

Chapter 12

Summary of SNMP Configuration Statements

The following sections explain each of the Simple Network Management Protocol (SNMP) configuration statements. The statements are organized alphabetically.

agent-address

| | |
|---------------------------------|---|
| Syntax | agent-address outgoing-interface; |
| Hierarchy Level | [edit snmp trap-options] |
| Description | Set the agent address of all SNMPv1 traps generated by this router. Currently, the only option is outgoing-interface, which sets the agent address of each SNMPv1 trap to the address of the outgoing interface of that trap. |
| Options | outgoing-interface—Value of agent address of all SNMPv1 traps generated by this router. The outgoing-interface option sets the agent address of each SNMPv1 trap to the address of the outgoing interface of that trap. Default: disabled (The agent address is not specified in SNMPv1 traps.) |
| Usage Guidelines | See “Configuring the Agent Address for SNMP Traps” on page 34. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

authorization

| | |
|---------------------------------|--|
| Syntax | <code>authorization <i>authorization</i>;</code> |
| Hierarchy Level | [edit snmp community <i>community-name</i>] |
| Description | Set the access authorization for SNMP Get, GetBulk, GetNext, and Set requests. |
| Options | <p><code>authorization</code>—Access authorization level:</p> <p><code>read-only</code>—Enable Get, GetNext, and GetBulk requests.</p> <p><code>read-write</code>—Enable all requests, including Set requests. You must configure a view to enable Set requests.</p> |
| | Default: read-only |
| Usage Guidelines | See “Configuring the SNMP Community String” on page 30. |
| Required Privilege Level | <p>snmp—To view this statement in the configuration.</p> <p>snmp-control—To add this statement to the configuration.</p> |

categories

| | |
|---------------------------------|---|
| Syntax | <code>categories [<i>categories</i>];</code> |
| Hierarchy Level | [edit snmp trap-group <i>group-name</i>] |
| Description | Define the types of traps that will be sent to the targets of the named trap group. |
| Default | If you omit the categories statement, all trap types are included in trap notifications. |
| Options | <p><code>categories</code>—One or more trap types.</p> <p>Values: authentication, chassis, configuration, link, remote-operations, rmon-alarm, routing, sonet-alarms, startup, vrrp-events</p> |
| Usage Guidelines | See “Configuring SNMP Trap Groups” on page 35. |
| Required Privilege Level | <p>snmp—To view this statement in the configuration.</p> <p>snmp-control—To add this statement to the configuration.</p> |

clients

| | |
|---------------------------------|---|
| Syntax | clients { <i>address</i> restrict; } |
| Hierarchy Level | [edit snmp community <i>community-name</i>] |
| Description | Specify the IPv4 or IPv6 addresses of the SNMP client hosts that are authorized to use this community. |
| Default | If you omit the clients statement, all SNMP clients using this community string are authorized to access the router. |
| Options | <p><i>address</i>—Address of an SNMP client that is authorized to access this router. You must specify an address, not a hostname. To specify more than one client, include multiple <i>address</i> options.</p> <p><i>restrict</i>—(Optional) Do not allow the specified SNMP client to access the router. Default: If you omit the restrict option after the address, access is permitted for this particular client.</p> |
| Usage Guidelines | See “Configuring the SNMP Community String” on page 30. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

commit-delay

| | |
|---------------------------------|---|
| Syntax | commit-delay <i>seconds</i> ; |
| Hierarchy Level | [edit snmp nonvolatile] |
| Description | Configure the timer for the SNMP set reply and start of the commit. Default: 5 seconds |
| Usage Guidelines | See “Configuring the Commit Delay Timer” on page 29. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

community

| | |
|---------------------------------|--|
| Syntax | <pre>community <i>community-name</i> { authorization <i>authorization</i>; clients { <i>address</i> restrict; } view <i>view-name</i>; }</pre> |
| Hierarchy Level | [edit snmp] |
| Description | <p>Define an SNMP community. An SNMP community authorizes SNMP clients based on the source IP address of incoming SNMP request packets. A community also defines which MIB objects are available and the operations (read-only or read-write) allowed on those objects.</p> <p>The SNMP client application specifies an SNMP community name in Get, GetBulk, GetNext, and Set SNMP requests.</p> |
| Default | If you omit the community statement, all SNMP requests are denied. |
| Options | <p><i>community-name</i>—Community string. If the name includes spaces, enclose it in quotation marks (" ").</p> <p>The remaining statements are explained separately.</p> |
| Usage Guidelines | See “Configuring the SNMP Community String” on page 30. |
| Required Privilege Level | <p>snmp—To view this statement in the configuration.</p> <p>snmp-control—To add this statement to the configuration.</p> |

contact

| | |
|---------------------------------|--|
| Syntax | contact <i>contact</i> ; |
| Hierarchy Level | [edit snmp] |
| Description | Define the value of the MIB II sysContact object, which is the contact person for the managed system. |
| Options | <i>contact</i> —Name of contact person. If the name includes spaces, enclose it in quotation marks (" "). |
| Usage Guidelines | See “Configuring the System Contact” on page 27. |
| Required Privilege Level | <p>snmp—To view this statement in the configuration.</p> <p>snmp-control—To add this statement to the configuration.</p> |

