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## Configure QoS Elements on Concerto

 For supported software information, click [here](#).

You can configure the following types of QoS elements in Concerto:

- Classification
- Traffic-class scheduler
- Rewrite rule (for Releases 10.2.1 and later)
- Interface scheduler

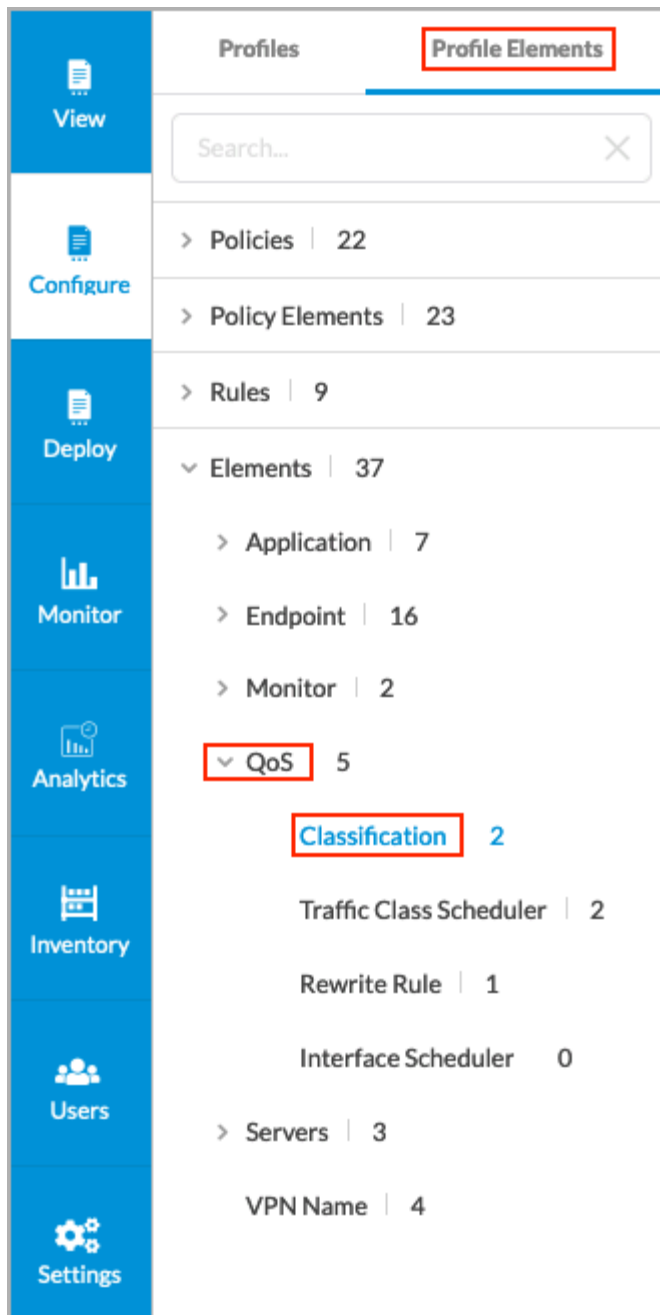
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## Configure QoS Classification Elements

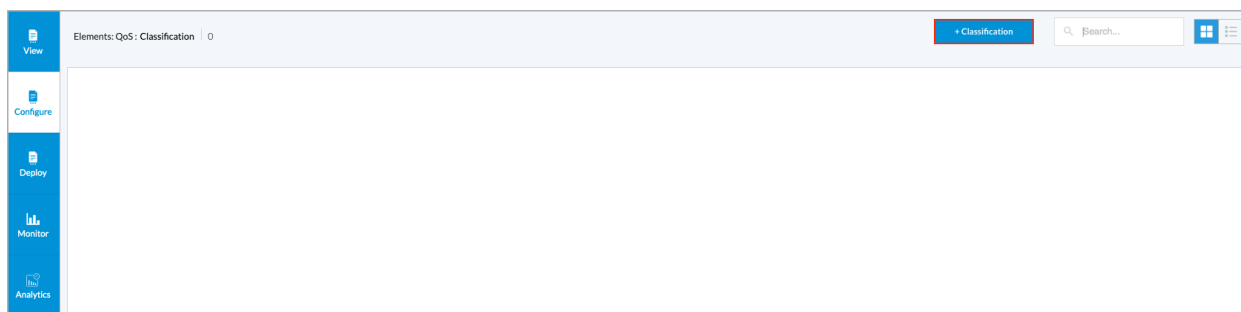
You use QoS classification elements to categorize all ingress traffic packets based on their importance and to place related packets into their own forwarding class. You can also configure the loss priority and rate limits for each classification, and you can rewrite the Differentiated Services Code Point (DSCP) and 802.1p bits in the packet headers.

