



DistributedDirector MIB Support

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Note

Effective with Cisco IOS Release 12.4(24)T, this feature is not available in Cisco IOS software.

Feature History

Release	Modification
12.2(8)T	This feature was introduced.
12.4(24)T	This feature was removed.

This document describes DistributedDirector MIB support and the enhancements and modifications made to the Cisco IOS Simple Network Management Protocol (SNMP) infrastructure in order to support DistributedDirector in Cisco IOS Release 12.2(8)T. It includes the following sections:

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Feature Overview

Network management takes place between two major types of systems: those in control, called managing systems, and those observed and controlled, called managed systems. The most common type of managing system is called a *network management system* (NMS). Managed systems can include hosts, servers, or network components such as routers or intelligent repeaters.



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To promote interoperability, cooperating systems must adhere to a common framework and a common language, called a *protocol*. In the Internet network management framework, that protocol is the SNMP.

In a managed device, specialized low-impact software modules, called *agents*, access information about the device and make it available to the NMS. Managed devices maintain values for a number of variables and report those, as required, to the NMS. For example, an agent might report such data as the number of bytes and packets passing in and out of the device, or the number of broadcast messages sent and received. In the Internet network management framework, each variable is referred to as a *managed object*, which is anything that an agent can access and report back to the NMS.

All managed objects are contained in the Management Information Base (MIB), which is a database of the managed objects. The managed objects, or variables, can be set or read to provide information on network devices and interfaces. An NMS can control a managed device by sending a message to an agent of that managed device requiring the device to change the value of one or more of its variables.

The Cisco DistributedDirector MIB provides MIB support for DistributedDirector. This MIB contains DistributedDirector statistics, configurations, and status.

The DistributedDirector MIB contains five groups of object type definitions:

- `ciscoDistDirGeneralGroup`—A group of objects related to DistributedDirector general configurations, statistics, and status.
- `ciscoDistDirHostGroup`—A group of objects related to DistributedDirector host-specific configurations, statistics, and status.
- `ciscoDistDirServerGroup`—A group of objects related to DistributedDirector server-specific configurations, statistics, and status.
- `ciscoDistDirMappingGroup`—A group of objects related to associations between DistributedDirector host names and real servers.
- `ciscoDistDirNotificatonGroup`—A group of objects related to DistributedDirector significant events.

The DistributedDirector MIB defines the following tables:

- `cddGeneralMetricProfTable`—DistributedDirector metric profiles. A profile contains priority and weight values of DistributedDirector metrics, which can be applied to specific hosts or to the DistributedDirector default configuration.
- `cddHostTable`—DistributedDirector virtual host name or subdomain-specific configurations, statistics, and status entries.
- `cddHostConnectCfgTable`—DistributedDirector per-host server connect test configuration information entries.
- `cddHostToICfgTable`—DistributedDirector per-host priority-level metric tolerance configuration information entries.
- `cddServerTable`—DistributedDirector server-specific information entries. This information includes the configuration parameters and statistics for each server.
- `cddServerPortTable`—DistributedDirector server port-specific information entries. This information includes the configuration parameters, statistics, and availability status for each service port on servers.
- `cddServerPortMetricTable`—DistributedDirector per-service per-metric weight entries.
- `cddHostServerMappingTable`—DistributedDirector associations of virtual host name to real server.

The DistributedDirector MIB defines the following notifications:

- `ciscoDistDirEventServerUp`—This trap is generated whenever a distributed server changes to the “up” state.

- `ciscoDistDirEventServerDown`—This trap is generated whenever a distributed server changes to the “down” state.
- `ciscoDistDirEventHitRateHigh`—This trap is generated whenever the incoming Domain Name system (DNS) HTTP query rate reaches a certain threshold. Use the Event MIB described in RFC 2981 to control the trigger of this notification.

The `ciscoDistDirEventServerUp` and `ciscoDistDirEventServerDown` notifications can be enabled or disabled using the Cisco IOS **`snmp-server enable traps director`** and **`snmp-server host`** commands.

The **`snmp-server host`** command is used in conjunction with the **`snmp-server enable traps director`** command. Use the **`snmp-server enable traps director`** command to specify which DistributedDirector SNMP notifications are sent globally. For a host to receive most notifications, at least one **`snmp-server enable traps director`** command and the **`snmp-server host`** command for that host must be enabled.

Benefits

The DistributedDirector MIB provides network management functionality to DistributedDirector.

Restrictions

The DistributedDirector MIB implementation for Cisco IOS Release 12.2(8)T supports read-only capability to the objects defined in the MIB.