description

| | |
|---------------------------------|---|
| Syntax | <code>description <i>description</i>;</code> |
| Hierarchy Level | [edit snmp] |
| Description | Define the value of the MIB II sysDescription object, which is the description of the system being managed. |
| Options | <i>description</i> —System description. If the name includes spaces, enclose it in quotation marks (" "). |
| Usage Guidelines | See “Configuring the System Description” on page 28. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

destination-port

| | |
|---------------------------------|---|
| Syntax | <code>destination-port <<i>port-number</i>>;</code> |
| Hierarchy Level | [edit snmp trap-group] |
| Description | Assign a trap port number other than the default. |
| Options | <i>port-number</i> —(Optional) SNMP trap port number. Default: port 162 |
| Usage Guidelines | See “Configuring SNMP Trap Groups” on page 35. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

engine-id

See engine-id on page 151

filter-duplicates

| | |
|---------------------------------|---|
| Syntax | <code>filter-duplicates;</code> |
| Hierarchy Level | [edit snmp] |
| Description | Filter duplicate Get, GetNext, or GetBulk SNMP requests. |
| Usage Guidelines | See “Filtering Duplicate SNMP Requests” on page 28. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

interface

| | |
|---------------------------------|---|
| Syntax | interface [<i>interface-names</i>]; |
| Hierarchy Level | [edit snmp] |
| Description | Configure the interfaces on which SNMP requests can be accepted. |
| Default | If you omit this statement, SNMP requests entering the router through any interface will be accepted. |
| Options | <i>interface-names</i> —Names of one or more logical interfaces. |
| Usage Guidelines | See “Configuring the Interfaces on Which SNMP Requests Can Be Accepted” on page 38. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

location

| | |
|---------------------------------|---|
| Syntax | location <i>location</i> ; |
| Hierarchy Level | [edit snmp] |
| Description | Define the value of the MIB II sysLocation object, which is the physical location of the managed system. |
| Options | <i>location</i> —Location of the local system. You must enclose the name within quotation marks (" "). |
| Usage Guidelines | See “Configuring the System Location” on page 27. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

name

| | |
|---------------------------------|---|
| Syntax | name <i>name</i> ; |
| Hierarchy Level | [edit snmp] |
| Description | Set the system name from the command-line interface. |
| Options | <i>name</i> —System name override. |
| Usage Guidelines | See “Configuring the System Name” on page 29. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

nonvolatile

| | |
|---------------------------------|---|
| Syntax | nonvolatile { commit-delay <i>seconds</i> ; } |
| Hierarchy Level | [edit snmp] |
| Description | Configure options for SNMP set requests. The statement is explained separately in this chapter. |
| Usage Guidelines | See “Configuring the Commit Delay Timer” on page 29. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

oid

| | |
|---------------------------------|---|
| Syntax | oid <i>object-identifier</i> (include exclude); |
| Hierarchy Level | [edit snmp view <i>view-name</i>], |
| Description | Specify an object identifier (OID) used to represent a subtree of MIB objects. |
| Options | <i>object-identifier</i> —OID used to represent a subtree of MIB objects. All MIB objects represented by this statement have the specified OID as a prefix. It can be specified either by a sequence of dotted integers or by a subtree name. include—Include the subtree of MIB objects represented by the specified OID. exclude—Exclude the subtree of MIB objects represented by the specified OID. |
| Usage Guidelines | See “Configuring MIB Views” on page 39. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

snmp

| | |
|---------------------------------|---|
| Syntax | snmp { ... } |
| Hierarchy Level | [edit] |
| Description | Configure SNMP. |
| Usage Guidelines | See “Configuring SNMP” on page 25. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

source-address

| | |
|---------------------------------|---|
| Syntax | source-address <i>address</i> ; |
| Hierarchy Level | [edit snmp trap-options] |
| Description | Set the source address of every SNMP trap packet sent by this router to a single address regardless of the outgoing interface. If the source address is not specified, the default is to use the address of the outgoing interface as the source address. |
| Options | <i>address</i> —Source address of SNMP traps. You can configure the source address of trap packets two ways: lo0 or a valid IPv4 address configured on one of the router interfaces. The value lo0 indicates that the source address of all SNMP trap packets will be set to the lowest loopback address configured at interface lo0. |
| | Default: disabled (The source address is the address of outgoing interface.) |
| Usage Guidelines | See “Configuring the Source Address for SNMP Traps” on page 33. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

targets

| | |
|---------------------------------|---|
| Syntax | targets { <i>address</i> ; } |
| Hierarchy Level | [edit snmp trap-group <i>group-name</i>] |
| Description | Configure one or more systems to receive SNMP traps. |
| Options | <i>address</i> —IPv4 or IPv6 address of the system to receive traps. You must specify an address, not a hostname. |
| Usage Guidelines | See “Configuring SNMP Trap Groups” on page 35. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

traceoptions

Syntax traceoptions {
 file size *size* files *number*;
 flag *flag*;
 }

Hierarchy Level [edit snmp]

Description The output of the tracing operations is placed into log files in the /var/log directory. Each log file is named after the SNMP agent that generates it. Currently, the following logs are created in the /var/log directory when the traceoptions statement is used:

chassisd
 craftd
 ilmid
 mib2d
 rmopd
 serviced
 snmpd

Options files *number*—(Optional) Maximum number of trace files per SNMP subagent. When a trace file (for example, snmpd) reaches its maximum size, it is archived by being renamed to snmpd.0. The previous snmpd.1 is renamed to snmpd.2, and so on. The oldest archived file is deleted.