To configure a QoS classification element:

1. Go to Configure > Profile Elements > Elements > QoS > Classification.



The QoS Classification screen displays.



2. Click + Classification to create a new Classification element. In the Create Classification screen, enter information for the following fields.

**Create Classification**  
V1

**General**
Permissions

Name Version 1

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Type  
**Classification**

Forwarding Class

Category  
**Network Control** ▼

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Class  
**Forwarding Class 0** ▼

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☐ DSCP Rewrite
☐ 802.1P Rewrite

**Advanced**

Loss Priority ▼ **Low** ▼ ✕

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[Add Term](#)

Field	Description
Name	Enter a name for the classification.
Forwarding Class (Group of Fields)	
<ul style="list-style-type: none"> <li>Category</li> </ul>	Select the category: <ul style="list-style-type: none"> <li>Assured</li> <li>Best Effort</li> <li>Expedited</li> <li>Network Control</li> </ul>
<ul style="list-style-type: none"> <li>Class</li> </ul>	Select the forwarding class to apply to the classification: <ul style="list-style-type: none"> <li>Forwarding Class 0 through Forwarding Class 3 (for the Network Control category)</li> <li>Forwarding Class 4 through Forwarding Class 7 (for the Expedited category)</li> <li>Forwarding Class 8 through Forwarding Class 11 (for the Assured category)</li> <li>Forwarding Class 12 through Forwarding Class 15 (for the Best Effort category)</li> </ul>
<ul style="list-style-type: none"> <li>DSCP Rewrite</li> </ul>	Click to enable the rewriting of the DSCP bits in the headers of outbound traffic.
<ul style="list-style-type: none"> <li>802.1P Rewrite</li> </ul>	Click to enable rewriting of the 802.1P bits in the headers of outbound traffic.
Advanced (Group of Fields)	
<ul style="list-style-type: none"> <li>Loss Priority</li> </ul>	Select the loss priority: <ul style="list-style-type: none"> <li>High</li> <li>Low</li> </ul>

Field	Description
<ul style="list-style-type: none"> <li>Rate Limit</li> </ul>	<div> <div>Advanced</div> <div> <div>Rate Limit</div> <div> <div>Peak Rate</div> <div>Add Another</div> <div>Add Term</div> </div> </div> </div> <p>Select the type of rate limited:</p> <ul style="list-style-type: none"> <li>Peak Burst Size—Enter the peak burst size, in bytes.</li> <li>Peak Rate—Enter the peak rate, in kbps</li> </ul>

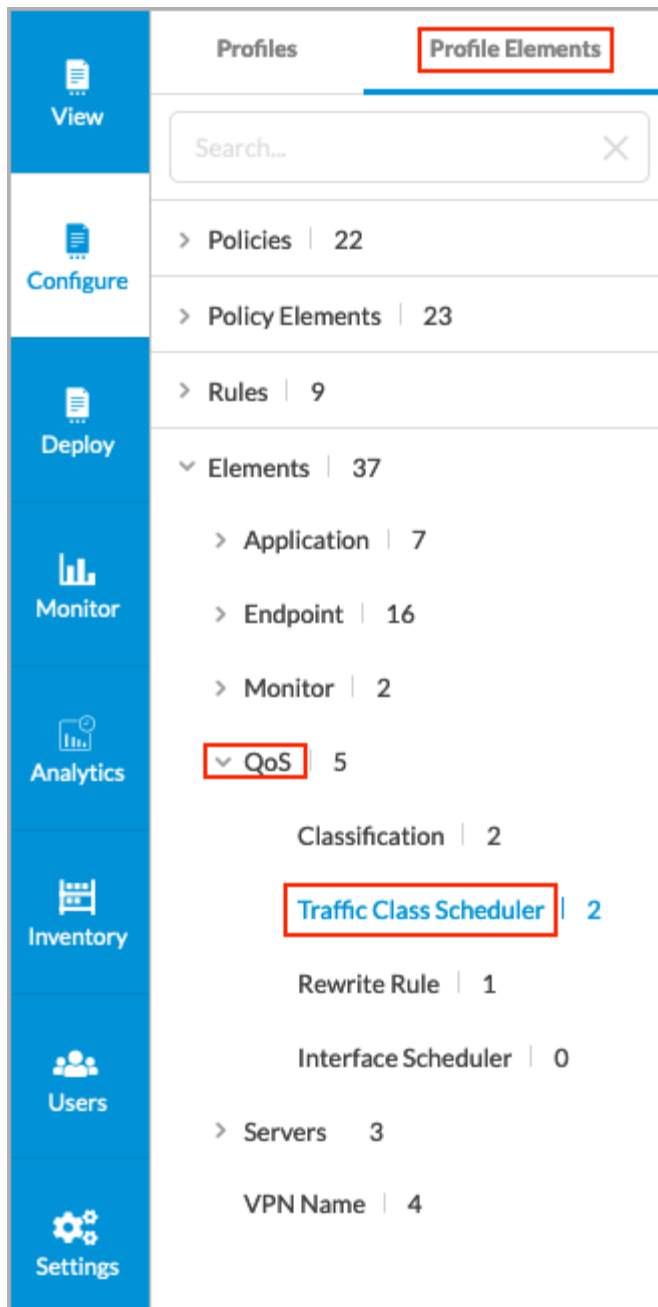
3. Select the Permissions tab, or click Next.
4. Update the permissions, if desired, and then click Save.

