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Manual Revision 1.0
Release Date: 3/2/2020

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<th>Date</th>
<th>Revision</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/2/2020</td>
<td>1.0</td>
<td>Initial document.</td>
</tr>
</tbody>
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1 SNMP Overview

SNMP helps to monitor and manage the switches from network management systems (NMS). SNMP solutions contain three major components – SNMP manager, SNMP agent and MIB (Management Information Base) as shown in Figure – SNMP-1.

The SNMP MIB contains all the configuration and status information of the switch. MIB is organized in a tree structure with branches and leaf nodes. Each node contains an object of information and is identified with an object identifier (OID). SNMP MIB is stored and maintained in the switch.

The SNMP agent also resides on the switch. It processes the SNMP requests received from the SNMP manager. It sends responses to SNMP managers by retrieving required information from the MIB. It also updates the MIB based on SNMP messages sent by the SNMP managers. SNMP agents also send voluntary traps to SNMP managers. Traps are sent to alert the SNMP managers on events happening on the switch.

The SNMP manager is an NMS application. It monitors and manages switches by communicating to the SNMP agents running on the switch. The SNMP manager application provides command or graphical interfaces to the network administrators to help them manage the networks.

Figure SNMP-1: SNMP Systems

There are three versions of SNMP protocols available.

- SNMPv1
  - First version of SNMP
  - Improved features over SNMPv1
  - Community string based administration
  - 64 bit counters support
  - getbulk support to retrieve large info
  - Introduced inform messages
  - Improved error handling

- SNMPv2c
  - Improved over SNMPv1
  - Improved authentication and message encryption
  - Improved error handling

- SNMPv3
  - Improvements over SNMPv2c
  - Improved authentication based on SNMP engine ID
  - Improved security - encrypted information
  - USM (User based Security Model)
  - VACM (View based Access Control Model)
  - Security model specifies the authentication mechanism for the user and the group to which the user belongs. The security models in the Supermicro switch are v1, v2c and v3.
  - Security level specifies the permitted security within the particular security model. The security levels in Supermicro switches are
    - NoAuthNoPriv
    - AuthNoPriv
- AuthPriv

The security model and level combinations possible in Supermicro switch are listed in the table below.

<table>
<thead>
<tr>
<th>Security Model</th>
<th>Security Level</th>
<th>Authentication</th>
<th>Encryption</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>noAuthNoPriv</td>
<td>Community string</td>
<td>None</td>
<td>Community string and community user are used to authenticate user login.</td>
</tr>
<tr>
<td>V2c</td>
<td>noAuthNoPriv</td>
<td>Community string</td>
<td>None</td>
<td>Community string and community user are used to authenticate user login.</td>
</tr>
<tr>
<td>V3</td>
<td>noAuthNoPriv</td>
<td>User name</td>
<td>None</td>
<td>User configuration is used to authenticate user login.</td>
</tr>
<tr>
<td>V3</td>
<td>Auth</td>
<td>MD5 or SHA</td>
<td>None</td>
<td>MD5 or SHA algorithm is used to verify user login.</td>
</tr>
<tr>
<td>V3</td>
<td>Priv</td>
<td>None</td>
<td>DES</td>
<td>DES is used to encrypt all SNMP messages.</td>
</tr>
</tbody>
</table>

SNMP uses multiple messages between managers and agents. The below table describes the SNMP messages.

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Originator</th>
<th>Receiver</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>get-request</td>
<td>Manager</td>
<td>Agent</td>
<td>To get the value of a particular MIB object</td>
</tr>
<tr>
<td>get-next-request</td>
<td>Manager</td>
<td>Agent</td>
<td>To get the value of the next object in a table</td>
</tr>
<tr>
<td>get-bulk-request</td>
<td>Manager</td>
<td>Agent</td>
<td>To get the values of multiple MIB objects in one transaction</td>
</tr>
<tr>
<td>get-response</td>
<td>Agent</td>
<td>Master</td>
<td>Response for get-request, get-next-request and get-bulk-request messages.</td>
</tr>
<tr>
<td>set-request</td>
<td>Manager</td>
<td>Agent</td>
<td>To set the value of a particular MIB object</td>
</tr>
<tr>
<td>Trap</td>
<td>Agent</td>
<td>Master</td>
<td>To notify the events occurring on agents</td>
</tr>
<tr>
<td>Inform</td>
<td>Agent</td>
<td>Master</td>
<td>To guarantee delivery of traps to Manager</td>
</tr>
</tbody>
</table>

2 SNMP Support

Supermicro switches support three versions of SNMP: SNMPv1, SNMPv2c and SNMPv3. A switch supports 50 users, 50 groups, 50 views and 50 views.

3 Interface Numbers

IF-MIB contains information about all the interfaces on the switch. Users can access the interface specific MIB object values using interface index (ifIndex) numbers. The ifIndex numbers are assigned by
switch software for every physical and logical interface. The table below shows ifIndex to interface mapping method.

