



APPENDIX **B**

Option Support

This appendix identifies the technology-specific options that Cisco BAC supports for each technology version and specifies the following attributes for each option:

- **Option No.**—Identifies the option number, as an integer or in dotted notation.
- **Description**—Describes the option.
- **Encoding**—Specifies the data format and the encoding of the option value. For detailed information on the encoding types, see [Encoding Types for Defined Options, page 5-23](#).
- **Validation**—Specifies a validation rule that restricts the allowable option values.
- **Multivalued**—Indicates whether multiple options can be specified in a single configuration file. For suboptions, this value specifies whether the option can be repeated within the parent option.
- **Version**—Identifies the technology versions that support the option number and encoding.

This appendix describes the options for these technologies:

- [DOCSIS Option Support, page B-1](#)
- [PacketCable Option Support, page B-22](#)
- [CableHome Option Support, page B-22](#)

DOCSIS Option Support

[Table B-1](#) describes DOCSIS options and identifies the specific version support for each option.

Table B-1 DOCSIS Options and Version Support

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
0	PAD	No length and no value	None	True	✓	✓	✓	✓
1	Downstream Frequency	Unsigned integer 32	Multiples of 62500	False	✓	✓	✓	✓
2	Upstream Channel ID	Unsigned integer 8	None	False	✓	✓	✓	✓
3	Network Access Control	Boolean	None	False	✓	✓	✓	✓
4	Class of Service	Compound	None	True	✓	✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
4.1	Class ID	Unsigned integer 8	From 1 to 16	False	✓	✓	✓	✓
4.2	Maximum Downstream Rate	Unsigned integer 32	None	False	✓	✓	✓	✓
4.3	Maximum Upstream Rate	Unsigned integer 32	None	False	✓	✓	✓	✓
4.4	Upstream Channel Priority	Unsigned integer 8	Less than 8	False	✓	✓	✓	✓
4.5	Guaranteed Minimum Upstream Channel Data Rate	Unsigned integer 32	None	False	✓	✓	✓	✓
4.6	Maximum Upstream Channel Transmit Burst	Unsigned integer 16	None	False	✓	✓	✓	✓
4.7	Class-of-Service Privacy Enable	Boolean	None	False	✓	✓	✓	✓
6	CM MIC Configuration Setting	Byte 16	None	False	✓	✓	✓	✓
7	CMTS MIC Configuration Setting	Bytes	None	False	✓	✓	✓	✓
9	Software Upgrade Filename	NVTASCII	None	False	✓	✓	✓	✓
10	SNMP Write-Access Control	OIDCF	None	True	✓	✓	✓	✓
11	SNMP MIB Object	SNMPVarBind	None	True	✓	✓	✓	✓
14	CPE Ethernet MAC Address	MAC Address	None	True	✓	✓	✓	✓
15	Telephone Settings Option	Compound	None	False	✓	✓	✓	✓
15.2	Service Provider Name	NVTASCII	None	False	✓	✓	✓	✓
15.3	Telephone Number (1)	NVTASCII	None	False	✓	✓	✓	✓
15.4	Telephone Number (2)	NVTASCII	None	False	✓	✓	✓	✓
15.5	Telephone Number (3)	NVTASCII	None	False	✓	✓	✓	✓
15.6	Connection Threshold	Unsigned integer 8	None	False	✓	✓	✓	✓
15.7	Login Username	NVTASCII	None	False	✓	✓	✓	✓
15.8	Login Password	NVTASCII	None	False	✓	✓	✓	✓
15.9	DHCP Authenticate	Boolean	None	False	✓	✓	✓	✓
15.10	DHCP Server	IP Address	None	False	✓	✓	✓	✓
15.11	RADIUS Realm	NVTASCII	None	False	✓	✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
15.12	PPP Authenticate	Unsigned integer 8	None	False	✓	✓	✓	✓
15.13	Demand Dial Inactivity Timer Threshold	Unsigned integer 32	None	False	✓	✓	✓	✓
16	SNMP IPv4 Address (No Longer Used)	IP Address	None	False	✓	✓	✓	✓
17	Baseline Privacy Configuration Setting	Compound	None	False	✓	✓	✓	✓
17.1	Authorize Wait Timeout	Unsigned integer 32	From 1 to 30	False	✓	✓	✓	✓
17.2	Reauthorize Wait Timeout	Unsigned integer 32	From 1 to 30	False	✓	✓	✓	✓
17.3	Authorization Grace Time	Unsigned integer 32	From 1 to 1800	False	✓			
17.3	Authorization Grace Time	Unsigned integer 32	From 1 to 6047999	False		✓	✓	✓
17.4	Operational Wait Timeout	Unsigned integer 32	From 1 to 10	False	✓	✓	✓	✓
17.5	Rekey Wait Timeout	Unsigned integer 32	From 1 to 10	False	✓	✓	✓	✓
17.6	TEK Grace Time	Unsigned integer 32	From 1 to 1800	False	✓			
17.6	TEK Grace Time	Unsigned integer 32	From 1 to 302399	False		✓	✓	✓
17.7	Authorize Reject Wait Timeout	Unsigned integer 32	From 1 to 600	False	✓	✓	✓	✓
17.8	SA Map Wait Timeout	Unsigned integer 32	From 1 to 10	False		✓	✓	✓
17.9	SA Map Max Retries	Unsigned integer 32	From 1 to 10	False		✓	✓	✓
18	Maximum Number of CPE	Unsigned integer 8	None	False	✓	✓	✓	✓
19	TFTP Server Timestamp	Unsigned integer 32	None	False	✓	✓	✓	✓
20	TFTP Server Provisioned Modem Address	IP Address	None	False	✓	✓	✓	✓
21	Software Upgrade TFTP Server	IP Address	None	False	✓	✓	✓	✓
22	Upstream Packet Classification Encoding	Compound	None	True		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
22.1	Classifier Reference	Unsigned integer 8	From 1 to 255	False		✓	✓	✓
22.2	Classifier Identifier	Unsigned integer 16	From 1 to 65535	False		✓	✓	✓
22.3	Service Flow Reference	Unsigned integer 16	From 1 to 65535	False		✓	✓	✓
22.4	Service Flow Identifier	Unsigned integer 32	Greater than 0	False		✓	✓	✓
