Overview

This chapter contains the following sections:

Licensing Requirements

For a complete explanation of Cisco NX-OS licensing recommendations and how to obtain and apply licenses, see the *Cisco NX-OS Licensing Guide*.

About Interfaces

Cisco NX-OS supports multiple configuration parameters for each of the interface types supported. Most of these parameters are covered in this guide but some are described in other documents.

The following table shows where to get further information on the parameters you can configure for an interface.

Table 1: Interface Parameters

Feature	Parameters	Further Information
Basic parameters	description, duplex, error disable, flow control, MTU, beacon	"Configuring Basic Interface Parameters"
Layer 3	medium and IPv4 addresses	"Configuring Layer 3 Interfaces"
Layer 3	bandwidth, delay, IP routing, VRFs	*Cisco Nexus 3400-S NX-OS Unicast Routing Configuration Guide* *Cisco Nexus 3400-S NX-OS Multicast Routing Configuration Guide*

Feature	Parameters	Further Information
Port Channels	channel group, LACP	"Configuring Port Channels"
Security	EOU	*Cisco Nexus 3400-S NX-OS Security Configuration Guide*

Ethernet Interfaces

Ethernet interfaces include routed ports.

Access Ports

An access port carries traffic for one VLAN. This type of port is a Layer 2 interface only.

For more information on access ports, see the "Information About Access and Trunk Interfaces" section.

Routed Ports

A routed port is a physical port that can route IP traffic to another device. A routed port is a Layer 3 interface only.

For more information on routed ports, see the "Routed Interfaces" section.

Management Interface

You can use the management Ethernet interface to connect the device to a network for remote management using a Telnet client, the Simple Network Management Protocol (SNMP), or other management agents. The management port (mgmt0) is autosensing and operates in full-duplex mode at a speed of 10/100/1000 Mb/s.

For more information on the management interface, see the *Cisco Nexus 3400-S NX-OS Fundamentals Configuration Guide* . You will also find information on configuring the IP address and default IP routing for the management interface in this document.

Port-Channel Interfaces

A port channel is a logical interface that is an aggregation of multiple physical interfaces. You can bundle up to 32 individual links to physical ports into a port channel to improve bandwidth and redundancy. You can also use port channeling to load balance traffic across these channeled physical interfaces. For more information about port-channel interfaces, see the "Configuring Port Channels" section.

Subinterfaces

You can create virtual subinterfaces on a parent interface configured as a Layer 3 interface. A parent interface can be a physical port. Subinterfaces divide the parent interface into two or more virtual interfaces on which you can assign unique Layer 3 parameters such as IP addresses and dynamic routing protocols.

Loopback Interfaces

A virtual loopback interface is a virtual interface with a single endpoint that is always up. Any packet that is transmitted over a virtual loopback interface is immediately received by that interface. Loopback interfaces emulate a physical interface. For more information about subinterfaces, see the "Loopback Interfaces" section.

Breakout Interfaces

Cisco NX-OS supports the breakout of high bandwidth 100G and 400G interfaces at the module level or at the per-port level.

Information about Breakout Interfaces

The Cisco Nexus 3408-S switch is a 4-Rack-Unit (RU) with 8-slot chassis with the flexibility of 100G or 400G Line-Card Expansion Modules (LEMs) offering 128 ports of 100G or 32 ports of 400G. The Cisco Nexus 3408-S and 3432D-S switches support the breakout feature. Breakout enables a 100 Gigabit and 400 Gigabit Ethernet port to be split into independent and logical Ethernet ports at module level or at the per-port level.

Cisco Nexus 3408-S switch with NXM-X16C LEM provides 88 non-breakout and 80 breakout ports. A Cisco Nexus 3408-S switch with NXM-X4D LEM provides 128 breakout ports. On a 400G LEM, breakout is supported on all the slots. The NXM-X16C LEM has 16 QSFP28 ports and the NXM-X4D LEM has 4 QSFP-DD.

