MIB Persistence

The MIB Persistence feature allows the Simple Network Management Protocol (SNMP) data of a MIB to be persistent across reloads; that is, the MIB information retains the same set object values each time a networking device reboots.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and 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.

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.

Information about MIB Persistence

MIB Persistence

The MIB Persistence feature allows the SNMP data of a MIB to be persistent across reloads; that is, the MIB information retains the same set object values each time a networking device reboots. MIB Persistence is enabled by issuing the **snmp mib persist** command, and the MIB data of all MIBs that have had persistence enabled using this command is then written to NVRAM by issuing the **write mib-data** command. All modified MIB data must be written to NVRAM using the **write mib-data** command.

Both Event and Expression MIBs allow you to configure a value for an object and to set up object definitions. Both allow rows of data to be modified while the row is in an active state.

Scalar objects are stored every time they are changed, and table entries are stored only if the row is in an active state. The Event MIB has two scalar objects and nine tables to be persisted into NVRAM. The tables are as follows:

- mteEventNotificationTable

- mteEventSetTable

- mteEventTable

- mteObjectsTable

- mteTriggerBooleanTable

- mteTriggerDeltaTable

- mteTriggerExistenceTable

- mteTriggerTable

- mteTriggerThresholdTable

The Expression MIB has two scalar objects and three tables to be stored in NVRAM. The scalar objects are expResourceDeltaMinimum and expResourceDeltaWildcardInstanceMaximum. The tables are as follows:

- expExpressionTable

- expNameTable

- expObjectTable

Writing MIB data to NVRAM may take several seconds. The length of time depends on the amount of MIB data.

Event MIB Persistence and Expression MIB Persistence both allow MIB objects to be saved from reboot to reboot, allowing long-term monitoring of specific devices and interfaces, and configurations of object values that are preserved across reboots.

How to Configure MIB Persistence

Configuring MIB Persistence

Note   Depending on your release, configuration of MIB persistence is automatic and is not required to perform manual configuration.

The MIB Persistence features allow the SNMP data of a MIB to be persistent across reloads, that is, MIB information retains the same set of object values each time a networking device reboots. The following sections contain tasks for using Distributed Management Event and Expression MIB persistence.

Prerequisites

- SNMP is configured on your networking device.

- Values for Event MIB and Expression MIB have been configured.

Restrictions

- If the number of MIB objects to persist increases, the NVRAM storage capacity may be strained. Occasionally, the time taken to write MIB data to NVRAM may be longer than expected.

- The Distributed Management Event MIB Persistence feature is not supported on all Cisco platforms. Use Cisco Feature Navigator to find information about platform support and Cisco software image support.

Enabling and Disabling Event MIB Persistence

Perform this task to configure Event MIB Persistence.

Note Event MIB Persistence is disabled by default.

SUMMARY STEPS

1. **enable**
2. **configure   terminal**
3. **snmp mib persist event**
4. **no snmp mib persist event**
5. **end**
6. **write mib-data**
7. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.

		Command or Action	**Purpose**
Step 3		**snmp mib persist event** **Example:** Device(config)# snmp mib persist event	Enables MIB Persistence for the Event MIB.
Step 4		**no snmp mib persist event** **Example:** Device(config)# no snmp mib persist event	(Optional) Disables MIB Persistence for the Event MIB.
Step 5		**end** **Example:** Device(config)# end	Exits global configuration mode.
Step 6		**write mib-data** **Example:** Device# write mib-data	Saves the Event MIB Persistence configuration data to NVRAM.
Step 7		**copy running-config startup-config** **Example:** Device# copy running-config startup-config	Copies the running configuration to the startup configuration.

Enabling and Disabling Expression MIB Persistence

Perform this task to configure Expression MIB Persistence.

