



Monitoring Quality of Service

Quality of Services (QoS) is the technique of prioritizing traffic flows and specifying preferences for forwarding packets with higher priority. It prioritizes traffic flow for different applications, users, or data flows and ensures certain level of performance to a data flow. This service plays an important part when the network capacity is insufficient, especially for real time streaming multimedia applications such as VoIP, online games, and IP-TV.

In Prime Network, you can view all the services configured for the selected network element in the QoS node under logical inventory.

The QoS Node under logical inventory is made up of two sub-nodes—the Policy Container and the Class of Service container. Both these sub-nodes are explained in greater detail in the following sections.

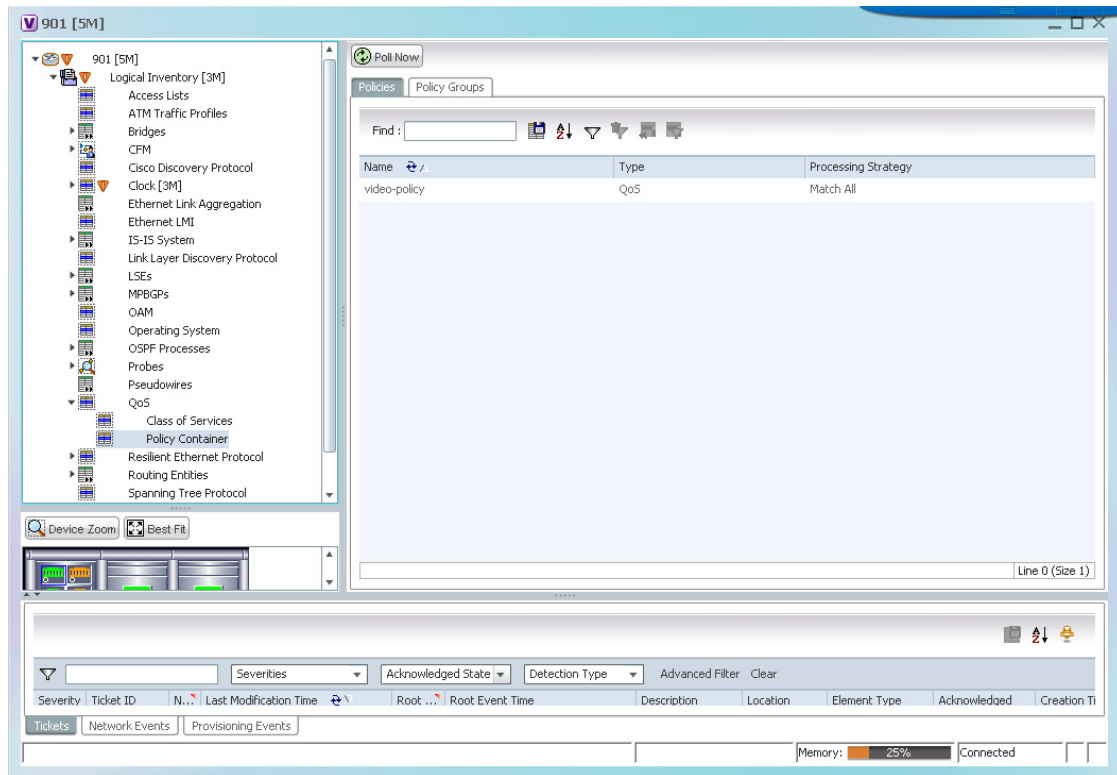
Viewing the Service Policy and Policy Group Profiles

The Policy Container node in the logical inventory lists all the available service groups and service policies that are associated with service templates, BBA groups, and subscriber access points.

To view the service policy and policy group profiles:

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- Step 1** Right-click on the required device and choose the **Inventory** option.
 - Step 2** In the **Inventory** window, choose **Logical Inventory > QoS > Policy Container**. The Policies tab is displayed by default in content pane, which lists the existing policies are displayed as shown in [Figure 21-1](#).