## Configure QoS Traffic-Class Schedulers

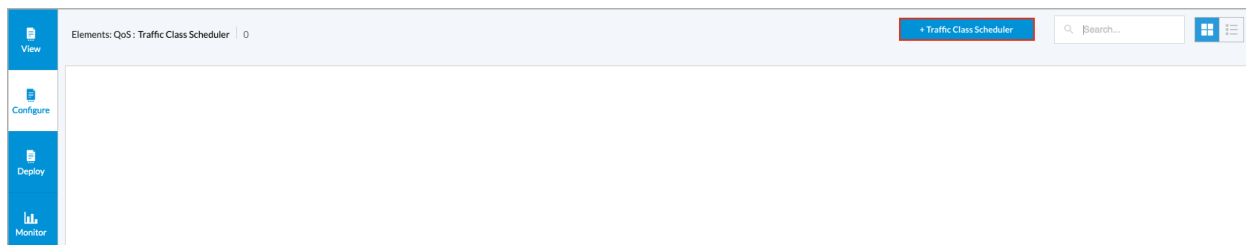
You can configure traffic-class schedulers to assign different types of traffic to different outbound queues, which associate drop profiles with a high and a low drop-low priority. Schedulers are grouped into a scheduler map, which assigns the schedulers to a traffic class.

To configure a QoS traffic class scheduler:

1. Go to Configure > Profile Elements > Elements > QoS > Traffic Class Scheduler.



The QoS Traffic Class Scheduler screen displays.



- Click + Traffic Class Scheduler to create a new traffic class scheduler. The Create Traffic Class Scheduler screen displays.

**Create Traffic Class Scheduler**  
V1

**General** Permissions

Name

Version 1

Type

**Traffic Class Scheduler**

[Add Rate Type](#)

[Advanced](#)

- Select the General tab.
- Enter a name for the traffic class scheduler.
- Click Add Rate Type, and then select a rate type, which can be Guaranteed Rate or Transmit Rate.

Type

**Traffic Class Scheduler**

Type

Transmit Rate

Kbps

[Add Another](#)

[Advanced](#)

%

Kbps

- Enter a value in the field to the right of Type, and then select the units, either percentage (%) or Kbps.
- Click Advanced.

Advanced

Term Type

Queue Priority

Queue	Weight
0	Select
1	Select
2	Select
3	Select

- For each queue, select a weight value. The value can be 1 through 16.
- Select the Permissions tab, or click Next.
- Update the permissions, if desired, and then click Save.

