



Switch Configuration Example for Q-SYS™ Platform

Hewlett Packard Enterprise Aruba 2930F-24G-PoEP-4SFP

Important Note

This switch configuration example is intended to serve as a network setup guideline for systems using Q-LAN audio and video streaming within your Q-SYS system and should be used alongside the [Q-SYS Q-LAN Networking Overview](#) tech note for deeper setup insight. Keep in mind that QSC is unable to provide live network configuration support for third-party switch configuration. To learn more about network switch qualification services and the plug-and-play Q-SYS NS Series preconfigured network switches, visit <http://www.qsc.com/switches>.

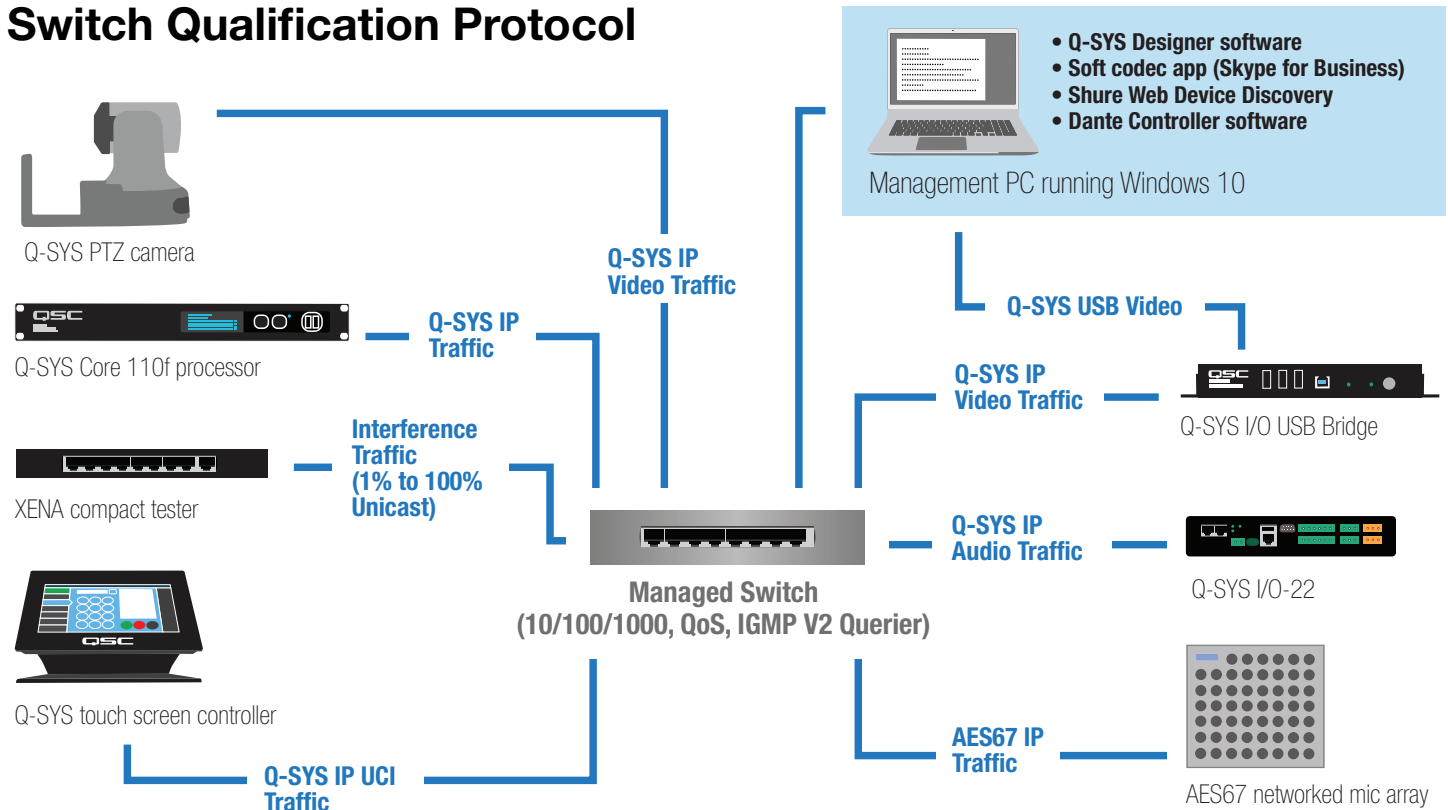
This document applies to this HPE switch:
Aruba 2930F 24G

