Supported Devices and Software Releases for CiscoWorks QoS Policy Manager 3.2.1

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The tables below describe the devices and software releases that CiscoWorks QoS Policy Manager (QPM) 3.2.1 supports, and the QoS techniques you can use on the supported platforms. Please note that the information in the tables is subject to change, depending on specific devices and their QoS support.

Device Support Added by QPM 3.2.1

Table 1 shows the device support added by QPM 3.2.1in addition to the devices supported by QPM 3.2. For each device series, the table shows the supported device OIDs (Object IDs) and device names.

Table 1 Device Support Added by QPM 3.2.1

Cisco System Device	Device OID	Device Name
800/805	1.3.6.1.4.1.9.1.212	Cisco801
	1.3.6.1.4.1.9.1.213	Cisco802
	1.3.6.1.4.1.9.1.214	Cisco803
	1.3.6.1.4.1.9.1.215	Cisco804
	1.3.6.1.4.1.9.1.245	Cisco805
806	1.3.6.1.4.1.9.1.384	Cisco806
820	1.3.6.1.4.1.9.1.322	Cisco826
	1.3.6.1.4.1.9.1.270	Cisco827 4v
	1.3.6.1.4.1.9.1.446	Cisco827H
	1.3.6.1.4.1.9.1.382	Cisco828G

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Table 1 Device Support Added by QPM 3.2.1 (continued)

Cisco System Device	Device OID	Device Name
830	1.3.6.1.4.1.9.1.497	Cisco831
	1.3.6.1.4.1.9.1.499	Cisco836
	1.3.6.1.4.1.9.1.495	Cisco837
Cisco Catalyst 2950	1.3.6.1.4.1.9.1.559	Catalyst2950T-48-SI
Cisco Catalyst 2970	1.3.6.1.4.1.9.1.527	Catalyst2970-24
	1.3.6.1.4.1.9.1.561	Catalyst2970-G-24TS-E
Cisco Catalyst 3560	1.3.6.1.4.1.9.1.563	Catalyst3560-24PS
	1.3.6.1.4.1.9.1.564	Catalyst3560-48PS

Supported VIP Card Types

Table 2 shows the VIP card types supported by QPM 3.2.1. For each card type, the table shows the card name and the card ID.

Table 2 Supported VIP Card Type

Card Name	Card ID
vip	164
vip2	165
vip2-50	181
feip2	182
geip	187
vip4-80	195
vip4-50	196
geip-plus	199
wsx-6182-2pa (FlexWAN)	658
vip6-80	2132

Supported Devices and QoS Techniques for IOS Software Releases

Cisco IOS releases supported include 11.1cc, 12.0, 12.1, 12.2, 12.1E, 12.2S, 12.2T, and 12.3. In addition, a Cisco IOS mapping function is used to enable QPM 3.2 to support 12.1E and 12.2T QoS techniques. This is included in later releases of IOS main (T or E train) software.

These tables show the QoS techniques that you can use with the devices and IOS software releases that QPM 3.2.1 supports:

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- Supported Modular CLI (MQC) Features, page 4

Supported Scheduling Methods

Table 3 shows the scheduling techniques that QPM supports on the devices and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM name	Description
CBQ	Class-Based QoS	Class-Based QoS[1]
CQ	CQ	Custom Queuing
DWFQ	DWFQ	Distributed WFQ and QoS group DWFQ
DWRED	WRED	Distributed WRED
FIFO	FIFO	First In First Out Queuing
FQ	FQ	Fair Queuing (Flow-based Distributed WFQ)
PQ	PQ	Priority Queuing
WFQ	WFQ	Weighted Fair Queuing
WRED	WRED	Weighted Random Early Detection

1. Details of the Class-based QoS features supported by QPM are shown in Table 4.

Table 3 Supported Scheduling Techniques on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E [1]	12.2S[2]	12.T[3]	12.3
800/805	CQ, PQ, FIFO, WRED, WFQ	CQ, PQ, FIFO, WRED, WFQ	CBQ, CQ, PQ, FIFO, WRED, WFQ	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	CBQ, CQ, PQ, FIFO, WRED, WFQ
806	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	CBQ, CQ, PQ, FIFO, WRED, WFQ

Table 3 Supported Scheduling Techniques on Devices and IOS Software Releases (continued)

