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Introduction

Despite running similar code, the different varieties of Nexus 3000 and Nexus 9000 series switches have different commands for breaking out the 40G interfaces. This document will provide a consolidated view of break out configuration for specfic platforms.

Prerequisites

Requirements

Cisco recommends that you have basic knowledge of these topics

- Cisco Nexus 3000/9000 Series interface configuration

Nexus 3000 Series Switches

Nexus 3064

The 3064 supports breakout, however, the QSFP ports can not be broken out independently. You must break them all out to 10GB or configure them all in 40 GB. This is done by setting the hardware profile mode:

```
N3064(config)# hardware profile portmode ?
  16x10g+12x40g  16x10G+12x40G port mode
  16x40g         16x40G port mode
  32x10g+8x40g   32x10G+8x40G port mode
  48x10g+4x40g   48x10G+4x40G port mode
  52x10g+3x40g   52x10G+3x40G port mode
  56x10g+2x40g   56x10G+2x40G port mode
  60x10g+1x40g   60x10G+1x40G port mode
```

```
  64x10g          64x10G port mode
  8x10g+14x40g    8x10g+14x40G port mode
```

Note that even though the command help gives the option to breakout the ports individually, this won't actually work. The options that work are 48x10g+4x40g or 64x10g.

The switch must be reloaded for the change to take effect.

Nexus 3132

On the 3132, the 40G ports can be broken out independently. However, like the 3064 switch, it also has a hardware profile mode that must be set:

```
N3132Q(config)# hardware profile portmode ?
  24x40g       24x40G non-oversubscribed breakout port mode
  26x40g       26x40G oversubscribed breakout port mode
  32x40g       32x40G oversubscribed breakout port mode
  fixed32x40g  32x40G oversubscribed fixed port mode
```

In the fixed 32x40G mode, the ports can not be broken out. In the other modes, the ports can be broken out individually by setting the "speed 10000" command. However, only the first 24 ports can be broken out, except in 26x40G mode, where all available ports can be broken out.

They can be recollapsed using "speed 40000" command. This does not require a switch reload. Like the 3064 switch, setting the hardware profile mode requires a reload.

The 3132 also has 4 SFP+ ports which are interlaced with the first QSFP port. This means you can use either the first QSFP port or the 4 SFP+ ports, but not both.

By default the QSFP port is turned on. You can enable the SFP+ ports with this command:

```
N3132Q(config)# hardware profile front portmode ?
  qsfp       Front panel QSFP port 1 is active
  sfp-plus   Front panel SFP+ (1-4) ports are active
```

However, you can not set the SFP+ port mode while using the fixed 32x40G hardware profile.

Nexus 3164

The Cisco Nexus 3164Q switch supports breakout interfaces beginning with Cisco NX-OS Release 6.1(2)I2(2b). The interface breakout module command splits each of the Cisco Nexus 3164Q switch's 64 40G interfaces into 4 10G interfaces,
for a total of 256 10G interfaces. After you enter this command, you must copy the running configuration to the startup configuration and reload the device. Breakout support for Cisco NX-OS Releases prior to 7.0(3)I1(1) is at the
module level, applying to all ports of the module. Beginning with Cisco NX-OS Release 7.0(3)I1(1), you can break out any number of ports.

To breakout on a per-module basis, use the command.

```
interface breakout module 1
```
Individual ports can be broken out with the below command

```
interface breakout module 1 port <x> map 10g-4x
```
Use the "no" form of this command to collapse the port.

Nexus 3172

The 3172 has a single hardware profile, 48X10G+breakout6x40g. The 40GB ports can be broken out individually with the "speed 10000" command.
They can be collapsed with the "speed 40000" command.

Nexus 3232C

The Cisco Nexus 3232C switch supports breakout interfaces. The command splits each of the switch's 40G ports into four 10G ports (breakout ports) or each of the switch's 100G ports into four 25G ports or two 50G ports. The port range is from 1 to 32.

```
interface breakout module 1 port <x> map {10g-4x | 25g-4x | 50g-2x}
```
Nexus 3264Q

The 3264 supports breakout as of 7.0(2)I3(1). However, this switch can only support 128 logical ports, so each 40GB interface can only be broken out into 2x10GB mode. At this time, breakout of a port to 4x10GB mode is not supported.

Nexus 9000 Series Switches

Nexus 9332

The 9332 supports breakout on ports 1-12 and ports 15-26. The ports can be broken out individually with the

```
interface breakout module 1 port <x> map 10g-4x
```
 Use the "no" form of this command to collapse the port.

Nexus 93XX Switches

These platforms does not support breakout of the 40G ports. However, you can use the QSA adapter to convert a 40G port into a 10G port. The QSA adapter can only be used at 10G-it does not work for 1G speed.

Nexus 9500

The 9636PQ, 9432PQ, and 9536PQ line cards support breakout. They can be broken out on a per-module basis with the command.

```
interface breakout module <x>
```
 Individual ports can be broken out with the command.

```
interface breakout module 1 port <x> map 10g-4x
```
 Use the "no" form of these commands to collapse the ports.