22.5	Rule Priority	Unsigned integer 8	None	False		✓	✓	✓
22.6	Classifier Activation State	ActInact	None	False		✓	✓	✓
22.7	Dynamic Service Change Action	Unsigned integer 8	Less than 3	False		✓	✓	✓
22.9	IPv4 Packet Classification Encodings	Compound	None	False		✓	✓	✓
22.9.1	IPv4 Type of Service Range and Mask	Unsigned integer 8 triplet	None	False		✓	✓	✓
22.9.2	IP Protocol	Unsigned integer 16	Less than 258	False		✓	✓	✓
22.9.3	IPv4 Source Address	IP Address	None	False		✓	✓	✓
22.9.4	IPv4 Source Mask	IP Address	None	False		✓	✓	✓
22.9.5	IPv4 Destination Address	IP Address	None	False		✓	✓	✓
22.9.6	IPv4 Destination Mask	IP Address	None	False		✓	✓	✓
22.9.7	TCP/UDP Source Port Start	Unsigned integer 16	None	False		✓	✓	✓
22.9.8	TCP/UDP Source Port End	Unsigned integer 16	None	False		✓	✓	✓
22.9.9	TCP/UDP Destination Port Start	Unsigned integer 16	None	False		✓	✓	✓
22.9.10	TCP/UDP Destination Port End	Unsigned integer 16	None	False		✓	✓	✓
22.10	Ethernet LLC Packet Classification Encodings	Compound	None	False		✓	✓	✓
22.10.1	Destination MAC Address	MAC Address and Mask	None	False		✓	✓	✓
22.10.2	Source MAC Address	MAC Address	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
22.10.3	EtherType/DSAP/MacType	Unsigned integer 8 and unsigned integer 16	None	False		✓	✓	✓
22.11	IEEE 802.1P/Q Packet Classification Encodings	Compound	None	False		✓	✓	✓
22.11.1	IEEE 802.1P User_Priority	Unsigned integer 8 pair	Less than 8	False		✓	✓	✓
22.11.2	IEEE 802.1Q VLAN_ID	Unsigned integer 16	None	False		✓	✓	✓
22.12	IPv6 Packet Classification Encodings	Compound	None	False				✓
22.12.1	IPv6 Traffic Class Range and Mask	Unsigned integer 8 triplet	None	False				✓
22.12.2	IPv6 Flow Label	Unsigned integer 32	Greater than 0	False				✓
22.12.3	IPv6 Next Header Type	Unsigned integer 16	Less than 258	False				✓
22.12.4	IPv6 Source Address	IPv6 address	None	False				✓
22.12.5	IPv6 Source Prefix Length	Unsigned integer 8	Less than 129	False				✓
22.12.6	IPv6 Destination Address	IPv6 address	None	False				✓
22.12.7	IPv6 Destination Prefix Length	Unsigned integer 8	Less than 129	False				✓
22.13	CM Interface Mask (CMIM)	Bytes	None	False				✓
22.43	Vendor Specific Classifier Parameters	Compound	None	False		✓	✓	✓
22.43.8	Vendor ID	OUI	None	False		✓	✓	✓
22.43.5	L2VPN Encoding	Compound	None	False			✓	✓
22.43.5.1	VPNID Subtype	Bytes	None	False			✓	✓
22.43.5.2	NSI Encapsulation Subtype	Compound	None	False			✓	✓
22.43.5.2.1	Other Format Subtype 1	No length and no value	None	False			✓	✓
22.43.5.2.2	IEEE 802.1Q Format Subtype 2	Unsigned integer 16	None	False			✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
22.43.5.2.3	IEEE 802.1ad Format Subtype	Unsigned integer 32	None	False			✓	✓
22.43.5.2.4	MPLS Peer Format Subtype	Inet Address Peer	None	False			✓	✓
22.43.5.2.5	L2TPv3 Peer Format Subtype	Inet Address Peer	None	False			✓	✓
22.43.5.3	Enable eSAFE DHCP Snooping	Bytes	None	False			✓	✓
22.43.5.4	CM Interface Mask	Bytes	None	False			✓	✓
22.43.5.5	Attachment Group ID	Bytes	From 0 to 16	False			✓	✓
22.43.5.6	Source Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
22.43.5.7	Target Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
22.43.5.8	Ingress User Priority	Unsigned integer 8	From 0 to 7	False			✓	✓
22.43.5.9	User Priority Range	Unsigned integer 16	None	False			✓	✓
22.43.5.4.3	Vendor-Specific	Compound	None	False			✓	✓
23	Downstream Packet Classification Encoding	Compound	None	True		✓	✓	✓
23.1	Classifier Reference	Unsigned integer 8	From 1 to 255	False		✓	✓	✓
23.2	Classifier Identifier	Unsigned integer 16	From 1 to 65535	False		✓	✓	✓
23.3	Service Flow Reference	Unsigned integer 16	From 1 to 65535	False		✓	✓	✓
23.4	Service Flow Identifier	Unsigned integer 32	Greater than 0	False		✓	✓	✓
23.5	Rule Priority	Unsigned integer 8	None	False		✓	✓	✓
23.6	Classifier Activation State	Boolean	None	False		✓	✓	✓
23.7	Dynamic Service Change Action	Unsigned integer 8	Less than 3	False		✓	✓	✓
23.8	Classifier Error Encodings	Compound	None	False		✓	✓	✓
23.9	IPv4 Packet Classification Encodings	Compound	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
23.9.1	IPv4 Type of Service Range and Mask	Unsigned integer 8 triplet	None	False		✓	✓	✓
23.9.2	IP Protocol	Unsigned integer 16	Less than 258	False		✓	✓	✓
23.9.3	IPv4 Source Address	IP Address	None	False		✓	✓	✓
23.9.4	IPv4 Source Mask	IP Address	None	False		✓	✓	✓
23.9.5	IPv4 Destination Address	IP Address	None	False		✓	✓	✓
23.9.6	IPv4 Destination Mask	IP Address	None	False		✓	✓	✓
23.9.7	TCP/UDP Source Port Start	Unsigned integer 16	None	False		✓	✓	✓
23.9.8	TCP/UDP Source Port End	Unsigned integer 16	None	False		✓	✓	✓
23.9.9	TCP/UDP Destination Port Start	Unsigned integer 16	None	False		✓	✓	✓
23.9.10	TCP/UDP Destination Port End	Unsigned integer 16	None	False		✓	✓	✓
23.10	Ethernet LLC Packet Classification Encodings	Compound	None	False			✓	✓
23.10.1	Destination MAC Address	MAC Address and Mask	None	False		✓	✓	✓