Introduction

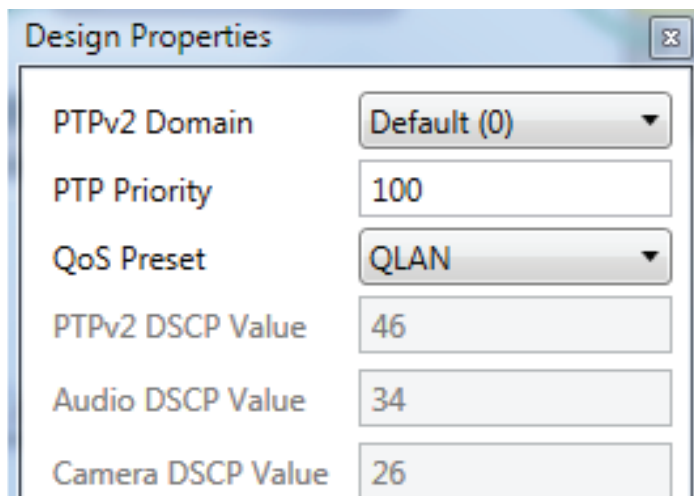
As of release 5.3.x, Q-SYS Designer software now supports AES67-standard interoperability. The AES67 standard does not prescribe a method of discovery for devices so manufacturers are free to implement one or more discovery services for their devices. In this configuration document, the process uses Bonjour as the discovery method for AES67 devices.

Q-SYS Designer now also offers a selection of Differential Services Code Point (DSCP) setting presets to optimize Quality of Service (QoS) for different types of deployment. DSCP codes are a six-bit value placed in the IP header of data packet, and they instruct a network switch to handle various types of data with defined levels of priority that ensure proper QoS.

Switch Qualification Protocol



Selecting QoS presets in a Q-SYS design file



1. In Q-SYS Designer, open the design. Make sure it is disconnected from the Core processor (press **F7** or select **File > Disconnect**).
2. Select **File > Design Properties**.
3. Select the appropriate QoS preset (See specification table below.)

Specifications

Preset	Q-LAN	Audinate	Manual
Use for:	<ul style="list-style-type: none"> • Q-LAN-only network • Q-LAN + AES67 network 	<ul style="list-style-type: none"> • DANTE-only network • DANTE + Q-LAN network • DANTE + Q-LAN + AES67 network 	<ul style="list-style-type: none"> • If custom DSCP settings are necessary
QoS class assigned:	PTPv2: 46 Audio: 34 Camera: 26	PTPv2: 56 Audio: 46 Camera: 26	PTPv2: 56 Audio: 46 Camera: 26

1. Leave the PTPv2 Domain and PTP Priority settings at default. Click **OK**.
2. To save the settings, press **F5** or select **File > Save to Core & Run**.

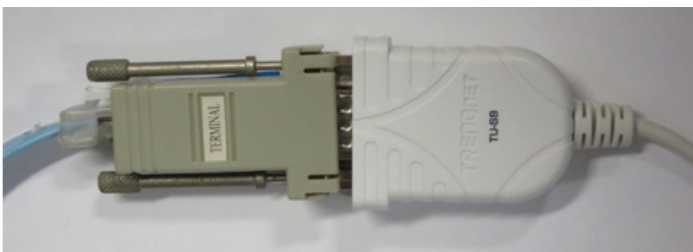
Configuring the network switch for Q-SYS

NOTE: This setup procedure is valid for the Hewlett Packard Enterprise (HPE) Aruba 2930F 24G PoEP 4SFP switch. We recommend configuring the switch via the console connection using its CLI because not all the necessary options are available in the Web GUI. To complete this procedure you must be familiar with Aruba commands.

This procedure was developed using a switch with firmware version **WC.16.07.0002** and boot ROM version **WC.16.01.0004**. *Make sure the switch has the latest firmware version before you start configuring it.*

Configuring the switch requires these items:

- Computer with an available USB port
- DB9 to USB serial adaptor
- Switch console cable (not supplied with the switch)



