



SNMP Cache Engine Enhancement

The SNMP Cache Engine Enhancement feature caches the SNMP information on the Supervisor.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/>. An account on <http://www.cisco.com/> is not required.

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Hardware Compatibility Matrix for Cisco cBR Series Routers



Note The hardware components introduced in a given Cisco IOS-XE Release are supported in all subsequent releases unless otherwise specified.

Table 1: Hardware Compatibility Matrix for the Cisco cBR Series Routers

Cisco CMTS Platform	Processor Engine	Interface Cards
Cisco cBR-8 Converged Broadband Router	<p>Cisco IOS-XE Release 3.15.0S and Later Releases</p> <p>Cisco cBR-8 Supervisor:</p> <ul style="list-style-type: none"> • PID—CBR-CCAP-SUP-160G • PID—CBR-CCAP-SUP-60G¹ • PID—CBR-SUP-8X10G-PIC 	<p>Cisco IOS-XE Release 3.15.0S and Later Releases</p> <p>Cisco cBR-8 CCAP Line Cards:</p> <ul style="list-style-type: none"> • PID—CBR-LC-8D30-16U30 • PID—CBR-LC-8D31-16U30 • PID—CBR-RF-PIC • PID—CBR-RF-PROT-PIC <p>Cisco cBR-8 Downstream PHY Modules:</p> <ul style="list-style-type: none"> • PID—CBR-D30-DS-MOD • PID—CBR-D31-DS-MOD <p>Cisco cBR-8 Upstream PHY Modules:</p> <ul style="list-style-type: none"> • PID—CBR-D30-US-MOD

¹ Effective with Cisco IOS-XE Release 3.17.0S, CBR-CCAP-SUP-60G supports 8 cable line cards. The total traffic rate is limited to 60Gbps, the total number of downstream service flow is limited to 72268, and downstream unicast low-latency flow does not count against the limits.

Restrictions for SNMP Cache Engine Enhancement

The time interval for which the cached information is available on the Supervisor is 5 seconds.

Information About SNMP Cache Engine Enhancement

The SNMP Cache Engine Enhancement feature caches the information on the Supervisor for the MIB tables, which need to retrieve the data from the interface cards. When a MIB table item is queried from the interface card, the next N items are retrieved and cached on the Supervisor.

For example, if SNMP client queries the docsIf3CmtsCmRegStatusMacAddr.1, the interface card bundles docsIf3CmtsCmRegStatusMacAddr.1, docsIf3CmtsCmRegStatusMacAddr.2, docsIf3CmtsCmRegStatusMacAddr.3, to docsIf3CmtsCmRegStatusMacAddr.N together in one IPC response, and sends it to the Supervisor. The Supervisor caches all the items locally. When the SNMP client queries the docsIf3CmtsCmRegStatusMacAddr.2 later, the information is available in the Supervisor cache directly instead of sending another IPC message to interface card. The number N depends on the single MIB item size and maximum IPC message buffer size.

The MIB table information for following MIBs are retrieved and cached on the Supervisor:

- DOCS-IF-MIB
- DOCS-IFEXT2-MIB
- DOCS-QOS-MIB
- DOCS-IF3-MIB
- DOCS-IF31-MIB
- DOCS-QOS3-MIB
- DOCS-IETF-QOS-MIB
- DOCS-BPI-PLUS-MIB
- DOCS-LOADBALANCING-MIB
- DOCS-LOADBAL3-MIB
- DOCS-DSG-IF-MIB
- CISCO-DOCS-EXT-MIB
- CISCO-CABLE-WIDEBAND-MIB
- CISCO-CABLE-SPECTRUM-MIB

This feature is enabled by default on the Cisco cBR routers. The time interval for which the SNMP cache information is stored on the Supervisor is known as *age* and set to 5 seconds.

How to Configure SNMP Cache Engine Enhancement

Before you begin

You must configure the **service internal** command in global configuration mode to enable or disable SNMP Cache Engine Enhancement.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password, if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	cable snmp cache active Example: Router(config)# cable snmp cache active	Sets the SNMP cache status to active. Note Use the no form of the command to disable the SNMP cache status.

	Command or Action	Purpose
Step 4	exit Example: Router(config)# exit	Exits the global configuration mode and enters the privileged EXEC mode.

Verifying the SNMP Cache Engine Status

Use the **show cable snmp cache-status** command to display the current SNMP cache engine status.



Important

You must configure the **service internal** command in global configuration mode to verify the SNMP cache engine status.

Following is a sample output of the command.

```
Router# show cable snmp cache-status

Cache engine is ON, age: 5 seconds
```

Use the **test cable snmp counter-show** command to display the cache counters information.

```
Router# test cable snmp counter-show
===== cache counters =====
ubrccce_snmp_cache_hit_counter:0.
ubrccce_snmp_cache_get_from_lc_counter:1.
ubrccce_snmp_cache_miss_counter:0.
ubrccce_snmp_cache_ipc_fail_counter:0.
ubrccce_snmp_cache_buffer_full_counter:0.
```

hit and *mis* are the historic information for the SNMP cache after the system bootup. *hit* indicates the number of times the SNMP queries are hit in the cache and *mis* indicates the number of times the SNMP queries are missed in the SNMP cache.

Additional References

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	http://www.cisco.com/support

Feature Information for SNMP Cache Engine Enhancement

Use Cisco Feature Navigator to find information about the platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to the <https://cfmg.cisco.com/> link. An account on the Cisco.com page is not required.



Note The following table lists the software release in which a given feature is introduced. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for SNMP Cache Engine Enhancement

Feature Name	Releases	Feature Information
SNMP Cache Engine Enhancement	Cisco IOS-XE Release 3.15.0S	This feature was introduced on the Cisco cBR Series Converged Broadband Routers.
SNMP Cache Engine Enhancement	Cisco IOS-XE Release 3.18.0S	This feature was updated on the Cisco cBR Series Converged Broadband Routers.

