



APPENDIX **B**

Relationship Between MIB Objects and CLI Show Commands

This chapter shows the Management Information Base (MIB) files and their object identifiers (OIDs) that correspond to the fields that are displayed by the command-line interface (CLI) **show** commands. Because different subsystems process CLI and Simple Network Management Protocol (SNMP) commands, a slight variation should be expected between the counters returned by SNMP commands and those displayed by CLI commands.



Note

Unless otherwise indicated, all SNMP counter objects are 32-bit counters. Also, all SNMP counters begin incrementing from zero when the CMTS router initially boots and continue incrementing until they wrap around to zero, or until the CMTS router is rebooted. For more information on the differences between CLI-based and SNMP-based counters, see the [“SNMP-Based and CLI-Based Counters”](#) section on page A-2.



Tip

For the generic interface counters that are displayed by the **show interface** command, see the corresponding counters in the ifTable in IF-MIB.

- [CISCO-CABLE-QOS-MONITOR-MIB](#), page B-2
- [CISCO-DOCS-EXT-MIB](#), page B-3
- [CISCO-DOCS-REMOTE-QUERY](#), page B-10
- [DOCS-IF-MIB](#), page B-10
- [DOCS-QOS-MIB](#), page B-15
- [DOCS-SUBSCRIBER-MIB](#), page B-24

CISCO-CABLE-QOS-MONITOR-MIB

The `ccqmCmtsEnforceRuleTable` in CISCO-CABLE-QOS-MONITOR-MIB contains objects that show the quality of service (QoS) enforce rules that are currently configured on the Cisco CMTS. [Table B-1](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-1 Quality of Service Enforce Rules (`ccqmCmtsEnforceRuleTable`)

Object and OID	Equivalent Show Command and Field	Description
CISCO-CABLE-QOS-MONITOR-MIB (ciscoCableQosMonitor)		
<code>ccqmCmtsEnforceRuleName</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.1)	show cable qos enforce-rule: Name	Name of this enforce rule.
<code>ccqmCmtsEnfRuleRegQoS</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.2)	show cable qos enforce-rule: Reg	Pointer into the <code>docsIfQosProfileTable</code> for the QoS profile to be used when a subscriber registers (0 to 16383).
<code>ccqmCmtsEnfRuleEnfQoS</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.3)	show cable qos enforce-rule: Enf	Pointer into the <code>docsIfQosProfileTable</code> for the QoS profile to be used when a subscriber violates the bandwidth specified by their service level agreement (SLA) (0 to 16383).
<code>ccqmCmtsEnfRuleMonDuration</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.4)	show cable qos enforce-rule: Dur (min)	Duration, in minutes, for the sliding window to be used to monitor subscribers (10 to 10080).
<code>ccqmCmtsEnfRuleSampleRate</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.5)	show cable qos enforce-rule: rate (min)	Sample rate, in minutes, at which the CMTS should check a subscriber's bandwidth usage to determine whether the subscriber is overconsuming their allotted resources (10 to 120).
<code>ccqmCmtsEnfRuleDirection</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.8)	show cable qos enforce-rule: Dir	Direction in which this enforce rule should be applied: upstream, downstream, or both.
<code>ccqmCmtsEnfRuleAutoEnforce</code> (1.3.6.1.4.1.9.9.341.1.1.1.1.9)	show cable qos enforce-rule: Auto enf	Indicates whether the enforced QoS profile should be automatically applied to subscribers who violate the maximum bandwidth limits during a sliding window monitoring period.

The `ccqmEnfRuleViolateTable` in CISCO-CABLE-QOS-MONITOR-MIB provides a snapshot of all subscribers who have violated their enforce rules. [Table B-2](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-2 Enforce Rules Violators (`ccqmEnfRuleViolateID`)

Object and OID	Equivalent Show Command and Field	Description
CISCO-CABLE-QOS-MONITOR-MIB (ciscoCableQosMonitor)		
<code>ccqmEnfRuleViolateID</code> (1.3.6.1.4.1.9.9.341.1.2.2.1.1)	show cable subscriber-usage: Sfid	Index for this service flow.

Table B-2 Enforce Rules Violators (*ccqmEnfRuleViolateID*)

Object and OID	Equivalent Show Command and Field	Description
ccqmEnfRuleViolateMacAddr (1.3.6.1.4.1.9.9.341.1.2.2.1.2)	show cable subscriber-usage: Mac Address	MAC address of the subscriber.
ccqmEnfRuleViolateRuleName (1.3.6.1.4.1.9.9.341.1.2.2.1.3)	show cable subscriber-usage: Enforce-rule Name	Name of the enforce rule being used for this subscriber.
ccqmEnfRuleViolateLastDetectTime (1.3.6.1.4.1.9.9.341.1.2.2.1.5)	show cable subscriber-usage: Last-detect Time	Time stamp for when the subscriber was found to have violated the enforce rule. If the enforce rule automatically applies the enforced QoS profile, this time stamp also shows the time at which the enforced QoS profile was in effect.
ccqmEnfRuleViolatePenaltyExpTime (1.3.6.1.4.1.9.9.341.1.2.2.1.6)	show cable subscriber-usage: Last-penalty Time	Time stamp for when the original (registered) QoS profile is scheduled to be restored to this subscriber.

CISCO-DOCS-EXT-MIB

The *cdxQosCtrlUpTable* in CISCO-DOCS-EXT-MIB contains a number of QoS objects that the scheduler uses to control cable modem registration on each upstream interface. [Table B-3](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-3 Quality of Service Upstream Control Objects (*cdxQosCtrlUpTable*)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxQosCtrlUpAdmissionCtrl (1.3.6.1.4.1.9.9.116.1.1.1.1.1)	N/A	Indicates whether admission control is enabled to control minimum guaranteed upstream bandwidth scheduling service requests on this upstream.
cdxQosCtrlUpMaxRsvdBWPercent (1.3.6.1.4.1.9.9.116.1.1.1.1.2)	N/A	Maximum percentage of total upstream bandwidth that is allowed to be reserved for minimum guaranteed upstream scheduling service requests on this upstream (10 to 1000 percent), when admission control is enabled.
cdxQosCtrlUpAdmissionRejects (1.3.6.1.4.1.9.9.116.1.1.1.1.3)	N/A	Total number of cable modem Registration Requests (REG-REQ) that the CMTS rejected on this upstream when admission control is enabled, because insufficient bandwidth was reserved.

Table B-3 Quality of Service Upstream Control Objects (*cdxQosCtrlUpTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxQosCtrlUpReservedBW (1.3.6.1.4.1.9.9.116.1.1.1.1.4)	show interface cable upstream: Total channel bandwidth reserved	Total reserved bandwidth, in bits per second (bps), that is currently reserved on this upstream (0 to 102400000).
cdxQosCtrlUpMaxVirtualBW (1.3.6.1.4.1.9.9.116.1.1.1.1.5)	N/A	Maximum virtual bandwidth of this capacity, in bits per second (bps), when admission control is enabled (0 to 102400000).

The *cdxCmtsServiceExtTable* in CISCO-DOCS-EXT-MIB extends the information about a service ID (SID) in *docsIfCmtsServiceTable*. [Table B-4](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-4 Service ID Information (*cdxCmtsServiceExtTable*)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxIfCmtsServiceOutOctets (1.3.6.1.4.1.9.9.116.1.1.3.1.1)	show interface cable sid counter verbose: Bytes received	Total number of data packet bytes that have been sent for this SID.
cdxIfCmtsServiceOutPackets (1.3.6.1.4.1.9.9.116.1.1.3.1.2)	show interface cable sid counter: Packets received	Total number of data packets that have been sent for this SID.