Figure 21-1 Policy Container



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- Step 3** Right-click on a policy and choose **Properties**. The Service Policy Properties window is displayed. [Table 21-1](#) describes the fields that are displayed in the Service Policy Properties window.

Table 21-1 Service Policy Properties

Field Name	Description
Name	The name of the policy.
Type	The type of policy, which defaults to QoS.
Processing Strategy	The strategy in applying the policy, which defaults to Match All.
Policy Rules & Actions tab	
Name	The name of the policy rule.
Match Condition	The class of service associated to the policy. Clicking this link will take you to the relevant service under the Class of Service node in the logical inventory.
Action Execution Strategy	The policy execution strategy, which can be any of the following: <ul style="list-style-type: none"> Execute All Execute Until Success Execute Until Failure
Applied Interfaces tab	

Table 21-1 Service Policy Properties (continued)

Field Name	Description
Interface Name	The name of the interface on which the service policy is applied.
Entity Association	The logical or physical port to which the policy is associated to. Clicking this link will display the relevant ethernet/gigabit ethernet port. Verify the Ingress Policy or Egress Policy applicable to the port.
Action Lists tab	
Sequence Number	The sequence number of the action list.
Action Type	The action taken on the entity. For example, Activate, Deactivate, Authenticate and Authorize.
Affected Entity Type	The entity type affected due to the selected action list. For example, service-policy, traffic shaping.
Affected Entity	The entity that gets affected due to the selected action.
Entity Association	The link to the entity affected due to the action. Clicking on this link will take you to the relevant entity. For example, if the associated entity is a policy, then clicking this link will take you to the relevant policy under the Policy Container node.

Step 4 Close the **Service Policy Properties** window.

Step 5 In the content pane, click the **Policy Group** tab. A list of existing groups are displayed.

Step 6 Right-click on a policy group and choose **Properties**.

[Table 21-2](#) describes the fields in the Policy Group tab.

Table 21-2 Policy Group Properties

Field Name	Description
Name	The name of the policy group.
Type	The type of policy group, which can be any one of the following: <ul style="list-style-type: none"> Accounting Control PBR Performance Traffic QoS Traffic Redirect This field defaults to Control.
Processing Strategy	The strategy in applying the policy, which defaults to Match All.
Policies	
Name	The name of the service policy map.
Type	The type of policy map.
Processing Strategy	The strategy in applying the policies on the incoming traffic.

Table 21-2 Policy Group Properties (continued)

Field Name	Description
Applied Interfaces tab	
Interface Name	The name of the interface on which the service policy is applied.
Entity Association	The logical or physical port to which the policy is associated to. Clicking this link will display the relevant logical or physical port. Verify the Ingress Policy or Egress Policy applicable to the port.

Step 7 In the Policies tab, right-click on a policy from the list and choose **Properties**. The Service Policy Properties dialog box is displayed. See Table 21-1 for more details.

Figure 21-2 shows the association between the policy and interface.

Figure 21-2 Policy and Interface Association

The screenshot shows the 'Service Policy Properties' dialog box for the policy 'MSN_Policy_egress_1G'. The 'Applied Interfaces' tab is selected, displaying a table of interfaces and their associated entities. Below this, the 'Action Lists' section shows a list of actions and their affected entities.

Name	Match Condition	Interface Name	Associated Entity
class-default	10.104.120.175#class-default	Bundle-Ether200	10.104.120.195#Aggregation Group 200
Control	10.104.120.175#Control	GigabitEthernet0/1/0/8.10	10.104.120.195#0.1:GigabitEthernet0/1/0/8
COS1	10.104.120.175#COS1	GigabitEthernet0/1/0/8.30: EFP 30	10.104.120.195#0.1:GigabitEthernet0/1/0/8 EFP:30
COS2	10.104.120.175#COS2	GigabitEthernet0/1/0/9	10.104.120.195#0.1:GigabitEthernet0/1/0/9
COS2V	10.104.120.175#COS2V		
COS3	10.104.120.175#COS3	GigabitEthernet0/1/0/14	10.104.120.195#0.1:GigabitEthernet0/1/0/14

