

## 10.5.2 Assigning a MAC Address to an Interface

Ethernet and Management interfaces are assigned a MAC address when manufactured. This address is the **burn-in address**. The **mac-address** command assigns a MAC address to the configuration mode interface in place of the burn-in address. The **no mac-address** command reverts the interface's current MAC address to its burn-in address.

### Examples

- This command assigns the MAC address of **001c.2804.17e1** to Ethernet interface 7.  
switch(config-if-Et7)#mac-address 001c.2804.17e1
- This command displays the MAC address of Ethernet interface 7. The active MAC address is **001c.2804.17e1**. The burn-in address is **001c.7312.02e2**.

```
switch(config-if-Et7)#show interface ethernet 7
Ethernet7 is up, line protocol is up (connected)
    Hardware is Ethernet, address is 001c.2804.17e1 (bia 001c.7312.02e2)
    Description: b.e45
    <-----OUTPUT OMITTED FROM EXAMPLE----->
```

```
switch(config-if-Et7)#

```

## 10.5.3 Port Groups (QSFP+ and SFP+ Interface Selection)

Several of Arista's fixed switches limit the number of 10G data lanes in operation through the use of port groups. A port group is a set of interfaces that can be configured as four SFP+ interfaces or a single QSFP+ interface. When configured in SFP+ mode, the port group enables 4 standalone 10GbE interfaces using SFP+ optics. When configured in QSFP+ mode, the port group enables a single QSFP+ interface (in addition to the dedicated QSFP+ ports), which can operate as a single 40GbE port, or as four 10GbE ports with the appropriate breakout cabling.

Hardware port groups are used on the following systems:

- DCS-7050Q-16
- DCS-7050QX-32S

Use the **hardware port-group** command to select the interface mode for the specified port group.

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**Important!** The **hardware port-group** command restarts the forwarding agent, which disrupts traffic on all switch ports.

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### Example

- These commands configure the DCS-7050-Q16 switch to enable four SFP+ interfaces and one extra QSFP+ interface by enabling the SFP+ interfaces in port group 1 and the QSFP+ interface in port group 2.

```
switch(config)#hardware port-group 1 select Et17-20
switch(config)#hardware port-group 2 select Et16/1-4
```

The **show hardware port-group** command displays the status of ports in the port groups.

**Example**

- This command displays the status of the flexible ports within the two port groups on a DCS-7050Q-16 switch.

```
switch#show hardware port-group

Portgroup: 1      Active Ports: Et17-20
Port          State
-----
Ethernet17     Active
Ethernet18     Active
Ethernet19     Active
Ethernet20     Active
Ethernet15/1   ErrDisabled
Ethernet15/2   ErrDisabled
Ethernet15/3   ErrDisabled
Ethernet15/4   ErrDisabled

Portgroup: 2      Active Ports: Et16/1-4
Port          State
-----
Ethernet16/1   Active
Ethernet16/2   Active
Ethernet16/3   Active
Ethernet16/4   Active
Ethernet21     ErrDisabled
Ethernet22     ErrDisabled
Ethernet23     ErrDisabled
Ethernet24     ErrDisabled
```

**10.5.3.1 DCS-7050Q-16**

The DCS-7050Q-16 has 14 dedicated QSFP+ ports, plus two port groups. The port groups support either two additional QSFP+ ports or eight SFP+ ports as shown in [Table 10-3](#).

**Table 10-3 DCS-7050Q-16 Port Groups**

<b>Port Group 1</b>		<b>Port Group 2</b>	
<b>Active Interface(s)</b>		<b>Active Interface(s)</b>	
In SFP+ Mode	In QSFP+ Mode (Default)	In SFP+ Mode	In QSFP+ Mode (Default)
Et17-20 (four SFP+ ports)	Et15/1-4 (one QSFP+ port)	Et21-24 (four SFP+ ports)	Et16/1-4 (one QSFP+ port)

**10.5.3.2 DCS-7050QX-32S**

The DCS-7050QX-32S has 31 dedicated QSFP+ ports, plus one port group. The port group supports either one additional QSFP+ port or four SFP+ ports as shown in [Table 10-4](#).