The *cdxBWQueueTable* in CISCO-DOCS-EXT-MIB displays the attributes for the QoS queues in a cable interface scheduler. [Table B-5](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-5 Quality of Service Queues (*cdxBWQueueTable*)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxBWQueueNameCode (1.3.6.1.4.1.9.9.116.1.2.1.1.1)	show interface cable upstream and show interface cable mac-scheduler: Queue...	Name code (type) for this queue: <i>cirQ</i> (1), <i>tbeQ</i> (2), <i>p0BEGrantQ</i> (3), <i>p1BEGrantQ</i> (4), <i>p2BEGrantQ</i> (5), <i>p3BEGrantQ</i> (6), <i>p4BEGrantQ</i> (7), <i>p5BEGrantQ</i> (8), <i>p6BEGrantQ</i> (9), <i>p7BEGrantQ</i> (10), and <i>rngPollQ</i> (11).
cdxBWQueueOrder (1.3.6.1.4.1.9.9.116.1.2.1.1.2)	N/A	Relative priority of this queue with regard to the other queues on this particular cable interface (0 to 10, where 0 is the highest priority and 10 is the lowest priority).
cdxBWQueueNumServedBeforeYield (1.3.6.1.4.1.9.9.116.1.2.1.1.3)	N/A	Maximum number of requests or packets that the scheduler can serve on this queue, before granting access to the next highest-priority queue (0 to 64).

Table B-5 Quality of Service Queues (*cdxBWQueueTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxBWQueueType (1.3.6.1.4.1.9.9.116.1.2.1.1.4)	show interface cable upstream: Queue ...	Type of queue to be used to decide the position of a request or packet in the queue: unknown(1), other(2), fifo(3), or priority(4).
cdxBWQueueMaxDepth (1.3.6.1.4.1.9.9.116.1.2.1.1.5)	show interface cable upstream and show interface cable mac-scheduler: Queue ...	Maximum number of requests or packets that this queue can support (0 to 64).
cdxBWQueueDepth (1.3.6.1.4.1.9.9.116.1.2.1.1.6)	show interface cable upstream and show interface cable mac-scheduler: Queue ...	Number of requests or packets that are currently in this queue (0 to 64).
cdxBWQueueDiscards (1.3.6.1.4.1.9.9.116.1.2.1.1.7)	show interface cable upstream and show interface cable mac-scheduler: Queue ...	Total number of requests or packets that this queue has discarded because the queue overflowed beyond the maximum specified by <i>cdxBWQueueDepth</i> .

The *cdxCmCpeTable* in CISCO-DOCS-EXT-MIB contains information about cable modems (CM) or customer premises equipments (CPE) devices. [Table B-6](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-6 Cable Modem and Customer Premises Equipment Information (*cdxCmCpeTable*)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxCmCpeMacAddress (1.3.6.1.4.1.9.9.116.1.3.1.1.1)	show cable device access-group: MAC address	MAC address of the cable modem or customer premises equipment (CPE) device.
cdxCmCpeType (1.3.6.1.4.1.9.9.116.1.3.1.1.2)	show cable device access-group: Type	Type of device: cm(1) or cpe(2).
cdxCmCpeIpAddress (1.3.6.1.4.1.9.9.116.1.3.1.1.3)	show cable device access-group: IP address	IP address for this cable modem or customer premises equipment (CPE) device.
cdxCmCpeIfIndex (1.3.6.1.4.1.9.9.116.1.3.1.1.4)	N/A	ifIndex for the cable interface on the CMTS that is connected to this cable modem or customer premises equipment (CPE) device.
cdxCmCpeCmtsServiceId (1.3.6.1.4.1.9.9.116.1.3.1.1.5)	show interface cable modem: SID	Primary service ID (SID) for the cable modem itself or for the cable modem that is providing services for this customer premises equipment (CPE) device (1 to 16383).

Table B-6 Cable Modem and Customer Premises Equipment Information (cdxCmCpeTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxCmCpeCmStatusIndex (1.3.6.1.4.1.9.9.116.1.3.1.1.6)	show interface cable modem: State	Pointer into the docsIfCmtsCmStatusTable identifying the status of this cable modem or for the cable modem that is providing services for this customer premises equipment (CPE) device (1 to 2147483647).
cdxCmCpeAccessGroup (1.3.6.1.4.1.9.9.116.1.3.1.1.7)	show cable device access-group: access-group	ASCII string that identifies the access group to be used to filter the upstream traffic for this cable modem or customer premises equipment (CPE) device.
cdxCmCpeResetNow (1.3.6.1.4.1.9.9.116.1.3.1.1.8)	N/A	Set this object to true(1) to remove a cable modem from the CMTS Station Maintenance list and to force the cable modem to reset its cable interface. If the device is a customer premises equipment (CPE) device, the CMTS removes it from its internal address tables.

The cdxCmtsCmStatusExtTable in CISCO-DOCS-EXT-MIB extends the CM status information in docsIfCmtsCmStatusTable. [Table B-7](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-7 Cable Modem Status Information (cdxCmtsCmStatusExtTable)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxCmtsCmStatusValue (1.3.6.1.4.1.9.9.116.1.3.2.1.1)	show cable modem: MAC State	The cable modem's current connectivity state. This object extends docsIfCmtsCmStatusValue by providing more detailed states.
cdxIfCmtsCmStatusOnlineTimes (1.3.6.1.4.1.9.9.116.1.3.2.1.2)	show cable modem connectivity: Times Online	Number of times that this cable modem has changed from the offline state to the online state, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusPercentOnline (1.3.6.1.4.1.9.9.116.1.3.2.1.3)	show cable modem connectivity: %online	Percentage of time, in hundredths of a percentage, that this cable modem has remained online, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS (0 to 10000).

Table B-7 Cable Modem Status Information (cdxCmtsCmStatusExtTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxIfCmtsCmStatusMinOnlineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.4)	show cable modem connectivity: Online time (min)	Minimum period of time, in hundredths of a second, that this cable modem has remained online, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusAvgOnlineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.5)	show cable modem connectivity: Online time (avg)	Average period of time, in hundredths of a second, that this cable modem has remained online, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusMaxOnlineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.6)	show cable modem connectivity: Online time (max)	Maximum period of time, in hundredths of a second, that this cable modem has remained online, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusMinOfflineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.7)	show cable modem connectivity: Offline time (min)	Minimum period of time, in hundredths of a second, that this cable modem has remained offline, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusAvgOfflineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.8)	show cable modem connectivity: Offline time (avg)	Average period of time, in hundredths of a second, that this cable modem has remained offline, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusMaxOfflineTime (1.3.6.1.4.1.9.9.116.1.3.2.1.9)	show cable modem connectivity: Offline time (max)	Maximum period of time, in hundredths of a second, that this cable modem has remained offline, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS.
cdxIfCmtsCmStatusDynSidCount (1.3.6.1.4.1.9.9.116.1.3.2.1.10)	N/A	Total number of dynamic service IDs (SIDs) that are active for this cable modem (0 to 16383).
cdxIfCmtsCmStatusAddlInfo (1.3.6.1.4.1.9.9.116.1.3.2.1.11)	N/A	Bit-mask providing additional information about this cable modem: noisyPlant(0) and modemPowerMaxOut(1).

Table B-7 Cable Modem Status Information (cdxCmtsCmStatusExtTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxIfCmtsCmStatusOnlineTimesNum (1.3.6.1.4.1.9.9.116.1.3.2.1.12)	show cable modem connectivity: Times Online	Number of times that this cable modem has changed from the offline state to the online state, from the time that the cable modem sent its first Ranging Request (RNG-REQ) message to the CMTS. This object is similar to cdxIfCmtsCmStatusOnlineTimes, but this object is reset to 0 whenever cdxIfCmtsCmStatusLastResetTime is changed.
cdxIfCmtsCmStatusLastResetTime (1.3.6.1.4.1.9.9.116.1.3.2.1.13)	N/A	Time stamp, in terms of sysUpTime, for the last time that the connectivity statistics for this cable modem had been reset.