<table>
<thead>
<tr>
<th>Interface Type</th>
<th>ifIndex</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Gig physical</td>
<td>Starts from 1 and goes up to the maximum number of 25 Gig interfaces</td>
</tr>
<tr>
<td>interfaces</td>
<td>available on the switch.</td>
</tr>
<tr>
<td></td>
<td>1 to 48</td>
</tr>
<tr>
<td>100 Gig physical</td>
<td>Starts after 1Gig ifindexes and goes up to the maximum number of 100 Gig</td>
</tr>
<tr>
<td>interfaces</td>
<td>interfaces available on the switch.</td>
</tr>
<tr>
<td></td>
<td>49 to 54</td>
</tr>
<tr>
<td>Port channel interfaces</td>
<td>Starts after 10Gig ifindexes and goes up to the maximum number of port</td>
</tr>
<tr>
<td></td>
<td>channel interfaces supported on the switch.</td>
</tr>
<tr>
<td></td>
<td>53 to 108</td>
</tr>
<tr>
<td>Management IP interfaces</td>
<td>109</td>
</tr>
</tbody>
</table>

4 SNMP Configuration

SNMP Configuration involves configuring user, group, access, view, community etc.

**SNMP Users**: SNMP users have a specified username, authentication password, privacy password, (if required) and authentication and privacy algorithms to use.

**SNMP Groups**: When a user is created, it is associated with an SNMP group. SNMPv3 groups are the means by which users are assigned their views and access control policy.

**SNMP View**: An SNMP MIB view is a defined list of objects within the MIB that can be used to control what parts of the MIB can be accessed by users belonging to the SNMP group that is associated with that particular view. When you want to permit a user to access a MIB view, you include a particular view. When you want to deny a user access to a MIB view, you exclude a particular view.

**SNMP Group access**: An SNMP group access is essentially an access control policy to which users can be added. Each SNMP group is configured with a security level, and is associated with an SNMP view.

There are three possible types of access that can be configured for the users in that SNMP group to have access to an SNMP view.

- ReadView - Specifies Read access for an SNMP view
- WriteView - Specifies Write access for an SNMP view
- NotifyView - Specifies SNMP view for which the group will receive notifications.

The figure below shows the relationship between the various SNMP tables: User, group, access and view.
The following mapping can exist between the SNMP tables user, group, access and view:

- Multiple users can belong to one group
- An user can belong to multiple groups.
- Multiple groups can be associated with a view.
- Multiple views can be created.
- More than one group can be associated with a particular view.
- More than one view can be associated with a group. For instance, a group can have read access to the entire MIB, but write access only for certain MIB objects.

### 4.1 Configuration Steps

The sequence of steps for SNMP Configuration in Supermicro switches are:

1. Create a **User** Name
2. Create a **community** name and associate user with the community (Optional).
3. Create a **group** and associate the user name with the group name.
4. The **view** is then defined to include or exclude whole/part MIB sub trees.
5. Define type of **access** for each group for a view.
6. Finally, **traps** can be defined based on the User Name (Optional).
## 5 SNMP Defaults

<table>
<thead>
<tr>
<th>Function</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNMP Agent Status</td>
<td>Enabled</td>
</tr>
<tr>
<td>SNMP Sub-Agent Status</td>
<td>Disabled</td>
</tr>
<tr>
<td>Version</td>
<td>3</td>
</tr>
<tr>
<td>Engine Id</td>
<td>80.00.08.1c.04.46.53</td>
</tr>
<tr>
<td>Communities</td>
<td>PUBLIC, NETMAN</td>
</tr>
<tr>
<td>Users</td>
<td>initial, TemplateMD5, TemplateSHA</td>
</tr>
<tr>
<td>Authentication (for default users)</td>
<td>initial : none TemplateMD5: MD5 TemplateSHA: SHA</td>
</tr>
<tr>
<td>Privacy (for default users)</td>
<td>initial : none TemplateMD5: none TemplateSHA: DES</td>
</tr>
<tr>
<td>Groups</td>
<td>iso, initial</td>
</tr>
<tr>
<td>Access</td>
<td>iso, initial</td>
</tr>
<tr>
<td>View (for default groups)</td>
<td>iso: iso, initial: restricted</td>
</tr>
<tr>
<td>Notify View Name</td>
<td>iss, iss1</td>
</tr>
<tr>
<td>Read, Write, Notify</td>
<td>Iso</td>
</tr>
<tr>
<td>Target Parameters</td>
<td>Internet, test1</td>
</tr>
<tr>
<td>Storage Type</td>
<td>Volatile</td>
</tr>
<tr>
<td>Context</td>
<td>None</td>
</tr>
<tr>
<td>SNMP Port</td>
<td>161</td>
</tr>
<tr>
<td>SNMP Trap Port</td>
<td>162</td>
</tr>
<tr>
<td>Trap Status</td>
<td>Enabled</td>
</tr>
<tr>
<td>Authentication Trap</td>
<td>Disabled</td>
</tr>
<tr>
<td>Link-State Trap</td>
<td>Enabled</td>
</tr>
<tr>
<td>Switch Name</td>
<td>SMIS</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>System Contact</td>
<td><a href="http://www.supermicro.com">http://www.supermicro.com</a></td>
</tr>
<tr>
<td>System Location</td>
<td>Supermicro</td>
</tr>
</tbody>
</table>

6 Enable/Disable the SNMP Agent

The SNMP Agent is enabled by default in Supermicro switches. Follow the steps below to disable the SNMP agent.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>disable snmpagent</td>
<td>Disables the SNMP agent</td>
</tr>
<tr>
<td>Step 3</td>
<td>end</td>
<td>Exits the configuration mode</td>
</tr>
<tr>
<td>Step 4</td>
<td>write startup-config</td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “enable snmpagent” command enables the SNMP agent.