23.10.2	Source MAC Address	MAC Address	None	False		✓	✓	✓
23.10.3	Ethertype/DSAP/MacType	Unsigned integer 8 and unsigned integer 16	None	False		✓	✓	✓
23.11	IEEE 802.1P/Q Packet Classification Encodings	Compound	None	False		✓	✓	✓
23.11.1	IEEE 802.1P User_Priority	Unsigned integer 8 pair	Less than 8	False		✓	✓	✓
23.11.2	IEEE 802.1Q VLAN_ID	Unsigned integer 16	None	False		✓	✓	✓
23.12	IPv6 Packet Classification Encodings	Compound	None	False				✓
23.12.1	IPv6 Traffic Class Range and Mask	Unsigned integer 8 triplet	None	False				✓
23.12.2	IPv6 Flow Label	Unsigned integer 32	Greater than 0	False				✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
23.12.3	IPv6 Next Header Type	Unsigned integer 16	Less than 258	False				✓
23.12.4	IPv6 Source Address	IPv6 address	None	False				✓
23.12.5	IPv6 Source Prefix Length	Unsigned integer 8	Less than 129	False				✓
23.12.6	IPv6 Destination Address	IPv6 address	None	False				✓
23.12.7	IPv6 Destination Prefix Length	Unsigned integer 8	Less than 129	False				✓
23.43	Vendor Specific Classifier Parameters	Compound	None	False		✓	✓	✓
23.43.5	L2VPN Encoding	Compound	None	False			✓	✓
23.43.5.1	VPNID Subtype	Bytes	None	False			✓	✓
23.43.5.2	NSI Encapsulation Subtype	Compound	None	False			✓	✓
23.43.5.2.1	Other Format Subtype 1	No length and no value	None	False			✓	✓
23.43.5.2.2	IEEE 802.1Q Format Subtype 2	Unsigned integer 16	None	False			✓	✓
23.43.5.2.3	IEEE 802.1ad Format Subtype 3	Unsigned integer 32	None	False			✓	✓
23.43.5.2.4	MPLS Peer Format Subtype 4	Inet Address Peer	None	False			✓	✓
23.43.5.2.5	L2TPv3 Peer Format Subtype 5	Inet Address Peer	None	False			✓	✓
23.43.5.3	Enable eSAFE DHCP Snooping	Bytes	None	False			✓	✓
23.43.5.4	CM Interface Mask	Bytes	None	False			✓	✓
23.43.5.5	Attachment Group ID	Bytes	From 0 to 16	False			✓	✓
23.43.5.6	Source Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
23.43.5.7	Target Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
23.43.5.8	Ingress User Priority	Unsigned integer 8	From 0 to 7	False			✓	✓
23.43.5.9	User Priority Range	Unsigned integer 16	None	False			✓	✓
23.43.5.4.3	Vendor-Specific 3	Compound	None	False			✓	✓
23.43.8	Vendor ID	OUI	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
24	Upstream Service Flow Scheduling	Compound	None	True		✓	✓	✓
24.1	Service Flow Reference	Unsigned integer 16	Greater than 0	False		✓	✓	✓
24.3	Service Identifier	Unsigned integer 16	None	False		✓	✓	✓
24.4	Service Class Name	ZTASCII	None	False		✓	✓	✓
24.6	Quality of Service Parameter Set Type	Bit Flag 8	Less than 8	False		✓	✓	✓
24.7	Traffic Priority	Unsigned integer 8	Less than 8	False		✓	✓	✓
24.8	Upstream Maximum Sustained Traffic Rate	Unsigned integer 32	None	False		✓	✓	✓
24.9	Maximum Traffic Burst	Unsigned integer 32	None	False		✓	✓	✓
24.10	Minimum Reserved Traffic Rate	Unsigned integer 32	None	False		✓	✓	✓
24.11	Assumed Minimum Reserved Rate Packet Size	Unsigned integer 16	None	False		✓	✓	✓
24.12	Timeout for active QoS Parameters	Unsigned integer 16	None	False		✓	✓	✓
24.13	Timeout for Admitted QoS Parameters	Unsigned integer 16	None	False		✓	✓	✓
24.14	Maximum Concatenated Burst	Unsigned integer 16	None	False		✓	✓	✓
24.15	Service Flow Scheduling Type	Service Flow	From 1 to 6	False		✓	✓	✓
24.16	Request/Transmission Policy	Bit Flag 32	Less than 512	False		✓	✓	✓
24.17	Nominal Polling Interval	Unsigned integer 32	None	False		✓	✓	✓
24.18	Tolerated Poll Jitter	Unsigned integer 32	None	False		✓	✓	✓
24.19	Unsolicited Grant Size	Unsigned integer 16	None	False		✓	✓	✓
24.20	Nominal Grant Interval	Unsigned integer 32	None	False		✓	✓	✓
24.21	Tolerated Grant Jitter	Unsigned integer 32	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
24.22	Grants per Interval	Unsigned integer 8	Less than 128	False		✓	✓	✓
24.23	IPv4 Type of Service Overwrite	Unsigned integer 8 pair	None	False		✓	✓	✓
24.24	Unsolicited Grant Time Reference	Unsigned integer 32	None	False		✓	✓	✓
24.25	Multiplier to Contention Request Backoff Window	Unsigned integer 8	From 4 to 12	False				✓
24.26	Multiplier to Number of Bytes Requested	Unsigned integer 8	Values 1, 2, 4, 8, or 16	False				✓
24.27	Maximum Requests per SID Cluster	Unsigned integer 8	Less than 256	False				✓
24.28	Maximum Outstanding Bytes per SID Cluster	Unsigned integer 32	Less than 4294967296	False				✓
24.29	Maximum Total Bytes Requested per SID Cluster	Unsigned integer 32	Less than 4294967296	False				✓
24.30	Maximum Time in the SID Cluster	Unsigned integer 16	Less than 65535	False				✓
24.31	Service Flow Required Attribute Mask	Bit Flag 32	None	False				✓
24.32	Service Flow Forbidden Attribute Mask	Bit Flag 32	None	False				✓
24.33	Service Flow Attribute Aggregation Mask	Bit Flag 32	None	False				✓
24.34	Application Identifier	Bit Flag 32	None	False				✓
24.43	Vendor Specific QoS Parameters	Compound	None	False		✓	✓	✓
24.43.8	Vendor ID	OUI	None	False		✓	✓	✓
24.43.5	L2VPN Encoding	Compound	None	False			✓	✓
24.43.5.1	VPNID Subtype	Bytes	None	False			✓	✓
