



## Class-Map Configuration Mode Commands

Class-Map is used to configure a packet classifier for the flow-based Traffic Policing feature within destination context. It filters egress and/or ingress packets of a subscriber session based on rules configured in a subscriber context.

### Command Modes

Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure** > **context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```



### Important

The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

- [end, on page 1](#)
- [exit, on page 2](#)
- [match any, on page 2](#)
- [match dst-ip-address, on page 3](#)
- [match dst-port-range, on page 3](#)
- [match ip-tos, on page 4](#)
- [match ipsec-spi, on page 5](#)
- [match packet-size, on page 6](#)
- [match protocol, on page 7](#)
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- [match src-port-range, on page 9](#)

## end

Exits the current configuration mode and returns to the Exec mode.

### Product

All

### Privilege

Security Administrator, Administrator

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**Syntax Description** `end`

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**Usage Guidelines** Use this command to return to the Exec mode.

## exit

Exits the current mode and returns to the parent configuration mode.

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**Product** All

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**Privilege** Security Administrator, Administrator

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**Syntax Description** `exit`

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**Usage Guidelines** Use this command to return to the parent configuration mode.

## match any

Allows all traffic types in this class map.

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**Product** PDSN  
HA  
ASN-GW  
HSGW  
P-GW  
SAEGW  
SCM

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**Privilege** Security Administrator, Administrator

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**Command Modes** Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure** > **context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

---

**Syntax Description** `match any`

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**Usage Guidelines** Sets the match rule to allow all traffic flow for specific class map.

### Example

The following command allows all packets going to a system with this class map.

```
match any
```

## match dst-ip-address

Specifies a traffic classification rule based on the destination IP address of packets.

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PDSN  
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HSGW  
P-GW  
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SCM

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**Privilege**

Security Administrator, Administrator

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**Command Modes**

Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure** > **context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map)#
```

---

**Syntax Description**

**match dst-ip-address** *dst\_ip\_address* /*subnet\_mask*

***dst\_ip\_address/subnet\_mask***

Specifies the destination IP address of the packets.

*dst\_ip\_address* must be entered in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

*subnet\_mask* is an option that is entered in CIDR notation.

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**Usage Guidelines**

Sets the match rule based on the destination IP address of packets for specific Class Map.

**Example**

The following command specifies the rule for packets going to a system having an IP address *10.1.2.6*.

```
match dst-ip-address 10.1.2.6
```

## match dst-port-range

Specifies a traffic classification rule based on the range of destination ports for L4 packets.

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HSGW  
P-GW  
SAEGW  
SCM

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**Privilege** Security Administrator, Administrator

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**Command Modes** Exec > Global Configuration > Context Configuration > Class-Map Configuration  
**configure > context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

---

**Syntax Description** **match dst-port-range** *initial\_port\_number* [ **to** *last\_port\_number* ]

***initial\_port\_number*** [ ***to last\_port\_number*** ]

Specifies the destination port or range of ports of L4 packets.

*initial\_port\_number* is the starting port number and must be an integer 1 to 65535 but less than *last\_port\_number*, if specified.

*last\_port\_number* is the end port number and must be an integer from 1 to 65535 but more than *initial\_port\_number*.

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**Usage Guidelines** Sets the match rule based on the destination port number or range of ports of L4 packets for specific Class Map.

### Example

The following command specifies the rule for packets having destination port number from 23 to 88.

```
match dst-port-range 23 to 88
```

## match ip-tos

Specifies a traffic classification rule based on the IP Type of Service value in ToS field of packet.

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HSGW  
P-GW  
SAEGW  
SCM

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**Privilege** Administrator

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**Command Modes** Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure > context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

---

**Syntax Description** **match ip-tos** { *service\_value* [ **ip-tos-mask** *mask\_value* ] | **tos-range** *low\_value* **to** *high\_value* }

***service\_value***

Specifies the IP Type-of-Service value to match inside the ToS field of packets as an integer from 0 to 255.

**ip-tos-mask** *mask\_value*

Specifies the IP Type-of-Service mask value to match inside the ToS field of packets as an integer from 1 to 255.

**tos-range** *low\_value* **to** *high\_value*

Specifies a range that a ToS value in a received packet must fall within to be considered a match. *low\_value* and *high\_value* must be an integer from 0 to 255.

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**Usage Guidelines** Sets the match rule based on the IP ToS value in ToS field of packets for specific Class Map.

#### Example

The following commands specifies the IP ToS value of 3 is the value to match in a ToS field in received packets.