Beginning Cisco NX-OS Release 9.3(5), a Cisco Nexus 3408-S switch supports a maximum of 168 breakout ports. In the default hardware profile mode, 128 x 100G - 32 x 400G, the number of ports with breakout capability is limited. Out of the total 168 ports, it supports 88 non-breakout and 80 breakout ports. In the 160 x 25G + 8 x 100G hardware profile mode, the range of ports with breakout capability is large and it supports 8 non-breakout and 160 breakout ports.

Note When the Breakout feature is configured, the configuration for the corresponding interface is removed.

With the Cisco Nexus 3400-S switch, following breakout modes are supported on a 40 Gigabit Ethernet port:

- 40G to 4x10G breakout ports
    - Enables the breakout of 40G ports into 4 X 10G ports.
    - Use the interface breakout module 1 port x map 10g-4x command.

With the Cisco Nexus 3400-S switch, following breakout modes are supported on a 100 Gigabit Ethernet port:

- 100G to 2x50G breakout ports
    - Enables the breakout of 100G ports into 2 X 50G ports.
    - Use the interface breakout module 1 port x map 50g-2x command.

- 100G to 4x25G breakout ports
    - Enables the breakout of 100G ports into 4 X 25G ports.

  • Use the interface breakout module 1 port x map 25g-4x command

With the Cisco Nexus 3400-S switch, following breakout modes are supported on a 400 Gigabit Ethernet port:

  • 400G to 2x200G breakout ports

    • Enables the breakout of 400G ports into 2 X 200G ports.

    • Use the interface breakout module 1 port x map 200g-2x command.

  • 400G to 4x100G breakout ports

    • Enables the breakout of 400G ports into 4 X 100G ports.

    • Use the interface breakout module 1 port x map 100g-4x command

  • 400G to 4x50G breakout ports

    • Enables the breakout of 400G ports into 4 X 50G ports.

    • Use the interface breakout module 1 port x map 50g-4x command

The Cisco Nexus 3432D-S switch is a 1-Rack-Unit (RU) with the flexibility of 40G, 100G and 400G offering 168 ports of 100G or 32 ports of 400G. The Cisco Nexus 3432D-S switch support the breakout feature. Breakout enables a 100 and 400 Gigabit Ethernet port to be split into independent and logical Ethernet ports at module level or at the per-port level.

With the Cisco Nexus 3432D-S switch, following breakout modes are supported on a 40 Gigabit Ethernet port:

  • 40G to 4x10G breakout ports

    • Enables the breakout of 40G ports into 4 X 10G ports.

    • Use the interface breakout module 1 port x map 10g-4x command.

With the Cisco Nexus 3432D-S switch, following breakout modes are supported on a 100 Gigabit Ethernet port:

  • 100G to 2x50G breakout ports

    • Enables the breakout of 100G ports into 2 X 50G ports.

    • Use the interface breakout module 1 port x map 50g-2x command.

  • 100G to 4x25G breakout ports

    • Enables the breakout of 100G ports into 4 X 25G ports.

    • Use the interface breakout module 1 port x map 25g-4x command

With the Cisco Nexus 3432D-S switch, following breakout modes are supported on a 400 Gigabit Ethernet port:

  • 400G to 2x200G breakout ports

- Enables the breakout of 400G ports into 2 X 200G ports.

- Use the interface breakout module 1 port x map 200g-2x command.

- 400G to 4x100G breakout ports

  - Enables the breakout of 400G ports into 4 X 100G ports.

  - Use the interface breakout module 1 port x map 100g-4x command

- 400G to 4x50G breakout ports

  - Enables the breakout of 400G ports into 4 X 50G ports.