24.43.5.2	NSI Encapsulation Subtype	Compound	None	False			✓	✓
24.43.5.2.1	Other Format Subtype 1	No length and no value	None	False			✓	✓
24.43.5.2.2	IEEE 802.1Q Format Subtype 2	Unsigned integer 16	None	False			✓	✓
24.43.5.2.3	IEEE 802.1ad Format Subtype 3	Unsigned integer 32	None	False			✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
24.43.5.2.4	MPLS Peer Format Subtype	Inet Address Peer	None	False			✓	✓
24.43.5.2.5	L2TPv3 Peer Format Subtype	Inet Address Peer	None	False			✓	✓
24.43.5.3	Enable eSAFE DHCP Snooping	Bytes	None	False			✓	✓
24.43.5.4	CM Interface Mask	Bytes	None	False			✓	✓
24.43.5.5	Attachment Group ID	Bytes	From 0 to 16	False			✓	✓
24.43.5.6	Source Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
24.43.5.7	Target Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
24.43.5.8	Ingress User Priority	Unsigned integer 8	From 0 to 7	False			✓	✓
24.43.5.9	User Priority Range	Unsigned integer 16	None	False			✓	✓
24.43.5.4.3	Vendor-Specific	Compound	None	False			✓	✓
25	Downstream Service Flow Scheduling	Compound	None	True		✓	✓	✓
25.1	Service Flow Reference	Unsigned integer 16	Greater than 0	False		✓	✓	✓
25.3	Service Identifier	Unsigned integer 16	None	False		✓	✓	✓
25.4	Service Class Name	ZTASCII	None	False		✓	✓	✓
25.6	Quality of Service Parameter Set Type	Bit Flag 8	Less than 8	False		✓	✓	✓
25.7	Traffic Priority	Unsigned integer 8	Less than 8	False		✓	✓	✓
25.8	Downstream Maximum Sustained Traffic Rate	Unsigned integer 32	None	False		✓	✓	✓
25.9	Maximum Traffic Burst	Unsigned integer 32	None	False		✓	✓	✓
25.10	Minimum Reserved Traffic Rate	Unsigned integer 32	None	False		✓	✓	✓
25.11	Assumed Minimum Reserved Rate Packet Size	Unsigned integer 16	None	False		✓	✓	✓
25.12	Timeout for active QoS Parameters	Unsigned integer 16	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
25.13	Timeout for Admitted QoS Parameters	Unsigned integer 16	None	False		✓	✓	✓
25.14	Maximum Downstream Latency	Unsigned integer 32	None	False		✓	✓	✓
25.23	IPv4 Type of Service (DSCP) Overwrite	Unsigned integer 8 pair	None	False				✓
25.31	Service Flow Required Attribute Mask	Bit Flag 32	None	False				✓
25.32	Service Flow Forbidden Attribute Mask	Bit Flag 32	None	False				✓
25.33	Service Flow Attribute Aggregation Mask	Bit Flag 32	None	False				✓
25.34	Application Identifier	Bit Flag 32	None	False				✓
25.43	Vendor Specific QoS Parameters	Compound	None	False		✓	✓	✓
25.43.8	Vendor ID	OUI	None	False		✓	✓	✓
26	Payload Header Suppression	Compound	None	True		✓	✓	✓
26.1	Classifier Reference	Unsigned integer 8	Greater than 0	False		✓	✓	✓
26.2	Classifier Identifier	Unsigned integer 16	Greater than 0	False		✓	✓	✓
26.3	Service Flow Reference	Unsigned integer 16	Greater than 0	False		✓	✓	✓
26.4	Service Flow Identifier	Unsigned integer 32	Greater than 0	False		✓	✓	✓
26.5	Dynamic Service Change Action	SrvChangeAct	Less than 4	False		✓	✓	✓
26.7	Payload Header Suppression Field (PHSF)	Bytes	None	False		✓	✓	✓
26.8	Payload Header Suppression Index (PHSI)	Unsigned integer 8	Greater than 0	False		✓	✓	✓
26.9	Payload Header Suppression Mask (PHSM)	Bytes	None	False		✓	✓	✓
26.10	Payload Header Suppression Size (PHSS)	Unsigned integer 8	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
26.11	Payload Header Suppression Verification (PHSV)	Verify	None	False		✓	✓	✓
26.13	Dynamic Bonding Change Action	Unsigned integer 8	Less than 2	False				✓
26.43	Vendor Specific PHS Parameters	Compound	None	False		✓	✓	✓
26.43.8	Vendor ID	OUI	None	False		✓	✓	✓
28	Maximum Number of Classifiers	Unsigned integer 16	None	False		✓	✓	✓
29	Privacy Enable	Boolean	None	False		✓	✓	✓
32	Manufacturer CVC	Bytes	None	False		✓	✓	✓
33	Co-signer CVC	Bytes	None	False		✓	✓	✓
34	SnmpV3 Kickstart Value	Compound	None	False		✓	✓	✓
34.1	SnmpV3 Kickstart Security Name	NVTASCII	None	False		✓	✓	✓
34.2	SnmpV3 Kickstart Manager Public Number	Bytes	None	False		✓	✓	✓
35	Subscriber Management Control	Bytes	None	False		✓	✓	✓
36	Subscriber Management CPE IPv4 Table	IP Address N	None	False		✓	✓	✓
37	Subscriber Management Filter Groups	Bytes	None	False		✓	✓	✓
38	SNMPv3 Notification Receiver	Compound	None	True		✓	✓	✓
38.1	SNMPv3 Notification Receiver IPv4 Address	IP address	None	False		✓	✓	✓
38.2	SNMPv3 Notification Receiver UDP Port	Unsigned integer 16	None	False		✓	✓	✓
38.3	SNMPv3 Notification Receiver Trap Type	SNMP Trap Type	From 1 to 5	False		✓	✓	✓
38.4	SNMPv3 Notification Receiver Timeout	Unsigned integer 16	None	False		✓	✓	✓
38.5	SNMPv3 Notification Receiver Retries	Unsigned integer 16	From 0 to 255	False		✓	✓	✓
38.6	Notification Receiver Filtering Parameters	OID	None	False		✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
38.7	Notification Receiver Security Name	NVTASCII	None	False		✓	✓	✓
38.8	SNMPv3 Notification Receiver IPv6 Address	IPv6 address	None	False				✓
39	Enable 2.0 Mode	Boolean	None	False			✓	✓
40	Enable Test Modes	Boolean	None	True			✓	✓
