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## M Commands

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This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with M.

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## match access-group

To identify a specified access control list (ACL) group as a match criteria for a class map, use the **match access-group** command. To remove an ACL match criteria from a class map, use the **no** form of this command.

**match access-group name** *acl-name*

**no match access-group name** *acl-name*

### Syntax Description

**name** *acl-name* Matches on the characteristics in the ACL name specified.

### Command Default

None

### Command Modes

Class-map type qos configuration

### Command History

Release	Modification
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines



#### Note

The **permit** and **deny** ACL keywords do not affect the matching of packets.

### Examples

This example shows how to create a qos class map that matches characteristics of the ACL my\_acl:

```
switch(config)# class-map class_acl
switch(config-cmap-qos)# match access-group name my_acl
```

### Related Commands

Command	Description
show class-map	Displays class maps.

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## match cos

To define the class of traffic using the class of service (CoS) value in a type qos class map, use the **match cos** command. To remove the match on the CoS value, use the **no** form of this command.

**match [not] cos** *cos-list*

**no match [not] cos** *cos-list*

### Syntax Description

<b>not</b>	(Optional) Negates the specified match result.
<i>cos-list</i>	Specified CoS value or list of specified CoS values. Valid values are from 0 to 7.

### Command Default

None

### Command Modes

Class-map type qos configuration

### Command History

Release	Modification
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas



#### Note

Only class maps of type qos support the optional **not** keyword form of this command. Class maps of type queuing do not support the **not** keyword.

### Examples

This example shows how to match on the CoS value for a type qos class map:

```
switch(config)# class-map class_acl
switch(config-cmap-qos)# match cos 5-7
```

### Related Commands

Command	Description
<b>show class-map</b>	Displays class maps.

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## match dscp

To identify specific differentiated services code point (DSCP) values in the DiffServ field of the IP Header (either IPv4 or IPv6) as a match criteria, use the **match dscp** command. To remove specified DSCP values as a match criteria, use the **no** form of this command.

**match [not] dscp** *dscp-list*

**no match [not] dscp** *dscp-list*

### Syntax Description

<b>not</b>	(Optional) Negates the specified match result.
<i>dscp-list</i>	Specified DSCP value or list of DSCP values. See <a href="#">Table 1</a> for a list of valid DSCP values.

### Command Default

None

### Command Modes

Class-map type qos configuration

### Command History

Release	Modification
5.2(1)N1(1)	Added support for IPv6.
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines

The standard DSCP values are shown in [Table 1](#).

**Table 1** Standard DSCP Values

DSCP Value	Description
af11	AF11 dscp (001010)—decimal value 10
af12	AF12 dscp (001100)—decimal value 12
af13	AF13 dscp (001110)—decimal value 14
af21	AF21 dscp (010010)—decimal value 18
af22	AF22 dscp (010100)—decimal value 20
af23	AF23 dscp (010110)—decimal value 22
af31	AF31 dscp (011010)—decimal value 26
af32	AF40 dscp (011100)—decimal value 28
af33	AF33 dscp (011110)—decimal value 30
af41	AF41 dscp (100010)—decimal value 34
af42	AF42 dscp (100100)—decimal value 36
af43	AF43 dscp (100110)—decimal value 38

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**Table 1**      **Standard DSCP Values (continued)**

DSCP Value	Description
cs1	CS1 (precedence 1) dscp (001000)—decimal value 8
cs2	CS2 (precedence 2) dscp (010000)—decimal value 16
cs3	CS3 (precedence 3) dscp (011000)—decimal value 24
cs4	CS4 (precedence 4) dscp (100000)—decimal value 32
cs5	CS5 (precedence 5) dscp (101000)—decimal value 40
cs6	CS6 (precedence 6) dscp (110000)—decimal value 48
cs7	CS7 (precedence 7) dscp (111000)—decimal value 56
default	Default dscp (000000)—decimal value 0
ef	EF dscp (101110)—decimal value 46

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

### Examples

This example shows how to match on DSCP value af21:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match dscp af21
```

### Related Commands

Command	Description
<b>show class-map</b>	Displays class maps.

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## match ip rtp

To configure a class map to use the Real-Time Protocol (RTP) port as a match criteria, use the **match ip rtp** command. To remove the RTP port as a match criteria, use the **no** form of this command.

**match [not] ip rtp** *port-list*

**no match [not] ip rtp** *port-list*

### Syntax Description

<b>not</b>	(Optional) Negates the specified match result.
<i>port-list</i>	Specified UDP port or list of UDP ports that are using RTP. Valid values range from 2000 to 65535.

### Command Default

None

### Command Modes

Class-map type qos configuration

### Command History

Release	Modification
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

### Examples

This example shows how to match on a port using RTP:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match ip rtp 2300
```

### Related Commands

Command	Description
<b>show class-map</b>	Displays class maps.