To enable the SNMP agent, it must be in the disabled state.

The examples below show ways to disable/enable the SNMP agent function on Supermicro switches.

**Disable the SNMP agent.**

SMIS# configure terminal
SMIS(config)# disable snmpagent
SMIS(config)# end

**Enable the SNMP agent.**

SMIS# configure terminal
SMIS(config)# enable snmpagent
SMIS(config)# end

6.1 Switch Name

Supermicro switches can be assigned a name for identification purposes. The default switch name is SMIS. The switch name is also used as a prompt.
Follow the steps below to configure the switch name.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>device name &lt;devname(15)&gt;</td>
<td>Configures switch name and prompt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Devname – Switch name specified with 1-15 alphanumeric characters.</td>
</tr>
<tr>
<td>Step 3</td>
<td>End</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td>show system information</td>
<td>Displays the system information configuration.</td>
</tr>
<tr>
<td>Step 5</td>
<td>write startup-config</td>
<td>Optional step – saves this configuration to be part of the startup configuration</td>
</tr>
</tbody>
</table>

The device name configuration is automatically stored as part of the startup configuration file.

The example below shows the commands used to configure the switch name.

```
SMIS# configure terminal
SMIS(config)# device name switch1
switch1(config)# end

switch1# show system information
Switch Name: switch1
Switch Base MAC Address: 00:30:48:e3:70:bc
SNMP EngineID: 80.00.08.1c.04.46.53
System Contact: http://www.supermicro.com/support
System Location: Supermicro
Logging Option: Console Logging
Login Authentication Mode: Local
Snoop Forward Mode: MAC based
Config Restore Status: Not Initiated
Config Restore Option: No restore
Config Restore Filename: iss.conf
Config Save IP Address: 0.0.0.0
Device Up Time: 0 days 0 hrs 1 mins 11 secs
Boot-up Flash Area: Normal
NTP Broadcast Mode: No
[NTP] ntp is disabled
Server Key Prefer
============= ===== ======
Key # Key
```
6.2 Switch Contact

Supermicro switches provide an option to configure the switch in charge Contact details, usually an email ID.

Follow the steps below to configure the switch contact.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>system contact &lt;string - to use more than one word, provide the string within double quotes&gt;</td>
<td>Configures the switch contact. String – Contact information entered as a String of maximum length 256.</td>
</tr>
<tr>
<td>Step 3</td>
<td>End</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td>show system information</td>
<td>Displays the system information configuration.</td>
</tr>
<tr>
<td>Step 5</td>
<td>write startup-config</td>
<td>Optional step – saves this configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The Switch contact configuration is automatically stored as part of the startup configuration file.

The example below shows the commands used to configure a switch contact.

SMIS# configure terminal
SMIS(config)# system contact "User1 at CA"
SMIS(config)# end

SMIS# show system information
Switch Name: SMIS
Switch Base MAC Address: 00:30:48:e3:70:bc
SNMP EngineID: 80.00.08.1c.04.46.53
System Contact: User1 at CA
System Location: Supermicro
Logging Option: Console Logging
Login Authentication Mode: Local
Snoop Forward Mode: MAC based
Config Restore Status: Not Initiated
Config Restore Option: No restore
Config Restore Filename: iss.conf
Config Save IP Address: 0.0.0.0
Device Up Time: 0 days 0 hrs 50 mins 51 secs
Boot-up Flash Area: Normal
NTP Broadcast Mode: No
[NTP] ntp is disabled
Server Key Prefer

Key # Key

Time zone offset not set

6.3 System Location

Supermicro switches provide an option to configure the switch location details.

Follow the steps below to configure system location.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>system location &lt;location name&gt;</td>
<td>Configures the system location.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>location name – Location of the switch specified as a string with a maximum size of 256.</td>
</tr>
<tr>
<td>Step 3</td>
<td>End</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td>show system information</td>
<td>Displays the system information configuration.</td>
</tr>
<tr>
<td>Step 5</td>
<td>write startup-config</td>
<td>Optional step – saves this configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The System Location configuration is automatically stored as part of the startup configuration file.

The example below shows the commands used to configure system location.

SMIS# configure terminal
SMIS(config)# system location "Santa Clara"
SMIS(config)# end
SMIS# show system information
Switch Name: SMIS
Switch Base MAC Address: 00:30:48:e3:70:bc
SNMP EngineID: 80.00.08.1c.04.46.53
System Contact: http://www.supermicro.com
System Location: Santa Clara
Logging Option: Console Logging
Login Authentication Mode: Local
Snoop Forward Mode: MAC based
Config Restore Status: Not Initiated
Config Restore Option: No restore
Config Restore Filename: iss.conf
Config Save IP Address: 0.0.0.0
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Device Up Time: 0 days 0 hrs 51 mins 39 secs
Boot-up Flash Area: Normal
NTP Broadcast Mode: No
[NTF] ntp is disabled
Server Key Prefer
====================
Key # Key
====================
Time zone offset not set

7 Access Control

There are various parameters that control access to the SNMP Agent.
- Engine ID
- Community String
- User
- Group
- Group Access