Table 10-4 DCS-7050QX-32S Port Groups

Port Group 1 Active Interface(s)	
In SFP+ Mode	In QSFP+ Mode (Default)
Et1-4 (four SFP+ ports)	Et5/1-4 (one QSFP+ port)

#### 10.5.4 Referencing Modular Ports

Arista modular switches provide port access through installed line cards. The maximum number of line cards on a modular switch varies with the switch series and model.

Several CLI commands modify modular parameters for all ports on a specified line card or controlled by a specified chip. This manual uses these conventions to reference modular components:

- *card\_x* refers to a line card.
- *module\_y* refers to a QSFP+ module.
- *port\_z* refers to a line card or module port.

Commands that display Ethernet port status use the following conventions:

- SFP ports: : *card\_x/port\_z* to label the line card-port location of modular ports
- QSFP ports: *card\_x/module\_y/port\_z* to label the line card-port location of modular ports

[Section 10.5.6](#) describe QSFP+ module usage.

#### Example

- This command displays the status of interfaces 1 to 9 on line card 4:

```
switch>show interface ethernet 4/1-9 status
  Port      Name       Status     Vlan      Duplex   Speed Type
  Et4/1          connected    1        full    10G Not Present
  Et4/2          connected    1        full    10G Not Present
  Et4/3          connected    1        full    10G Not Present
  Et4/4          connected    1        full    10G Not Present
  Et4/5          connected    1        full    10G Not Present
  Et4/6          connected    1        full    10G Not Present
  Et4/7          connected    1        full    10G Not Present
  Et4/8          connected    1        full    10G Not Present
  Et4/9          connected    1        full    10G Not Present
switch>
```

#### 10.5.5 Referencing Multi-lane Ports

EOS supports two types of Ethernet ports:

- single-lane (also called fixed-lane)
- multi-lane (also called flexible-lane)

**Single-lane** (or “fixed-lane”) ports are always modeled as a single interface within EOS. While the speed of the interface may be configurable, the physical port can never be broken out into multiple lower-speed interfaces. Single-lane ports use the following naming scheme:

- Ethernet <port #> (for fixed switches)
- Ethernet <module #>/<port #> (for modular switches)

**Multi-lane** (or “flexible lane”) ports are made up of multiple parallel lanes, each served by its own laser. Multi-lane ports can be configured to combine the lanes and operate as a single native high-speed interface (a 40GbE or 100GbE interface), or to operate each lower-speed interface independently (four 10GbE or 25GbE interfaces). Multi-lane ports use the following naming scheme:

- Ethernet <port #>/<lane #> (for fixed switches)
- Ethernet <module #>/<port #>/<lane #> (for modular switches)

The operational state displayed for each lane of a multi-lane port is determined by the configuration applied to the primary lane(s), as shown in **Table 10-5**. When broken out into multiple lower-speed interfaces, all lanes will be active in parallel, and each will display its operational state as **connected** or **not connected**. In high-speed mode, only the primary lane(s) will be displayed as active, with the remaining lanes showing as **errdisabled**. The exception is the CFP2 module: when it is configured as a single 100GbE port, the primary lane is displayed as active in the CLI while the other lanes are hidden.

**Table 10-5 Lane States**

Parent Port Configured Mode	Primary Lane(s)	Secondary Lanes

A multi-lane port is configured as a single high-speed interface or multiple breakout interfaces by using the **speed** command on the primary lane(s) of the port. For specific configuration instructions and details regarding the primary lane(s) of a specific interface, refer to the configuration section for the appropriate interface type:

- QSFP+ Ethernet Port Configuration
- QSFP100 Ethernet Port Configuration
- CFP2 Ethernet Port Configuration
- MXP Ethernet Port Configuration

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**Important!** Use of the **speed** command to configure a multi-lane port is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

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### 10.5.6 QSFP+ Ethernet Port Configuration

Each QSFP+ module contains four data lanes which can be used individually or combined to form a single, higher-speed interface. This allows a QSFP+ Ethernet port to be configured as a single 40GbE interface or as four 10GbE interfaces.

