

Switch Port Attributes

Restriction

1. **known issue:** It does not return failed if configure wrong speed on the interface. (This issue is fixed in 202006.1 or later)

e.g: configure **1000G** on the interface

```
admin@sonic:~$ sudo config interface speed Ethernet2 1000000
```

```
admin@sonic:~$ show interfaces status | head -n 5
```

Interface	Lanes	Speed	MTU	Alias	Vlan	Oper	Admin	Type	Asym PFC
Ethernet0	73	10G	9100	swp001	trunk	up	up	N/A	N/A
Ethernet1	74	10G	9100	swp002	trunk	up	up	N/A	N/A
Ethernet2	75	1000G	9100	swp003	routed	down	up	N/A	N/A

2. Please remember to do "sudo config save", or all of the settings won't be including to the startup configuration.
3. FEC is disabled in the default setting
4. Before 202006.4, there's no SONiC command to set the auto-negotiation.
5. The auto-negotiation is disabled in the default setting.
6. Before 202012.1, AS7326-56X doesn't support down speed to 1G.
7. There's a hardware limitation on AS7326-56X, it will have port group design(Ethernet0~Ethernet47). When one of the group members changes speed, others of the same group member will be also modified. We can find the port group member information from Alias. For example, the alias "Eth5/" mean the port group name is "Ethernet5", it will have member about Ethernet0/Ethernet1/Ethernet2/Ethernet5.

```
admin@sonic:~$ show interface status
```

```
Interface Lanes Speed MTU FEC Alias Vlan Oper Admin Type Asym PFC
```

```
-----  
Ethernet0 3 25G 9100 none Eth5/3 routed down up SFP/SFP+/SFP28 N/A  
Ethernet1 2 25G 9100 none Eth5/2 routed down up N/A N/A  
Ethernet2 4 25G 9100 none Eth5/4 routed down up N/A N/A  
Ethernet3 8 25G 9100 none Eth6/4 routed down up SFP/SFP+/SFP28 N/A  
Ethernet4 7 25G 9100 none Eth6/3 routed down up N/A N/A  
Ethernet5 1 25G 9100 none Eth5/1 routed down up N/A N/A
```

Caution:The "Alias" and "port group name" design is advanced after "version 202006", we can reference port group as attach interface(captured in "version 202006.2").

Configure 10G interface to be 1G interface

Tested model & firmware version:

- Switch model name:
DCS201 (AS5835-54X)
- Edgecore SONiC version:
202006.4
202012.0 ~ 202012.4
202111.0 ~202111.3

Step1. down-speed "Ethernet0" and "Ethernet1" to 1G

```
admin@sonic:~$ sudo config interface speed Ethernet0 1000
admin@sonic:~$ sudo config interface speed Ethernet1 1000
```

Caution: Before "version 202006.2", make sure Tx_Disable is Disabled on 10G interface. Otherwise, the 10G port can NOT link UP even speed configuration is correct. (1: transmit power is disable, 0: transmit power is enable ,default is 1)

Method: use "accton_as5835_54x_util.py set sfp 1-48 {0|1}" to set sfp# tx_disable

For example: disable the tx_disable on Ethernet0 and Ethernet1

```
admin@sonic:~$ sudo accton_as5835_54x_util.py set sfp 1 0
admin@sonic:~$ sudo accton_as5835_54x_util.py set sfp 2 0
Check command
admin@sonic:~$ sudo accton_as5835_54x_util.py show
omitted...
```

```
=====
SFP:
=====
sfp1: module_present_1=1 module_tx_disable_1=0
-----
sfp2: module_present_2=1 module_tx_disable_2=0
-----
sfp3: module_present_3=0 module_tx_disable_3=1
omitted...
```

Step 2. Check the port status.

```
admin@sonic:~$ show interfaces status | head -4
Interface Lanes Speed MTU FEC Alias Vlan Oper Admin Type Asym PFC
```

```
-----
Ethernet0 1 1G 9100 none Eth1/1 routed up up SFP/SFP+/SFP28 N/A
Ethernet1 2 1G 9100 none Eth2/1 routed up up SFP/SFP+/SFP28 N/A
```