7.1 Engine Identifier

The SNMP Engine Identifier is a unique identifier for the SNMP agent in a switch. It is used with a hashing function in the agent to generate keys for authentication and encryption. Hence after any change in the Engine Identifier, the following must be re-configured:
- SNMPv3 authentication
- SNMPv3 encryption/privacy
- Community
Follow the steps below to configure the SNMP Engine Identifier.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmpengineid&lt;EngineIdentifier&gt;</td>
<td>Configures the SNMP Engine Identifier.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>EngineIdentifier</em>-Hexadecimal number, with length between 5 and 32 octets. Each octet should be separated by a period.</td>
</tr>
<tr>
<td>Step 3</td>
<td>end</td>
<td>Exits the configuration mode</td>
</tr>
<tr>
<td>Step 4</td>
<td>show snmpengineID</td>
<td>Displays the SNMP engine Identifier information.</td>
</tr>
<tr>
<td>Step 5</td>
<td>write startup-config</td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The example below shows the commands used to configure the SNMP Engine Identifier.
```
SMIS# configure terminal
SMIS(config)# snmpengineid 80.00.08.1c.44.44
SMIS(config)# end
SMIS# show snmpengineid
EngineId: 80.00.08.1c.44.44
```

The “no snmpengineid” command resets the SNMP engineid to its default value of 80.00.08.1c.04.46.53.

7.2 Community

An SNMP community defines a group of devices and management systems. Only devices and management systems that are members of the same community can exchange SNMP messages. A device or management system can be a member of multiple communities.

The SNMP v1/v2 community is also used as a form of security. The community of SNMP managers that can access the agent MIB in the switch is defined by a community string.

Follow the steps below to configure an SNMP community.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmp community index &lt;CommunityIndex&gt; name &lt;CommunityName&gt; security &lt;SecurityName&gt;</td>
<td>Configures the SNMP community.</td>
</tr>
</tbody>
</table>
| [context <name>] [{volatile | nonvolatile}] [transporttag<TransportTagIdentifier | none>] | CommunityIndex—Alphanumeric value with a maximum of 32 characters.  
CommunityName—Alphanumeric value with a maximum of 64 characters.  
SecurityName — This is the user name associated with the community. Alphanumeric value with a maximum of 32 characters.  
Name — Alphanumeric value with a maximum of 32 characters.  
TransportTagIdentifier — Identifies the transport end points between agent and manager. Alphanumeric value with a maximum of 64 characters. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 3</strong></td>
<td><strong>end</strong></td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>show snmp community</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>write startup-config</td>
</tr>
</tbody>
</table>

The **“no snmp community index <CommunityIndex>”** command deletes the specified community index.

**SNMP User Name** is also referred to as **SNMP Security Name** in Supermicro switches.

The example below shows the commands used to configure the SNMP community.

SMIS(config)# snmp community index test1 name test1 security user1 nonvolatile

SMIS(config)# show snmp community

Community Index: NETMAN  
Community Name: NETMAN  
Security Name: none  
Context Name:  
Transport Tag:  
Storage Type: Volatile  
Row Status: Active  
--------------------------

Supermicro SSE-F3548S/SSE-F3548SR SNMP User’s Guide
Community Index: PUBLIC
Community Name: PUBLIC
Security Name: none
Context Name:
Transport Tag:
Storage Type: Volatile
Row Status: Active

Community Index: test1
Community Name: test1
Security Name: user1
Context Name:
Transport Tag:
Storage Type: Non-volatile
Row Status: Active

### 7.3 User

SNMP user configuration is used only for SNMPv3. An SNMP user requests and receives information about switch status and traps.

Follow the steps below to configure an SNMP user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmp user &lt;UserName&gt; [auth {md5</td>
<td>sha} &lt;passwd&gt;[priv DES &lt;passwd&gt;]] [{volatile</td>
</tr>
</tbody>
</table>

*UserName* - Alphanumeric value with a maximum of 32 characters.

Use **auth** to enable authentication for the user.

*Passwd*—Password used for user Authentication. Alphanumeric value with a maximum of 32 characters.

Use **priv** to enable encryption of packets.

*Passwd*—Password used to generate keys for encryption of messages. Alphanumeric value with a maximum of 40 characters.
Use `volatile` if the value need not be stored in NVRAM.

Use `nonvolatile` if the value must be stored in NVRAM and available after restart.

<table>
<thead>
<tr>
<th>Step 3</th>
<th>end</th>
<th>Exits the configuration mode.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4</td>
<td><code>show snmp user</code></td>
<td>Displays the SNMP user information.</td>
</tr>
<tr>
<td>Step 5</td>
<td><code>write startup-config</code></td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “`no snmp user <UserName>`” command deletes the specified user.

The example below shows the commands used to configure the SNMP user.

```
SMIS# configure terminal
SMIS(config)# snmp user user5 auth md5 abc123 priv DES xyz123
SMIS# end
SMIS# show snmp user
```

```
Engine ID: 80.00.08.1c.04.46.53
User: user5
Authentication Protocol: MD5
Privacy Protocol: DES_CBC
Storage Type: Volatile
Row Status: Active
```

```
Engine ID: 80.00.08.1c.04.46.53
User: initial
Authentication Protocol: None
Privacy Protocol: None
Storage Type: Volatile
Row Status: Active
```

```
Engine ID: 80.00.08.1c.04.46.53
User: templateMD5
Authentication Protocol: MD5
Privacy Protocol: None
Storage Type: Volatile
Row Status: Active
```

7.4 Group

A group identifies a set of users in SNMPv3.