Range: 2 through 1000 files

Default: 10 files

flag *flag*—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements:

all—Trace all SNMP events
 general—Trace general events
 interface-stats—Trace physical and logical interface statistics
 nonvolatile-sets—Trace nonvolatile SNMP set request handling
 pdu—Trace SNMP request and response packets
 protocol-timeouts—Trace SNMP response timeouts
 routing-socket—Trace routing socket calls
 subagent—Trace subagent restarts

timer—Trace internal timer events

varbind-error—Trace variable binding errors

size *size*—(Optional) Maximum size, in kilobytes (KB), of each trace file before it is closed and archived.

Range: 1 KB through the maximum file size supported on your system

Default: 1000 KB

Usage Guidelines See “Tracing SNMP Activity” on page 40.

Required Privilege Level snmp—To view this statement in the configuration.
snmp-control—To add this statement to the configuration.

trap-group

Syntax trap-group *group-name* {
categories [*categories*] ;
destination-port <*port-number*> ;
targets {
 address ;
}
version (all | v1 | v2) ;
}

Hierarchy Level [edit snmp]

Description Create a named group of hosts to receive the specified trap notifications. The name of the trap group is embedded in SNMP trap notification packets as one variable binding (varbind) known as the community name. At least one trap group must be configured for SNMP traps to be sent.

Options *group-name*—Name of the trap group. If the name includes spaces, enclose it in quotation marks (" ").

The remaining statements are explained separately.

Usage Guidelines See “Configuring SNMP Trap Groups” on page 35.

Required Privilege Level snmp—To view this statement in the configuration.
snmp-control—To add this statement to the configuration.

trap-options

| | |
|---------------------------------|---|
| Syntax | trap-options { agent-address outgoing-interface; source-address <i>address</i> ; } |
| Hierarchy Level | [edit snmp] |
| Description | Using SNMP trap options, you can set the source address of every SNMP trap packet sent by the router to a single address, regardless of the outgoing interface. In addition, you can set the agent address of each SNMPv1 trap. For more information on the contents of SNMPv1 traps, see RFC 1157. |
| Options | The remaining statements are explained separately. Default: disabled |
| Usage Guidelines | See “Configuring SNMP Trap Groups” on page 35. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

version

| | |
|---------------------------------|---|
| Syntax | version (all v1 v2); |
| Hierarchy Level | [edit snmp trap-group <i>group-name</i>] |
| Description | Specify the version number of SNMP traps. |
| Options | all—Send an SNMPv1 and SNMPv2 trap for every trap condition. v1—Send SNMPv1 traps only. v2—Send SNMPv2 traps only. Default: all |
| Usage Guidelines | See “Configuring SNMP Trap Groups” on page 35. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

view

See the following sections:

view (Associating MIB View with a Community) on page 146

view (Configuring MIB View) on page 146

view (Associating MIB View with a Community)

| | |
|---------------------------------|---|
| Syntax | <code>view view-name;</code> |
| Hierarchy Level | [edit snmp community <i>community-name</i>] |
| Description | Associate a view with a community. A view represents a group of MIB objects. |
| Options | <i>view-name</i> —Name of the view. You must use a view name already configured in the view statement at the [edit snmp] hierarchy level. |
| Usage Guidelines | See “Configuring the SNMP Community String” on page 30. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |

view (Configuring MIB View)

| | |
|------------------------|--|
| Syntax | <code>view view-name { oid object-identifier (include exclude); }</code> |
| Hierarchy Level | [edit snmp] |
| Description | Define a MIB view. A MIB view identifies a group of MIB objects. Each MIB object in a view has a common OID prefix. Each object identifier represents a subtree of the MIB object hierarchy. The view statement uses a view to specify a group of MIB objects on which to define access. To enable a view, you must associate the view with a community by including the view statement at the [edit snmp community <i>community-name</i>] hierarchy level. |



NOTE: To remove an OID completely, use the delete view all oid oid-number command but omit the include parameter.

| | |
|---------------------------------|---|
| Options | <i>view-name</i> —Name of the view The remaining statements are explained separately. |
| Usage Guidelines | See “Configuring MIB Views” on page 39. |
| Required Privilege Level | snmp—To view this statement in the configuration. snmp-control—To add this statement to the configuration. |
| See Also | community on page 138 |