Tested model & firmware version:

- Switch model name:
DCS202 (AS5835-54T)
- Edgecore SONiC version:
202012.2 ~ 202012.4
202111.0 ~ 202111.8

Step1. Add the 1G to advertised-speed with auto-negotiation. (The detail about the advertised-speed, please refer to "[Configure advertised-speed with auto-negotiation](#)".)

```
admin@sonic:~$ sudo config interface advertised-speeds Ethernet0 1000
```

Caution:

On AS5835-54T, we only support down-speed by auto-negotiation advertised.

If you try to set the speed by force, you will face bellowing error handling.

```
admin@sonic:~$ sudo config interface speed Ethernet0 1000
Can't set the port speed. Only support port speed: 0.
```

AS5835-54T does not support disabling auto-negotiation with error handling such as:

```
admin@sonic:~$ sudo config interface autoneg Ethernet0 disabled
Can not set autoneg disabled on Ethernet0 at Accton-AS5835-54T
```

Step2. Check the port status.

```
admin@sonic:~$ show interfaces status Ethernet0
```

Interface	Lanes	Speed	MTU	Oper	FEC	Alias	Vlan	Oper	Admin	ProtoDown	Eff
Admin	Type	Asym	PFC	Oper	Speed						

```
-----
Ethernet0 1 1G 9100 none Eth1(Port1) routed up up False up RJ45
N/A 1G
```

```
admin@sonic:~$ show interface autoneg status Ethernet0
```

Interface	Auto-Neg	Mode	Oper Speed	Adv Speeds	Type	Adv Types	Oper	Admin
Ethernet0	enabled		1000M	1000M	N/A	N/A	up	up

Configure 100G interface (QSFP+) to be 40G interface

Tested model & firmware version:

- Switch model name:

DCS203 (AS7326-56X)

- Edgecore SONiC version:

202006.4

202012.0 ~ 202012.4

202111.0 ~ 202111.8

Step1. down-speed "Ethernet48" and "Ethernet52" from 100G to 40G

```
admin@sonic:~$ sudo config interface speed Ethernet48 40000
```

```
admin@sonic:~$ sudo config interface speed Ethernet52 40000
```

Steps 2. Check the port speed by SONiC command

```
admin@sonic:~$ show interface status | grep 'Ethernet48\Ethernet52'
```

Ethernet48	77,78,79,80	40G	9100	none	Eth49(Port49)	routed	down	up	False
up *QSFP28 or later	N/A	40G							
Ethernet52	85,86,87,88	40G	9100	none	Eth50(Port50)	routed	down	up	False
up	N/A	N/A	40G						

Caution: On AS9716-32D, if user want to down-speed 40G, please change port mode(refer to Configure 400G interface to 100G/40G) and then down-speed as this example.

Configure 25G interface to be 10G interface

Tested model & firmware version:

- Switch model name:

DCS203 (AS7326-56X)

- Edgecore SONiC version:

202006 ~ 202006.4

202012.0 ~ 202012.4

202111.0 ~ 202111.8

In the "202006" and earlier versions, you can use following command to down-speed from 25G to 10G. Please be careful about "**restriction 7**" for port group.

```
admin@sonic:~$ sudo config interface speed Ethernet0 10000
```

In the "202006.1" or later version, there's a warning message if you set the port speed with the original command. Please follow bellowing way to down-speed from 25G to 10G.

```
admin@sonic:~$ sudo config interface speed Ethernet0 10000
```

Due to the special circuit scheme on PCB of this device, the port specified in the command is one of the child port out of 4 internally broken out ports. To change port speed as 1G or 10G, you must use "config interface breakout" command to change the port breakout mode as "4x10G[1G]". This will change port speed as 10G upon 4 ports at the same time. Under "4x10G[1G]" breakout mode, it is allowed to use "config interface speed" command to set port speed upon any port out of those 4 ports as 1G or 10G.