Follow the steps below to configure an SNMP group.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmp group &lt;GroupName&gt; user &lt;UserName&gt; security-model {v1</td>
<td>v2c</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>GroupName</strong> – Alphanumeric value with a maximum of 32 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Security-model</strong> – Use v1 or v2c or v3.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>UserName</strong> - Alphanumeric value with a maximum of 32 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use volatile if the value need not be stored in NVRAM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use nonvolatile if the value must be stored in NVRAM and available after restart.</td>
</tr>
<tr>
<td>Step 3</td>
<td>end</td>
<td>Exits the configuration mode</td>
</tr>
<tr>
<td>Step 4</td>
<td>show snmp group</td>
<td>Displays the SNMP group information.</td>
</tr>
<tr>
<td>Step 5</td>
<td>write startup-config</td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “no snmp group <GroupName> user <UserName>security-model {v1 | v2c | v3}” command deletes the specified group.

The example below shows the commands used to configure the SNMP group.
SMIS# configure terminal
SMIS(config)# snmp group group5 user user5  security-model v3
SMIS# end

SMIS# show snmp group

Security Model: v1
Security Name: none
Group Name: iso
Storage Type: Volatile
Row Status: Active

Security Model: v2c
Security Name: none
Group Name: iso
Storage Type: Volatile
Row Status: Active

Security Model: v3
Security Name: user5
Group Name: group5
Storage Type: Volatile
Row Status: Active

Security Model: v3
Security Name: initial
Group Name: initial
Storage Type: Non-volatile
Row Status: Active

Security Model: v3
Security Name: templateMD5
Group Name: initial
Storage Type: Non-volatile
Row Status: Active

Security Model: v3
Security Name: templateSHA
Group Name: initial
Storage Type: Non-volatile
Row Status: Active
### 7.5 View

A view specifies limited access to MIBs. A view can be associated with one or many groups. In an SNMP, parameters are arranged in a tree format. SNMP uses an Object Identifier (OID) to identify the exact parameter in the tree. An OID is a list of numbers separated by periods. Follow the steps below to configure the SNMP view.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>configure terminal</code></td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td><code>snmpview &lt;ViewName&gt;&lt;OIDTree&gt;</code> [mask &lt;OIDMask&gt;] {included</td>
<td>excluded}[[volatile</td>
</tr>
<tr>
<td>Step 3</td>
<td><code>end</code></td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td><code>show snmpviewtree</code></td>
<td>Displays the SNMP view information.</td>
</tr>
<tr>
<td>Step 5</td>
<td><code>write startup-config</code></td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “`no snmp view <ViewName><OIDTree>`” command deletes the specified SNMP view.

The example below shows the commands used to configure the SNMP view.

```
SMIS(config)# snmp view view1 1.3.6.1 included
```
SMIS(config)# show snmpviewtree

View Name: iso
Subtree OID: 1
Subtree Mask: 1
View Type: Included
Storage Type: Non-volatile
Row Status: Active

View Name: view1
Subtree OID: 1.3.6.1
Subtree Mask: 1.1.1.1
View Type: Included
Storage Type: Volatile
Row Status: Active

View Name: Restricted
Subtree OID: 1
Subtree Mask: 1
View Type: Excluded
Storage Type: Non-volatile
Row Status: Active

7.6 Group Access

Group access defines the access policy for a set of users belonging to a particular group. Group access is used only for SNMPv3.

Follow the steps below to configure SNMP group access.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
</tbody>
</table>
| Step 2 | snmp access <GroupName> {v1 | v2c | v3 {auth | noauth | priv}}[read <ReadView | none>] [write <WriteView | none>] [notify <NotifyView | none>] [{volatile | nonvolatile}] | Configures the SNMP group access.  
*GroupName* - Alphanumeric value with a maximum of 40 characters.  
Security model – Mention one of v1, v2c or v3.  
Use *auth* to enable authentication for the user.  
Use *priv* to enable encryption of packets. |
### SNMP Group Access Configuration

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><code>end</code></td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>4</td>
<td><code>show snmp group access</code></td>
<td>Displays the SNMP group access information.</td>
</tr>
<tr>
<td>5</td>
<td><code>write startup-config</code></td>
<td>Optional step – saves this SNMP configuration to be part of startup configuration.</td>
</tr>
</tbody>
</table>

**Group, user and view should be created before configuring group access.**

The **`no snmp access <GroupName> {v1 | v2c | v3 {auth | noauth | priv}}`** command deletes the specified SNMP group access.

The sequence of steps to delete a group that is associated with a group access and view:
1. Delete the view
2. Delete the group access.
3. Delete the group.

The example below shows the commands used to configure the SNMP group access.

```
SMIS# configure terminal
SMIS(config)# snmp access group5 v3 auth read view1 write view2 notify none nonvolatile
SMIS(config)# end
```
SMIS# show snmp group access

Group Name: iso
Read View: iso
Write View: iso
Notify View: iso
Storage Type: Volatile
Row Status: Active
-------------------------------
Group Name: iso
Read View: iso
Write View: iso
Notify View: iso
Storage Type: Volatile
Row Status: Active
-------------------------------
Group Name: group5
Read View: view1
Write View: view2
Notify View:
Storage Type: Non-volatile
Row Status: Active
-------------------------------
Group Name: Initial
Read View: Restricted
Write View: Restricted
Notify View: Restricted
Storage Type: Non-volatile
Row Status: Active
-------------------------------
Group Name: Initial
Read View: iso
Write View: iso
Notify View: iso
Storage Type: Non-volatile
Row Status: Active
-------------------------------
Group Name: initial
Read View: iso
Write View: iso
Notify View: iso
Storage Type: Non-volatile
Row Status: Active
-------------------------------
## 8 Trap

### 8.1 Target Address

A target is a receiver of SNMP notification(s), which are usually SNMP Managers. The target address defines the transport parameters of the receivers.