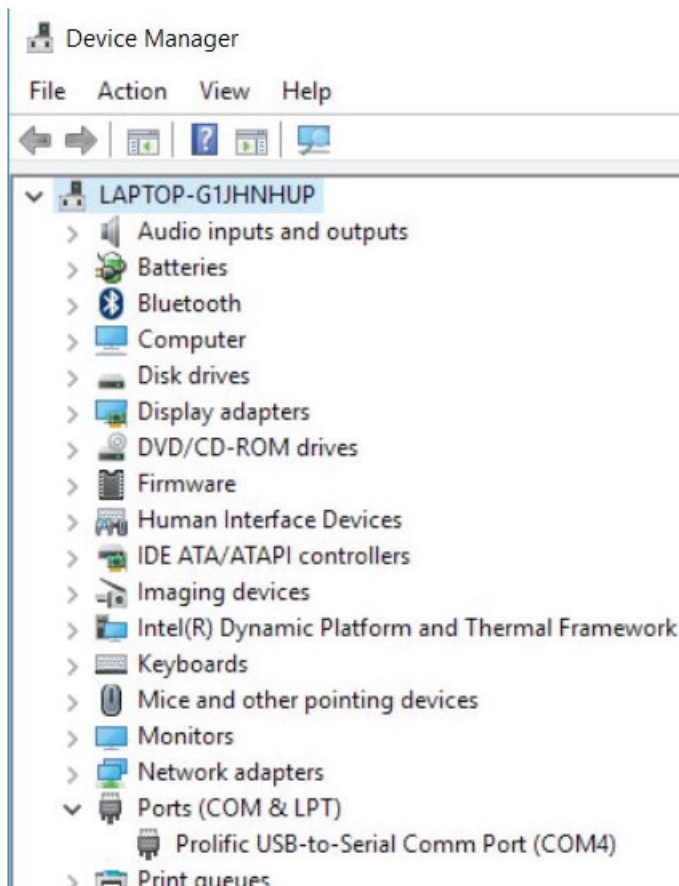
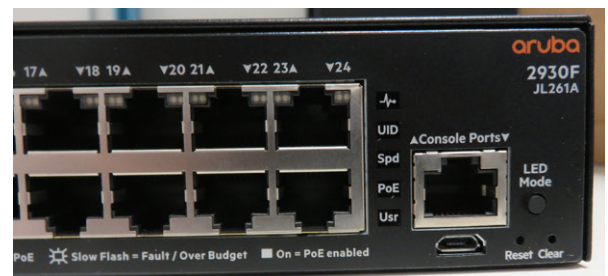
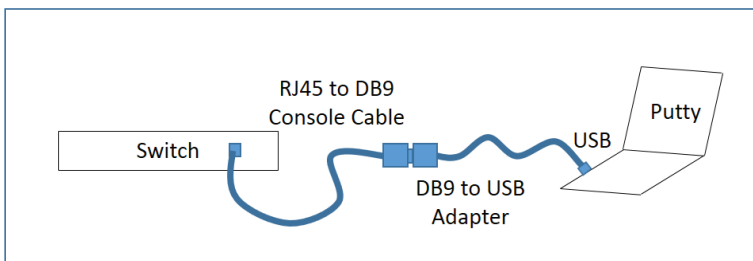
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- PuTTY terminal software (or equivalent)

Before starting, use the console cable and adaptor to connect the computer to the switch's console port.



Verify that Windows recognizes the USB-to-serial adapter. In Windows, open Device Manager (In Windows 10, you can find it by typing **device manager** into the Cortana text box). Expand Ports (COM & LPT); the USB-to-serial comm port adapter should be listed there.

If the adapter does not appear, try these remedies:

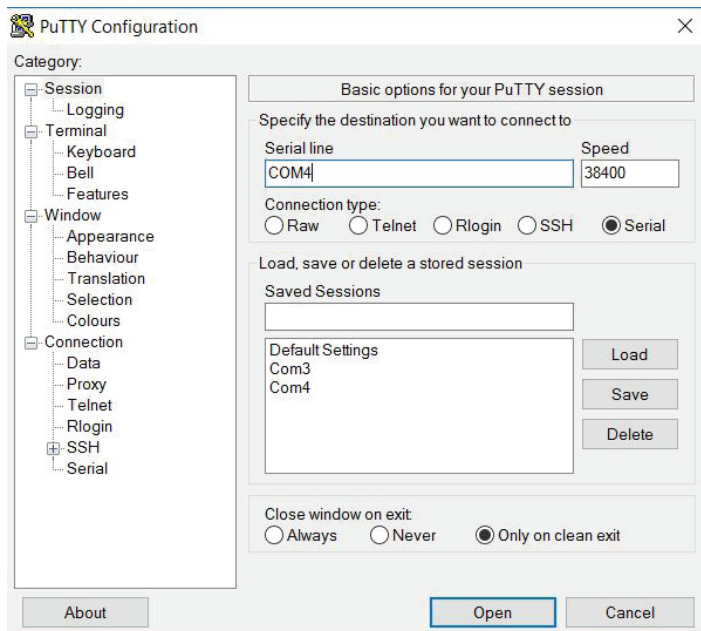
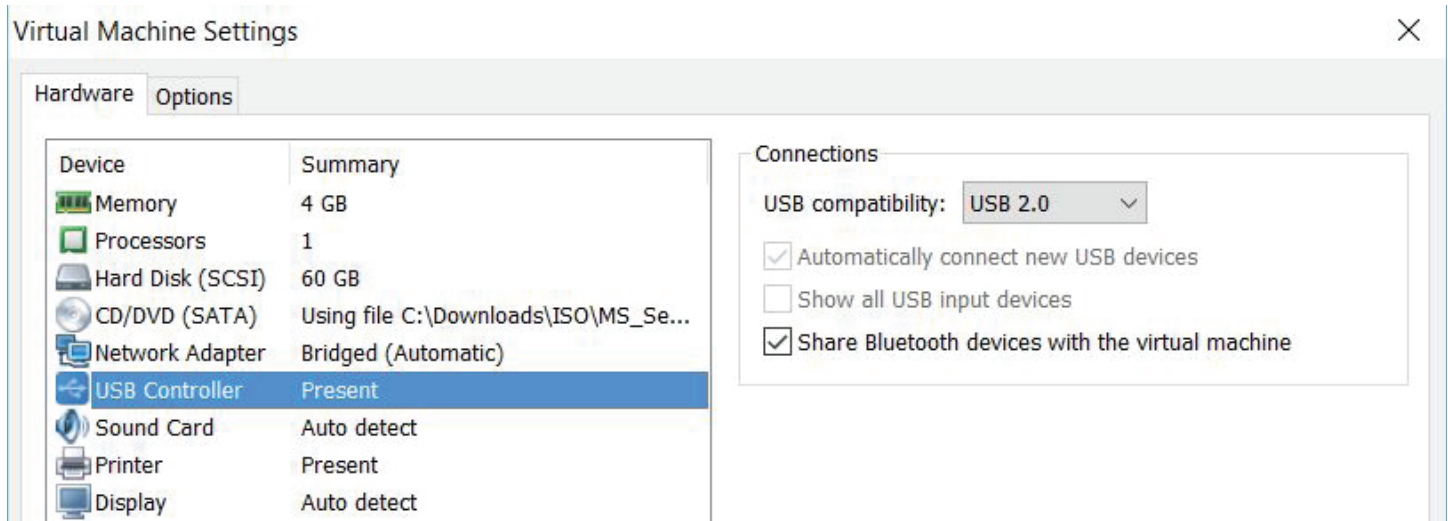
- Plug the USB-to-serial adapter directly into the computer, to bypass any USB hubs.
- Download and install the latest drivers for the USB-to-serial adapter.
- If you are using virtualization, make sure that the USB devices are configured to connect to the virtual machine. If you still have problems with the USB connections, try running the computer without any virtualization (i.e., "bare metal").
- See if any Windows updates are queued. If there are, apply them and reboot the computer.
- Check security settings and any security software for issues that might prevent functioning of the USB devices.

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1. When the computer properly recognizes the USB-to-Serial Comm Port, open PuTTY. The PuTTY Configuration window will open first.



2. At **Connection type**, select **Serial**.
3. At **Serial line**, select the COM port that the USB-to-serial adapter is connected to (as displayed in Device Manager).

At **Speed**, enter any number from **1200** to **115200**. The switch will sense the connection speed automatically.
4. Optional: If you wish to save these session settings, enter a name for them in **Saved Sessions** and then click **Save**.
5. Click **Open**.

6. A terminal window will open as the session begins. If there is no prompt, press **Enter**.
7. At the prompt, type **enable** and press **Enter**.
8. Type **config t** and press **Enter**.

The first steps will be to configure DSCP mapping for Quality of Service (QoS). The mapping for Q-SYS-only traffic is slightly different than for Q-SYS plus Audinate (AES67).

For Q-SYS only (continued)

```
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 43 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 44 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 45 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 46 priority 7
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 47 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 48 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 49 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 50 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 51 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 52 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 53 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 54 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 55 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 56 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 57 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 58 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 59 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 60 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 61 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 62 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 63 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# exit
Aruba-2930F-24G-PoEP-4SFP# wr mem
```

For Audinate + Q-SYS (continued)

```
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 43 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 44 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 45 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 46 priority 6
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 47 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 48 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 49 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 50 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 51 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 52 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 53 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 54 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 55 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 56 priority 7
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 57 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 58 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 59 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 60 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 61 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 62 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# qos dscp-map 63 priority 0
Aruba-2930F-24G-PoEP-4SFP(config)# exit
Aruba-2930F-24G-PoEP-4SFP# wr mem
```

10. Aruba switches allow you to configure multiple interfaces (ports) simultaneously on the command line interface. Enable these parameters on all ports on the switch. Then save the configuration to memory with a **write mem** command.

```
flow-control
qos trust dscp
no bandwidth-min output
untagged vlan 1
spanning-tree admin-edge-port
```