  - Use the interface breakout module 1 port x map 50g-4x command

Beginning with Cisco NX-OS Release 9.3(4), Cisco Nexus 3408-S switch provides two different modes of operation:

- Mode 1 (default mode): 128 * 100G - 32 * 400G (128x100G | 32x400G)

  - Hardware profile portmode 128x100G - 32x400G

- Mode 2: 128 * 100G - 30 * 400G + 2 * 200G (128x100G | 30x400G + 2x200G)

  - Hardware profile portmode 128x100G - 30x400G + 2x200G

Beginning with Cisco NX-OS Release 9.3(5), Cisco Nexus 3408-S switch provides the following third mode of operation:

- Mode 3: 160 * 10G/25G breakout + 8 * 100G | 6 * 400G non-breakout port mode

  - Hardware profile portmode 160 x 25G + 8 x 100G

Note To change port mode, use the hardware profile portmode command. You must copy the running configuration and startup configuration by using the copy running-config startup-config command and reload the switch for the command to take effect. All interface configurations will be purged after reload.

This example shows how to change the hardware profile port mode. When you change the port mode, you get a warning message.

```
switch(config)# hardware profile portmode 128x100g-30x400g+2x200g

Warning: This command needs immediate copy r s and reload to take effect.
It will reset all interface config and port capabilities. User has to redo the interface
configurations.
Are you sure you want to proceed [y/n]: [n] y

switch(config)# copy running-config startup-config
```

Beginning with Cisco NX-OS Release 9.3(3), the 100G ports in Cisco Nexus 3432D-S switch support speed of 50G. On a 100G port, you can configure both 100G and 50G speeds. The speed 50G configuration does not apply to ports that are already a part of the breakout configuration.

This example shows how to enable 50G speed:

```
switch(config-if)# speed ?
50000   50Gb/s
switch(config-if)# speed 50000
switch(config-if)# no shut
switch(config-if)# show interface e1/1 brief
--------------------------------------------------------------------------------
Ethernet      VLAN    Type Mode    Status  Reason                  Speed      Port Interface
 Ch#
--------------------------------------------------------------------------------
Eth1/1        --      eth  routed up       none                               50G(D) --
Eth1/2        --      eth  routed up       none                               50G(D) --

switch(config-if-range)# show interface e1/1-2 status
--------------------------------------------------------------------------------
Port            Name                Status    Vlan    Duplex  Speed   Type
--------------------------------------------------------------------------------
Eth1/1          --                  connected routed  full    50G     QSFP-100G-AOC1M
Eth1/2          --                  connected routed  full    50G     QSFP-100G-AOC1M
```

This example shows how to disable 50G speed:

```
switch(config)# int e1/1
switch(config-if)# no speed

switch(config)# show interface e1/1
 Ethernet1/1 is down
 admin state is down, Dedicated Interface
 Hardware: 10000/25000/40000/50000/100000/200000/400000 Ethernet, address: 0c65.bd37.1ff7
(bia 0c65.bd37.1ff8)
 MTU 1500 bytes, BW 50000000 Kbit, DLY 10 usec
 reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, medium is broadcast
 auto-duplex, auto-speed, media type is 100G
 Beacon is turned off
 Auto-Negotiation is turned off  FEC mode is Auto

switch(config)# show running-config interface e1/1
!Command: show running-config interface Ethernet1/1
!Running configuration last done at: Fri Dec  6 19:10:30 2019
!Time: Fri Dec  6 23:09:14 2019
version 9.3(3) Bios:version 05.39
interface Ethernet1/1
```