Step 1. Check your port group.

```
admin@sonic:~$ show interfaces status
```

Interface	Lanes	Speed	MTU	Oper	FEC	Alias	Vlan	Oper	Admin	Proto	Down
Eff Admin			Type	Asym	PFC	Oper Speed					

Ethernet0	3	25G	9100	none		Eth6/3(Port1)	routed	down	up	False	up
SFP/SFP+/SFP28	N/A	25G									
Ethernet1	2	25G	9100	none		Eth6/2(Port2)	routed	down	up	False	up
N/A	N/A	25G									
Ethernet2	4	25G	9100	none		Eth6/4(Port3)	routed	down	up	False	up
N/A	N/A	25G									
Ethernet3	8	25G	9100	none		Eth7/4(Port4)	routed	down	up	False	up
N/A	N/A	25G									
Ethernet4	7	25G	9100	none		Eth7/3(Port5)	routed	down	up	False	up
N/A	N/A	25G									
Ethernet5	1	25G	9100	none		Eth6/1(Port6)	routed	down	up	False	up
N/A	N/A	25G									

Step 2. Check breakout option availability and current breakout mode.

```
admin@sonic:~$ show inter breakout
{
  "Ethernet5": {
    "index": "6,2,1,3",
```

```

"lanes": "1,2,3,4",
"breakout_modes": {
  "4x25G": [
    "Eth6/1(Port6)",
    "Eth6/2(Port2)",
    "Eth6/3(Port1)",
    "Eth6/4(Port3)"
  ],
  "4x10G[1G]": [
    "Eth6/1(Port6)",
    "Eth6/2(Port2)",
    "Eth6/3(Port1)",
    "Eth6/4(Port3)"
  ]
},
"interface_ids": "5,1,0,2",
"default_brkout_mode": "4x25G",
"autoneg": "off",
"Current Breakout Mode": "4x25G",
"child ports": "Ethernet0,Ethernet1,Ethernet2,Ethernet5",
"child port speeds": "25G,25G,25G,25G"
},
...
omitted

```

Step 3. Configure the port group "Ethernet5" to 10G.

```

admin@sonic:~$ sudo config interface breakout Ethernet5 '4x10G[1G]'
Do you want to Breakout the port, continue? [y/N]: y

```

```

Running Breakout Mode : 4x25G
Target Breakout Mode : 4x10G
...
omitted

```

Step 4. Checking the status.

```

admin@sonic:~$ show int status

```

Interface	Lanes	Speed	MTU	Oper FEC	Alias	Vlan	Oper	Admin	ProtoDown
Eff Admin			Type	Asym PFC	Oper Speed				
Ethernet0	3	10G	9100	none	Eth6/3(Port1)	routed	down	up	False up
SFP/SFP+/SFP28	N/A	10G							
Ethernet1	2	10G	9100	none	Eth6/2(Port2)	routed	down	up	False up
N/A N/A	10G								
Ethernet2	4	10G	9100	none	Eth6/4(Port3)	routed	down	up	False up
N/A N/A	10G								
Ethernet3	8	25G	9100	none	Eth7/4(Port4)	routed	down	up	False up

N/A	N/A	25G										
Ethernet4		7	25G	9100	none	Eth7/3(Port5)	routed	down	up	False	up	
N/A	N/A	25G										
Ethernet5		1	10G	9100	none	Eth6/1(Port6)	routed	down	up	False	up	
N/A	N/A	10G										

Caution:

- Before "202006.2", doing the DPB command, the 'Admin' status will be down. After "202006.2" or later version, the 'Admin' status will be up for speed change about 25G to 10G or 10G to 25G.
- After 202012.1 or later, AS7326-56X support down-speed to 1G. '4x10G' mode is change to '**4x10G[1G]**'. When user change mode to '4x10G[1G]', the device will link in 10G. If user wants to down-speed to 1G, please down the speed to "1000" directly. (please refer to Configure 10G interface to be 1G interface.)

