uplink/fabric/port-channel # set port-type data
```

The **data** keyword is the default type. Do not choose the **cluster** keyword unless you want to use this port-channel as the cluster control link instead of the default.

**Step 5** (Optional) Set the interface speed for all members of the port-channel.

```
set speed {10mbps | 100mbps | 1gbps | 10gbps | 40gbps | 100gbps}
```

**Example:**

```
Firepower /eth-uplink/fabric/port-channel* # set speed 1gbps
```

**Step 6** (Optional) Set the duplex for all members of the port-channel.

```
set duplex {fullduplex | halfduplex}
```

**Example:**

```
Firepower /eth-uplink/fabric/port-channel* # set duplex fullduplex
```

**Step 7** Enable or disable autonegotiation, if supported for your interface.

```
set auto-negotiation {on | off}
```

**Example:**

```
Firepower /eth-uplink/fabric/interface* # set auto-negotiation off
```

- Step 8** If you edited the default flow control policy, it is already applied to interfaces. If you created a new policy, apply it to the interface. See [Configure a Flow Control Policy, on page 7](#).

**set flow-control-policy** *name*

**Example:**

```
Firepower /eth-uplink/fabric/interface* # set flow-control-policy flow1
```

- Step 9** Commit the configuration:  
**commit-buffer**
- 

## Configure Breakout Cables

The following procedure shows how to configure breakout cables for use with the Firepower 9300 chassis. You can use a breakout cable to provide four 10 Gbps ports in place of a single 40 Gbps port.

### Procedure

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- Step 1** To create a new breakout, use the following commands:

- a) Enter cabling mode:

**scope cabling**

**scope fabric a**

- b) Create the breakout:

**create breakout** *network\_module\_slot port*

**Example:**

```
Firepower /cabling/fabric/ # create breakout 2 1
```

- c) Commit the configuration:

**commit-buffer**

This will cause an automatic reboot. If you are configuring more than one breakout, you should create all of them before you issue the commit-buffer command.

- Step 2** To enable/configure the breakout ports, use the following commands:

- a) Enter interface mode:

**scope eth-uplink**

**scope fabric a**

**scope aggr-interface** *network\_module\_slot port*

**Note** Interfaces that are already a member of a port-channel cannot be modified individually. If you use the **enter interface** or **scope interface** command on an interface that is a member of a port channel, you will receive an error stating that the object does not exist. You should edit interfaces using the **enter interface** command before you add them to a port-channel.

- b) Use the **set** command to configure the interface speed and port type.  
Use the **enable** or **disable** command to set the administrative state of the interface.
- c) Commit the configuration:  
**commit-buffer**

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## Configure a Flow Control Policy

Flow control policies determine whether the Ethernet ports send and receive IEEE 802.3x pause frames when the receive buffer for a port fills. These pause frames request that the transmitting port stop sending data for a few milliseconds until the buffer clears. For flow control to work between devices, you must enable the corresponding receive and send flow control parameters for both devices.

The default policy disables send and receive control, and sets the priority to autonegotiate.

### Procedure

---

**Step 1** Enter eth-uplink and then flow-control mode.

```
scope eth-uplink
scope flow-control
```

**Example:**

```
firepower-4110# scope eth-uplink
firepower-4110 /eth-uplink # scope flow-control
firepower-4110 /eth-uplink/flow-control #
```

**Step 2** Edit or create a flow control policy.

```
enter policy name
```

If you want to edit the default policy, enter **default** for the name.

**Example:**

```
firepower-4110 /eth-uplink/flow-control # enter policy default
firepower-4110 /eth-uplink/flow-control/policy* #
```

**Step 3** Set the priority.

```
set prio {auto | on}
```

The priority sets whether to negotiate or enable PPP for this link.

**Example:**

```
firepower-4110 /eth-uplink/flow-control/policy* # set prio on
```

**Step 4** Enable or disable flow control receive pauses.

**set receive {on | off}**

- **on**—Pause requests are honored and all traffic is halted on that uplink port until the network cancels the pause request.
- **off**—Pause requests from the network are ignored and traffic flow continues as normal.

**Example:**

```
firepower-4110 /eth-uplink/flow-control/policy* # set receive on
```

**Step 5** Enable or disable flow control send pauses.

**set send {on | off}**

- **on**—The Firepower 9300 sends a pause request to the network if the incoming packet rate becomes too high. The pause remains in effect for a few milliseconds before traffic is reset to normal levels.
- **off**—Traffic on the port flows normally regardless of the packet load.

**Example:**

```
firepower-4110 /eth-uplink/flow-control/policy* # set send on
```

**Step 6** Save the configuration.

**commit-buffer**

**Example:**

```
firepower-4110 /eth-uplink/flow-control/policy* # commit-buffer
firepower-4110 /eth-uplink/flow-control/policy #
```

**Example**

The following example configures a flow control policy.

```
firepower-4110# scope eth-uplink
firepower-4110 /eth-uplink # scope flow-control
firepower-4110 /eth-uplink/flow-control # enter policy FlowControlPolicy23
firepower-4110 /eth-uplink/flow-control/policy* # set prio auto
firepower-4110 /eth-uplink/flow-control/policy* # set receive on
firepower-4110 /eth-uplink/flow-control/policy* # set send on
firepower-4110 /eth-uplink/flow-control/policy* # commit-buffer
firepower-4110 /eth-uplink/flow-control/policy #
```



# Monitoring Interfaces

- **show interface**

Shows interface status.




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**Note** Interfaces that act as ports in port channels do not appear in this list.

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```
Firepower# scope eth-uplink
Firepower /eth-uplink # scope fabric a
Firepower /eth-uplink/fabric # show interface
```

Interface:

Port Name	Port Type	Admin State	Oper State	State Reason
Ethernet1/1	Mgmt	Enabled	Up	
Ethernet1/2	Data	Enabled	Link Down	Link failure or not-connected
Ethernet1/3	Data	Enabled	Up	
Ethernet1/4	Data	Enabled	Sfp Not Present	Unknown
Ethernet1/6	Data	Enabled	Sfp Not Present	Unknown
Ethernet1/7	Data	Enabled	Sfp Not Present	Unknown
Ethernet1/8	Data	Disabled	Sfp Not Present	Unknown
Ethernet2/1	Data	Enabled	Up	
Ethernet2/2	Data	Enabled	Up	
Ethernet2/4	Data	Enabled	Up	
Ethernet2/5	Data	Enabled	Up	
Ethernet2/6	Data	Enabled	Up	
Ethernet3/2	Data	Enabled	Up	
Ethernet3/4	Data	Enabled	Up	

