Configuring SNMP

This chapter contains the following sections:

Information About SNMP

SNMP is an application-layer protocol that provides a message format for communication between SNMP managers and agents. SNMP provides a standardized framework and a common language used for the monitoring and management of devices in a network.

SNMP Functional Overview

The SNMP framework consists of three parts:

- An SNMP manager—The system used to control and monitor the activities of network devices using SNMP.
- An SNMP agent—The software component within the managed device that maintains the data for the device and reports these data, as needed, to manage systems. The Cisco VSG supports the agent and MIB. To enable the SNMP agent, you must define the relationship between the manager and the agent.
- A managed information base (MIB)—The collection of managed objects on the SNMP agent.
- SNMP is defined in RFCs 3411 to 3418.

Note SNMP role-based access control (RBAC) is not supported. Both SNMPv1 and SNMPv2 use a community-based form of security.

SNMP Notifications

A key feature of SNMP is the ability to generate notifications from an SNMP agent. These notifications do not require that requests be sent from the SNMP manager. Notifications can indicate improper user authentication, restarts, the closing of a connection, loss of a connection to a neighbor router, or other significant events.

SNMP notifications are generated as either traps or informs. A trap is an asynchronous, unacknowledged message sent from the agent to the SNMP managers listed in the host receiver table. Informs are asynchronous messages sent from the SNMP agent to the SNMP manager which the manager must acknowledge receipt of.

Traps are less reliable than informs because the SNMP manager does not send any acknowledgment when it receives a trap. The Cisco Virtual Security Gateway (VSG) cannot determine if the trap was received. An SNMP manager that receives an inform request acknowledges the message with an SNMP response protocol data unit (PDU). If the Cisco VSG Firewall never receives a response, it can send the inform request again. You can configure the Cisco VSG Firewall to send notifications to multiple host receivers.

High Availability

Stateless restarts for SNMP are supported. After a reboot or supervisor switchover, the **running configuration** command is applied.

Guidelines and Limitations

SNMP has the following configuration guidelines and limitations:

- Read-only access to some SNMP MIBs is supported. See the Cisco NX-OS MIB support list at the following URL for more information: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml.
- SNMP role-based access control (RBAC) is not supported.
- The SNMP set command is supported by the following Cisco MIBs:
    - CISCO-IMAGE-UPGRADE-MIB
    - CISCO-CONFIG-COPY-MIB

Configuring SNMP

For SNMP configuration, see the *Cisco Prime Network Services Controller GUI Configuration Guide*.

Verifying the SNMP Configuration

To display the SNMP configuration, use one of the following commands:

Table 1: SNMP Configuration Verification Commands

Command	Purpose
show running-config snmp [all]	Displays the SNMP running configuration.
show snmp	Displays the SNMP status.
show snmp community	Displays the SNMP community strings.
show snmp context	Displays the SNMP context mapping.
show snmp engineID	Displays the SNMP engine ID.
show snmp group	Displays SNMP roles.
show snmp session	Displays SNMP sessions.
show snmp trap	Displays the SNMP enabled or disabled notifications.
show snmp user	Displays SNMP users.

Related Documents

Related Topic	Document Title
Complete command syntax, command modes, command history, defaults, usage guidelines, and examples	*Cisco Virtual Security Gateway for VMware vSphere Command Reference*

Standards

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

MIBs

Table 2: Supported MIBs

MIBs	MIBs Link
• CISCO-TC • SNMPv2-MIB • SNMP-FRAMEWORK-MIB • SNMP-FRAMEWORK-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • ENTITY-MIB • CISCO-ENTITY-EXT-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-FLASH-MIB • CISCO-IMAGE-MIB • NOTIFICATION-LOG-MIB • CISCO-SYSTEM-MIB • CISCO-SYSTEM-EXT-MIB • ISCO-IMAGE-MIB • CISCO-IMAGE-UPGRADE-MIB • CISCO-BRIDGE-MIB • CISCO-SYSLOG-EXT-MIB • CISCO-PROCESS-MIB • CISCO-AAA-SERVER-MIB • CISCO-AAA-SERVER-EXT-MIB • CISCO-COMMON-ROLES-MIB • CISCO-COMMON-MGMT-MIB • CISCO-UNIFIED-FIREWALL-MIB	To locate and download MIBs, go to the following URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Feature History for SNMP

Table 3: Feature History for SNMP

Feature Name	Release	Feature Information
SNMP	4.2(1)VSG1(4.1)	This feature was introduced.