Configure 400G interface to 100G/40G(Support on Edgecore-202006.2 or later)

Tested model & firmware version:

- Switch model name:
DCS510 (AS9716-32D)
- Edgecore SONiC version:
202012.2 ~ 202012.4
202111.0 ~ 202111.8

Step 1. Check breakout option availability and current breakout mode.

```
admin@sonic:~$ show interfaces breakoutadmin@sonic:~$ show interfaces breakout
{
  "Ethernet0": {
    "index": "1,1,1,1,1,1,1",
    "lanes": "73,74,75,76,77,78,79,80",
    "breakout_modes": {
      "1x400G": [
        "Eth1(Port1)"
      ],

```

```

    "2x200G": [
        "Eth1/1(Port1)",
        "Eth1/2(Port1)"
    ],
    "4x100G": [
        "Eth1/1(Port1)",
        "Eth1/2(Port1)",
        "Eth1/3(Port1)",
        "Eth1/4(Port1)"
    ],
    "1x100G[40G](4)": [
        "Eth1(Port1)"
    ],
    "2x50G(4)": [
        "Eth1/1(Port1)",
        "Eth1/2(Port1)"
    ],
    "4x25G[10G](4)": [
        "Eth1/1(Port1)",
        "Eth1/2(Port1)",
        "Eth1/3(Port1)",
        "Eth1/4(Port1)"
    ]
},
"default_brkout_mode": "1x400G",
"autoneg": "off",
"Current Breakout Mode": "1x400G",
"child ports": "Ethernet0",
"child port speeds": "400G"
},

```

Step 2. Down speed "Ethernet0" from 400G to 100G.

```
admin@sonic:~$ sudo config interface breakout Ethernet0 '1x100G[40G](4)'
```

Caution:

- Be careful, because down speed from 400G to 100G control by DPB command, the "Admin" status will be down after modified.
- if you want 40G, you need to break out first(1x100G[40G](4)) and then use the down speed command as following.


```
admin@sonic:~$ sudo config interface breakout Ethernet32 '1x100G[40G](4)'
Do you want to Breakout the port, continue? [y/N]: y
```

Running Breakout Mode : 1x400G
Target Breakout Mode : 1x100G[40G](4)

Ports to be deleted :

```
{
  "Ethernet32": "400000"
}
```

Ports to be added :

```
{
  "Ethernet32": "100000"
}
```

After running Logic to limit the impact

Final list of ports to be deleted :

```
{
  "Ethernet32": "400000"
}
```

Final list of ports to be added :

```
{
  "Ethernet32": "100000"
}
```

Loaded below Yang Models

['sonic-acl', 'sonic-extension', 'sonic-interface', 'sonic-loopback-interface', 'sonic-port', 'sonic-portchannel', 'sonic-types', 'sonic-vlan']

Note: Below table(s) have no YANG models:

CONTAINER_FEATURE, VERSIONS, DEVICE_METADATA, TELEMETRY, FEATURE, FLEX_COUNTER_TABLE, BREAKOUT_CFG, MGMT_INTERFACE, CRM,

Breakout process got successfully completed.

Please note loaded setting will be lost after system reboot. To preserve setting, run `config save`.

```
admin@sonic:~$ sudo config interface speed Ethernet32 40000
```

Configure FEC (Forward Error Correction) to RS mode

Tested model & firmware version:

- Switch model name:
DCS204 (AS7726-32X)

- Edgecore SONiC version:
202006.4
202012.0 ~ 202012.4
202111.0 ~ 202111.8

Step 1: Configure FEC to RS mode.

```
admin@sonic:~$ sudo config interface fec Ethernet0 rs
```

Caution: FEC mode support three parameters, "rs", "fc" and "none"