41	Downstream Channel List	Compound	None	True			✓	✓
41.1	Single Downstream Channel	Compound	None	True			✓	✓
41.1.1	Single Downstream Channel Timeout	Unsigned integer 16	None	False			✓	✓
41.1.2	Single Downstream Channel Frequency	Unsigned integer 32	Multiples of 62500	False			✓	✓
41.2	Downstream Frequency Range	Compound	None	True			✓	✓
41.2.1	Downstream Frequency Range Timeout	Unsigned integer 16	None	False			✓	✓
41.2.2	Downstream Frequency Range Start	Unsigned integer 32	Multiples of 62500	False			✓	✓
41.2.3	Downstream Frequency Range End	Unsigned integer 32	Multiples of 62500	False			✓	✓
41.2.4	Downstream Frequency Range Step Size	Unsigned integer 32	None	False			✓	✓
41.3	Default Scanning	Unsigned integer 16	None	True			✓	✓
42	Multicast MAC Address	MAC Address	None	True			✓	✓
43	DOCSIS Extension Field (OUI FF-FF-FF)	Compound	None	True	✓	✓	✓	✓
43.1	CM Load Balancing Policy ID	Unsigned integer 32	None	False			✓	✓
43.2	CM Load Balancing Priority	Unsigned integer 32	None	False			✓	✓
43.3	CM Load Balancing Group ID	Unsigned integer 32	None	False			✓	✓
43.4	CM Ranging Class ID Extension	Unsigned integer 16	None	False			✓	✓
43.5	L2VPN Encoding	Compound	None	False			✓	✓
43.5.1	VPNID Subtype	Bytes	None	False			✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
43.5.2	NSI Encapsulation Subtype	Compound	None	False			✓	✓
43.5.2.1	Other Format Subtype	No length and no value	None	False			✓	✓
43.5.2.2	IEEE 802.1Q Format Subtype	Unsigned integer 16	None	False			✓	✓
43.5.2.3	IEEE 802.1ad Format Subtype	Unsigned integer 32	None	False			✓	✓
43.5.2.4	MPLS Peer Format Subtype	Inet Address Peer	None	False			✓	✓
43.5.2.5	L2TPv3 Peer Format Subtype	InetAddress Peer	None	False			✓	✓
43.5.3	Enable eSAFE DHCP Snooping	Bytes	None	False			✓	✓
43.5.4	CM Interface Mask	Bytes	None	False			✓	✓
43.5.5	Attachment Group ID	Bytes	From 0 to 16	False			✓	✓
43.5.6	Source Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
43.5.7	Target Attachment Individual ID	Bytes	From 0 to 16	False			✓	✓
43.5.8	Ingress User Priority	Unsigned integer 8	From 0 to 7	False			✓	✓
43.5.9	User Priority Range	Unsigned integer 16	None	False			✓	✓
43.5.43	Vendor-Specific	Compound	None	False			✓	✓
43.6	Extended CMTS MIC Configuration Setting	Compound	None	False				✓
43.6.1	Extended CMTS MIC HMAC type	Unsigned integer 8	Values 1, 2, 43	False				✓
43.6.2	Extended CMTS MIC Bitmap	Bytes	None	False				✓
43.6.3	Explicit Extended CMTS MIC Digest Subtype	Bytes	None	False				✓
43.7	Source Address Verification (SAV) Authorization Encoding	Compound	None	False			✓	✓
43.7.1	Name of an SAV Group configured in the CMTS	ZTASCII	From 1 to 15	False			✓	✓
43.7.2	SAV Static Prefix Subtype Encodings	Compound	None	False			✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
43.7.2.1	SAV Static Prefix Address Subtype	IPv4 or IPv6 Address	None	False			✓	✓
43.7.2.2	SAV Static Prefix Length Subtype	Bit Flag 8	Less than 129	False			✓	✓
43.8	Vendor ID	OUI	None	False	✓	✓	✓	✓
43.9	Cable Modem Mask Subtype Encodings	Compound	None	False				✓
43.9.1	Cable Modem Required Attribute Mask	Bit flag 32	None	False				✓
43.9.2	Cable Modem Forbidden Attribute Mask	Bit flag 32	None	False				✓
43.10	IP Multicast Join Authorization Encoding	Suboptions	None	False				✓
43.10.1	Name of an IP Multicast Profile configured in the CMTS	NVTASCII	From 1 to 15	True				✓
43.10.2	IP Multicast Join Authorization Static Session Rule Subtype Encodings	Compound	None	True				✓
43.10.2.1	Rule Priority	Unsigned integer 8	None	False				✓
43.10.2.2	Authorization Action	Authorization action	None	False				✓
43.10.2.3	Source Prefix Address Subtype	IPv4 or IPv6 address	None	False				✓
43.10.2.4	Source Prefix Length Subtype	Bit flag 8	Less than 129	False				✓
43.10.2.5	Group Prefix Address Subtype	IPv4 or IPv6 address	None	False				✓
43.10.2.6	Group Prefix Length Subtype	Bit flag 8	Less than 129	False				✓
43.10.3	Maximum Multicast Sessions Encoding	Unsigned integer 16	None	False				✓
43	DOCSIS Extension Field (OUI 00-00-0C)	Compound	None	True	✓	✓	✓	✓
43.1	Static Downstream Frequency	Unsigned integer 32	None	False	✓	✓	✓	✓
43.2	Sync Loss Timeout	Unsigned integer 32	None	False	✓	✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
43.3	Update Boot Monitor Image	NVTASCII	None	False	✓	✓	✓	✓
43.4	Power Backoff	Unsigned integer 16	None	False	✓	✓	✓	✓
43.8	Vendor ID	OUI	None	False	✓	✓	✓	✓
43.9	Update Factory System Image	Boolean	None	False	✓	✓	✓	✓
43.10	Phone Lines	Unsigned integer 8	None	False	✓	✓	✓	✓
43.11	IP Precedence Settings	Compound	None	True	✓	✓	✓	✓
43.11.1	IP Precedence Value	Unsigned integer 8	None	False	✓	✓	✓	✓
43.11.2	Rate Limit	Unsigned integer 32	None	False	✓	✓	✓	✓
43.128	IOS Configuration Filename	NVTASCII	None	False	✓	✓	✓	✓
43.129	IOS Config File Without Console Disable	NVTASCII	None	False	✓	✓	✓	✓
43.131	IOS CLI Command	NVTASCII	None	True	✓	✓	✓	✓
43.132	1.0 Plus Flow Encodings	Compound	None	False	✓	✓	✓	✓
43.132.1	1.0 Plus Flow ID	Unsigned integer 8	None	False	✓	✓	✓	✓