Sequence Number	Action Type	Affected Entity Type	Affected Entity	Entity Association
1	Set	Traffic-shaping	CIR: 20 %	
2	Set	Service-Policy	mytest123	10.104.120.175#mytest123
3	Set	Policing	CIR: 30 %	
4	Set	COS	2	
5	Set	DSCP	cs1	
6	Set	MPLS Experimental Topmost	3	

Viewing the Class of Services Profile

To view the QoS profile:

Step 1 Right-click on the device and choose the **Inventory** option.

- Step 2** In the **Inventory** window, choose **Logical Inventory > QoS > Class of Services**. A list of existing policies are displayed in the content pane.
- Step 3** Right-click on a service in the list and choose **Properties**. The Class of Services Properties dialog box is displayed. You can click on the tabs to view more details.

Table 21-3 describes the fields that are displayed in the Class of Services Properties dialog box.

Table 21-3 Class of Services Properties

Field Name	Description
Name	The name of the class of service.
Type	The type of the class of service, which can be any one of the following: <ul style="list-style-type: none"> Control QoS Traffic This field defaults to QoS.
Matching Strategy	The matching condition for the service, which can be any one of the following: <ul style="list-style-type: none"> Match All Match Any Match None This field defaults to Match All.
Match Criteria Lists	
Index	The sequential number for the match criteria.
Match Type	The type that is used to match lists. For example, Access Group, Discard-class, DSCP, MPLS, QoS-group.
Match Condition	The match condition for the class of service, which can be any one of the following: <ul style="list-style-type: none"> available/not available class greater-than/not greater-than greater-than-or-equal/not greater-than-or-equal less-than/not less-than less-than-or-equal/not less-than-or-equal
Match Value	The value associated with the match type.
Associated Entity	The entity specified in the Match Value field. Click this hyperlink to view the related record.

Viewing Ingress and Egress Speed Details

Traffic shaping technique is used to match device and link speeds, thereby controlling packet loss, variable delay, and link saturation, which can cause jitter and delay. Traffic shaping must be applied to all outgoing traffic on a physical interface or on a VLAN. Traffic shaping is implemented when packets are ready to be transmitted on an interface. Traffic shaping is applied on the subinterfaces of the layer 2 and layer 3 when QoS policy is applied.

To view the ingress and egress details when QoS policy is applied on the subinterfaces:

- Step 1** In the **Inventory** window, choose **Physical Inventory**.
- Step 2** Select an interface in layer 2 or layer 3.
- Step 3** Select a subinterface for which you want to view the ingress and egress speed details.
- Step 4** Click the **EFP** tab or **Sub Interface** tab to view the speed details of the subinterface mapped on layer 2 or layer 3 respectively. [Figure 21-2](#) shows the speed details on a subinterface.

Figure 21-3 Speed Details

VLAN	IP Interface	VRF Name	Binding	Is MPLS	Ingress Policy	Ingress Speed (Kbps)	Egress Policy	Egress Speed (Kbps)	Service Control
				false	no9aifson	0	no9aifson	0	
				false	no9aifpolicy3	0	no9aifpolicy3	0	
				false	no9aifcisco	40	no9aifcisco	32	
				false	no9aifcisco	40	no9aifpolicy3	0	

The following table provides information about the fields that are not self-explanatory.

[Table 21-4](#) describes the fields that are not self-explanatory

Table 21-4 Traffic Shaping Details

Field Name	Description
Egress Policy	The name of the egress policy.
Egress Speed	The traffic shaping of the outgoing packets in an interface.
Ingress Policy	The name of the ingress policy.
Ingress Speed	The traffic shaping of the incoming packets in an interface.

**Note**

Ingress policy, egress policy, ingress speed, and egress speed are supported in Cisco ASR 9000 devices but ingress policy and ingress speed are not supported in Cisco ASR 903 device and egress policy and egress speed are not supported in Cisco ASR 901 device