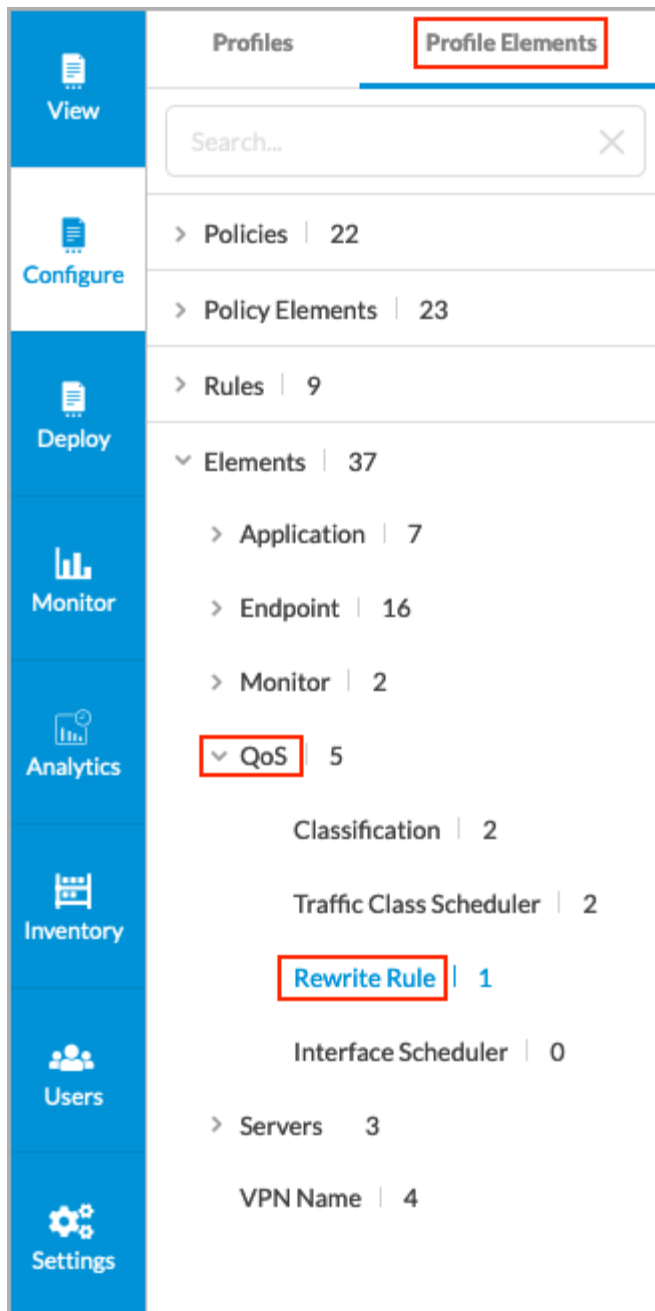
## Configure QoS Rewrite Rules

You configure rewrite rules to remark, or change, bits in the header of outgoing packets. A rewrite rule examines a packet's forwarding class and loss priority and sets the CoS bits to the value defined in the rule. Rewrite rules apply the packet loss priority and forwarding class information to determine the DSCP on outbound packets or streams.

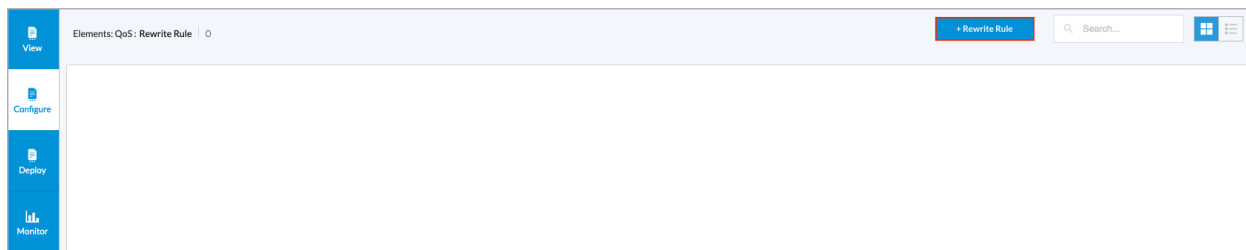
In Concerto Releases 10.2.1 and later, you can configure QoS rewrite rules and make them reusable profile elements. Once you create rewrite rules, you can use them in any Interface policy under Configure Profiles > Profile Elements > >Policy Elements > Device > Interface.To configure QoS rewrite rules:

- Go to Configure > Profile Elements > Elements > QoS > Rewrite Rule.





The QoS Rewrite Rule screen displays.



[https://docs.versa-networks.com/Secure\\_SD-WAN/02\\_Configuration\\_from\\_Concerto/Secure\\_SD-WAN\\_Configuration/Config...](https://docs.versa-networks.com/Secure_SD-WAN/02_Configuration_from_Concerto/Secure_SD-WAN_Configuration/Config...)

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2. Click + Rewrite Rule to create a new rewrite rule. In the Create Rewrite Rule screen, enter information for the following fields.

Create Rewrite Rule

V1

General

Permissions

Name

Version 1

Type

DSCP

Category

Select

Forwarding Class

Select

Loss Priority

Select

Code Point

Select

Add Another

Add Forwarding Class

Add Type

Field	Description
Name	Enter a name for the rewrite rule.
Type	Select the rewrite table type: <ul style="list-style-type: none"><li>DSCP</li><li>DSCPv6</li><li>IEEE 802.1p</li></ul>
Category	Select the category: <ul style="list-style-type: none"><li>Assured</li><li>Best Effort</li></ul>