43.132.2	Class ID	Unsigned integer 8	None	False	✓	✓	✓	✓
43.132.3	Unsolicited Grant Size	Unsigned integer 16	From 1 to 65535	False	✓	✓	✓	✓
43.132.4	Nominal Grant Interval	Unsigned integer 32	From 1 to 65535	False	✓	✓	✓	✓
43.132.5	Grants Per Interval	Unsigned integer 8	From 0 to 127	False	✓	✓	✓	✓
43.132.6	Embedded Voice Calls	Unsigned integer 8	From 0 to 127	False	✓	✓	✓	✓
43.132.7	Hold Queue Length	Unsigned integer 16	From 0 to 4096	False	✓	✓	✓	✓
43.132.8	Fair Queue	Compound	None	False	✓	✓	✓	✓
43.132.8.1	Congestive Discard Threshold	Unsigned integer 16	From 1 to 4096	False	✓	✓	✓	✓
43.132.8.2	Number of Dynamic Conversation Queues	Unsigned integer 16	From 16 to 4096	False	✓	✓	✓	✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
43.132.8.3	Number of Reservable Conversation Queues	Unsigned integer 16	From 0 to 1000	False	✓	✓	✓	✓
43.132.9	Custom Queue List Length	Unsigned integer 8	From 1 to 16	False	✓	✓	✓	✓
43.132.10	Random Detection	Boolean	None	False	✓	✓	✓	✓
43.132.11	Priority Group	Unsigned integer 8	From 1 to 16	False	✓	✓	✓	✓
43.132.12	Service Policy File	NVTASCII	None	False	✓	✓	✓	✓
43.132.13	Inactivity Timer	Unsigned integer 16	From 1 to 10080	False	✓	✓	✓	✓
43.132.14	COS Tag	NVTASCII	None	False	✓	✓	✓	✓
43.133	Downstream Sub Channel ID	Unsigned integer 8	From 0 to 15	False	✓	✓	✓	✓
43.134	SU Tag	NVTASCII	None	False	✓	✓	✓	✓
45	Downstream Unencrypted Traffic (DUT) Filtering Encoding	Compound	None	False			✓	✓
45.1	Downstream Unencrypted Traffic (DUT) Control	Boolean	None	False			✓	✓
45.2	Downstream Unencrypted Traffic (DUT) CMIM	Bytes	None	False			✓	✓
53	SNMPv1v2c Coexistence Configuration	Compound	None	True				✓
53.1	SNMPv1v2c Community Name	ZTASCII	From 1 to 32	False				✓
53.2	SNMPv1v2c Transport Address Access	Compound	None	True				✓
53.2.1	SNMPv1v2c Transport Address	Transport address and mask	None	False				✓
53.2.2	SNMPv1v2c Transport Address Mask	Transport address and mask	None	False				✓
53.3	SNMPv1v2c Access View Type	Access view type	None	False				✓
53.4	SNMPv1v2c Access View Name	ZTASCII	From 1 to 32	False				✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
54	SNMPv3 Access View	Compound	None	True				✓
54.1	SNMPv3 Access View Name	ZTASCII	From 1 to 32	False				✓
54.2	SNMPv3 Access View Subtree	OID	None	False				✓
54.3	SNMPv3 Access View Mask	Bytes	From 1 to 16	False				✓
54.4	SNMPv3 Access View Type	Access view control	None	False				✓
55	SNMP CPE Access Control	CPE access control	None	False				✓
56	Channel Assignment Configuration Settings	Compound	None	True				✓
56.1	Transmit Channel Assignment Configuration Setting	Unsigned integer 8	None	False				✓
56.2	Receive Channel Assignment Configuration Setting	Unsigned integer 32	None	False				✓
58	Software Upgrade IPv6 TFTP Server	IPv6 address	None	False				✓
59	TFTP Provisioned Modem IPv6 Address	IPv6 address	None	False				✓
60	Upstream Drop Packet Classification Encoding	Compound	None	True				✓
60.1	Classifier Reference	Unsigned integer 8	From 1 to 255	False				✓
60.2	Classifier Identifier	Unsigned integer 16	From 1 to 65535	False				✓
60.5	Rule Priority	Unsigned integer 8	None	False				✓
60.6	Classifier Activation State	ActInact	None	False				✓
60.7	Dynamic Service Change Action	Unsigned integer 8	Less than 3	False				✓
60.9	IPv4 Packet Classification Encodings	Compound	None	False				✓
60.9.1	IPv4 Type of Service Range and Mask	Unsigned integer 8 triplet	None	False				✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
60.9.2	IP Protocol	Unsigned integer 16	Less than 258	False				✓
60.9.3	IPv4 Source Address	IP address	None	False				✓
60.9.4	IPv4 Source Mask	IP address	None	False				✓
60.9.5	IPv4 Destination Address	IP address	None	False				✓
60.9.6	IPv4 Destination Mask	IP address	None	False				✓
60.9.7	TCP/UDP Source Port Start	Unsigned integer 16	None	False				✓
60.9.8	TCP/UDP Source Port End	Unsigned integer 16	None	False				✓
60.9.9	TCP/UDP Destination Port Start	Unsigned integer 16	None	False				✓
60.9.10	TCP/UDP Destination Port End	Unsigned integer 16	None	False				✓
60.10	Ethernet LLC Packet Classification Encodings	Compound	None	False				✓
60.10.1	Destination MAC Address	MAC address and mask	None	False				✓
60.10.2	Source MAC Address	MAC address	None	False				✓
60.10.3	Ethertype/DSAP/MacType	Unsigned integer 8 and 16	None	False				✓
60.11	IEEE 802.1P/Q Packet Classification Encodings	Compound	None	False				✓
60.11.1	IEEE 802.1P User_Priority	Unsigned integer 8 pair	Less than 8	False				✓
60.11.2	IEEE 802.1Q VLAN_ID	Unsigned integer 16	None	False				✓
60.12	IPv6 Packet Classification Encodings	Compound	None	False				✓
60.12.1	IPv6 Traffic Class Range and Mask	Unsigned integer 8 triplet	None	False				✓
60.12.2	IPv6 Flow Label	Unsigned integer 32	Greater than 0	False				✓
60.12.3	IPv6 Next Header Type	Unsigned integer 16	Less than 258	False				✓
60.12.4	IPv6 Source Address	IPv6 address	None	False				✓