When the four lanes are combined to form a 40GbE interface, display commands will show lane /1 as **connected** or **not connected**, and will show lanes /2 through /4 as **errdisabled**.

The following sections describe the configuration of QSFP+ ports.

### 10.5.6.1 Configuring a QSFP+ Module as a Single 40GbE Interface

To configure the port as a single 40GbE interface, combine the module's four data lanes by using the **speed** command (**speed forced 40g full**) on the port's /1 lane (the primary lane).

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP+ Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 40gfull** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 40gfull
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name       Status     Vlan   Duplex  Speed    Type      Flags
Et1          connected  2        full    1G      10GBASE-T
----->
Et5/1/1      connected  1        full    40G     40GBASE-SR4
Et5/1/2      errdisabled 1        unconf  unconf  40GBASE-SR4
Et5/1/3      errdisabled 1        unconf  unconf  40GBASE-SR4
Et5/1/4      errdisabled 1        unconf  unconf  40GBASE-SR4
----->
```

### 10.5.6.2 Configuring a QSFP+ Module as Four 10GbE Interfaces

To configure the port as four 10GbE interfaces, use the **speed** command (**speed forced 10000full**) on the port's /1 lane (the primary lane).

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP+ Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 10000full** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 10000full
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name       Status     Vlan   Duplex  Speed    Type      Flags
Et1          connected  2        full    1G      10GBASE-T
----->
Et5/1/1      connected  1        full    10G     40GBASE-SR4
Et5/1/2      connected  1        full    10G     40GBASE-SR4
Et5/1/3      connected  1        full    10G     40GBASE-SR4
Et5/1/4      connected  1        full    10G     40GBASE-SR4
----->
```

## 10.5.7 QSFP100 Ethernet Port Configuration

Each QSFP100 module contains four data lanes which can be used individually or combined to form a single, higher-speed interface. This allows a QSFP100 Ethernet port to be configured as a single 100GbE interface, a single 40GbE interface, or four 10GbE interfaces. The default mode is a single 100GbE interface.

The 7060X, 7260X and 7320X platforms also allow a QSFP100 port to be configured as two 50GbE interfaces or four 25GbE interfaces.

When the lanes are combined to form a higher-speed interface, display commands will show the primary lane(s) as **connected** or **not connected**, and will show the other lanes as **errdisabled**.

The following sections describe the configuration of QSFP+ ports.

### 10.5.7.1 Configuring a QSFP100 Module as a Single 100GbE Interface

By default, the QSFP100 module operates as a single 100GbE interface; using the **default speed** or **no speed** command on the primary lane restores the default behavior.

To explicitly configure the port as a single 100GbE interface, combine the module's four data lanes by using the **speed** command (**speed forced 100gfull**) on the port's /1 lane (the primary lane).

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP100 Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 100gfull** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 100gfull
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name       Status     Vlan   Duplex Speed Type      Flags
Et1          Et1      connected    2      full    1G  10GBASE-T
-----OUTPUT OMITTED FROM EXAMPLE-----
Et5/1/1        Et5/1/1  connected    1      full    100G 100GBASE-SR4
Et5/1/2        Et5/1/2  errdisabled  1      unconf  unconf 100GBASE-SR4
Et5/1/3        Et5/1/3  errdisabled  1      unconf  unconf 100GBASE-SR4
Et5/1/4        Et5/1/4  errdisabled  1      unconf  unconf 100GBASE-SR4
-----OUTPUT OMITTED FROM EXAMPLE-----
```

### 10.5.7.2 Configuring a QSFP100 Module as Two 50GbE Interfaces

To configure the port as a two 50GbE interfaces, configure the module's four data lanes by using the **speed** command (**speed forced 50gfull**) on the port's /1 and /3 lanes. This configuration is available on 7060X, 7260X and 7320X platforms.

---

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

---

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP100 Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 50gfull** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 50gfull
```

**Step 3** Repeat the above steps for lane /3.

```
switch(config-if-Et5/1/1)#interface ethernet 5/1/3
switch(config-if-Et5/1/3)#speed forced 50gfull
```