11. This completes configuration of the switch. To check the current running configuration, at the prompt type **show run structured** and press **Enter**. The displayed configuration should be this:

Running configuration:

```
; JL261A Configuration Editor; Created on release #WC.16.07.0002
; Ver #14:01.4f.f8.1d.9b.3f.bf.bb.ef.7c.59.fc.6b.fb.9f.fc.ff.37.ef:02
hostname "Aruba-2930F-24G-PoEP-4SFP"
module 1 type jl261a
spanning-tree 1 admin-edge-port
spanning-tree 2 admin-edge-port
spanning-tree 3 admin-edge-port
spanning-tree 4 admin-edge-port
spanning-tree 5 admin-edge-port
spanning-tree 6 admin-edge-port
spanning-tree 7 admin-edge-port
spanning-tree 8 admin-edge-port
spanning-tree 9 admin-edge-port
spanning-tree 10 admin-edge-port
spanning-tree 11 admin-edge-port
spanning-tree 12 admin-edge-port
```

```
spanning-tree 13 admin-edge-port
spanning-tree 14 admin-edge-port
spanning-tree 15 admin-edge-port
spanning-tree 16 admin-edge-port
spanning-tree 17 admin-edge-port
spanning-tree 18 admin-edge-port
spanning-tree 19 admin-edge-port
spanning-tree 20 admin-edge-port
spanning-tree 21 admin-edge-port
spanning-tree 22 admin-edge-port
spanning-tree 23 admin-edge-port
spanning-tree 24 admin-edge-port
spanning-tree 25 admin-edge-port
spanning-tree 26 admin-edge-port
spanning-tree 27 admin-edge-port
spanning-tree 28 admin-edge-port
snmp-server community "public" unrestricted
qos dscp-map 8 priority 0
```

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```
qos dscp-map 9 priority 0
qos dscp-map 10 priority 0
qos dscp-map 11 priority 0
qos dscp-map 12 priority 0
qos dscp-map 13 priority 0
qos dscp-map 14 priority 0
qos dscp-map 15 priority 0
qos dscp-map 16 priority 0
qos dscp-map 17 priority 0
qos dscp-map 18 priority 0
qos dscp-map 19 priority 0
qos dscp-map 20 priority 0
qos dscp-map 21 priority 0
qos dscp-map 22 priority 0
qos dscp-map 23 priority 0
qos dscp-map 24 priority 0
qos dscp-map 25 priority 0
qos dscp-map 26 priority 5
qos dscp-map 27 priority 0
qos dscp-map 28 priority 0
qos dscp-map 29 priority 0
qos dscp-map 30 priority 0
qos dscp-map 31 priority 0
qos dscp-map 32 priority 0
qos dscp-map 33 priority 0
qos dscp-map 34 priority 6
qos dscp-map 35 priority 0
qos dscp-map 36 priority 0
qos dscp-map 37 priority 0
qos dscp-map 38 priority 0
qos dscp-map 39 priority 0
qos dscp-map 40 priority 0
qos dscp-map 41 priority 0
qos dscp-map 42 priority 0
qos dscp-map 43 priority 0
qos dscp-map 44 priority 0
qos dscp-map 45 priority 0
qos dscp-map 47 priority 0
qos dscp-map 48 priority 0
qos dscp-map 49 priority 0
qos dscp-map 50 priority 0
qos dscp-map 51 priority 0
qos dscp-map 52 priority 0
qos dscp-map 53 priority 0
qos dscp-map 54 priority 0
qos dscp-map 55 priority 0
qos dscp-map 56 priority 0
qos dscp-map 57 priority 0
qos dscp-map 58 priority 0
qos dscp-map 59 priority 0
qos dscp-map 60 priority 0
qos dscp-map 61 priority 0
qos dscp-map 62 priority 0
qos dscp-map 63 priority 0
qos type-of-service diff-services

interface 1
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 2
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 3
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 4
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 5
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 6
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 7
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 8
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 9
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 10
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 11
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 12
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 13
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 14
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 15
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 16
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 17
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 18
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 19
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 20
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 21
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 22
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 23
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 24
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
```


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```
interface 25
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 26
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 27
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
interface 28
  flow-control
  qos trust dscp
  no bandwidth-min output
  untagged vlan 1
  spanning-tree admin-edge-port
  exit
vlan 1
  name "DEFAULT_VLAN"
  untagged 1-28
  ip address 192.168.1.188 255.255.255.0
  ip igmp
  exit
```

Aruba-2930F-24G-PoEP-4SFP#



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