Note Expression MIB Persistence is disabled by default.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **snmp mib persist expression**
4. **no snmp mib persist expression**
5. **end**
6. **write mib-data**
7. **copy running-config startup-config**
8. **more system:running-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** Device> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Device# configure terminal	Enters global configuration mode.
Step 3	**snmp mib persist expression** **Example:** Device(config)# snmp mib persist expression	Enables MIB Persistence for Expression MIB.
Step 4	**no snmp mib persist expression** **Example:** Device(config)# no snmp mib persist expression	(Optional) Disables MIB Persistence for Expression MIB.
Step 5	**end** **Example:** Device(config)# end	Exits global configuration mode.
Step 6	**write mib-data** **Example:** Device# write mib-data	Saves the Expression MIB Persistence configuration data to NVRAM.

	Command or Action	Purpose
Step 7	**copy running-config startup-config** **Example:** `Device# copy running-config startup-config`	Copies the running configuration to the startup configuration.
Step 8	**more system:running-config** **Example:** `Device# more system:running-config`	Displays the currently running configuration. • Use this command to verify the MIB persistence configuration.

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
SNMP commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	Cisco IOS SNMP Command Reference
Cisco implementation of RFC 1724, RIP Version 2 MIB Extensions	RIPv2 Monitoring with SNMP Using the RFC 1724 MIB Extensions feature module
DSP Operational State Notifications for notifications to be generated when a digital signaling processor (DSP) is used	DSP Operational State Notifications feature module

Standards and RFCs

Standard/RFC	Title
CBC-DES (DES-56) standard	*Symmetric Encryption Protocol*
STD: 58	*Structure of Management Information Version 2 (SMIv2)*
RFC 1067	*A Simple Network Management Protocol*
RFC 1091	*Telnet terminal-type option*

Standard/RFC	Title
RFC 1098	*Simple Network Management Protocol (SNMP)*
RFC 1157	*Simple Network Management Protocol (SNMP)*
RFC 1213	*Management Information Base for Network Management of TCP/IP-based internets:MIB-II*
RFC 1215	*Convention for defining traps for use with the SNMP*
RFC 1901	*Introduction to Community-based SNMPv2*
RFC 1905	*Common Management Information Services and Protocol over TCP/IP (CMOT)*
RFC 1906	*Telnet X Display Location Option*
RFC 1908	*Simple Network Management Protocol (SNMP)*
RFC 2104	*HMAC: Keyed-Hashing for Message Authentication*
RFC 2206	*RSVP Management Information Base using SMIv2*
RFC 2213	*Integrated Services Management Information Base using SMIv2*
RFC 2214	*Integrated Services Management Information Base Guaranteed Service Extensions using SMIv2*
RFC 2271	*An Architecture for Describing SNMP Management Frameworks*
RFC 2570	*Introduction to Version 3 of the Internet-standard Network Management Framework*
RFC 2578	*Structure of Management Information Version 2 (SMIv2)*
RFC 2579	*Textual Conventions for SMIv2*
RFC 2580	*Conformance Statements for SMIv2*
RFC 2981	*Event MIB*
RFC 2982	*Distributed Management Expression MIB*
RFC 3413	*SNMPv3 Applications*
RFC 3415	*View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)*
RFC 3418	*Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)*

MIBs

MIB	MIBs Link
• Circuit Interface Identification MIB • Cisco SNMPv2 • Ethernet-like Interfaces MIB • Event MIB • Expression MIB Support for Delta, Wildcarding, and Aggregation • Interfaces Group MIB (IF-MIB) • Interfaces Group MIB Enhancements • MIB Enhancements for Universal Gateways and Access Servers • MSDP MIB • NTP MIB • Response Time Monitor MIB • Virtual Switch MIB	To locate and download MIBs for selected platforms, releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

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 MIB Persistence

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 . An account on Cisco.com is not required.

Table 1: Feature Information for MIB Persistence

Feature Name	Releases	Feature Information
MIB Persistence	12.0(5)T 12.0(12)S 12.1(3)T 12.2(4)T 12.2(4)T3	The MIB Persistence feature allows the SNMP data of a MIB to be persistent across reloads; this means MIB information retains the same set object values each time a networking device reboots. MIB Persistence is enabled by using the **snmp mib persist** command, and the MIB data of all MIBs that have had persistence enabled using this command is then written to NVRAM storage by using the **write mib-data** command. Any modified MIB data must be written to the NVRAM memory using the **write mib-data** command.