Table B-1 DOCSIS Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	DOCSIS Version			
					1.0	1.1	2.0	3.0
60.12.5	IPv6 Source Prefix Length	Unsigned integer 8	Less than 129	False				✓
60.12.6	IPv6 Destination Address	IPv6 address	None	False				✓
60.12.7	IPv6 Destination Prefix Length	Unsigned integer 8	Less than 129	False				✓
60.13	CM Interface Mask (CMIM)	Bytes	None	False				✓
60.43	Vendor Specific Classifier Parameters	Compound	None	False				✓
60.43.8	Vendor ID	OUI	None	False				✓
61	Subscriber Management CPE IPv6 Table	IPv6 Address N	None	False				✓
62	Upstream Drop Classifier Group ID	Bytes	None	False				✓
63	Subscriber Management Control Max CPE IPv6 Prefix	Unsigned integer 16	None	False				✓
64	CMTS Static Multicast Session Encoding	Compound	None	True				✓
64.1	Static Multicast Group Encoding	IPv4 or IPv6 address	None	False				✓
64.2	Static Multicast Source Encoding	IPv4 or IPv6 address	None	False				✓
64.3	Static Multicast CMIM Encoding	Bytes	None	False				✓
255	End-of-Data Marker	No length and no value	None	False	✓	✓	✓	✓

