

# Cumulus OS NVUE and ports configuration

Using Cumulus commands and configuring switch ports

Lenovo

## NVUE CLI

NVUE commands all begin with `nv` and fall into one of three syntax categories:

- Configuration: `nv set/unset`
- Monitoring: `nv show`
- Configuration management: `nv config`

Command completion: As you enter commands, you can get help with valid keywords or options by using the tab key.

Command help: As you enter commands, you can get help with command syntax by entering `-h` or `--help` – for example: `nv set interface -h`

Command list: You can list all the NVUE commands by entering `nv list-commands`.

Command history: At the command prompt, press the up and down arrow keys to move through the list of previously entered commands.

## Enabling a port and testing cable connectivity

By default, Cumulus Linux disables all data plane ports (every Ethernet port except the management interface – eth0). To test cable connectivity, administratively enable physical ports. To enable a port, use one of the following methods:

- NVUE commands:

```
cumulus@switch:~$ nv set interface swp1 for a single port
```

```
cumulus@switch:~$ nv set interface swp1-60 for all ports
```

```
cumulus@switch:~$ nv config apply
```

To check link status, run the `nv show interface` command.

## Layer 2 port configuration

Cumulus Linux does not put all ports into a bridge by default. Use one of the following procedures to create a bridge and configure one or more front panel ports as members of the bridge. In the following examples, the bridge is named `br_default`.

- NVUE commands

To configure a single port, swp1:

```
cumulus@switch:~$ nv set interface swp1 bridge domain  
br_default cumulus@switch:~$ nv config apply
```

To configure a range of ports – in this example, ports swp1 through swp3, swp6, and swp14 through swp20:

```
cumulus@switch:~$ nv set interface swp1-3,swp6,swp14-20 bridge  
domain br_default
```

To check link status, run the `nv show interface` command.

## Configuring breakout ports with splitter cables

The SN5600 64 OSFP interfaces support speeds down to 10 G. For 1 G operation, the SFP28 port must be used.

The switch has a limit of 256 logical ports (plus 1 SFP28 25 GbE port). Lanes on each port run at a maximum speed of 100 G PAM4.

If a physical port is split into 64 interfaces, you must disable the adjacent port.

For example, when splitting port 1 into eight 50 G interfaces, you must disable port 2 in the `/etc/cumulus/ports.conf` file:

```
1=8x100G
```

```
2=disabled
```

All 64 OSFP ports can be split into two or four ports without disabling any ports.

## Using NVUE to configure breakout ports

By default, Cumulus Linux disables all data plane ports (every Ethernet port except the management interface – eth0). To configure a breakout port, use the following NVUE commands:

```
cumulus@switch:~$ nv set interface swp1 link breakout 2x400G
cumulus@switch:~$ nv config apply
```

**To remove a breakout port:**

- **Run the `nv unset interface <interface>` command – for example:**

```
cumulus@switch:~$ nv unset interface swp1s0
cumulus@switch:~$ nv unset interface swp1s1
cumulus@switch:~$ nv config apply
```

- **Run the `nv unset interface <interface> link breakout` command to configure the interface for the original speed – for example:**

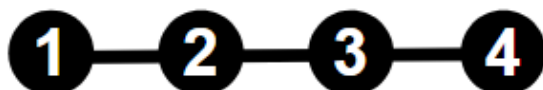
```
cumulus@switch:~$ nv unset interface swp1 link breakout
cumulus@switch:~$ nv config apply
```

## Using Linux to configure breakout ports

Cumulus Linux 5.4 and later versions use a new format for port splitting. To split ports, users have to edit the `/etc/network/ports` file in a text editor and use the `/etc/network/interfaces` command to set an interface speed parameter. The following example illustrates the procedure used to configure breakout port 1 into four interfaces and set the speed of each interface.

Click each number in turn to see the procedure.

Step




## Using Linux to configure breakout ports

**Step 1:** Edit the `/etc/cumulus/ports.conf` file as follows:

```
cumulus@switch:~$ sudo cat /etc/cumulus/ports.conf  
...  
1=2x400G  
2=800G  
3=800G  
4=400G  
...
```

**Note:** `1=4x` means splitting port 1 into four ports, and `2=1x` means port 2 is not split and will keep the default port setting. The SN5600 supports 1x, 2x, 4x, and 8x.

Step 



## Using Linux to configure breakout ports

**Step 2:** Reload `switchd` with the `sudo systemctl reload switchd.service` command. The reload does not interrupt network services.

```
cumulus@switch:~$ sudo systemctl reload switchd.service
```

Step



# Using Linux to configure breakout ports

**Step 3:** To configure specific speeds for the split ports, edit the `/etc/network/interfaces` file, and then run the `ifreload -a` command. In the following example, the speed of each swp1 breakout port (swp1s0, swp1s1, swp1s2, and swp1s3) is configured to 10 G with auto-negotiation off.

```
cumulus@switch:~$ sudo cat /etc/network/interfaces
...
auto swp1s0
iface swp1s0
    link-speed 10000
    link-duplex full
    link-autoneg off
auto swp1s1
iface swp1s1
    link-speed 10000
    link-duplex full
    link-sw1s2autoneg off
```

Step



## Using Linux to configure breakout ports

```
iface swp1s1
    link-speed 10000
    link-duplex full
    link-swp1s2autoneg off
auto
iface swp1s2
    link-speed 10000
    link-duplex full
    link-autoneg off
auto swp1s3
iface swp1s3
    link-speed 10000
    link-duplex full
    link-autoneg off
...
```

Step



## Using Linux to configure breakout ports

**Step 4:** Users can also run the `nv set interface <interface> link speed <speed>` NVUE command to configure each port before running the `ifreload -a` command.

Step **1**—**2**—**3**—**4**