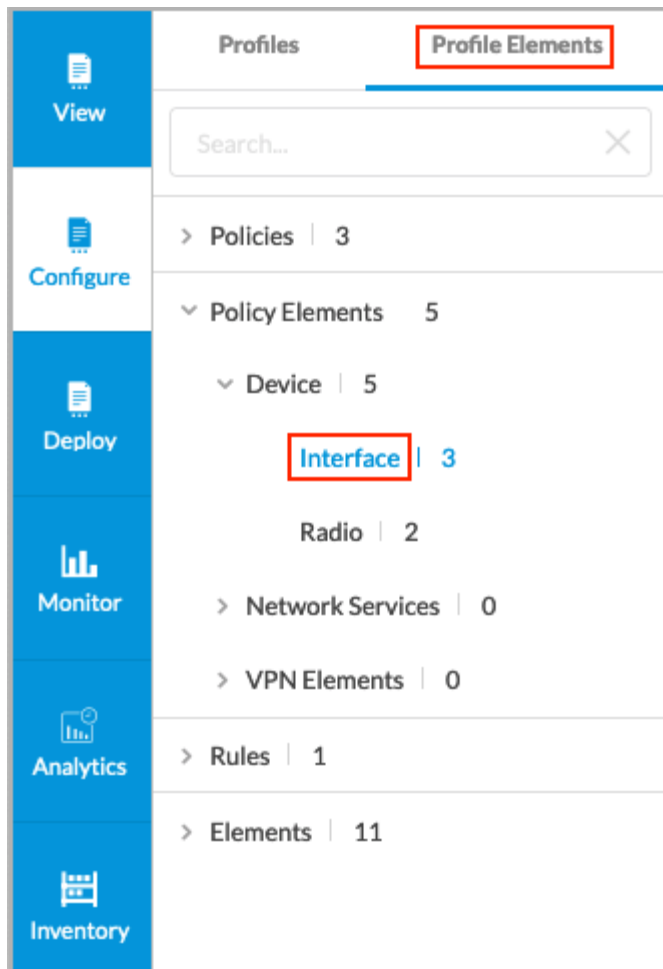
Field	Description
	<ul style="list-style-type: none"> <li>◦ Expedited</li> <li>◦ Network Control</li> </ul>
Forwarding Class	<p>Select the forwarding class to which to apply the rewrite rule. Certain forwarding classes are available for each category:</p> <ul style="list-style-type: none"> <li>◦ Forwarding Class 0 through Forwarding Class 3 (for the Network Control category)</li> <li>◦ Forwarding Class 4 through Forwarding Class 7 (for the Expedited category)</li> <li>◦ Forwarding Class 8 through Forwarding Class 11 (for the Assured category)</li> <li>◦ Forwarding Class 12 through Forwarding Class 15 (for the Best Effort category)</li> </ul>
Loss Priority	<p>Select the drop loss priority at which the DSCP, DSCPv6, or IEEE 802.1p value should be rewritten:</p> <ul style="list-style-type: none"> <li>◦ Low</li> <li>◦ High</li> </ul>
Code Point	Select the standard code point to associate with the forwarding class and the drop loss priority.
Add Forwarding Class	Click to add another forwarding class, if desired.
Add Type	Click to add another type, if desired.

3. Select the Permissions tab, and edit the permissions if desired.
4. Click Save to create the reusable rewrite rule.

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## Use a QoS Rewrite Rule in an Interface Policy

1. Go to Configure > Profile Elements > >Policy Elements > Device > Interface.



The Device: Interface screen displays.

View	Policy Elements: Device: Interface   1										+ Interface	Search...	
Configure	NAME	TYPE	VERSI...	INTERFACE	CATEGORY	CONNECTION NAME	IPv4 ADDRESS	IPv6 ADDRESS	VARIABLES	LAST MODIFIED			
Deploy	LanAE	Physical	1	Enabled	LAN   AE		DHCP			11/19/2021, 10:47:26 P...			
Monitor													
Analytics													
Inventory													
Users													
Settings													

2. Click an interface name. The Edit Interface screen displays.

Edit Interface

WAN-1v2

General

Connection

QoS

Permissions

Interface Scheduler

Select

Traffic Rate

Maximum Rate(kbps)

Burst Size(Bytes)

Rewrite

☒

Enable

Name

unnamed

v1

[ Select Existing ]