The following example shows that you cannot configure **speed 50000** on a broken out port.

```
switch(config)# interface breakout module 1 port 51,52 map 25g-4x
switch(config)# config
switch(config)# interface ethernet 1/51/1-4, ethernet 1/52/1-4
switch(config-if-range)# no sh
switch(config-if-range)# show interface ethernet 1/51/1-4, ethernet 1/52/1-4 b

--------------------------------------------------------------------------------
Ethernet VLAN Type Mode Status Reason Speed Port
Interface Ch #
--------------------------------------------------------------------------------
Eth1/51/1 -- eth routed up none 25G(D) --
Eth1/51/2 -- eth routed up none 25G(D) --
Eth1/51/3 -- eth routed up none 25G(D) --
Eth1/51/4 -- eth routed up none 25G(D) --
Eth1/52/1 -- eth routed up none 25G(D) --
Eth1/52/2 -- eth routed up none 25G(D) --
Eth1/52/3 -- eth routed up none 25G(D) --
Eth1/52/4 -- eth routed up none 25G(D) --

switch(config-if-range)# show cdp neighbors interface ethernet 1/51/1-4
```

```
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
S - Switch, H - Host, I - IGMP, r - Repeater,
V - VoIP-Phone, D - Remotely-Managed-Device,
s - Supports-STP-Dispute

Device-ID Local Intrfce Hldtme Capability Platform Port ID
switch(FOC23183Y8G) Eth1/51/1 164 R S s N3K-3432D-S- Eth1/52/1
switch(FOC23183Y8G) Eth1/51/2 164 R S s N3K-3432D-S- Eth1/52/2
switch(FOC23183Y8G) Eth1/51/3 164 R S s N3K-3432D-S- Eth1/52/3
switch(FOC23183Y8G) Eth1/51/4 164 R S s N3K-3432D-S- Eth1/52/4

Total entries displayed: 4
switch(config-if-range)# interface ethernet 1/51/1
switch(config-if)# speed 50000
interface[eth1/51/1] Speed is 50G, but the port doesn't support this speed
```

Beginning with Cisco NX-OS Release 9.3(5), the 40G ports in Cisco Nexus 3408-S switch support native speed of 40G with a 40G SFP in a 100G LEM. The native 40G speed is achieved by breaking out port with the command **map 40G-1x**. The speed 40G configuration does not apply to ports that are already a part of the breakout configuration. This feature is supported only on odd-numbered ports. All the corresponding even-numbered ports will be blocked. For example if you configure 40G on 1/1, then 1/2 will be purged.

This example shows how to configure 40G speed:

```
switch(config)# sh interface status
--------------------------------------------------------------------------------
Port Name Status Vlan Duplex Speed Type
--------------------------------------------------------------------------------
mgmt0 -- connected routed full 1000 --

--------------------------------------------------------------------------------
Port Name Status Vlan Duplex Speed Type
--------------------------------------------------------------------------------
Eth1/1 -- notconnec routed auto auto QSFP-40G-CR4
Eth1/2 -- xcvrAbsen routed auto auto --
Eth1/3 -- notconnec routed auto auto QSFP-40G-CR4
Eth1/4 -- notconnec routed auto auto QSFP-100G-CR4
```

This example shows how to configure breakout:

```
switch(config-if)# interface breakout module 1 port 1 map 40g-1x
Warning: Interface: eth1/2 is purged
switch(config-if)# interface breakout module 1 port 3 map 40g-1x
Warning: Interface: eth1/4 is purged
switch(config)# interface ethernet 1/1/1, ethernet 1/3/1
switch(config-if-range)# no shut

switch(config)# sh interface status
```

The following example displays the interface status and brief summary after the configuration:

```
switch(config)# sh interface status

--------------------------------------------------------------------------------
Port Name Status Vlan Duplex Speed Type
--------------------------------------------------------------------------------
mgmt0 -- connected routed full 1000 --

--------------------------------------------------------------------------------
Port Name Status Vlan Duplex Speed Type
```

```
-------------------------------------------------------------------------------
Eth1/1/1 -- connected routed full 40G QSFP-40G-CR4
Eth1/3/1 -- connected routed full 40G QSFP-40G-CR4
Eth1/5 -- xcvrAbsen routed auto auto --
Eth1/6 -- xcvrAbsen routed auto auto --

switch(config-if-range)# sh interface brief


-------------------------------------------------------------------------------
Port VRF Status IP Address Speed MTU
-------------------------------------------------------------------------------
mgmt0 -- up 100.192.360.114 1000 1500
-------------------------------------------------------------------------------
Ethernet VLAN Type Mode Status Reason Speed Port
Interface Ch #
-------------------------------------------------------------------------------
Eth1/1/1 -- eth routed up none 40G(D) --
Eth1/3/1 -- eth routed up none 40G(D) --
Eth1/5 -- eth routed down XCVR not inserted auto(D) --
Eth1/6 -- eth routed down XCVR not inserted auto(D) --
```