The cdxIfUpstreamChannelExtTable in CISCO-DOCS-EXT-MIB extends docsIfUpstreamChannelEntry with additional objects that describe the upstream channels. Table B-8 lists the most commonly used objects in this table and the related **show** commands:

Table B-8 Upstream Channel Information (cdxIfUpstreamChannelExtTable)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-EXT-MIB (ciscoDocsExtMIB)		
cdxIfUpChannelWidth (1.3.6.1.4.1.9.9.116.1.4.1.1.1)	show interface cable <interface> mac-scheduler <upstream-port>: Channel width on this upstream channel	Lower frequency, in Hz, for this upstream channel's bandwidth (0 to 16000000). The docsIfUpChannelWidth specifies the higher frequency, and these two objects together specify the upstream channel width to be used for automated advanced spectrum management.
cdxIfUpChannelModulationProfile (1.3.6.1.4.1.9.9.116.1.4.1.1.2)	N/A	Secondary modulation profile to be used for this upstream channel.
cdxIfUpChannelCmTotal (1.3.6.1.4.1.9.9.116.1.4.1.1.3)	show interface cable <interface> mac-scheduler <upstream-port>: Total Modems on This Upstream Channel	Total number of cable modems that have been on this upstream channel since the CMTS initially booted (0 to 8191).
cdxIfUpChannelCmActive (1.3.6.1.4.1.9.9.116.1.4.1.1.4)	show interface cable <interface> mac-scheduler <upstream-port>: Total Modems on This Upstream Channel	Total number of cable modems that are currently active on this upstream channel (0 to 8191).
cdxIfUpChannelCmRegistered (1.3.6.1.4.1.9.9.116.1.4.1.1.5)	N/A	Total number of cable modems that are currently registered and online on this upstream channel (0 to 8191).
cdxIfUpChannelInputPowerLevel (1.3.6.1.4.1.9.9.116.1.4.1.1.6)	N/A	Upstream input power level, in tenths of a dBmV, for this upstream interface.

Table B-8 Upstream Channel Information (cdxIfUpstreamChannelExtTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
cdxIfUpChannelAvgUtil (1.3.6.1.4.1.9.9.116.1.4.1.1.7)	N/A	Average percentage of the upstream channel's utilization, calculated as the running average of the channel's utilization in the MAC upstream scheduler (0 to 100).
cdxIfUpChannelAvgContSlots (1.3.6.1.4.1.9.9.116.1.4.1.1.8)	N/A	Average percentage of contention mini-slots on this upstream channel, calculated as the running average of contention mini-slots in the MAC upstream scheduler (0 to 100).
cdxIfUpChannelRangeSlots (1.3.6.1.4.1.9.9.116.1.4.1.1.9)	N/A	Average percentage of initial ranging mini-slots on this upstream channel, calculated as the running average of initial ranging mini-slots in the MAC upstream scheduler (0 to 100).
cdxIfUpChannelNumActiveUGS (1.3.6.1.4.1.9.9.116.1.4.1.1.10)	show interface cable upstream ugs statistics: # of Active UGS on the Upstream	Number of active unsolicited grant service (UGS) requests on this upstream channel.
cdxIfUpChannelMaxUGSLastOneHour (1.3.6.1.4.1.9.9.116.1.4.1.1.11)	show interface cable upstream ugs statistics: UGS Allocation Statistics (max)	Maximum number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the previous hour.
cdxIfUpChannelMinUGSLastOneHour (1.3.6.1.4.1.9.9.116.1.4.1.1.12)	show interface cable upstream ugs statistics: UGS Allocation Statistics (min)	Minimum number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the previous hour.
cdxIfUpChannelAvgUGSLastOneHour (1.3.6.1.4.1.9.9.116.1.4.1.1.13)	show interface cable upstream ugs statistics: UGS Allocation Statistics (avg)	Average number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the previous hour.
cdxIfUpChannelMaxUGSLastFiveMins (1.3.6.1.4.1.9.9.116.1.4.1.1.14)	show interface cable upstream ugs statistics: UGS Allocation Statistics (max)	Maximum number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the last five minutes.
cdxIfUpChannelMinUGSLastFiveMins (1.3.6.1.4.1.9.9.116.1.4.1.1.15)	show interface cable upstream ugs statistics: UGS Allocation Statistics (min)	Minimum number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the last five minutes.
cdxIfUpChannelAvgUGSLastFiveMins (1.3.6.1.4.1.9.9.116.1.4.1.1.16)	show interface cable upstream ugs statistics: UGS Allocation Statistics (avg)	Average number of unsolicited grant service (UGS) requests that were allocated on this upstream channel over the last five minutes.

CISCO-DOCS-REMOTE-QUERY

The `cdrqCmtsCmStatusTable` in CISCO-DOCS-REMOTE-QUERY-MIB contains the status of the cable modems that are polled by the remote-query feature. [Table B-9](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-9 Remote Query Information for Cable Modems (`cdrqCmtsCmStatusTable`)

Object and OID	Equivalent Show Command and Field	Description
CISCO-DOCS-REMOTE-QUERY (<code>ciscoDocsRemoteQueryMIB</code>)		
<code>cdrqCmtsCmDownChannelPower</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.1)	show cable modem remote-query: DS Power	Received power level, in tenths of dBmV, of the cable modem.
<code>cdrqCmtsCmStatusTxPower</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.2)	show cable modem remote-query: US Power	Operational transmit power level, in tenths of dBmV, for the cable modem's upstream.
<code>cdrqCmtsCmUpChnlTxTimingOffset</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.3)	show cable modem remote-query: TX Time Offset	Latest measure, as a 32-bit unsigned value, for the current round-trip time to the cable modem.
<code>cdrqCmtsCmSigQSignalNoise</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.4)	show cable modem remote-query: S/N Ratio	Signal-to-noise ratio (SNR), in tenths of dB, as perceived by the CMTS, for the cable modem's downstream.
<code>cdrqCmtsCmSigQMicroreflections</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.5)	show cable modem remote-query: Micro (dB) Reflection	Total microreflections, expressed as dBc below the signal level, as perceived by the CMTS, for the cable modem's downstream. This object is only a rough indication of microreflections, including in-channel response, and not an absolute measurement.
<code>cdrqCmtsCmPollTime</code> (1.3.6.1.4.1.9.10.59.1.2.1.1.6)	N/A	Timestamp, in terms of <code>sysUpTime</code> , when this cable modem was last polled by the remote-query feature.

DOCS-IF-MIB

The `docsIfSignalQualityTable` in DOCS-IF-MIB contains upstream signal information for each `ifEntry` with an `ifType` of `docsCableUpstreamChannel` (205). [Table B-10](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-10 Upstream Signal Information (`docsIfSignalQualityTable`)

Object and OID	Equivalent Show Command and Field	Description
DOCS-IF-MIB (<code>docsIfMib</code>)		
<code>docsIfSigQIncludesContention</code> (1.3.6.1.2.1.10.127.1.1.4.1.1)	show interface cable signal-quality: includes contention intervals	Indicates whether the CMTS includes contention intervals in this table's counters. Always false for CMs.
<code>docsIfSigQUnerrored</code> (1.3.6.1.2.1.10.127.1.1.4.1.2)	N/A	Number of codewords received on this channel without errors.

Table B-10 Upstream Signal Information (*docsIfSignalQualityTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsIfSigQCorrecteds (1.3.6.1.2.1.10.127.1.1.4.1.3)	N/A	Number of codewords received on this channel with correctable errors.
docsIfSigQUncorrectables (1.3.6.1.2.1.10.127.1.1.4.1.4)	show interface cable upstream: uncorrectable	Number of codewords received on this channel with uncorrectable errors.
docsIfSigQSignalNoise (1.3.6.1.2.1.10.127.1.1.4.1.5)	show interface cable upstream: noise	Current signal-to-noise ratio (SNR), in tenths of dB, for this downstream channel (CM) or upstream channel (CMTS).
docsIfSigQMicroreflections (1.3.6.1.2.1.10.127.1.1.4.1.6)	show interface cable upstream: microreflections	Rough indication of the total number of microreflections including in-channel response as perceived on this interface, measured in dBc below the signal level (0 to 255).
docsIfSigQEqualizationData (1.3.6.1.2.1.10.127.1.1.4.1.7)	N/A	Equalization data for the downstream channel (CM) or upstream channel (CMTS).