PacketCable Option Support

Table B-2 identifies the PacketCable MTA options that Cisco BAC supports.

Table B-2 PacketCable MTA Options

Option No.	Description	Encoding	Validation	Multi-valued	PacketCable Version		
					1.0	1.1	1.5
11	SNMP MIB Object	SNMPVarBind with 1-byte length	None	True	✓	✓	✓
38	SNMPv3 Notification Receiver	Suboptions	None	True	✓	✓	✓
38.1	SNMPv3 Notification Receiver IP Address	IP address	None	False	✓	✓	✓
38.2	SNMPv3 Notification Receiver UDP Port Number	Unsigned integer 16	None	False	✓	✓	✓
38.3	SNMPv3 Notification Receiver Trap Type	SNMP trap type	From 1 to 5	False	✓	✓	✓
38.4	SNMPv3 Notification Receiver Timeout	Unsigned integer 16	None	False	✓	✓	✓
38.5	SNMPv3 Notification Receiver Retries	Unsigned integer 16	From 0 to 255	False	✓	✓	✓
38.6	Notification Receiver Filtering Parameters	OID	None	False	✓	✓	✓
38.7	Notification Receiver Security Name	NVTASCII	None	False	✓	✓	✓
43	Vendor-Specific Information	Suboptions	None	True	✓	✓	✓
43.8	Vendor ID	OUI	None	False	✓	✓	✓
64	SNMP MIB Object	SNMPVarBind with 2-byte length	None	True	✓	✓	✓
254	Telephony Config File Start/End	Unsigned integer 8	Must be 1 or 255	False	✓	✓	✓

CableHome Option Support

Table B-3 identifies the non-secure CableHome options that Cisco BAC supports.

Table B-3 CableHome Options and Version Support

Option No.	Description	Encoding	Validation	Multi-valued	CableHome Version 1.0
0	PAD	No length and no value	None	True	✓
9	Software Upgrade Filename	NVTASCII	None	False	✓

Table B-3 CableHome Options and Version Support (continued)

Option No.	Description	Encoding	Validation	Multi-valued	CableHome Version 1.0
10	SNMP Write-Access Control	OIDCF	None	True	✓
12	Modem IP Address	IP address	None	False	✓
14	CPE Ethernet MAC Address	MAC address	None	True	✓
21	Software Upgrade TFTP Server	IP address	None	False	✓
28	SNMP MIB Object	SNMPVarBind	None	True	✓
32	Manufacturer CVC	Bytes	None	False	✓
33	Co-signer CVC	Bytes	None	True	✓
34	SnmpV3 Kickstart Value	Suboptions	None	False	✓
34.1	SnmpV3 Kickstart Security Name	NVTASCII	None	False	✓
38	SNMPv3 Notification Receiver	Suboptions	None	True	✓
38.1	SNMPv3 Notification Receiver IP Address	IP address	None	False	✓
38.2	SNMPv3 Notification Receiver UDP Port Number	Unsigned integer 16	None	False	✓
38.3	SNMPv3 Notification Receiver Trap Type	SNMP trap type	From 1 to 5	False	✓
38.4	SNMPv3 Notification Receiver Timeout	Unsigned integer 16	None	False	✓
38.5	SNMPv3 Notification Receiver Retries	Unsigned integer 16	None	False	✓
38.6	Notification Receiver Filtering Parameters	OID	None	False	✓
38.7	Notification Receiver Security Name	NVTASCII	None	False	✓
43	Vendor-Specific Information	Suboptions	None	True	✓
43.1	Vendor ID	OUI	None	False	✓
53	PS MIC. A 20-octet SHA-1 hash of PS config file	Bytes	None	False	✓
255	End-of-Data Marker	No length and no value	None	False	✓