Limitations for Breakout

The following limitations apply for breakout ports in mode 1 (default mode):

- • An 8 slots chassis with 100G LEM can support 80 breakout ports and 88 non-breakout ports. Breakout is not supported on slots 2,3,6 and 7; it is supported only on slots 1,4,5 and 8. The port numbers may differ based on the type of breakout. The number of ports supported in each slot in a 4 x 25G/10G (100G LEM) breakout configuration is as follows:

  - **Slot 1**: 4 Ports — 1/1, 1/3, 1/5, 1/7 : 16 breakout ports

  - **Slot 4**: 2 Ports — 4/1, 4/3 : 8 breakout ports

  - **Slot 5**: 8 Ports — 5/1, 5/3, 5/5, 5/7, 5/9, 5/11, 5/13, 5/15 : 32 breakout ports

  - **Slot 8:** 6 Ports — 8/1, 8/3, 8/5, 8/7, 8/9, 8/11 : 24 breakout ports

  The number of ports supported in each slot in a 2 x 50G (100G LEM) breakout configuration is as follows. 2x50G breakout cannot is not supported on odd ports of 100G LEM because of hardware limitations.

  - **Slot 1**: 8 ports : 1/1-8 : 16 breakout ports

  - **Slot 4**: 4 ports : 4/1-4 : 8 breakout ports

  - **Slot 5**: 16 ports : 5/1-16. : 32 breakout ports

  - **Slot 8**: 12 ports : 8/1-12. : 24 breakout ports

- The following limitations apply for breakout ports in mode 2:

- An 8 slots chassis with 100G LEM can support 80 breakout ports and 88 non-breakout ports. Breakout is not supported on slots 2,3,6 and 7; it is supported only on slots 1,4,5 and 8. The port numbers may differ based on the type of breakout. The number of ports supported in each slot in a 4 x 25G/10G (100G LEM) breakout configuration is as follows:

- **Slot 1**: 4 Ports — 1/1, 1/3, 1/5, 1/7 : 16 breakout ports

- **Slot 4**: 2 Ports — 4/1, 4/3 : 8 breakout ports

- **Slot 5**: 6 Ports — 5/1, 5/3, 5/5, 5/7, 5/9, 5/15 : 24 breakout ports

- **Slot 8:** 5 Ports — 8/1, 8/3, 8/5, 8/7, 8/9 : 20 breakout ports

The number of ports supported in each slot in a 2 x 50G (100G LEM) breakout configuration is as follows. 2x50G breakout cannot is not supported on odd ports of 100G LEM because of hardware limitations.

- **Slot 1**: 8 ports : 1/1-8 : 16 breakout ports

- **Slot 4**: 4 ports : 4/1-4 : 8 breakout ports

- **Slot 5**: 12 ports : 5/1-10, 5/15-16. : 24 breakout ports

- **Slot 8:** 10 ports : 8/1-10 : 20 breakout ports

✎

Note   If you are using 400G in slots 1/3 and 5/3, the speed is limited to 200G.

- A 4 x 25G/10G breakout requires 4 individual lanes of MAC. But in this architecture, the 100G port has only two PAM4 lanes in the MAC. Due to this architecture limitation, for a 4 x 25G/10G breakout in an odd-numbered port, the adjacent two lanes of even-numbered port is used. Odd-numbered ports support both 4 x 25G/10G and 2 x 50G breakouts Even-numbered ports support only 2 x 50G breakout. If a 2 x 50G breakout is configured on an even-numbered port, then a 4 x 25G breakout in its adjacent odd port will be blocked. For example, if you configure a 4 x 25G/10G breakout in 1/1, then 1/2 will be purged. But if a 2 x 50G breakout is already configured on 1/2, then 4 x 25/10G configuration on 1/1 will be blocked.