The docsIfCmtsCmStatusTable in DOCS-IF-MIB contains the status information for each CM that is available in the CMTS. [Table B-11](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-11 Cable Modem Status Information (*docsIfCmtsCmStatusTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-IF-MIB (docsIfMib)		
docsIfCmtsCmStatusMacAddress (1.3.6.1.2.1.10.127.1.3.3.1.2)	show cable modem verbose: MAC Address	MAC address for the CM's cable interface.
docsIfCmtsCmStatusIpAddress (1.3.6.1.2.1.10.127.1.3.3.1.3)	show cable modem verbose: IP Address	IP address for the CM's cable interface. This object is deprecated and replaced by docsIfCmtsCmStatusInetAddressType and docsIfCmtsCmStatusInetAddress, to enable migration to IPv6.
docsIfCmtsCmStatusDownChannelIfIndex (1.3.6.1.2.1.10.127.1.3.3.1.4)	show cable modem verbose: Interface	ifIndex for the downstream channel being used by this CM.
docsIfCmtsCmStatusUpChannelIfIndex (1.3.6.1.2.1.10.127.1.3.3.1.5)	show cable modem verbose: Interface	ifIndex for the upstream channel for this CM.
docsIfCmtsCmStatusRxPower (1.3.6.1.2.1.10.127.1.3.3.1.6)	show cable modem verbose: Upstream Power show cable modem verbose: Received Power	Receive power level, in tenths of dBmV, for this CM, as perceived by the CMTS on the upstream.
docsIfCmtsCmStatusTimingOffset (1.3.6.1.2.1.10.127.1.3.3.1.7)	show cable modem verbose: Timing Offset	Current round-trip time, in 6.25 microseconds/(64*256), for upstream transmissions for this CM.
docsIfCmtsCmStatusEqualizationData (1.3.6.1.2.1.10.127.1.3.3.1.8)	show cable modem verbose: Transmit Equalizer Support	Equalization data for this CM.

Table B-11 Cable Modem Status Information (docsIfCmtsCmStatusTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsIfCmtsCmStatusValue (1.3.6.1.2.1.10.127.1.3.3.1.9)	show cable modem: MAC State	Current connectivity state for this CM: other(1), ranging(2), rangingAborted(3), rangingComplete(4), ipComplete(5), registrationComplete(6), accessDenied(7).
docsIfCmtsCmStatusUnerrored (1.3.6.1.2.1.10.127.1.3.3.1.10)	N/A	Number of codewords received without error from this CM. This object is the 32-bit version of docsIfCmtsCmStatusExtUnerrored, which is a 64-bit counter.
docsIfCmtsCmStatusCorrected (1.3.6.1.2.1.10.127.1.3.3.1.11)	N/A	Number of codewords received with correctable errors from this CM. This object is the 32-bit version of docsIfCmtsCmStatusExtCorrected, which is a 64-bit counter.
docsIfCmtsCmStatusUncorrectable (1.3.6.1.2.1.10.127.1.3.3.1.12)	N/A	Number of codewords received with uncorrectable errors from this CM. This object is the 32-bit version of docsIfCmtsCmStatusExtUncorrectable, which is a 64-bit counter.
docsIfCmtsCmStatusSignalNoise (1.3.6.1.2.1.10.127.1.3.3.1.13)	N/A	Current signal-to-noise ratio (SNR), in tenths of dB, for this CM, as perceived from its upstream transmissions.
docsIfCmtsCmStatusMicroreflections (1.3.6.1.2.1.10.127.1.3.3.1.14)	N/A	Rough indication of the total number of microreflections, including in-channel response, perceived for this CM, as measured in dBc below the signal level.
docsIfCmtsCmStatusExtUnerrored (1.3.6.1.2.1.10.127.1.3.3.1.15)	N/A	Number of codewords received without error from this CM. This object is the 64-bit version of docsIfCmtsCmStatusUnerrored, which is a 32-bit counter.
docsIfCmtsCmStatusExtCorrected (1.3.6.1.2.1.10.127.1.3.3.1.16)	N/A	Number of codewords received with correctable errors from this CM. This object is the 64-bit version of docsIfCmtsCmStatusCorrected, which is a 32-bit counter.
docsIfCmtsCmStatusExtUncorrectable (1.3.6.1.2.1.10.127.1.3.3.1.17)	N/A	Number of codewords received with uncorrectable errors from this CM. This object is the 64-bit version of docsIfCmtsCmStatusUncorrectable, which is a 32-bit counter.

Table B-11 Cable Modem Status Information (*docsIfCmtsCmStatusTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsIfCmtsCmStatusDocsisRegMode (1.3.6.1.2.1.10.127.1.3.3.1.18)	show cable modem verbose: QoS Provisioned Mode	Indicates the DOCSIS QoS revision level at which this CM is currently registered. This object replaces docsIfCmtsCmStatusDocsisMode from DOCS-IF-EXT-MIB.
docsIfCmtsCmStatusModulationType (1.3.6.1.2.1.10.127.1.3.3.1.19)	show cable modem verbose: Phy Operating Mode	Indicates the upstream PHY mode (TDMA, A-TDMA, S-CDMA) that the CM is registered for and currently using. (The mixed TDMA/A-TDMA mode is not supported here, because that describes the upstream interface and not the behavior of individual CMs.)
docsIfCmtsCmStatusInetAddressType (1.3.6.1.2.1.10.127.1.3.3.1.20)	show cable modem verbose: IP Address	Type of IP address that this CM is using (IPv4 or IPv6).
docsIfCmtsCmStatusInetAddress (1.3.6.1.2.1.10.127.1.3.3.1.21)	show cable modem verbose: IP Address	IP address for this CM's cable interface. This object, together with docsIfCmtsCmStatusInetAddressType, replace docsIfCmtsCmStatusIpAddress.

The docsIfCmtsModulationTable in DOCS-IF-MIB describes an Interval Usage Code (IUC) for one or more upstream channel modulation profiles. [Table B-12](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-12 Interval Usage Code Upstream Configuration (*docsIfCmtsModulationTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-IF-MIB (docsIfMib)		
docsIfCmtsModIntervalUsageCode (1.3.6.1.2.1.10.127.1.3.5.1.2)	show cable modulation-profile [verbose]: IUC, IUC	Type of IUC being defined: request(1), requestData(2), initialRanging(3), periodicRanging(4), shortData(5), longData(6), dvPhyShortData(9), advPhyLongData(10), and ugs(11).
docsIfCmtsModType (1.3.6.1.2.1.10.127.1.3.5.1.4)	show cable modulation-profile [verbose]: Type, Modulation	Modulation type for this burst profile: QPSK, 8-QAM, 16-QAM, 32-QAM, 64-QAM, and 128-QAM.
docsIfCmtsModPreambleLen (1.3.6.1.2.1.10.127.1.3.5.1.5)	show cable modulation-profile [verbose]: Pre len, Preamble length	Preamble length, in bits, for this burst profile (0 to 1536 bits).
docsIfCmtsModDifferentialEncoding (1.3.6.1.2.1.10.127.1.3.5.1.6)	show cable modulation-profile [verbose]: Diff enco, Differential Encoding	Specifies whether differential encoding is enabled on this burst profile.
docsIfCmtsModFECErrorCorrection (1.3.6.1.2.1.10.127.1.3.5.1.7)	show cable modulation-profile [verbose]: FEC T BYTE, FEC parity T bytes	Number of correctable errored bytes (t) that should be used for forward error correction (FEC) on this burst profile (0 to 16).