Step 2: Checking the FEC status.

```
admin@sonic:~$ show interfaces status
```

Interface	Lanes	Speed	MTU	Oper	FEC	Alias	Vlan	Oper	Admin	ProtoDown	Eff	Admin	Type	Asym
PFC	Oper	Speed												
Ethernet0	1,2,3,4	100G	9100	rs	Eth1(Port1)	routed	down	up	False	up	N/A	N/A		
100G														
Ethernet4	5,6,7,8	100G	9100	none	Eth2(Port2)	routed	down	up	False	up	N/A	N/A		
100G														
Ethernet8	9,10,11,12	100G	9100	none	Eth3(Port3)	routed	down	up	False	up	N/A	N/A		
100G														
Ethernet12	13,14,15,16	100G	9100	none	Eth4(Port4)	routed	down	up	False	up	N/A	N/A		
100G														

Configure the Ethernet0 to auto-negotiation

Tested model & firmware version:

- Switch model name:
EPS202 (AS4630-54PE)
DCS202 (AS5835-54T)
- Edgecore SONiC version:
202006.4
202012.0 ~ 202012.4
202111.0 ~ 202111.8

Step 1. Enable the auto-negotiation on Ethernet0

```
admin@sonic:~$ sudo config interface autoneg Ethernet0 enabled
```

Step 2. Check configuration status

```
admin@sonic:~$ show interface autoneg status Ethernet0
```

Interface	Auto-Neg Mode	Oper Speed	Adv Speeds	Type	Adv Types	Oper	Admin
Ethernet0	enabled	1000M	1000M	N/A	N/A	up	up

Caution: Before 202006.4, You need to access auto-negotiation by modified config_db.json and "config reload" to apply it.

```
admin@sonic:~$ sudo vi /etc/sonic/config_db.json
```

```
{
... omitted

  "Ethernet0": {
    "admin_status": "up",
    "adv_speeds": "1000",
    "alias": "Eth1(Port1)",
    "autoneg": "on",
    "index": "1",
    "lanes": "2",
    "mtu": "9100",
    "parent_port": "Ethernet0",
    "speed": "0"
  },
... omitted
}
```

```
admin@sonic:~$ sudo config reload -y
```

Configure advertised-speed with auto-negotiation.

Tested model & firmware version:

- Switch model name:
DCS202 (AS5835-54T)
- Edgecore SONiC version:
202012.0 ~ 202012.4
202011.0 ~ 202111.8

Restriction

- Known issue :

- [SONIC-3544] [AS5835-54T] Fix the problem that the advertised speed cannot configure with the multiple capabilities (Ethernet0 ~ Ethernet47). (Fixed on version 202012.4)

Step1: Add multiple capabilities in advertised speed.

```
admin@sonic:~$ sudo config interface advertised-speeds Ethernet0 1000,10000
```

Note: the Valid speeds are 1000,2500,5000,10000.

Caution:

There is a known issue in **202012.3** and previous versions, the advertised-speeds cannot be configured with multiple capabilities.

Version 202012.0, although this version could set the multiple capabilities, in fact, it only supports only one capability.

For example, I connect the 1G device on Ethernet0, but it won't link up.

```
admin@sonic:~$ show interfaces autoneg status Ethernet0
Interface  Auto-Neg Mode  Speed  Adv Speeds  Oper  Admin
-----
Ethernet0   enabled    10G    1G,10G  down  up
```

Version 202012.1 ~ 202012.3, there's a warning message.

```
admin@sonic:~$ sudo config interface advertised-speeds Ethernet0 1000,1000
Can not set advertised-speeds 1000,1000 on Ethernet0 due to Accton-AS5835-54T only supports
10000 only or 1000 only
```

Step 2: Checking the status.

```
admin@sonic:~$ show interfaces autoneg status Ethernet0
Interface  Auto-Neg Mode  Oper Speed  Adv Speeds  Oper  Admin
-----
Ethernet0   enabled      10G    1G,10G    up    up
```