



Purpose: How to create a QoS Policy. In this example, a policy will be created that will set a high priority for telnet access to 192.168.1.167.

Background: The Quality of Service feature classifies subscriber traffic so that it can then be acted upon by devices that support QoS prioritization or other QoS capabilities. This requires the use of 802.1q-based VLANs on the network, as it is based on 802.1p Class of Service (CoS) marking. The QoS classification function supports both external and internal modes. In External mode, when the NSE received packets with 802.1p priority bits already set, it will pass the priority values through unaltered. In Internal mode, classification and resultant bit marking is performed via QoS policies that are defined within the NSE. The two modes can also be used in combination.

NSE provides support for DSCP (Differentiated Services Code Point) marking. You can use the two QoS mechanisms individually or concurrently.

Step 1: Create a Traffic Descriptor – Navigate to Configuration/Traffic Descriptors and click Add to create a new descriptor. First you will need to define the conditions.

If descriptors contain multiple conditions, an option exists to match any or all of them. If 'Any' is selected, the descriptor will apply if any one of the conditions is matched; if "All" is selected, all the conditions must be satisfied for a match to occur.

In this example we are using a Remote IP address of 192.168.1.167 and will set the priority for telnet, port 23

[Back to Main Traffic Descriptor Settings page](#)

Add Condition:

Remote TCP port

Note: For ranges (of local/remote IP addresses, UDP ports, or TCP ports), enter the range endpoints separated by a dash, e.g., 10.20.135.1-10.20.135.254 or 5000-5999

Note: For transport protocol, you may specify the following protocol names: TCP, UDP, ICMP, ESP, AH, GRE. For any other transport protocols, please use the proper protocol number.

Note: For remote or local IP subnet, use the address/prefix-length format, e.g. 77.88.99.00/24.

Click on Add Condition to save the condition and then repeat for address condition.



[Back to Main Traffic Descriptor Settings page](#)

+ Add Condition

Add Condition:

Remote IP address or subnet ▼

192.168.1.167

Note: For ranges (of local/remote IP addresses, UDP ports, or TCP ports), enter the range endpoints separated by a dash, e.g., 10.20.135.1-10.20.135.254 or 5000-5999

Note: For transport protocol, you may specify the following protocol names: TCP, UDP, ICMP, ESP, AH, GRE. For any other transport protocols, please use the proper protocol number.

Note: For remote or local IP subnet, use the address/prefix-length format, e.g. 77.88.99.00/24.

As each condition is created it will appear on the descriptor screen. Add a name and description for the Traffic Descriptor and Add Descriptor to save.

Add Traffic Descriptor

Unique Name:

Description:

Match Any All of the following conditions:

Condition 1 Remote IP address: 192.168.1.167

Condition 2 Remote TCP port: 23

+ Add Descriptor

NOTE: Any conditions you add here will not be stored in the database until the Add Descriptor button is clicked.



The Main Traffic Descriptors screen will now reflect the created descriptor.

Traffic Descriptor Settings
Rules to classify subscriber traffic for special treatment

Traffic Descriptor Settings (up to 100 may be created)

<u>Unique Name</u>	<u>Description</u>
telnet167	telnet priority for 192.168.1.167

Click here to add a new Traffic Descriptor.

Step 2 Create a QoS Policy – Navigate to Configuration/QoS and click on Add Policy.

QoS Settings
How AG should manage Quality-of-Service demands

802.1P Marking: Enabled
 External classifier only
 External and Internal
 Internal policies only

DSCP Marking: Enabled ⓘ
 External and Internal
 Internal policies only

Disabling DSCP effectively sets NSE to External mode.

QoS Policies:

QoS Policies for subscriber traffic (up to 16 may be created)

<u>Unique name</u>	<u>Description</u>
--------------------	--------------------

Number of policies: 0

Click here to add a new QoS Policy



Create a rule by selecting telnet167 from the Traffic Descriptor drop down list and set the Class-Of-Service. Click Add Rule to save the rule. This will then appear in the Traffic Descriptor section of the Policy.

Add new 802.1P rule

Select Traffic Descriptor: Select 802.1P CoS:

Next select a Default CoS and DSCP for all other traffic from the drop down list, enter a name and description and Save Policy to create the policy.

Add QoS Policy for Subscribers

Name of QoS Policy: (max. 15 chars)
Description: (max. 127 chars)
Default 802.1P CoS:
Default DSCP Value:

Apply the following rules to subscriber's traffic (up to 16 rules can be applied):

	Traffic Descriptor	Type	Value
Rule 1	telnet167	802.1P	CoS 7

Number of rules in this policy: 1



This will return you to the main QoS menu. Here you will enable QoS mode, QoS Classification, Internal Policies and QoS Marking 802.1p and DSCP.

QoS Settings

How AG should manage Quality-of-Service demands

- 802.1P Marking: Enabled
- External classifier only
 - External and Internal
 - Internal policies only
- DSCP Marking: Enabled i
- External and Internal
 - Internal policies only

Assigning a QoS Policy to a user can be done through their profile in the subscriber database, access code in the database, through a billing plan, a port location assignment or through a radius user profile. Each of these is detailed below.

Subscriber Profile

QoS Policy

Count-down after Login

Access Code

BW Downstream: kbps

QoS Policy:



NOMADIX

Billing Plan

QoS Policy (no policy) ▼
DHCP Pool (no policy)
telnetaccess167

Port Location

Add a Port-Location

Location ⓘ
Port (e.g. VLAN ID)
Description ⓘ

Provide DHCP Service ⓘ

Subnet

Default Group Bandwidth Management Policy ⓘ

Max Up Bandwidth (Kbps) ⓘ

Max Down Bandwidth (Kbps) ⓘ

Default QoS Policy (no policy) ▼

Default CBQ Class (no policy)

State no state authorization not needed

Radius

Nomadix-Qos-Policy=telnetaccess167