Type

DSCP

Category

Select

Forwarding Class

Select

Loss Priority

Select

Code Point

Select

Add Another

Add Forwarding Class

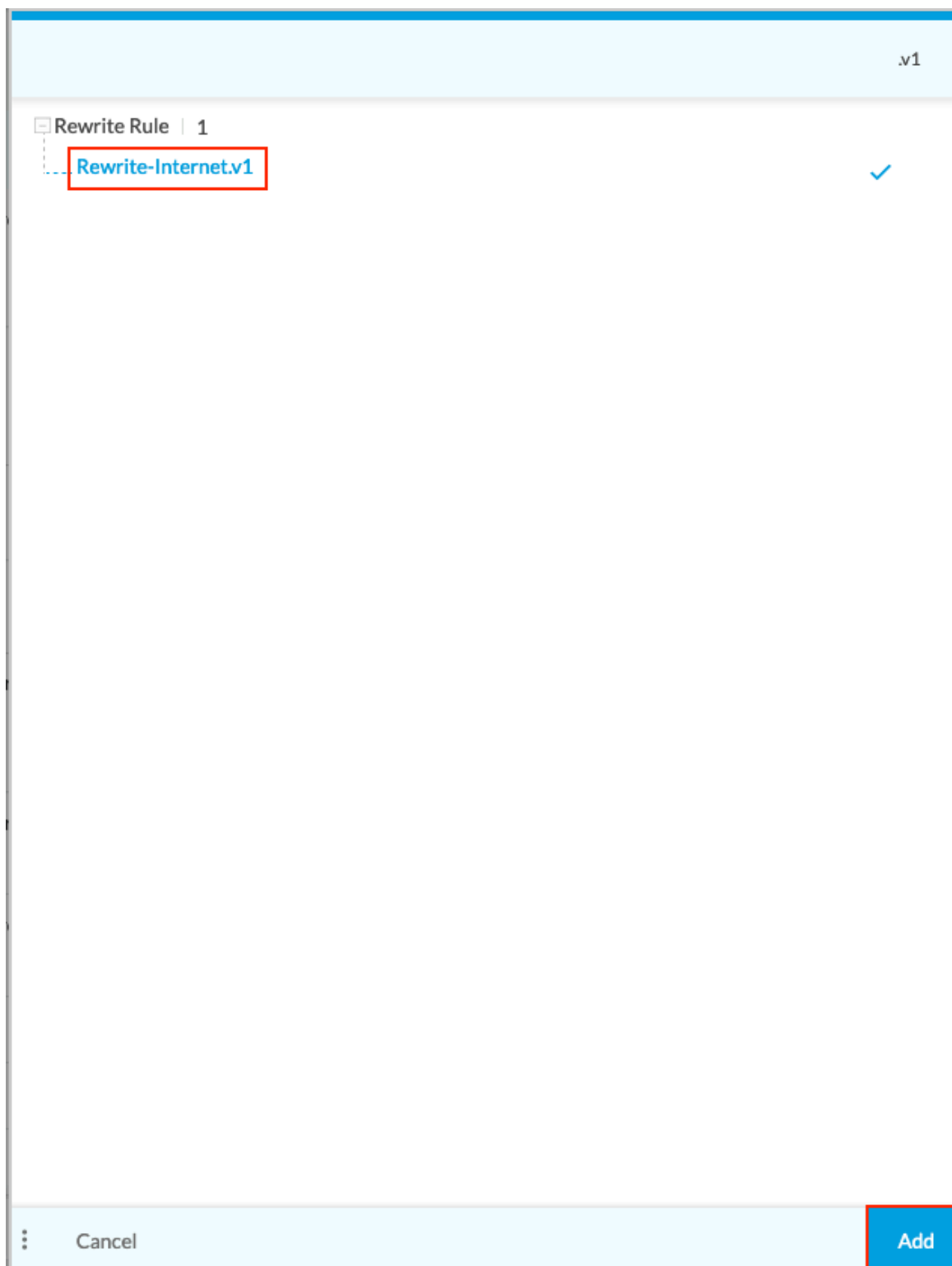
Add Type

Cancel

Next

3. Select the QoS tab.
4. Select an Interface Scheduler .

5. Click the Enable Rewrite box.
6. Click Select Existing. The reusable rewrite rules display.



7. Select a rewrite rule, and then click Add. The details of the rewrite rule are added to the QoS tab of the Edit Interface screen.