Table B-12 Interval Usage Code Upstream Configuration (docsIfCmtsModulationTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsIfCmtsModFECCodeWordLength (1.3.6.1.2.1.10.127.1.3.5.1.8)	show cable modulation-profile [verbose]: FEC k BYTE, FEC codeword length K bytes	Number of data bytes (k) in each FEC codeword (1 to 255).
docsIfCmtsModScramblerSeed (1.3.6.1.2.1.10.127.1.3.5.1.9)	show cable modulation-profile [verbose]: Scrm seed, Scrambler seed	Fifteen-bit seed value for the scrambler used on this burst profile (0 to 32767).
docsIfCmtsModMaxBurstSize (1.3.6.1.2.1.10.127.1.3.5.1.10)	show cable modulation-profile [verbose]: Max B siz, Max short burst size B bytes	Maximum number of mini-slots that can be transmitted during this particular burst (0 to 255).
docsIfCmtsModGuardTimeSize (1.3.6.1.2.1.10.127.1.3.5.1.11)	show cable modulation-profile [verbose]: Guard time size, Guard time size in symbols	Number of symbol-times that are appended to this particular burst as a guard time.
docsIfCmtsModLastCodewordShortened (1.3.6.1.2.1.10.127.1.3.5.1.12)	show cable modulation-profile [verbose]: Last CW short, Shortened last codeword	Indicates whether the last FEC codeword is truncated.
docsIfCmtsModScrambler (1.3.6.1.2.1.10.127.1.3.5.1.13)	show cable modulation-profile [verbose]: Scrm, Scrambler	Indicates whether the scrambler is enabled for this burst profile.
docsIfCmtsModByteInterleaverDepth (1.3.6.1.2.1.10.127.1.3.5.1.14)	show cable modulation-profile [verbose]: RS interleaver depth	A-TDMA byte interleaver depth (Ir).
docsIfCmtsModByteInterleaverBlockSize (1.3.6.1.2.1.10.127.1.3.5.1.15)	show cable modulation-profile [verbose]: RS interleaver block size	A-TDMA byte interleaver block size (Br).
docsIfCmtsModPreambleType (1.3.6.1.2.1.10.127.1.3.5.1.16)	show cable modulation-profile [verbose]: Pre Type, Preamble type	Preamble type for DOCSIS 2.0 burst profiles: qpsk0(1), qpsk1(2).
docsIfCmtsModTcmErrorCorrectionOn (1.3.6.1.2.1.10.127.1.3.5.1.17)	N/A	Indicates whether trellis code modulation (TCM) is enabled for S-CDMA burst profiles.
docsIfCmtsModScdmaInterleaverStepSize (1.3.6.1.2.1.10.127.1.3.5.1.18)	N/A	Interleaver step size for S-CDMA burst profiles (0, 1 to 32).
docsIfCmtsModScdmaSpreaderEnable (1.3.6.1.2.1.10.127.1.3.5.1.19)	N/A	Indicates whether the spreader is enabled for S-CDMA burst profiles.
docsIfCmtsModScdmaSubframeCodes (1.3.6.1.2.1.10.127.1.3.5.1.20)	N/A	Subframe size for S-CDMA burst profiles (0, 1 to 128).
docsIfCmtsModChannelType (1.3.6.1.2.1.10.127.1.3.5.1.21)	N/A	Modulation channel type for this burst profile: tdma (1), atdma (2), scdma (3), and tdmaAndAtdma (4).

DOCS-QOS-MIB

The docsQosPktTable in DOCS-QOS-MIB describes the packet classification configured on the Cisco CMTS router. [Table B-13](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-13 DOCSIS Packet Classifiers (*docsQosPktTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosPktClassId (1.3.6.1.2.1.10.127.7.1.1.1.1)	show cable modem classifiers: CfrId	ID for this packet classifier entry (1 to 65535).
docsQosPktClassDirection (1.3.6.1.2.1.10.127.7.1.1.1.2)	show cable modem classifiers: Direction	Indicates the direction (upstream or downstream) in which this classifier is applied.
docsQosPktClassPriority (1.3.6.1.2.1.10.127.7.1.1.1.3)	show cable modem classifiers: Priority	Priority for this classifier, which determines the order in which the classifiers are evaluated (0 to 255).
docsQosPktClassIpTosLow (1.3.6.1.2.1.10.127.7.1.1.1.4)	show cable modem classifiers cache: ToS	Low 8 bits for the range of type of service (ToS) values to be matched (0 to 255).
docsQosPktClassIpTosHigh (1.3.6.1.2.1.10.127.7.1.1.1.5)	show cable modem classifiers cache: ToS	High 8 bits for the range of type of service (ToS) values to be matched (0 to 255).
docsQosPktClassIpTosMask (1.3.6.1.2.1.10.127.7.1.1.1.6)	show cable modem classifiers cache: ToS	And Mask value for the ToS bytes in an IP packet, and the result is checked against the low and high ToS byte values.
docsQosPktClassIpProtocol (1.3.6.1.2.1.10.127.7.1.1.1.7)	show cable modem classifiers cache: IPProt	IP Layer-4 protocol field to be matched against packets (0 to 258, where 256 matches all protocols, and 257 matches both TCP and UDP).
docsQosPktClassIpSourceAddr (1.3.6.1.2.1.10.127.7.1.1.1.8)	show cable modem classifiers cache: IpSrc	Source IP address to be matched.
docsQosPktClassIpSourceMask (1.3.6.1.2.1.10.127.7.1.1.1.9)	N/A	Source IP address mask to be matched.
docsQosPktClassIpDestAddr (1.3.6.1.2.1.10.127.7.1.1.1.10)	show cable modem classifiers cache: IpDest	Destination IP address to be matched.
docsQosPktClassIpDestMask (1.3.6.1.2.1.10.127.7.1.1.1.11)	N/A	Destination IP address mask to be matched.
docsQosPktClassSourcePortStart (1.3.6.1.2.1.10.127.7.1.1.1.12)	N/A	Low value of the range of source TCP/UDP port numbers to be matched (0 to 65535).

Table B-13 DOCSIS Packet Classifiers (docsQosPktTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosPktClassSourcePortEnd (1.3.6.1.2.1.10.127.7.1.1.1.13)	N/A	High value of the range of source TCP/UDP port numbers to be matched (0 to 65535).
docsQosPktClassDestPortStart (1.3.6.1.2.1.10.127.7.1.1.1.14)	N/A	Low value of the range of destination TCP/UDP port numbers to be matched (0 to 65535).
docsQosPktClassDestPortEnd (1.3.6.1.2.1.10.127.7.1.1.1.15)	N/A	High value of the range of destination TCP/UDP port numbers to be matched (0 to 65535).
docsQosPktClassDestMacAddr (1.3.6.1.2.1.10.127.7.1.1.1.16)	N/A	Destination MAC address to be matched.
docsQosPktClassDestMacMask (1.3.6.1.2.1.10.127.7.1.1.1.17)	N/A	Destination MAC address mask to be matched.
docsQosPktClassSourceMacAddr (1.3.6.1.2.1.10.127.7.1.1.1.18)	N/A	Source MAC address to be matched.
docsQosPktClassEnetProtocolType (1.3.6.1.2.1.10.127.7.1.1.1.19)	N/A	Layer 3 protocol ID in the Ethernet frame that should be matched (0 to 65535).
docsQosPktClassEnetProtocol (1.3.6.1.2.1.10.127.7.1.1.1.20)	N/A	Ethernet Type value to be matched (0 to 65535).
docsQosPktClassUserPriLow (1.3.6.1.2.1.10.127.7.1.1.1.22)	N/A	Indicates the low value of the range of 3-bit priority fields to be matched, for Ethernet frames with an EtherType of 0x8100 and an 802.1P/Q tag header (0 to 7).
docsQosPktClassUserPriHigh (1.3.6.1.2.1.10.127.7.1.1.1.23)	N/A	Indicates the high value of the range of 3-bit priority fields to be matched, for Ethernet frames with an EtherType of 0x8100 and an 802.1P/Q tag header (0 to 7).
docsQosPktClassVlanId (1.3.6.1.2.1.10.127.7.1.1.1.24)	N/A	Indicates the 12-bit VLAN ID to be matched, for Ethernet frames with an EtherType of 0x8100 and an 802.1P/Q tag header (0 to 7).
docsQosPktClassState (1.3.6.1.2.1.10.127.7.1.1.1.25)	N/A	Indicates whether the classifier is active(1) or inactive(2).
docsQosPktClassPkts (1.3.6.1.2.1.10.127.7.1.1.1.26)	N/A	Number of packets that have been classified using this classifier.
docsQosPktClassBitMap (1.3.6.1.2.1.10.127.7.1.1.1.27)	N/A	17-bit bitmask that indicates the parameter encodings that were actually present in the DOCSIS message that created the classifier, as opposed to parameters that were unspecified and left at their default values.