Follow the steps below to configure the SNMP Target address.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>configure terminal</code></td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>`snmptargetaddr&lt;TargetAddressName&gt;param&lt;ParamName&gt; {&lt;IPAddress&gt;</td>
<td>&lt;IP6Address&gt;} [timeout &lt;Seconds(1-1500)] [retries &lt;RetryCount(1-3)] [taglist&lt;TagIdentifier</td>
</tr>
</tbody>
</table>

- **TargetAddressName** - Alphanumeric value with a maximum of 32 characters.
- **ParamName** – The parameter to be notified to the specific target. Alphanumeric value with a maximum of 32 characters.
- **IPAddress** – IPv4 address of the target.
- **IP6Address** – IPv6 address of the target.
### SNMP Target Address Configuration

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><code>end</code></td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>4</td>
<td><code>show snmpTargetAddr</code></td>
<td>Displays the SNMP target address information.</td>
</tr>
<tr>
<td>5</td>
<td><code>write startup-config</code></td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>
The “no snmptargetaddr<TargetAddressName>” command deletes the specified SNMP target address information.

The example below shows the commands used to configure the SNMP target address.
SMIS# configure terminal
SMIS(config)# snmptargetaddr host1 param param1 192.168.1.10 taglist tg1
SMIS# end

SMIS# show snmptargetaddr

Target Address Name: host1
IP Address: 192.168.1.10
Tag List: tg1
Parameters: param1
Storage Type: Volatile
Row Status: Active

8.2 Target Parameters

Target parameters define the MIB objects that should be notified to an SNMP target, usually an SNMP manager.
Follow the steps below to configure SNMP target parameters.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
</tbody>
</table>
| Step 2 | snmptargetparams<ParamName> user <UserName>security-model {v1 | v2c | v3 {auth | noauth | priv}} message-processing {v1 | v2c | v3} [(volatile | nonvolatile)] | Configures the SNMP target parameters. 

*ParamName* The parameter to be notified. Alphanumeric value with a maximum of 32 characters. 

*UserName* - Alphanumeric value with a maximum of 32 characters. 

Security model – Use one of v1, v2c, v3. 

Use **auth** to enable authentication for the user.
Use **priv** to enable encryption of packets.

Message processing - Specifies the SNMP version for sending/receiving the parameter via a notification message.

Use **volatile** if the value need not be stored in NVRAM.

Use **nonvolatile** if the value must be stored in NVRAM and available after restart.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><strong>end</strong></td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>4</td>
<td><strong>show snmptargetparam</strong></td>
<td>Displays the SNMP target parameters information.</td>
</tr>
<tr>
<td>5</td>
<td><strong>write startup-config</strong></td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “**no snmptargetparams<ParamName>**” command deletes the specified SNMP target parameters information.

The example below shows the commands used to configure the SNMP target parameters.

SMIS# configure terminal
SMIS(config)# snmptargetparams param4 user user4 security-model v2c message-processing v2c
SMIS# end

SMIS# show snmptargetparam

Target Parameter Name: Internet
Message Processing Model: v2c
Security Model: v2c
Security Name: None
Security Level: No Authentication, No Privacy
Storage Type: Volatile
Row Status: Active
--------------------------

Target Parameter Name: param4
Message Processing Model: v2c
8.3 SNMP Notify

Notify is used to specify the type of notifications to be sent to particular targets that are grouped under a particular tag.

Follow the steps below to configure the SNMP Notification.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmp notify &lt;NotifyName&gt; tag &lt;TagName&gt; type {Trap</td>
<td>Inform}{{volatile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NotifyName - Alphanumeric value with a maximum of 32 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TagName – Specifies a group of targets identified by this name. Alphanumeric value with a maximum of 32 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type – Notification can be Trap or Inform.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use volatile if the value need not be stored in NVRAM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use nonvolatile if the value must be stored in NVRAM and available after restart.</td>
</tr>
<tr>
<td>Step 3</td>
<td>end</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td>show snmp notify</td>
<td>Displays the SNMP notification information and Inform statistics.</td>
</tr>
</tbody>
</table>
show snmp inform statistics

<table>
<thead>
<tr>
<th>Step 5</th>
<th>write startup-config</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “no snmp notify <NotifyName>” command deletes the specified SNMP notification.

The example below shows the commands used to configure the SNMP notification.

SMIS# configure terminal
SMIS(config)# snmp notify PUBLIC tag tag1 type trap nonvolatile
SMIS(config)# end

SMIS# show snmpnotif

Notify Name: PUBLIC
Notify Tag: tag1
Notify Type: trap
Storage Type: Non-volatile
Row Status: Active

--------------------
Notify Name: iss
Notify Tag: iss
Notify Type: trap
Storage Type: Volatile
Row Status: Active

--------------------
Notify Name: iss1
Notify Tag: iss1
Notify Type: trap
Storage Type: Volatile
Row Status: Active

--------------------

8.4 Trap UDP Port

The default UDP port for traps is 162. Supermicro switches provide an option for users to change this trap UDP port.