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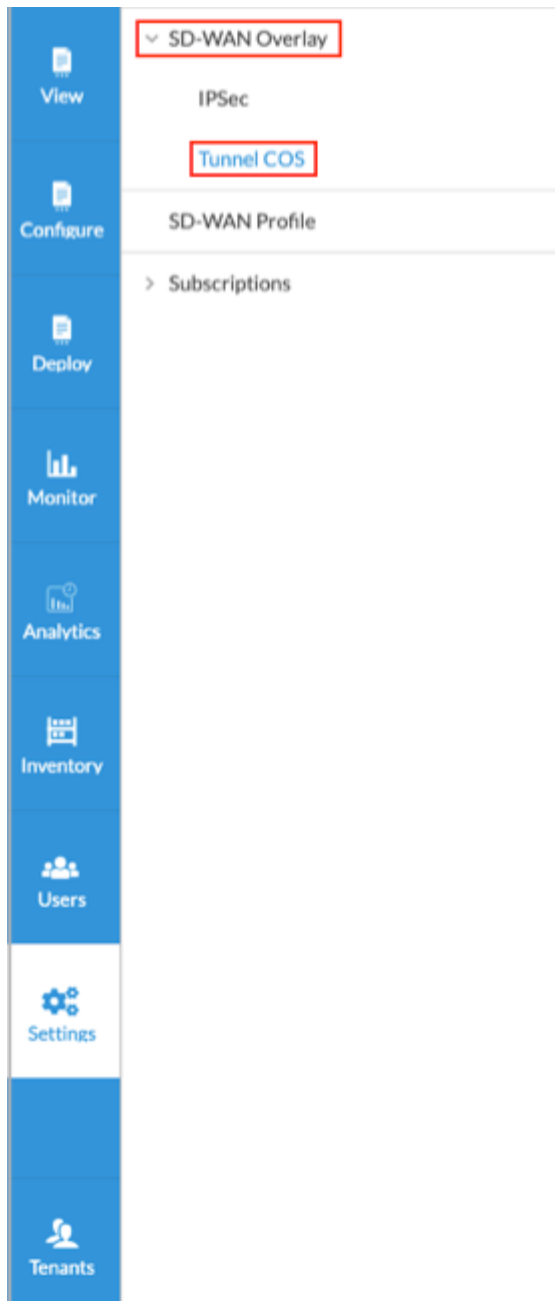
## Apply a QoS Rewrite Rule to SD-WAN Overlay Tunnels

*For Releases 12.1.1 and later.*

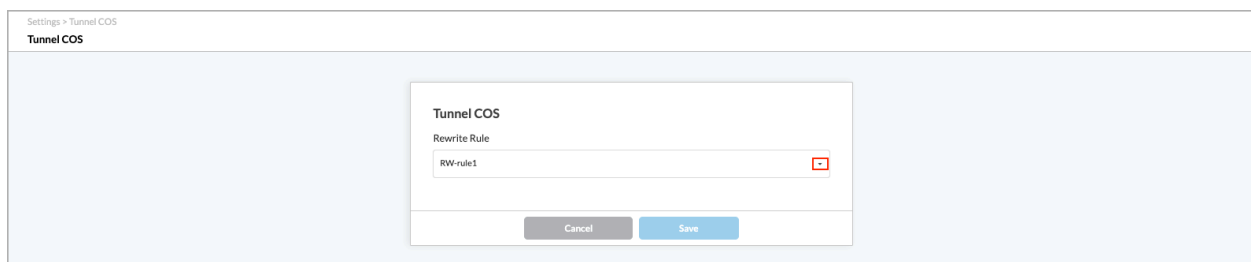
You can apply a QoS rewrite rule to all SD-WAN overlay tunnels so that the inner packets of all egress traffic are rewritten with the DSCP options specified in the rewrite rule.

To apply a QoS rewrite rule to SD-LAN overlay tunnels:

1. Go to the tenant home screen, and then select Settings > SD-WAN Overlay > Tunnel CoS in the left navigation bar.



The following screen displays.



[https://docs.versa-networks.com/Secure\\_SD-WAN/02\\_Configuration\\_from\\_Concerto/Secure\\_SD-WAN\\_Configuration/Config...](https://docs.versa-networks.com/Secure_SD-WAN/02_Configuration_from_Concerto/Secure_SD-WAN_Configuration/Config...)

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2. Select a rewrite rule.
3. Click Save.