- When a breakout port is configured as a part of a port-channel, you must apply the configuration twice (after write-erase/reload), to ensure the effectiveness of the port-channel.

- The following limitations apply for breakout ports in mode 3:

- An 8 slots chassis with 100G LEM can support 160 breakout ports and 8 non-breakout of 100G ports. The port numbers may differ based on the type of breakout. The number of ports supported in each slot in a 4 x 25G/10G (100G LEM) breakout configuration is as follows:

  - **Slot 1**: 8 Ports — 1/1, 1/3, 1/5, 1/7, 1/9, 1/11, 1/13, 1/15 : 32 breakout ports

  - **Slot 2**: 4 Ports — 2/1, 2/3, 2/5, 2/7 : 16 breakout ports

  - **Slot 4**: 8 Ports — 4/1, 4/3, 4/5, 4/7, 4/9, 4/11, 4/13, 4/15 : 32 breakout ports

  - **Slot 5:** 4 Ports — 5/1, 5/3, 5/5, 5/7 : 16 breakout ports

  - **Slot 6:** 8 Ports — 6/1, 6/3, 6/5, 6/7, 6/9, 6/11, 6/13, 6/15 : 32 breakout ports

  - **Slot 8:** 8 Ports — 8/1, 8/3, 8/5, 8/7, 8/9, 8/11, 8/13, 8/15 : 32 breakout ports

The number of ports supported in each slot in a 2 x 50G (100G LEM) breakout configuration is as follows. 2x50G breakout is not supported on odd ports of 100G LEM because of hardware limitations.

  - **Slot 1**: 8 Ports — 1/2, 1/4, 1/6, 1/8, 1/10, 1/12, 1/14, 1/16 : 16 breakout ports

- **Slot 2**: 4 Ports — 2/2, 2/4, 2/6, 2/8 : 8 breakout ports

- **Slot 4**: 8 Ports — 4/2, 4/4, 4/6, 4/8, 4/10, 4/12, 4/14, 4/16 : 16 breakout ports

- **Slot 5:** 4 Ports — 5/2, 5/4, 5/6, 5/8 : 8 breakout ports

- **Slot 6:** 8 Ports — 6/2, 6/4, 6/6, 6/8, 6/10, 6/12, 6/14, 6/16 : 16 breakout ports

- **Slot 8:** 8 Ports — 8/2, 8/4, 8/6, 8/8, 8/10, 8/12, 8/14, 8/16 : 16 breakout ports

Note   On a 400G LEM, the slots 3 and 7, the ports e3/2 and Eth7/2 are not available for use. Breakout is not supported on the ports 3/1, 3/3-4 and eth7/1, 7/3-4.

On 100G LEM, in slots 3 and 7, the ports 3/1-4, 3/9-16 and 7/1-4, 7/9-16 are not available for use. Breakout is not supported on the ports e3/5-8 and Eth7/5-8 .

On 100G LEM in slots 2 and 5, the ports 2/9-16 and 5/9-16 are not available for use.

Configuring Breakout on a Port

SUMMARY STEPS

1. **configure terminal**
2. **interface breakout module** *slot* **port** *port-range* **map 50g-2x**
3. **(Optional) copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal**	Enters global configuration mode.
Step 2	**interface breakout module** *slot* **port** *port-range* **map 50g-2x**	Configures the Breakout feature for a port. . • *slot*—Slot number of port depending on the chassis model. • • *port-range* —Single port or range of ports on which breakout is configured.
Step 3	**(Optional) copy running-config startup-config**	Saves the changes by copying the running configuration to the startup configuration.