The docsQosParamSetTable in DOCS-QOS-MIB describes the DOCSIS 1.1 QoS parameters that are defined on the Cisco CMTS router. Table B-14 lists the most commonly used objects in this table and the related **show** commands:

Table B-14 DOCSIS 1.1 Quality of Service Parameters (docsQosParamSetTable)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosParamSetServiceClassName (1.3.6.1.2.1.10.127.7.1.2.2.4)	show cable service-class verbose: Name show interface cable qos paramset verbose: Name	Service class name (SCN) for this parameter set.
docsQosParamSetPriority (1.3.6.1.2.1.10.127.7.1.2.2.5)	show cable service-class verbose: Traffic Priority show interface cable qos paramset verbose: Traffic Priority	Relative priority for this service flow (0 to 7), which determines the priority of service flows that have identical parameter sets.
docsQosParamSetMaxTrafficRate (1.3.6.1.2.1.10.127.7.1.2.2.6)	show cable service-class verbose: Maximum Sustained Rate show interface cable qos paramset verbose: Maximum Sustained Rate	Maximum sustained traffic rate, in bits per second, for this service flow.
docsQosParamSetMaxTrafficBurst (1.3.6.1.2.1.10.127.7.1.2.2.7)	show cable service-class verbose: Max Burst show interface cable qos paramset verbose: Max Burst	Token bucket size, in bytes, for this parameter set.
docsQosParamSetMinReservedRate (1.3.6.1.2.1.10.127.7.1.2.2.8)	show cable service-class verbose: Minimum Reserved Rate show interface cable qos paramset verbose: Minimum Reserved Rate	Guaranteed minimum rate, in bits per second, for this parameter set.
docsQosParamSetMinReservedPkt (1.3.6.1.2.1.10.127.7.1.2.2.9)	show cable service-class verbose: Minimum Packet Size show interface cable qos paramset verbose: Minimum Packet Size	Minimum packet size, in bytes, for which the docsQosParamSetMinReservedRate is provided (0 to 65535).
docsQosParamSetActiveTimeout (1.3.6.1.2.1.10.127.7.1.2.2.10)	show cable service-class verbose: Active QoS Timeout show interface cable qos paramset verbose: Active QoS Timeout	Maximum time, in seconds, that resources can remain unused while in the active state being released (0 to 65535, where 0 indicates no timeout).

Table B-14 DOCSIS 1.1 Quality of Service Parameters (docsQosParamSetTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosParamSetAdmittedTimeout (1.3.6.1.2.1.10.127.7.1.2.2.11)	show cable service-class verbose: Admitted QoS Timeout show interface cable qos paramset verbose: Admitted QoS Timeout	Maximum time, in seconds, that resources can remain in the admitted state before being released (0 to 65535, where 0 indicates no timeout).
docsQosParamSetMaxConcatBurst (1.3.6.1.2.1.10.127.7.1.2.2.12)	show interface cable qos paramset verbose: Maximum Concatenated Burst	Maximum size of the concatenated burst, in bytes, that is allowed on this upstream (0 to 65535).
docsQosParamSetSchedulingType (1.3.6.1.2.1.10.127.7.1.2.2.13)	show cable service-class verbose: Scheduling Type show interface cable qos paramset verbose: Scheduling Type	Upstream scheduling type that is used for this upstream service flow.
docsQosParamSetNomPollInterval (1.3.6.1.2.1.10.127.7.1.2.2.15)	N/A	Interval, in microseconds, between successive unicast request opportunities on the upstream service flow.
docsQosParamSetTolPollJitter (1.3.6.1.2.1.10.127.7.1.2.2.16)	N/A	Maximum amount of time, in microseconds, that unicast request intervals can be delayed from the regularly scheduled times on an upstream service flow.
docsQosParamSetUnsolicitGrantSize (1.3.6.1.2.1.10.127.7.1.2.2.17)	show cable service-class verbose: Unsolicited Grant Size	Unsolicited grant size, in bytes (0 to 65535) for UGS and UGS-AD service flows.
docsQosParamSetNomGrantInterval (1.3.6.1.2.1.10.127.7.1.2.2.18)	show cable service-class verbose: Nominal Grant Interval	Nominal time, in microseconds, between successive data grant opportunities on an upstream service flow.
docsQosParamSetTolGrantJitter (1.3.6.1.2.1.10.127.7.1.2.2.19)	show cable service-class verbose: Tolerated Grant Jitter	Maximum amount of time, in microseconds, that the transmission opportunities might be delayed from the regularly scheduled times for UGS and UGS-AD service flows.
docsQosParamSetGrantsPerInterval (1.3.6.1.2.1.10.127.7.1.2.2.20)	show cable service-class verbose: Grants per Interval	Number of data grants allowed per grant interval (0 to 127).
docsQosParamSetTosAndMask (1.3.6.1.2.1.10.127.7.1.2.2.21)	show cable service-class verbose: IP ToS Overwrite [AND-mask, OR-mask] show interface cable qos paramset verbose: IP ToS Overwrite [AND-mask, OR-mask]	AND mask for the IP type of service (ToS) byte.

Table B-14 DOCSIS 1.1 Quality of Service Parameters (*docsQosParamSetTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosParamSetTosOrMask (1.3.6.1.2.1.10.127.7.1.2.2.22)	show cable service-class verbose: IP ToS Overwrite [AND-mask, OR-mask] show interface cable qos paramset verbose: IP ToS Overwrite [AND-mask, OR-mask]	OR mask for the IP Type of Service (ToS) byte.
docsQosParamSetMaxLatency (1.3.6.1.2.1.10.127.7.1.2.2.23)	show cable service-class verbose: Max Latency	Maximum latency, in microseconds, between the time the CMTS receives a packet on its network-side interface (NSI) and forwards it on the RF cable interface.
docsQosParamSetType (1.3.6.1.2.1.10.127.7.1.2.2.24)	N/A	Indicates the type for this QoS parameter set: active(1), admitted(2), and provisioned(3).
docsQosParamSetRequestPolicyOct (1.3.6.1.2.1.10.127.7.1.2.2.25)	show cable service-class verbose: Request/Transmission Policy show interface cable qos paramset verbose: Request/Transmission Policy	32-bit bitmask that specifies the transmit interval opportunities that the CM omits for upstream transmission requests and packet transmissions. This object replaces docsQosParamSetRequestPolicy.
docsQosParamSetBitMap (1.3.6.1.2.1.10.127.7.1.2.2.26)	show cable service-class verbose: Parameter Presence Bitfield show interface cable qos paramset verbose: Parameter Presence Bitfield	Bitmask that indicates the set of parameters actually included in the DOCSIS registration or dynamic service request message that created the parameter set.

The docsQosServiceFlowIdTable in DOCS-QOS-MIB extends the information about a service ID (SID) in docsIfCmtsServiceTable. [Table B-15](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-15 Service ID Information (*docsQosServiceFlowIdTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosServiceFlowId (1.3.6.1.2.1.10.127.7.1.3.1.1)	show interface cable service-flow: Sfid	Service flow ID (SFID) assigned to this service flow (1 to 4294967295).
docsQosServiceFlowSID (1.3.6.1.2.1.10.127.7.1.3.1.6)	show interface cable service-flow: Sid	Service ID (SID) that is assigned to an admitted or active service flow (0 to 16383). Provisioned service flows are not assigned a SID.
docsQosServiceFlowDirection (1.3.6.1.2.1.10.127.7.1.3.1.7)	show interface cable service-flow: Dir	Direction of the service flow (upstream or downstream).
docsQosServiceFlowPrimary (1.3.6.1.2.1.10.127.7.1.3.1.8)	show interface cable service-flow: Type	Indicates whether the service flow is the primary flow or a secondary flow.