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E [1]	12.2S[2]	12.T[3]	12.3
820	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	CBQ, CQ, PQ, FIFO, WRED, WFQ
830	–	–	–	–	–	CBQ, CQ, PQ, FIFO, WRED, WFQ	CBQ, CQ, PQ, FIFO, WRED, WFQ

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Supported Modular CLI (MQC) Features

Table 4 shows the Modular CLI (MQC) features that QPM supports on the devices and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM Name	Description
Shaping	Shaping, Modular Shaping	Class-based Shaping and Hierarchical Shaping
D-Shaping	Shaping, Modular Shaping	Class-based Distributed Shaping and Hierarchical Distributed Shaping
ToS Marking	IP Precedence, DSCP Marking	Class-based IP Precedence and IP DSCP Marking
COS[1]	CoS Marking	Class-based Set Layer 2 Class Of Service Byte
MPLS	MPLS	Class-based Set and Match MPLS Experimental Byte
FR-DE	FR-DE	Class-based Set and Match of Frame Relay Discard Eligibly Bit
Policing	Policing	Class-based Policing
ERate Policing	Policing with Excess rate	Class-based Excess Rate Policing
LLQ	Priority	Class-based Low Latency Queuing
IP-RTP	IP-RTP	Class-based IP-RTP classification

QoS Feature	QPM Name	Description
FRF	Voice Fragmentation	Class-based QoS using MQC with Frame Relay Fragmentation
DFRF	Voice Fragmentation	Class-based QoS using MQC with Distributed Frame Relay Fragmentation
NBAR	NBAR	Class-based Network-Based Application Recognition
D-NBAR	NBAR	Class-based Distributed Network-Based Application Recognition

1. CoS marking is supported only on ISL/802.1Q interfaces.

Table 4 Supported MQC Features on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E[1]	12.2S[2]	12.2T[3]	12.3
800/805	–	–	–	–	–	IP-RTP, LLQ, Shaping	IP-RTP, LLQ, Shaping
806	–	–	FRF, ToS Marking, LLQ	–	–	FRF, ToS Marking, Policing, LLQ, NBAR	FRF, ToS Marking, Policing, LLQ, NBAR
820	–	–	FRF, ToS Marking, LLQ	–	–	FRF, ToS Marking, Policing, LLQ, NBAR	FRF, ToS Marking, Policing, LLQ, NBAR
830	–	–	–	–	–	FRF, IP-RTP, ToS Marking, LLQ, Shaping, COS, FR-DE	FRF, IP-RTP, ToS Marking, LLQ, NBAR, Shaping, COS, FR-DE

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Supported Marking, Policing, and Shaping Methods

Table 5 shows the marking, policing, and shaping methods that QPM supports on the devices and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM name	Description
PBR	Marking	Policy Based Routing (also called coloring or classification)
GTS	Shaping	Generic Traffic Shaping
CAR	Policing	Committed Access Rate

Table 5 Supported Marking, Policing, and Shaping Features on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E[1]	12.2S[2]	12.2T[3]	12.3
800/805	GTS	GTS	GTS	–	–	GTS	GTS
806	–	–	GTS, CAR	–	–	GTS, CAR	GTS, CAR
820	–	–	GTS, CAR	–	–	GTS, CAR	GTS, CAR
830	–	–	–	–	–	GTS, CAR	GTS, CAR

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Supported Link Efficiency Features

Table 6 shows the link efficiency features that QPM supports on the devices and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM Name	Description
IP RTP	IP RTP	IP Real-time Protocol Priority (for IOS releases that do not support MQC IP RTP)
CRTP	CRTP	Compressed Real-time Protocol
LFI	LFI	Link Fragmentation and Interleaving
DCRTP	CRTP	Distributed Compressed Real-time Protocol
DLFI	LFI	Distributed Link Fragmentation and Interleaving
TX-Ring Limit	TX-Ring Limit	Transmission Ring Limit

Table 6 Supported Link Efficiency Features on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E[1]	12.2S[2]	12.2T[3]	12.3
800/805	–	–	–	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	IP RTP, CRTP, LFI, TX-Ring Limit
806	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	IP RTP, CRTP, LFI, TX-Ring Limit
820	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	IP RTP, CRTP, LFI, TX-Ring Limit
830	–	–	–	–	–	IP RTP, CRTP, LFI, TX-Ring Limit	IP RTP, CRTP, LFI, TX-Ring Limit

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Resource Reservation Protocol Support