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## match precedence

To configure a class map to use the precedence value in the type of service (ToS) byte field of the IP header (either IPv4 or IPv6) as a match criteria, use the **match precedence** command. To remove the precedence values as a match criteria, use the **no** form of this command.

**match** [**not**] **precedence** *precedence-list*

**no match** [**not**] **precedence** *precedence-list*

<b>Syntax Description</b>	<b>not</b>	(Optional) Negates the specified match result.
	<i>precedence-list</i>	Specified IP precedence value or list of IP precedence values specified in bytes. Valid values are shown in <a href="#">Table 2</a> .

**Command Default** None

**Command Modes** Class-map type qos configuration

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	5.2(1)N1(1)	Added support for IPv6.
	4.1(3)N1(1)	This command was introduced.

**Usage Guidelines** See [Table 2](#) for a list of precedence values.

**Table 2** *Precedence Values*

<b>Precedence Value</b>	<b>Description</b>
0-7	IP precedence value
critical	Critical precedence (5)
flash	Flash precedence (3)
flash-override	Flash override precedence (4)
immediate	Immediate precedence (2)
internet	Internetwork control precedence (6)
network	Network control precedence (7)
priority	Priority precedence (1)
routine	Routine precedence (0)

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash

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- Specify a noncontiguous list of values separated by commas

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**Examples**

This example shows how to match on an IP precedence value:

```
switch(config)# class-map my_test  
switch(config-cmap-qos)# match precedence 7
```

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**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show class-map</b>	Displays class maps.

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## match protocol

To configure a class map to use a specific protocol as a match criterion, use the **match protocol** command. To remove the specified protocol as a match criteria, use the **no** form of this command.

**match [not] protocol** *protocol-name*

**no match [not] protocol** *protocol-name*

### Syntax Description

<b>not</b>	(Optional) Negates the specified match result.
<i>protocol-name</i>	Specified protocol name. Valid values are shown in <a href="#">Table 3</a> .

### Command Default

None

### Command Modes

Class-map type qos configuration

### Command History

Release	Modification
5.2(1)N1(1)	Added support for IPv6.
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines

The list of valid protocol names is shown in [Table 3](#).

**Table 3 Protocol Names**

Argument	Description
arp	Address Resolution Protocol (ARP)
clns_es	CLNS End Systems
clns_is	CLNS Intermediate System
dhcp	Dynamic Host Configuration (DHCP)
ldp	Label Distribution Protocol (LDP)
netbios	NetBIOS Extended User Interface (NetBEUI)

To specify more than one protocol, enter the command more than once with the desired protocol value each time.

### Examples

This example shows how to match on a specified protocol:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match protocol ldp
```

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**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show class-map</b>	Displays class maps.

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## match qos-group

To configure a class map to use a specific QoS group value as a match criterion, use the **match qos-group** command. To remove the specified protocol as a match criteria, use the **no** form of this command.

```
match [not] qos-group qos-group-list
```

```
no match [not] qos-group qos-group-list
```

### Syntax Description

<b>not</b>	(Optional) Negates the specified match result.
<i>qos-group-list</i>	Specified Qos group value or list of QoS group values specified in bytes. Valid values are from 2 to 5.

### Command Default

None

### Command Modes

Class map type network-qos configuration  
Class map type queuing configuration

### Command History

Release	Modification
4.1(3)N1(1)	This command was introduced.

### Usage Guidelines

The QoS group is an internal label and is not part of the packet payload or any packet header. The QoS group values have no mathematical significance. For example, a QoS group value of 2 is not greater than 1; the values are used only to internally differentiate QoS groups. As such, this value has local significance only.

You match on the QoS group only in egress policies because its value is undefined until you set it in an ingress policy.

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

### Examples

This example shows how to match on a specified QoS group value:

```
switch(config)# class-map type queuing my_test
switch(config-cmap-qos)# match qos-group 6
switch(config-cmap-qos)#
```

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<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>class-map type network-qos</b>	Creates or modifies a network qos class map.
	<b>class-map type queuing</b>	Creates or modifies a queuing class map.
	<b>show class-map</b>	Displays class maps.

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## mtu (ERSPAN)

To set the maximum transmission unit (MTU) size for Encapsulated Remote Switched Port Analyzer (ERSPAN) packets in a monitor session, use the **mtu** command. To remove the configured MTU, use the **no** form of this command.

**mtu** *mtu-value*

**no mtu** *mtu-value*

<b>Syntax Description</b>	<i>mtu-value</i>	Maximum allowable MTU for ERSPAN packets in a monitor session. The range is from 64 to 1518 bytes.
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<b>Command Default</b>	Default is no truncation enabled.
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<b>Command Modes</b>	ERSPAN session configuration mode
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	5.1(3)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	ERSPAN packets larger than the specified allowable size for the monitor session are truncated. This command does not require a license.
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<b>Examples</b>	This example shows how to set an MTU value for an ERSPAN session:
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```
switch# configure terminal
switch(config)# monitor session 1 type erspan-source
switch(config-erspan-src)# erspan-id 100
switch(config-erspan-src)# mtu 100
switch(config-erspan-src)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>monitor session</b>	Configures a SPAN or ERSPAN session.
	<b>show monitor session</b>	Displays the SPAN or ERSPAN session configuration.

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## mtu (interface)

To configure the maximum transmission unit (MTU) size for Layer 2 and Layer 3 Ethernet interfaces, use the **mtu** command. To remove the configured MTU, use the **no** form of this command.

**mtu** *mtu-value*

**no mtu** *mtu-value*

Syntax Description	<i>mtu-value</i>	MTU value for the class of service (CoS). The range is from 64 to 9216.1500 to 9216.
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**Command Default** Default MTU value is 1500. For FCoE cos 3, the default is 2158.

**Command Modes** Policy map type network-qos class configuration

Command History	Release	Modification
	4.1(3)N1(1)	This command was introduced.
	4.2(1)N1(1)	The MTU range is changed to 1500 to 9216. <b>Note</b> On a Cisco Nexus 5000 Series that run a Cisco NX-OS Release 4.1(3)N2(1) or earlier releases, the MTU range is from 1538 to 9216.
	5.0(3)N1(1)	Support for Layer 3 interfaces was added.
	5.1(3)N1(1)	The MTU range is changed to 64 to 9216.

**Usage Guidelines** You can configure an MTU for each virtual link in the system.

**Examples** This example shows how to set an MTU value for a class in a type network-qos policy map:

```
switch(config)# class-map type network-qos my_class1
switch(config-cmap-nq)# match qos-group 1
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos my_class1
switch(config-pmap-nq-c)# mtu 5000
switch(config-pmap-nq-c)#
```

Related Commands	Command	Description
	<b>service-policy</b>	Attaches a policy map to an interface or system policy.
	<b>show class-map</b>	Displays class maps.

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<b>Command</b>	<b>Description</b>
<b>show policy-map</b>	Displays policy maps.
<b>system qos</b>	Configures a system policy.

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## multicast-optimize

To optimize a class to send multiple packets, use the **multicast-optimize** command.

**multicast-optimize**

**no multicast-optimize**

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**Syntax Description** This command has no arguments or keywords.

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**Command Default** None

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**Command Modes** Policy map type network-qos class configuration

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Command History	Release	Modification
	4.1(3)N1(1)	This command was introduced.

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**Usage Guidelines** Multicast traffic in a class will be served by all available multicast queues.  
Only one class in a policy map can be configured for multicast optimization.



**Note**

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On a Cisco Nexus 5548 switch, multicast optimization is enabled by default on the class-default class. You must remove it from the class-default class before enabling it on a user-defined class.

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**Examples** This example shows how to enable optimized multicast for a traffic class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# multicast-optimize
switch(config-pmap-nq-c)#
```

This example shows how to remove the multicast optimization from a traffic class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# no multicast-optimize
switch(config-pmap-nq-c)#
```

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Related Commands	Command	Description
	<b>show policy-map</b>	Displays the policy maps.

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