```
match ip-tos 3
```

## match ipsec-spi

Specifies a traffic classification rule based on the IPSec Security Parameter Index (SPI) value in the SPI field of packet.

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**Product** PDSN  
HA  
ASN-GW  
HSGW  
P-GW  
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SCM

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**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure > context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

**Syntax Description** **match ipsec-spi** *index\_value*

***index\_value***

Specifies the IPsec SPI value to match inside the SPI field of packets as an integer from 1 to 65535.

**Usage Guidelines** Sets the match rule based on the IPsec SPI value in SPI field of packets for specific Class Map.

### Example

The following command specifies the IPsec SPI value as *1234* for the SPI field in packets.

```
match ipsec-spi 1234
```

## match packet-size

Specifies a traffic classification rule based on the size of packet.

**Product**

- PDSN
- HA
- ASN-GW
- HSGW
- P-GW
- SAEGW
- SCM

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure > context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

**Syntax Description** **match packet-size** [ **gt** | **lt** ] *size*

**[ gt | lt ] size**

Specifies the packet length in bytes.

**gt**: indicates a packet size greater than the specified size.

**lt:** indicates a packet size less than the specified size.

*size* must be an integer from 1 to 65535.

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### Usage Guidelines

Sets the match rule based on the size of packets for specific Class Map. This command is only applicable for static policies; it is not available for dynamic policies.

### Example

The following command specifies the packet length to be *1024* bytes.

```
match packet-size 1024
```

## match protocol

Specifies a traffic classification rule based on the protocol used for session flow.

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SCM

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### Privilege

Security Administrator, Administrator

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### Command Modes

Exec > Global Configuration > Context Configuration > Class-Map Configuration

```
configure > context context_name > class-map class_map_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map)#
```

---

### Syntax Description

```
match protocol { gre | ip-in-ip | number | rtp | sip | tcp | udp }
```

#### **gre**

Sets the match rule for session flow using Generic Routing Encapsulation (GRE) Protocol. It matches the protocol field to GRE inside the packet.

#### **ip-in-ip**

Sets the match rule for session flow using IP-in-IP encapsulation protocol. It matches the protocol field to ip-in-ip inside the packet.

**number**

Sets the match rule for a session flow using Transmission Control Protocol (TCP). It matches the specified protocol field inside the packet.

**rtp**

Sets the match rule for a session flow using Real Time Protocol (RTP). It matches the specified protocol field inside the packet.

**sip**

Sets the match rule for a session flow using Session Initiation Protocol (SIP). It matches the specified protocol field inside the packet.

**tcp**

Sets the match rule for a session flow using Transmission Control Protocol (TCP). It matches the protocol field to TCP inside the packet.

**udp**

Sets the match rule for a session flow having User Datagram Protocol (UDP). It matches the protocol field to UDP inside the packet.

**Usage Guidelines**

Sets the match rule based on the protocol of packet flow for a specific Class Map.

**Example**

The following command specifies the rule for packet flow using IP-in-IP protocol.

```
match protocol ip-in-ip
```

## match src-ip-address

Specifies a traffic classification rule based on the source IP address of packets.

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SCM

**Privilege**

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**Command Modes**

Exec > Global Configuration > Context Configuration > Class-Map Configuration



**configure** > **context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

---

**Syntax Description**

**match src-ip-address** *src\_ip\_address* /*subnet\_mask*

***src\_ip\_address/subnet\_mask***

Specifies the destination IP address of the packets.

*src\_ip\_address* must be entered in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

*subnet\_mask* is an option that is entered in CIDR notation.

---

**Usage Guidelines**

Sets the match rule based on the source IP address of packets for specific Class Map.

**Example**

The following command specifies the rule for packets coming from a system having an IP address 10.1.2.3.

```
match src-ip-address 10.1.2.3
```

## match src-port-range

Specifies a traffic classification rule based on the range of source ports of L4 packets.

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SCM

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**Privilege**

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**Command Modes**

Exec > Global Configuration > Context Configuration > Class-Map Configuration

**configure** > **context** *context\_name* > **class-map** *class\_map\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-class-map) #
```

---

**Syntax Description**

**match src-port-range** *initial\_port\_number* [ **to** *last\_port\_number* ]

***initial\_port\_number* [ to *last\_port\_number* ]**

Specifies the source port or range of ports of the L4 packets.

*initial\_port\_number* is the starting port number and must be an integer from 1 to 65535 but less than *last\_port\_number*, if specified.

*last\_port\_number* is the end port number and must be an integer from 1 to 65535 but more than *initial\_port\_number*.

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**Usage Guidelines**

Sets the match rule based on source port number or range of ports of L4 packets for specific Class Map.

**Example**

The following command specifies the rule for packets having source port number from 23 to 88.

```
match src-port-range 23 to 88
```