Table 7 shows the devices and IOS software releases that support Resource Reservation Protocol signaling. The table uses the following abbreviations:

RSVP Resource Reservation Protocol signaling

Table 7 RSVP Support on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E[1]	12.2S[2]	12.2T[3]	12.3
800/805	–	–	–	–	–	–	–
806	–	–	RSVP	–	–	RSVP	RSVP
820	–	–	RSVP	–	–	RSVP	RSVP
830	–	–	–	–	–	RSVP	RSVP

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Supported Frame Relay Traffic Shaping Features

Table 8 shows the frame relay traffic shaping methods that QPM supports on the devices and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM Name	Description
FRTS	FRTS	Frame Relay Traffic Shaping
FRF	Voice Fragmentation	Enhanced Frame Relay Traffic Shaping with Frame Relay fragmentation (FRF.12)
FRFQ	Extra Parameters for FRTS	Enhanced Frame Relay Traffic Shaping with Frame Relay Fair Queue
FRV	Voice bandwidth	Enhanced Frame Relay Traffic Shaping with Frame Relay Voice Configuration (Frame Relay Voice bandwidth parameter)

Table 8 Supported FRTS Features on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E[1]	12.2S[2]	12.2T[3]	12.3
800/805	–	–	–	–	–	FRTS, FRF, FRFQ, FRV	FRTS, FRF, FRFQ, FRV
806	–	–	FRTS, FRF, FRFQ, FRV	–	–	FRTS, FRF, FRFQ, FRV	FRTS, FRF, FRFQ, FRV
820	–	–	FRTS, FRF, FRFQ, FRV	–	–	FRTS, FRF, FRFQ, FRV	FRTS, FRF, FRFQ, FRV
830	–	–	–	–	–	FRTS, FRF, FRFQ, FRV	FRTS, FRF, FRFQ, FRV

1. Latest features supported for 12.1(13)E and 12.1(13)EX releases. QPM supports 12.1(13)E and 12.1(13)EX QoS techniques included in later releases of IOS 12.1E or 12.1EX train software.
2. Latest features supported for 12.2(14)S release. QPM supports 12.2(14)S QoS techniques included in later releases of IOS 12.2S train software.
3. Latest features supported for 12.2(13)T release. QPM supports 12.2(13)T QoS techniques included in later releases of IOS 12.2T train software.

Access Control Policy Support

Table 9 shows the devices and IOS software releases for which QPM supports access control policies. The table uses the following abbreviations:

AC	Access Control policies

Table 9 Access Control Policy Support on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E	12.2S	12.2T	12.3
All IOS Devices supported by QPM except 8500	AC	AC	AC	AC	AC	AC	AC

QoS Analysis (Monitoring) Capabilities

Table 10 shows the types of QoS that QPM QoS Analysis supports on devices and IOS versions. The table uses the following abbreviations:

CAR[1]	Committed Access Rate
Class-Based QoS[2],[3]	Class-Based QoS

1. CAR MIB does not include DSCP information, so policies with the DSCP option cannot be monitored.
2. QPM does not support monitoring of network elements that are assigned to a policy group configured with Modular Shaping.
3. QPM does not support monitoring of DSCP-based WRED actions.

Table 10 Supported QoS Analysis on Devices and IOS Software Releases

Cisco Systems Device	IOS Software Release						
	12.0	12.1	12.2	12.1E	12.2S	12.2T	12.3
800/805	–	–	Class-Based QoS	–	–	Class-Based QoS	Class-Based QoS
806	–	–	Class-Based QoS	–	–	Class-Based QoS	Class-Based QoS
820	–	–	Class-Based QoS	–	–	Class-Based QoS	Class-Based QoS
830	–	–	–	–	–	Class-Based QoS	Class-Based QoS

Supported QoS Features for Switches Running IOS

Table 11 shows the QoS features that QPM supports on switches running IOS, and IOS software releases. The table uses the following abbreviations:

QoS Feature	QPM Name	Description
CB	-	Class based QoS with Policing, Marking, and Trust
CBQ	Class-Based QoS	Class-Based QoS with Marking, Policing, Shaping, LLQ, NBAR, MPLS
Excess Rate	Excess Rate	Excess rate policing
4Q1T	4Q1T	4 Queue 1 Threshold queuing
4Q2T	4Q2T	4 Queue 2Threshold queuing
2Q2T/1P2Q2T	2Q2T/1P2Q2T	2 Queue 2 Threshold / 1 Priority 2 Queue 2 Threshold queuing
4Q1T-Shape	4Q1T-Shape	4 Queue 1 Threshold queuing with shaping
COS Mapping	COS Mapping	COS-DSCP-COS mapping
IPP Mapping	IPP Mapping	IP-Precedence – DSCP mapping
Marking	Marking	Marking the IP Precedence priority or Marking by Trust
Markdown table	Markdown	DSCP Markdown tables are available
In-Line Power	In-Line Power	In Line Power for IP Phones
Excess Markdown table	Excess Rate Markdown	Excess Rate DSCP Markdown tables are available

Table 11 Supported QoS Features on Switches and IOS Software Releases

Cisco Systems Device	IOS Software Release					
	12.0	12.1	12.2	12.1E	12.2S	12.2T
Cat2950_SI	–	–	–	4Q1T, Trust, Marking	–	–
Cat 2970	–	–	–	COS Mapping, IPP Mapping, CB, Markdown table, Trust	COS Mapping, IPP Mapping, CB, Markdown table, Trust	–

Table 11 Supported QoS Features on Switches and IOS Software Releases (continued)

Cisco Systems Device	IOS Software Release					
	12.0	12.1	12.2	12.1E	12.2S	12.2T
Cat 3560	–	–	–	COS Mapping, IPP Mapping, CB, Markdown table, Trust	COS Mapping, IPP Mapping, CB, Markdown table, Trust	–
Cat 3750	–	–	–	COS Mapping, IPP Mapping, CB, Markdown table, Trust	–	–
Cat4500 running Supervisor IOS	–	–	–	4Q1T-Shape, COS Mapping, CB, Markdown table, VLAN-Based, Trust, In-Line Power	4Q1T-Shape, COS Mapping, CB, Markdown table, VLAN-Based, Trust, In-Line Power	–
Catalyst 6000 with PFCIII BXL running Supervisor IOS	–	–	–	–	COS Mapping, IPP Mapping, CB, CBQ, 2Q2T/1P2Q2T, Excess Rate, Markdown table, VLAN-Based, Trust, Excess Markdown table	–

Supported Devices and QoS Techniques for CATOS Software Releases

Cisco CATOS releases supported include 5.5, 6.1, 6.2, 6.3, 7.1, 7.2, and 8.1. In addition, a Cisco CATOS mapping function is used to enable QPM to work with the supported QoS techniques of 5.5, 6.1, 6.2, 6.3, 7.1, 7.2 and 8.1 in later releases of CATOS.

Table 12 describes the QoS techniques that you can use with the devices and CATOS software releases that QPM supports. The table uses the following abbreviations:

QoS Feature	QPM Name	Description
2Q1T	2Q1T	2 Queue 1 Threshold queuing
2Q2T	2Q2T	2 Queue 2 Threshold queuing
1P2Q2T	1P2Q2T	1 Priority 2 Queue 2 Threshold queuing
Marking	Marking	Classification

QoS Feature	QPM Name	Description
Policing	Policing	Traffic policing including microflows and mark down
Excess Rate Policing	Excess Rate Policing	Traffic policing including excess rate, microflows and mark down
Excess Burst Policing	Excess Burst Policing	Traffic policing including excess burst
COS Mapping	COS Mapping	COS-DSCP-COS mapping
IPP Mapping	IPP Mapping	IP-Precedence – DSCP mapping
Markdown table	Markdown table	DSCP Markdown tables are available
VLAN Based	VLAN Based	VLAN Based QoS
Trust	Trust	Trust IP Precedence, IP DSCP, COS
Trust-Ext	Trust-Ext	Trust the Extension COS
In-Line Power	In-Line Power	In Line Power for IP Phones
Excess Markdown table	Excess Rate Markdown	Excess Rate DSCP Markdown tables are available

Table 12 Supported Devices and QoS Techniques for Catalyst Operating System

	Catalyst Software Release			
Cisco Systems Device	5.5	6.x	7.x	8.x
Catalyst 6000 family with PFCIII BXL	–	–	–	Marking, Excess Rate Policing, Excess Burst Policing, 2Q2T, 1P2Q2T, COS Mapping, IPP Mapping, Markdown Table, Excess Markdown table, VLAN-Based, Trust, Trust-Ext, In-Line Power