Follow the steps below to configure the SNMP UDP port for traps.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
</tbody>
</table>
### 8.5 Authentication Traps

Traps can be generated when a user login authentication fails at the SNMP agent. In Supermicro switches, authentication traps are disabled by default. Follow the steps below to enable an SNMP authentication trap.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>configure terminal</td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td>snmp-server enable traps snmp authentication</td>
<td>Enables the SNMP authentication traps.</td>
</tr>
<tr>
<td>Step 3</td>
<td>end</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 4</td>
<td>show snmp</td>
<td>Displays the SNMP information.</td>
</tr>
</tbody>
</table>

The example below shows the commands used to configure the SNMP UDP port for traps.

SMIS# configure terminal
SMIS(config)# snmp-server trap udp-port 170
SMIS(config)# end

SMIS(config)# show snmp-server traps

SNMP Trap Listen Port is 170
Currently enabled traps:
------------------------
linkup, linkdown,
Login Authentication Traps DISABLED.
Step 5  | **write startup-config**  | Optional step – saves this SNMP configuration to be part of the startup configuration.

---

The **“no snmp-server enable traps snmp authentication”** command disables SNMP authentication traps.

The example below shows the commands used to enable the SNMP authentication traps.
SMIS# configure terminal
SMIS(config)# snmp-server enable traps snmp authentication
SMIS# end

SMIS(config)# show snmp-server traps

SNMP Trap Listen Port is 162
Currently enabled traps:
------------------------
linkup, linkdown,
Login Authentication Traps ENABLED.

**8.6 Link-State Trap**

Link-state traps are enabled for all interfaces by default in Supermicro switches. Traps are generated when an interface toggles its state from Up to down or vice-versa.

Follow the steps below to disable SNMP Link-state trap.

<table>
<thead>
<tr>
<th>Step</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><strong>configure terminal</strong></td>
<td>Enters the configuration mode</td>
</tr>
<tr>
<td>Step 2</td>
<td><strong>interface &lt;interface-type&gt;&lt;interface-id&gt;</strong> or interface range &lt;interface-type&gt;&lt;interface-id&gt; ...</td>
<td>Enters the interface configuration mode. interface-type – may be any of the following: fx-ethernet – fx cx-ethernet – cx port-channel - po</td>
</tr>
</tbody>
</table>
interface-id is in slot/port format for all physical interfaces.

To configure multiple interfaces, use the “interface range ...” command.

To provide a range, use a hyphen (-) between the start and end interface numbers. E.g.: int range fx 0/1-10

To provide multiple interfaces or ranges, separate with a comma (,).
E.g.: int range fx 0/1-10, fx 0/20

If multiple interfaces are provided, the next step will perform the particular configuration on all these interfaces.

<table>
<thead>
<tr>
<th>Step 3</th>
<th>no snmp trap link-status</th>
<th>Disables the SNMP link-state trap on the particular interface.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4</td>
<td>end</td>
<td>Exits the configuration mode.</td>
</tr>
<tr>
<td>Step 5</td>
<td>show snmp</td>
<td>Displays the SNMP information.</td>
</tr>
<tr>
<td>Step 6</td>
<td>write startup-config</td>
<td>Optional step – saves this SNMP configuration to be part of the startup configuration.</td>
</tr>
</tbody>
</table>

The “snmp trap link-status” command enables SNMP link-state traps.

The example below shows the commands used to disable the SNMP Link-state trap.
SMIS# configure terminal
SMIS(config)# interface Fx 0/21
SMIS(config-if)# no snmp trap link-status
SMIS(config-if)# end

SMIS# show interface Fx 0/21

Fx0/21 up, line protocol is up (connected)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:30:48:e3:04:89
MTU  1500 bytes, Full duplex, 1 Gbps,  Auto-Negotiation
HOL Block Prevention enabled.
Input flow-control is off, output flow-control is off

Link Up/Down Trap is disabled

Reception Counters
  Octets      : 753
  Unicast Packets : 0
  Broadcast Packets : 0
  Multicast Packets : 9
  Pause Frames : 0
  Undersize Frames : 0
  Oversize Frames : 0
  CRC Error Frames : 0
  Discarded Packets : 0
  Error Packets : 0
  Unknown Protocol : 0

Transmission Counters
  Octets      : 9043
  Unicast Packets : 0
  Non-Unicast Packets : 74
  Pause Frames : 0
  Discarded Packets : 0
  Error Packets : 0
9 SNMP Configuration Example

Configure the following requirements on a switch acting as an SNMP agent as shown above in Figure SNMP-2.

1) Creates SNMP users
   a. Create an SNMP user ‘user1’ Specify the authentication and privacy protocol and the authentication and privacy passwords.
   b. Creates an SNMP user ‘user2’. Specify the authentication protocol and password.

2) Creates SNMP groups
   a. Create group called superusers and associate user1 with this group.
   b. Create group called generalusers and associate user1 with this group.

3) Create views
   a. Creates an SNMP view ‘full’ which will allow access to everything from the specified Object Identifier
   b. Creates an SNMP view ‘restricted’ which will allow access to everything from the specified OID onwards, and also adds a restriction to anything on a particular sub-tree.