The docsQosServiceFlowStatsTable in DOCS-QOS-MIB contains service flow statistics. [Table B-16](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-16 Service Flow Statistics (*docsQosServiceFlowStatsTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosServiceFlowPkts (1.3.6.1.2.1.10.127.7.1.4.1.1)	show interface cable service-flow counters verbose: Packets	Number of packets sent using this service flow.
docsQosServiceFlowOctets (1.3.6.1.2.1.10.127.7.1.4.1.2)	show interface cable service-flow counters verbose: Octets	Number of octets sent using this service flow, after payload header suppression (PHS) has been applied.
docsQosServiceFlowTimeCreated (1.3.6.1.2.1.10.127.7.1.4.1.3)	N/A	Time stamp, in terms of sysUpTime, for when this service flow was created.
docsQosServiceFlowTimeActive (1.3.6.1.2.1.10.127.7.1.4.1.4)	show interface cable service-flow: Active Time	Total time, in seconds, this service flow has been active.
docsQosServiceFlowPHSUnknowns (1.3.6.1.2.1.10.127.7.1.4.1.5)	N/A	Number of packets that had an unknown payload header suppression index.
docsQosServiceFlowPolicedDropPkts (1.3.6.1.2.1.10.127.7.1.4.1.6)	show interface cable service-flow counters verbose: RateLimit Dropped Pkts	Number of packets sent using this service flow that were dropped due to a violation of the flow's policies, especially because they would have exceeded the maximum traffic rate.
docsQosServiceFlowPolicedDelayPkts (1.3.6.1.2.1.10.127.7.1.4.1.7)	show interface cable service-flow counters verbose: RateLimit Delayed Pkts	Number of packets sent using this service flow that were delayed because of the flow's policies, especially because they would have otherwise exceeded the maximum traffic rate.

The docsQosUpstreamStatsTable in DOCS-QOS-MIB provides upstream service flow statistics. [Table B-17](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-17 Upstream Service Flow Statistics (*docsQosUpstreamStatsTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosSID (1.3.6.1.2.1.10.127.7.1.5.1.1)	show interface cable sid counters verbose: Sid	Service ID (SID) for an admitted or active upstream service flow (1 to 16383).
docsQosUpstreamFragments (1.3.6.1.2.1.10.127.7.1.5.1.2)	N/A	Number of fragmentation headers that were received on an upstream service flow.

Table B-17 Upstream Service Flow Statistics (*docsQosUpstreamStatsTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosUpstreamFragDiscards (1.3.6.1.2.1.10.127.7.1.5.1.3)	N/A	Number of upstream fragments that were discarded and not reassembled into a complete packet.
docsQosUpstreamConcatBursts (1.3.6.1.2.1.10.127.7.1.5.1.4)	N/A	Number of concatenation headers received on an upstream service flow.

The docsQosServiceClassTable in DOCS-QOS-MIB describes the DOCSIS service classes on a CMTS. [Table B-18](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-18 DOCSIS Service Classes (*docsQosServiceClassTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosServiceClassName (1.3.6.1.2.1.10.127.7.1.8.1.1)	show cable service-class [verbose]: Name show interface cable qos paramset verbose: Name	Unique name of the service class (up to 15 ASCII characters in length).
docsQosServiceClassPriority (1.3.6.1.2.1.10.127.7.1.8.1.4)	show cable service-class [verbose]: Prio, Traffic Priority show interface cable qos paramset verbose: Traffic Priority	Priority value (0 to 7) to be used for docsQosParamSetPriority.
docsQosServiceClassMaxTrafficRate (1.3.6.1.2.1.10.127.7.1.8.1.5)	show cable service-class [verbose]: MaxSusRate, Maximum Sustained Rate show interface cable qos paramset verbose: Maximum Sustained Rate	Maximum bit rate (in bps) for the docsQosParamSetMaxTrafficRate.
docsQosServiceClassMaxTrafficBurst (1.3.6.1.2.1.10.127.7.1.8.1.6)	show cable service-class [verbose]: MaxBurst, Max Burst show interface cable qos paramset verbose: Max Burst	Maximum number of bytes for the docsQosParamSetMaxTrafficBurst.
docsQosServiceClassMinReservedRate (1.3.6.1.2.1.10.127.7.1.8.1.7)	show cable service-class [verbose]: MinRsvRate, Minimum Reserved Rate show interface cable qos paramset verbose: Minimum Reserved Rate	Minimum bit rate (in bps) for the minimum guaranteed service rate (docsQosParamSetMinReservedRate).

Table B-18 DOCSIS Service Classes (docsQosServiceClassTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosServiceClassMinReservedPkt (1.3.6.1.2.1.10.127.7.1.8.1.8)	show cable service-class verbose: Minimum Packet Size show interface cable qos paramset verbose: Minimum Packet Size	Minimum packet size, in bytes, for for docsQosParamSetMinReservedPkt (0 to 65535).
docsQosServiceClassMaxConcatBurst (1.3.6.1.2.1.10.127.7.1.8.1.9)	show interface cable qos paramset verbose: Maximum Concatenated Burst	Maximum size of the concatenated burst, in bytes, that is allowed on this upstream (0 to 65535), for docsQosParamSetMaxConcatBurst.
docsQosServiceClassNomPollInterval (1.3.6.1.2.1.10.127.7.1.8.1.10)	N/A	Interval, in microseconds, between successive unicast request opportunities on the upstream service flow (docsQosParamSetNomPollInterval.)
docsQosServiceClassTolPollJitter (1.3.6.1.2.1.10.127.7.1.8.1.11)	N/A	Maximum amount of time, in microseconds, that unicast request intervals can be delayed from the regularly scheduled times on an upstream service flow (docsQosParamSetTolPollJitter).
docsQosServiceClassUnsolicitGrantSize (1.3.6.1.2.1.10.127.7.1.8.1.12)	show cable service-class verbose: Unsolicited Grant Size	Unsolicited grant size, in bytes (0 to 65535) for UGS and UGS-AD service flows (docsQosParamSetUnsolicitGrantSize).
docsQosServiceClassNomGrantInterval (1.3.6.1.2.1.10.127.7.1.8.1.13)	show cable service-class verbose: Nominal Grant Interval	Nominal time, in microseconds, between successive data grant opportunities on an upstream service flow (docsQosParamSetNomGrantInterval).
docsQosServiceClassTolGrantJitter (1.3.6.1.2.1.10.127.7.1.8.1.14)	show cable service-class verbose: Tolerated Grant Jitter	Maximum amount of time, in microseconds, that the transmission opportunities might be delayed from the regularly scheduled times for UGS and UGS-AD service flows (docsQosParamSetTolGrantJitter).
docsQosServiceClassGrantsPerInterval (1.3.6.1.2.1.10.127.7.1.8.1.15)	show cable service-class verbose: Grants per Interval	Number of data grants allowed per grant interval (0 to 127) for docsQosParamSetGrantsPerInterval.
docsQosServiceClassMaxLatency (1.3.6.1.2.1.10.127.7.1.8.1.16)	show cable service-class verbose: Max Latency	Maximum latency, in microseconds, between the time the CMTS receives a packet on its network-side interface (NSI) and forwards it on the RF cable interface, for docsQosParamSetClassMaxLatency.
docsQosServiceClassActiveTimeout (1.3.6.1.2.1.10.127.7.1.8.1.17)	show interface cable qos paramset verbose: Active QoS Timeout	Maximum time, in seconds, that resources can remain unused while in the active state being being released (0 to 65535, where 0 indicates no timeout), for docsQosServiceFlowActiveTimeout.