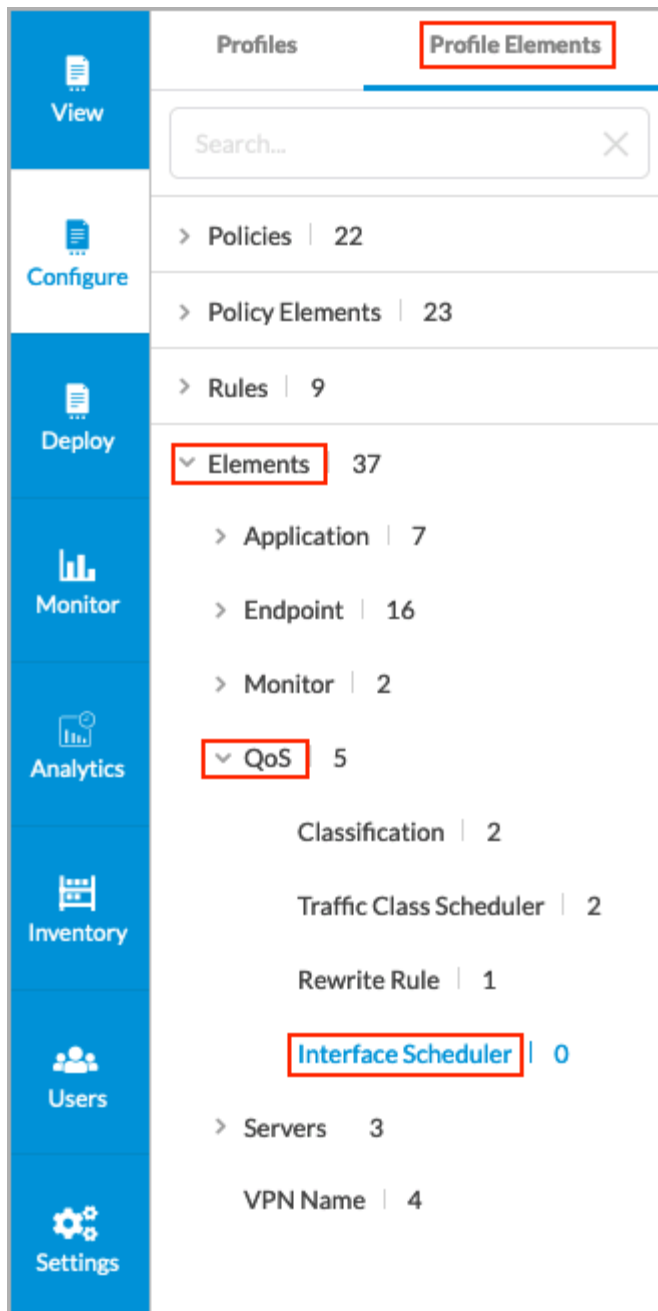
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## Configure QoS Interface Schedulers

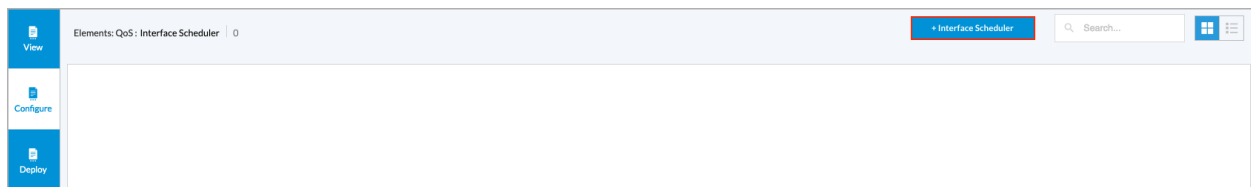
You can use QoS interface schedulers to assign traffic class schedulers to QoS forwarding class categories.

To configure a QoS interface scheduler:

1. Go to Configure > Profile Elements > Elements > QoS > Interface Schedulers.



The QoS Interface Scheduler screen displays.



2. Click + Profile to add a new interface scheduler. The Create Interface Scheduler screen displays.

[https://docs.versa-networks.com/Secure\\_SD-WAN/02\\_Configuration\\_from\\_Concerto/Secure\\_SD-WAN\\_Configuration/Config...](https://docs.versa-networks.com/Secure_SD-WAN/02_Configuration_from_Concerto/Secure_SD-WAN_Configuration/Config...)

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**Create Interface Scheduler**  
V1

General
Permissions

Name

Version 1

Type

**Interface Scheduler**

Category	Traffic Class Scheduler	
Network Control		▼
Expedited		▼
Assured		▼
Best Effort		▼

3. Enter a name for the new interface scheduler.
4. For each category, select an option from the drop-down list on the right. The options are TC1, TC-2, and TC-BE.
5. Select the Permissions tab or click Next.
6. Update the permissions, if desired, and then click Save.

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## Supported Software Information

Releases 10.2.1 and later support all content described in this article, except:

- Release 12.1.1 allows you to apply a QoS rewrite rule to all SD-LAN overlay tunnels.

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## Additional Information

### Configure Profiles

[https://docs.versa-networks.com/Secure\\_SD-WAN/02\\_Configuration\\_from\\_Concerto/Secure\\_SD-WAN\\_Configuration/Config...](https://docs.versa-networks.com/Secure_SD-WAN/02_Configuration_from_Concerto/Secure_SD-WAN_Configuration/Config...)

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