Cisco Bridge-Domain MIB

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This document describes the attributes and tables of the CISCO-BRIDGE-DOMAIN-MIB, the supported operations, and related CLI commands.

A bridge domain is a means for defining an Ethernet broadcast domain on a bridging device and an alternative to 802.1D bridge groups and to 802.1Q VLAN bridging. Members of a bridge domain learn addresses and participate in Spanning-Tree Protocol (STP) and operations, administration, and maintenance (OAM) protocols. The purpose of a bridge domain MIB is to provide a Simple Network Management Protocol (SNMP) network management interface for a configured bridge domain. A bridge domain MIB also helps network management personnel learn the details of various broadcast domains configured in a network.

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 www.cisco.com/go/cfn. An account on Cisco.com is not required.

Prerequisites for the Cisco Bridge-Domain MIB

SNMP contexts must be configured before you can poll the CISCO-BRIDGE-DOMAIN-MIB.

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Restrictions for the Cisco Bridge-Domain MIB

- The CISCO-BRIDGE-DOMAIN-MIB does not support notifications in Cisco IOS Release 12.2(50)SY.
- Customer bridge domains (C-MACs) are not supported in Cisco IOS Release 12.2(50)SY.

Information About the Cisco Bridge-Domain MIB

The CISCO-BRIDGE-DOMAIN-MIB is delivered as an SNMP MIB and follows the general MIB architecture for the Cisco IOS software. The CISCO-BRIDGE-DOMAIN-MIB contains objects to manage multiple instances of SNMP context support for bridge domains and can be used to learn the details of various broadcast domains configured in the network.

- CISCO-BRIDGE-DOMAIN-MIB Objects, page 2

CISCO-BRIDGE-DOMAIN-MIB Objects

The CISCO-BRIDGE-DOMAIN-MIB has one attribute object and one table object. Bridge domain attributes are managed using the SNMP context-aware infrastructure. Every configured bridge domain is related to an SNMP context so if you know the context, you can obtain the attributes.

- CISCO-BRIDGE-DOMAIN-MIB Attributes, page 2
- CISCO-BRIDGE-DOMAIN-MIB Tables, page 2

CISCO-BRIDGE-DOMAIN-MIB Attributes

The cbdMembersConfigured attribute is the only attribute defined. This attribute denotes the number of members configured on a bridge domain, and the variable used to populate the attribute is called “numb_of_bd_members.”

The cbdMembersConfigured attribute is read-only (Get operations are allowed). Set operations are not supported because bridge domain attributes are related to current bridge domain configurations on the system.

CISCO-BRIDGE-DOMAIN-MIB Tables

The cbdMemberInfo table is the only table defined. This table contains the bridge-domain attributes that correspond to the members configured for each bridge domain. Each row in the table is a unique entry for each interface that belongs to a specific bridge domain and a specific service.

All the objects in the cbdMemberInfoTable table are read-only. Set operations are not supported in Cisco IOS Release 12.2(50)SY. This table is indexed by ifIndex and cbdSIIndex.

The following table describes each object.

Table 1 Objects in the Table cbdMemberInfoTable

Object	Description	Variable to Populate Object or Object Value
cbdMemberAdminState	Administrative state of the bridge domain member.	bd_pp_admin_state_t
cbdMembercMac	Indicates if the bridge domain member is configured as a C-MAC.	If a C-MAC is configured on one or more members of the bridge domain, the value is 1; otherwise, the value is 0. **Note** In Cisco IOS Release 12.2(50)SY, the value is always zero because C-MAC is not supported in the release.
cbdMemberOperState	Operational state of the bridge domain member.	bd_pp_oper_state_t
cbdMemberSplitHorizon	Indicates if split horizon is configured.	If split horizon is configured, this object has a value of 1; otherwise the value is 0.
cbdMemberSplitHorizonNum	Number of the split horizon group the member belongs to.	bdomain_port_is_sh_member
cbdMemberStatus	Enables the SNMP agent to create, modify, and delete rows in the cbdMemberInfoTable.	The only value allowed is “active,” which is equal to 1.
cbdMemberStorageType	Specifies the storage type of this row and can have only a value of “nonVolatile.” Other values are not applicable and are not supported.	The only value allowed is “nonVolatile,” which is equal to 3.
cbdMemberType	Type of bridge domain member. • Ethernet service instance • ATM VC • FR VC	bd_pp_type_t
cbdSIIndex	Member index that identifies the service instance to which the bridge domain is attached. Denotes the service instance number for Ethernet service instance cbdSIIndex.	Efp_id for Ethernet service instance

How to Configure a Bridge Domain and a Related SNMP Context

Perform this task to configure a bridge domain and a related SNMP context, which the CISCO-BRIDGE-DOMAIN-MIB can be used to manage.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **bridge-domain** *bridge-id*
4. **snmp context** *context-name*
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**bridge-domain** *bridge-id* **Example:** `Router(config)# bridge-domain 5`	Configures components on bridge domain 5 and enters the bridge domain configuration mode.
Step 4	**snmp context** *context-name* **Example:** `Router(config-bdomain)# snmp context bd5`	Creates an SNMP context for bridge domain 5.
Step 5	**end** **Example:** `Router(config-bdomain)# end`	Exits bridge domain configuration mode and returs to privleged EXEC mode.

Configuration Examples for the Cisco Bridge-Domain MIB

Example: Bridge Domain and SNMP Context Configurations

The following example shows how two bridge domains and their corresponding SNMP contexts are configured.

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# bridge-domain 2
Router(config-bdomain)# snmp context bd2
Router(config-bdomain)# bridge-domain 3
Router(config-bdomain)# snmp context bd3
Router(config-bdomain)# end
```

Example: Verifying Context Configurations

Contexts must be configured before you can poll the CISCO-BRIDGE-DOMAIN-MIB. The following sample output of the **show snmp context mapping** command shows that an SNMP context is configured for each of two bridge domains. This output reflects the configuration in the previous example, “Bridge Domain and SNMP Context Configurations.”

```
Router# show snmp context mapping
Context: bd2
  VRF Name:
  BD Index: 2
Context: bd3
  VRF Name:
  BD Index: 3
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
Carrier Ethernet commands	Cisco IOS Carrier Ethernet Command Reference
Carrier Ethernet configurations	*Carrier Ethernet Configuration Guide, Cisco IOS Release 12.2SY*

Standards

Standard	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	--

MIBs

MIB	MIBs Link
• CISCO-CONTEXT-MAPPING-MIB • SNMP MIB	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	--

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for the Cisco Bridge-Domain MIB

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 2 Feature Information for the Cisco Bridge-Domain MIB

Feature Name	Releases	Feature Information
Bridge Domain MIB	15.0(1)S	The CISCO-BRIDGE-DOMAIN-MIB is delivered as an SNMP MIB and follows the general MIB architecture for Cisco IOS software. This MIB contains objects to manage multiple instances of SNMP context support for bridge domains and can be used to learn the details of various broadcast domains configured in the network. The following commands were introduced or modified: **show snmp context mapping**, **snmp context**.