Example

This example shows how to break out a 100 Gigabit Ethernet port into two 50 Gigabit Ethernet ports:

```
switch# configure terminal
switch(configure)# interface breakout module 1 port 1-2 map 50g-2x
```

```
switch(configure)# copy running-config startup-config
switch(configure)#
```

This example shows how to break out a 100 Gigabit Ethernet port into two 25 Gigabit Ethernet ports:

```
switch# configure terminal
switch(configure)# interface breakout module 1 port 1-4 map 25g-4x
switch(configure)# copy running-config startup-config
switch(configure)#
```

This example of the show interface command displays all the information specific to the ethernet interface 5/9-10 b:

```
switch# show interface ethernet 5/9-10 b
-----------------------------------------------------------------------------------
Ethernet VLAN Type Mode Status Reason Speed Port
Interface Ch#
-----------------------------------------------------------------------------------
Eth5/9 -- eth routed up none 100G(D) --
Eth5/10 -- eth routed up none 100G(D) --
fs1(config)# interface breakout module 5 port 9-10 map 25g-4x
Error: Breakout map not supported for slot 5 port 10

After breakout
Eth5/9/1 -- eth routed down Administratively down auto(D) --
Eth5/9/2 -- eth routed down Administratively down auto(D) --
Eth5/9/3 -- eth routed down Administratively down auto(D) --
Eth5/9/4 -- eth routed down Administratively down auto(D) --
Eth5/11 -- eth routed down Link not connected auto(D) --
Eth5/12 -- eth routed down Link not connected auto(D) --
```

This example of the show interface command displays all the information specific to the interfaces ethernet 5/9 and ethernet 5/10/1-2 b:. The error message indicates that you cannot apply the configuration on an already broken out port:

```
switch# show interface ethernet 5/9-10 b
-----------------------------------------------------------------------------------
Ethernet VLAN Type Mode Status Reason Speed Port
Interface Ch#
-----------------------------------------------------------------------------------
Eth5/9 -- eth routed down Administratively down auto(D) --
Eth5/10/1 -- eth routed down Administratively down auto(D) --
Eth5/10/2 -- eth routed down Administratively down auto(D) --

switch (config)# interface breakout module 5 map port
switch (config)# interface breakout module 5 port 9 map 25g-4x
Error: Next port already broken out. Config cannot be applied
```

Removing the Breakout Configuration

SUMMARY STEPS

1. **configure terminal**
2. **no interface breakout module** *slot* **port** *port-range* **map 50g-2x**
3. **(Optional) copy running-config startup-config**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**configure terminal**	Enters global configuration mode.
Step 2	**no interface breakout module** *slot* **port** *port-range* **map 50g-2x**	Removes the breakout configuration for a port module and returns the interface to 100 Gigabit Ethernet mode of operation. • *slot*—Slot number of port depending on the chassis model. • • *port-range* —Single port or range of ports.
Step 3	**(Optional) copy running-config startup-config**	Saves the changes by copying the running configuration to the startup configuration.

Example

This example shows how to remove the breakout configuration in a port and return to the 100 Gigabit Ethernet mode of operation.

```
switch# configure terminal
switch(configure)# no interface breakout module 1 port 1-2 map 50g-2x
switch(configure)# copy running-config startup-config
switch(configure)#
```

Verifying a Breakout Configuration

Removing the Breakout Configuration

SUMMARY STEPS

1. **configure terminal**
2. **show interface eth1/1 capabilities**
3. **show interface brief**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**configure terminal**	Enters global configuration mode.
Step 2	**show interface eth1/1 capabilities**	Displays information about the interface configuration.
Step 3	**show interface brief**	Displays a brief summary of the interface configuration.

Example

This example shows how to verify a breakout configuration for an interface:

```
switch# show interface ethernet 1/1 capabilities | i Breakout
Breakout capable:      yes
```

Virtual Device Contexts

Cisco NX-OS can segment operating system and hardware resources into virtual device contexts (VDCs) that emulate virtual devices. The Cisco Nexus 3400-S switch does not support multiple VDCs. All switch resources are managed in the default VDC.

High Availability for Interfaces

Interfaces support stateful and stateless restarts. A stateful restart occurs on a supervisor switchover. After the switchover, Cisco NX-OS applies the runtime configuration.