4) Create group access
   a. Access for superusers- fullread/write and notify privilege to the ‘full’ view
   b. Access for generalusers- full read, notify privilege to the ‘full’ view and restricted write

5) Display all configuration

SMIS# configure terminal
SMIS(config)# snmp user user1 auth md5 pwd1
SMIS(config)# snmp user user2 auth sha abcd priv des 1b12
SMIS(config)# snmp group superuser user1 security-model v3 volatile
SMIS(config)# snmp group generalusers user2 security-model v3 volatile
SMIS(config)# snmp view full 1.3.6.1 included volatile
SMIS(config)# snmp view restricted 1.3.6.1 included volatile
SMIS(config)# snmp view restricted 1.3.6.3.10.2.1 excluded volatile
SMIS(config)# snmp access superuser v3 auth read full write full notify full
SMIS(config)# snmp access generalusers v3 noauth read full write restricted notify full
SMIS(config)# end

SMIS# show snmp user

Engine ID : 80.00.08.1c.04.46.53
User : user1
Authentication Protocol : MD5
Privacy Protocol : None
Storage Type : Volatile
Row Status : Active

Engine ID : 80.00.08.1c.04.46.53
User : user2
Authentication Protocol : SHA
Privacy Protocol : DES_CBC
Storage Type : Volatile
Row Status : Active

Engine ID : 80.00.08.1c.04.46.53
User : initial
Authentication Protocol : None
Privacy Protocol : None
Storage Type : Volatile
Row Status : Active

Engine ID : 80.00.08.1c.04.46.53
User : templateMD5
Authentication Protocol : MD5
Privacy Protocol : None
Storage Type : Volatile
Row Status : Active

Engine ID : 80.00.08.1c.04.46.53
User : templateSHA
Authentication Protocol : SHA
Privacy Protocol : DES_CBC
Storage Type : Volatile
Row Status : Active

SMIS# show snmp group

Security Model : v1
Security Name : none
Group Name : iso
Storage Type : Volatile
Row Status : Active

Security Model : v2c
Security Name : none
Group Name : iso
Storage Type : Volatile
Row Status : Active

Security Model : v3
Security Name : user1
Group Name : superuser
Storage Type : Volatile
Row Status : Active

Security Model : v3
Security Name : user2
Group Name : generalusers
Storage Type : Volatile
Row Status : Active

Security Model : v3
Security Name : initial
Group Name : initial
Storage Type : Non-volatile
Row Status : Active

Security Model : v3
Security Name : templateMD5
Group Name : initial
Storage Type : Non-volatile
Row Status : Active

Security Model : v3
Security Name : templateSHA
Group Name : initial
Storage Type : Non-volatile
Row Status : Active

SMIS# show snmp group access

Group Name : iso
Read View : iso
Write View : iso
Notify View : iso
Storage Type : Volatile
Row Status : Active

Group Name : iso
Read View : iso
Write View : iso
Notify View : iso
Storage Type : Volatile
Row Status : Active
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Group Name : initial
Read View : restricted
Write View : restricted
Notify View : restricted
Storage Type : Non-volatile
Row Status : Active
---------------------------
Group Name : initial
Read View : iso
Write View : iso
Notify View : iso
Storage Type : Non-volatile
Row Status : Active
---------------------------
Group Name : initial
Read View : iso
Write View : iso
Notify View : iso
Storage Type : Non-volatile
Row Status : Active
---------------------------
Group Name : superuser
Read View : full
Write View : full
Notify View : full
Storage Type : Volatile
Row Status : Active
---------------------------
Group Name : generalusers
Read View : full
Write View :
Notify View : full
Storage Type : Volatile
Row Status : Active
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SMIS# show snmp viewtree

View Name : iso
Subtree OID : 1
Subtree Mask : 1
View Type : Included
Storage Type : Non-volatile
Row Status : Active
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View Name    : full
Subtree OID  : 1.3.6.1
Subtree Mask : 1.1.1.1
View Type    : Included
Storage Type : Volatile
Row Status   : Active

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View Name    : restricted
Subtree OID  : 1
Subtree Mask : 1
View Type    : Excluded
Storage Type : Non-volatile
Row Status   : Active

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View Name    : restricted
Subtree OID  : 1.3.6.1
Subtree Mask : 1.1.1.1
View Type    : Included
Storage Type : Volatile
Row Status   : Active

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View Name    : restricted
Subtree OID  : 1.3.6.3.10.2.1
Subtree Mask : 1.1.1.1.1.1
View Type    : Excluded
Storage Type : Volatile
Row Status   : Active

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SMIS# show running-config

Building configuration...
ID   Hardware Version       Firmware   OS     Boot Loader
0    SSE-F3548               1.0.0.0     6      0.0.0.0
vlan 1
    ports fx 0/1-24 untagged
    ports cx 0/1-3 untagged
exit

snmp user user1 auth md5 AUTH_PASSWD volatile
snmp user user2 auth sha AUTH_PASSWD priv DES DES_CBC volatile
snmp group superuser user user1 security-model v3 volatile
snmp group generalusers user user2 security-model v3 volatile
snmp access superuser v3 auth read full write full notify full volatile
snmp access generalusers v3 noauth read full notify full volatile
snmp view full 1.3.6.1 included volatile
snmp view restricted 1.3.6.1 included volatile
snmp view restricted 1.3.6.3.10.2.1 excluded volatile
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