Table B-18 DOCSIS Service Classes (docsQosServiceClassTable) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsQosServiceClassAdmittedTimeout (1.3.6.1.2.1.10.127.7.1.8.1.18)	show interface cable qos paramset verbose: Admitted QoS Timeout	Maximum time, in seconds, that resources can remain in the admitted state before being released (0 to 65535, where 0 indicates no timeout), for docsQosServiceFlowAdmittedTimeout.
docsQosServiceClassSchedulingType (1.3.6.1.2.1.10.127.7.1.8.1.19)	show cable service-class [verbose]: Sched, Scheduling Type show interface cable qos paramset verbose: Scheduling Type	Upstream scheduling type that is used for this upstream service flow, for docsQosServiceFlowSchedulingType.
docsQosServiceClassRequestPolicy (1.3.6.1.2.1.10.127.7.1.8.1.20)	show cable service-class verbose: Request/Transmission Policy show interface cable qos paramset verbose: Request/Transmission Policy	32-bit bitmask that specifies the transmit interval opportunities that the CM omits for upstream transmission requests and packet transmissions, for docsQosServiceFlowRequestPolicy.
docsQosServiceClassTosAndMask (1.3.6.1.2.1.10.127.7.1.8.1.21)	show cable service-class verbose: IP Tos Overwrite [AND-mask, OR-mask] show interface cable qos paramset verbose: IP ToS Overwrite [AND-mask, OR-mask]	AND mask for the IP Type of Service (ToS) byte, for docsQosServiceFlowTosAndMask.
docsQosServiceClassTosOrMask (1.3.6.1.2.1.10.127.7.1.8.1.22)	show cable service-class verbose: IP Tos Overwrite [AND-mask, OR-mask] show interface cable qos paramset verbose: IP ToS Overwrite [AND-mask, OR-mask]	OR mask for the IP Type of Service (ToS) byte, for docsQosServiceFlowTosOrMask.
docsQosServiceClassDirection (1.3.6.1.2.1.10.127.7.1.8.1.23)	show cable service-class [verbose]: Dir, Direction show interface cable qos paramset verbose: Direction	Direction for this service class template (upstream or downstream).

DOCS-SUBSCRIBER-MIB

The docsQosPHSTable in DOCS-QOS-MIB describes the payload header suppression (PHS) rules that are configured on the Cisco CMTS router. [Table B-19](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-19 Payload Header Suppression Rules (docsQosPHSTable)

Object and OID	Equivalent Show Command and Field	Description
DOCS-QOS-MIB (docsQosMib)		
docsQosPHSField (1.3.6.1.2.1.10.127.7.1.10.1.2)	show interface cable service-flow pfs verbose: PHSF	8-bit value that defines the header bytes that should be suppressed.
docsQosPHSMask (1.3.6.1.2.1.10.127.7.1.10.1.3)	show interface cable service-flow pfs verbose: PHSM	5-bit PHS mask that defines the header bytes that should be suppressed.
docsQosPHSSize (1.3.6.1.2.1.10.127.7.1.10.1.4)	show interface cable service-flow pfs verbose: PHSS	8-bit value specifying the number of header bytes to be suppressed.
docsQosPHSVerify (1.3.6.1.2.1.10.127.7.1.10.1.5)	show interface cable service-flow pfs verbose: PHSV	Indicates whether PHS verification is enabled.
docsQosPHSIndex (1.3.6.1.2.1.10.127.7.1.10.1.7)	show interface cable service-flow pfs verbose: PHSI	Index that uniquely references the PHS rule.

DOCS-SUBSCRIBER-MIB

The docsSubMgtPktFilterTable in DOCS-SUBSCRIBER-MIB is a generic packet filter table that is linked to specific cable modems through the linked by the docsSubMgtCmFilterTable. [Table B-20](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-20 Generic Packet Filter Table (docsSubMgtPktFilterTable)

Object and OID	Equivalent Show Command and Field	Description
DOCS-SUBSCRIBER-MIB (docsSubMgt)		
docsSubMgtPktFilterGroup (1.3.6.1.3.83.4.1.6.1.1)	show cable filter [verbose]: Filter Grp, Filter Group	Identifies this specific group of filters (1 to 1024).
docsSubMgtPktFilterIndex (1.3.6.1.3.83.4.1.6.1.2)	show cable filter [verbose]: Filter Id, Filter index	Index that describes the order in which filter groups are applied (1 to 1024).
docsSubMgtPktFilterSrcAddr (1.3.6.1.3.83.4.1.6.1.3)	show cable filter [verbose]: SrcAddr/Mask, Source IP Address	Source IP address to be matched.
docsSubMgtPktFilterSrcMask (1.3.6.1.3.83.4.1.6.1.4)	show cable filter [verbose]: SrcAddr/Mask, Source IP Address	Source IP address mask to be matched.
docsSubMgtPktFilterDstAddr (1.3.6.1.3.83.4.1.6.1.5)	show cable filter [verbose]: DestAddr/Mask, Destination IP Address	Destination IP address to be matched.

Table B-20 Generic Packet Filter Table (*docsSubMgtPktFilterTable*) (continued)

Object and OID	Equivalent Show Command and Field	Description
docsSubMgtPktFilterDstMask (1.3.6.1.3.83.4.1.6.1.6)	show cable filter [verbose]: DestAddr/Mask, Destination IP Address	Destination IP address mask to be matched.
docsSubMgtPktFilterUlp (1.3.6.1.3.83.4.1.6.1.7)	show cable filter [verbose]: Prot, IP Protocol type	Number of the upper level (Layer 4 and above) protocol to be matched (0 to 256, where 6 indicates TCP, 17 indicates UDP, and 256 matches anything).
docsSubMgtPktFilterTosValue (1.3.6.1.3.83.4.1.6.1.8)	show cable filter [verbose]: ToS, IP ToS (Mask, Value)	IP type of service (TOS) value to be matched (0 to 7).
docsSubMgtPktFilterTosMask (1.3.6.1.3.83.4.1.6.1.9)	show cable filter [verbose]: ToS, IP ToS (Mask, Value)	IP type of service (TOS) mask to be matched (0 to 7).
docsSubMgtPktFilterAction (1.3.6.1.3.83.4.1.6.1.10)	show cable filter [verbose]: Action, Match action	Action to be taken when a packet is matched: accept(1) or drop(2).
docsSubMgtPktFilterMatches (1.3.6.1.3.83.4.1.6.1.11)	show cable filter verbose: Matches	Number of times this specific filter rule has been matched, which occurs only when all components of the filter are matched against a packet. If a packet might match multiple filters, this counter is incremented only on the first filter that is matched.

The docsSubMgtTcpUdpFilterTable in DOCS-SUBSCRIBER-MIB extends the docsSubMgtPktFilterTable to provide optional filtering based on elements in TCP or UDP headers. [Table B-21](#) lists the most commonly used objects in this table and the related **show** commands:

Table B-21 TCP and UDP Header Filters (*docsSubMgtTcpUdpFilterTable*)

Object and OID	Equivalent Show Command and Field	Description
DOCS-SUBSCRIBER-MIB (docsSubMgt)		
docsSubMgtTcpUdpSrcPort (1.3.6.1.3.83.4.1.7.1.1)	show cable filter [verbose]: SPort, TCP/UDP Source Port	Source TCP/UDP port to be matched (0 to 65536, where 65536 matches any value).
docsSubMgtTcpUdpDstPort (1.3.6.1.3.83.4.1.7.1.2)	show cable filter [verbose]: DPort, TCP/UDP Destination Port	Destination TCP/UDP port to be matched (0 to 65536, where 65536 matches any value).
docsSubMgtTcpFlagValues (1.3.6.1.3.83.4.1.7.1.3)	show cable filter [verbose]: TCP flags, TCP Flags (mask, value)	Bit-mask containing the TCP flag values to be matched: urgent(0), ack(1), push(2), reset(3), syn(4), and fin(5).
docsSubMgtTcpFlagMask (1.3.6.1.3.83.4.1.7.1.4)	show cable filter [verbose]: TCP flags, TCP Flags (mask, value)	Bit-mask containing mask for bits to be checked for matching: urgent(0), ack(1), push(2), reset(3), syn(4), and fin(5).