Related Features and Technologies

- Event MIB
- SNMP
- Network management

Related Documents

- The “Configuring SNMP Support” chapter of *Cisco IOS Configuration Fundamentals Configuration Guide*, Release 12.2
- The “SNMP Commands” chapter of *Cisco IOS Configuration Fundamentals Command Reference*, Release 12.2
- RFC 1157, “Simple Network Management Protocol”
- Event MIB: RFC 2981, *Event MIB*

Supported Platforms

- Cisco 2600 series
- Cisco 3620 series
- Cisco 3640 series
- Cisco 3660 series

- Cisco 7200 series

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

Supported Standards, MIBs, and RFCs

Standards

No new or modified standards are supported by this feature.

MIBs

- Cisco DistributedDirector MIB (CISCO-DIST-DIRECTOR-MIB.my)
- Event MIB (EVENT-MIB.my)

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

RFCs

- Event MIB: RFC 2981, *Event MIB*

Prerequisites

DistributedDirector must be running on the router.

Configuration Tasks

See the following sections for configuration tasks for the DistributedDirector MIB support feature. Each task in the list is identified as either required or optional.

- [Enabling DistributedDirector SNMP Notifications](#) (required)
- [Specifying the Recipient of an SNMP Notification](#) (required)

Enabling DistributedDirector SNMP Notifications

To enable DistributedDirector SNMP notifications, use the following command in global configuration mode:

Command	Purpose
Router(config)# snmp-server enable traps director	Enables DistributedDirector SNMP notifications.

To disable DistributedDirector SNMP notifications, use the following command in global configuration mode:

Command	Purpose
Router(config)# no snmp-server enable traps director	Disables DistributedDirector SNMP notifications.

Specifying the Recipient of an SNMP Notification

To specify the recipient of a DistributedDirector SNMP notification, use the following command in global configuration mode:

Command	Purpose
Router(config)# snmp-server host 10.0.0.1 public director	Specifies the recipient of a DistributedDirector SNMP notification, where the host 10.0.0.1 is using the community string defined as “public.”

To remove the specified recipient, use the following command in global configuration mode:

Command	Purpose
Router(config)# no snmp-server host host-address director	Removes the recipient of a DistributedDirector SNMP notification.

Verifying DistributedDirector Notification Information

Enter the **show running-config** command to verify that DistributedDirector SNMP notification information is configured. Both server up and server down information is included, unless you specify one or the other.

```
Router# show running-config

ip host myhost 172.2.2.10 172.2.2.20 172.2.2.30
.
.
.
snmp-server enable traps director server-up server-down
```

Configuration Examples

This section provides the following configuration examples:

- Enabling DistributedDirector SNMP Notifications Example
- Specifying the Recipient of an SNMP Notification Example

Enabling DistributedDirector SNMP Notifications Example

In the following example, both `ciscoDistDirEventServerUp` and `ciscoDistDirEventServerDown` notifications are enabled:

```
Router(config)# snmp-server enable traps director

Router# show running-config

ip host myhost 172.2.2.10 172.2.2.20 172.2.2.30
.
.
.
snmp-server enable traps director server-up server-down
```

Specifying the Recipient of an SNMP Notification Example

In the following example, the `ciscoDistDirEventServerUp` and `ciscoDistDirEventServerDown` notifications are to be sent to the host 10.0.0.1 using the community string defined as “public”:

```
Router(config)# snmp-server host 10.0.0.1 public director

Router# show snmp

Chassis:8768490
0 SNMP packets input
  0 Bad SNMP version errors
  0 Unknown community name
  0 Illegal operation for community name supplied
  0 Encoding errors
  0 Number of requested variables
  0 Number of altered variables
  0 Get-request PDUs
  0 Get-next PDUs
  0 Set-request PDUs
0 SNMP packets output
  0 Too big errors (Maximum packet size 1500)
  0 No such name errors
  0 Bad values errors
  0 General errors
  0 Response PDUs
  0 Trap PDUs

SNMP logging:enabled
Logging to 10.0.0.1.162, 0/10, 0 sent, 0 dropped.
```

Command Reference

The following commands are introduced or modified in the feature or features documented in this module. For information about these commands, see the *Cisco IOS Network Management Command Reference* at http://www.cisco.com/en/US/docs/ios/netmgmt/command/reference/nm_book.html. For information about all Cisco IOS commands, go to the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or to the *Cisco IOS Master Commands List*.

- **snmp-server enable traps director**
- **snmp-server host**

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