**Step 4** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name          Status       Vlan     Duplex   Speed    Type        Flags
Et1       connected    2           full     1G      10GBASE-T
<-----OUTPUT OMITTED FROM EXAMPLE----->
Et5/1/1   connected    1           full     50G     100GBASE-SR4
Et5/1/2   errdisabled  1           unconf   unconf  100GBASE-SR4
Et5/1/3   connected    1           full     50G     100GBASE-SR4
Et5/1/4   errdisabled  1           unconf   unconf  100GBASE-SR4
<-----OUTPUT OMITTED FROM EXAMPLE----->
```

#### 10.5.7.3 Configuring a QSFP100 Module as a Single 40GbE Interface

To configure the port as a single 40GbE interface, combine the module's four data lanes by using the **speed** command (**speed forced 40gfull**) on the port's /1 lane (the primary lane).

---

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

---

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP100 Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 40gfull** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 40gfull
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name          Status       Vlan     Duplex   Speed    Type        Flags
Et1       connected    2           full     1G      10GBASE-T
<-----OUTPUT OMITTED FROM EXAMPLE----->
Et5/1/1   connected    1           full     40G     100GBASE-SR4
Et5/1/2   errdisabled  1           unconf   unconf  100GBASE-SR4
Et5/1/3   errdisabled  1           unconf   unconf  100GBASE-SR4
Et5/1/4   errdisabled  1           unconf   unconf  100GBASE-SR4
<-----OUTPUT OMITTED FROM EXAMPLE----->
```

#### 10.5.7.4 Configuring a QSFP100 Module as Four 25GbE Interfaces

To configure the port as four 25GbE interfaces, use the **speed** command (**speed forced 25gfull**) on the port's /1 lane (the primary lane). This configuration is available on 7060X, 7260X and 7320X platforms.

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP100 Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 25gfull** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 25gfull
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name       Status     Vlan   Duplex  Speed   Type      Flags
Et1          connected    2      full    1G      10GBASE-T
-----OUTPUT OMITTED FROM EXAMPLE-----
Et5/1/1      connected    1      full    25G     100GBASE-SR4
Et5/1/2      errdisabled  1      unconf  unconf  100GBASE-SR4
Et5/1/3      errdisabled  1      unconf  unconf  100GBASE-SR4
Et5/1/4      errdisabled  1      unconf  unconf  100GBASE-SR4
-----OUTPUT OMITTED FROM EXAMPLE-----
```

#### 10.5.7.5 Configuring a QSFP100 Module as Four 10GbE Interfaces

To configure the port as four 10GbE interfaces, use the **speed** command (**speed forced 10000full**) on the port's /1 lane (the primary lane).

**Important!** The **speed** command is hitless on the 7050X, 7060X, 7250X, 7260X, 7280SE, 7300X, 7320X and 7500E series platforms. On all other platforms, this command restarts the forwarding agent, which will result in traffic disruption.

**Step 1** Enter interface Ethernet configuration mode for lane /1 of the QSFP100 Ethernet interface.

```
switch(config)#interface ethernet 5/1/1
```

**Step 2** Enter the **speed forced 10000full** command. Depending on the platform, this command may restart the forwarding agent, disrupting traffic on all ports for 60 seconds or more.

```
switch(config-if-Et5/1/1)#speed forced 10000full
```

**Step 3** Use the **show interfaces status** command to confirm the change in configuration.

```
switch(config-if-Et5/1/1)#show interfaces status
Port      Name       Status     Vlan   Duplex  Speed   Type      Flags
Et1          connected    2      full    1G      10GBASE-T
-----OUTPUT OMITTED FROM EXAMPLE-----
Et5/1/1      connected    1      full    10G     100GBASE-SR4
Et5/1/2      connected    1      full    10G     100GBASE-SR4
Et5/1/3      connected    1      full    10G     100GBASE-SR4
Et5/1/4      connected    1      full    10G     100GBASE-SR4
-----OUTPUT OMITTED FROM EXAMPLE-----
```