Troubleshoot SNMPv3 Support with StarOS

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Introduction

This document describes the Simple Network Management Protocol Version 3 (SNMPv3) support in StarOS with snmp-engine ID configuration.

Problem

Once the upgrade is complete, SNMPv3 encounters a problem due to which alarms and files are not pushed at the server end (for example, Prime Server).

In versions earlier than 21.22.3, SNMPv3 worked without the creation of the snmp-engine ID. However, the same is not supported in later versions (series 21.22.x and 21.23.x). For this, you have to configure the snmp-engine ID.

Solution

Check all the SNMP configurations:

```
[local]LAB# show snmp accesses
SNMP Usage Statistics:
 Get PDUs Received        : 0
 GetNext PDUs Received    : 0
 Set PDUs Received        : 0
 PduTooBig Errors         : 0
 NoSuchName Errors        : 0
 BadValue Errors          : 0
 GenError Errors          : 0
 Agent started            : Thursday April 07 15:27:51 IST 2022
[local]LAB#

[local]LAB# show snmp server
SNMP Server Configuration:
 Server State             : enabled
 SNMP Port                : 161
 sysLocation              :
 sysContact               :
 authenticationFail traps : Disabled
 EngineID                 :                    ------------------ No Engine ID configured
 Runtime Debugging        : ON
 Runtime Debug Token      : |0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|
 Alert Threshold          : 500 alerts in 300 seconds
 Alert Low Threshold      : 20 alerts in 300 seconds
SNMP Agent Mib Configuration:
```

```
STARENT-MIB : Enabled
IF-MIB : Disabled
ENTITY-MIB : Disabled
ENTITY-STATE-MIB : Disabled
ENTITY-SENSOR-MIB : Disabled
HOST-RESOURCES-MIB : Disabled
CISCO-MOBILE-WIRELESS-SERVICE-MIB : Disabled
CISCO-ENTITY-DISPLAY-MIB : Disabled
CISCO-ENTITY-EXTENSION-MIB : Disabled
CISCO-ENTITY-FRU-CONTROL-MIB : Disabled
CISCO-ENTITY-REDUNDANCY-MIB : Disabled
CISCO-IP-LOCAL-POOL-MIB : Disabled
CISCO-PROCESS-MIB : Disabled
CISCO-FLASH-MIB : Disabled
CISCO-SYSTEM-EXT-MIB : Disabled
CISCO-IPSEC-FLOW-MONITOR-MIB : Disabled
CISCO-ENHANCED-IPSEC-FLOW-MIB : Disabled
CISCO-IF-EXTENSION-MIB : Disabled
```

As the engine ID is not created, no engine file is found in flash as checked.

```
[local]LAB# cli test-commands password xxxx
[local]LAB# debug shell
LAB:card1-cpu0# cd /flash
LAB:card1-cpu0# ls -lart | grep .eng  ------ No engine file found in flash
LAB:card1-cpu0#
```

From the checks, you see that the snmp-engine ID is not configured. It is mandatory for SNMPv3 support. The snmp-engine ID is a unique ID which needs to be configured in the node. For a secure connection between each node and the server, it must be unique and cannot be the same as any other node.

Workaround:

For SNMPv3 support, the snmp-engine ID is mandatory. So, you need to have the engine-ID configured.

Step 1. Configuration of snmp-engine ID.
Step 2. Restart the SNMP process.

The workaround is to be followed once the upgrade is complete in case SNMP stops for version 3 and is mostly observed in releases later than 21.22.x.

Step 1. Configuration of snmp-engine ID

Further to configure the snmp-engine ID, it is necessary to have at least a 10-digit or more snmp-engine ID. However, it depends on the operator of how they have configured their nodes.

For example, SNMP Engine ID: 80001F88805928415C9FE07840

Similarly, you need to configure snmp-engine ID which must be unique for every node and the same is applicable for both ASR5500 and VPC-DI nodes. For VPC-DI nodes typically HEX value strings are configured and for ASR5500 decimal 10 digits.

CLI for snmp-engine ID creation

```
[local]LAB# configure
```

```
[local]LAB(config)# snmp engine-id local 80001F88805928415C9FE07841
[local]LAB(config)# exit

[local]LAB# show snmp server
SNMP Server Configuration:
 Server State             : enabled
 SNMP Port                : 161
 sysLocation              :
 sysContact               :
 authenticationFail traps : Disabled
 EngineID                 : 80001F88805928415C9FE07841     -------- Engine ID configured
 Runtime Debugging        : ON
 Runtime Debug Token      : |0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|
 Alert Threshold          : 500 alerts in 300 seconds
 Alert Low Threshold      : 20 alerts in 300 seconds
SNMP Agent Mib Configuration:

[local]LAB# cli test-commands password xxxx
[local]LAB# debug shell
LAB:card1-cpu0# cd /flash
LAB:card1-cpu0# ls -lrth | grep .eng
LAB:card1-cpu0#
LAB:card1-cpu0# ls -lart | grep .eng
-rw-rw-r-- 1 root root 30 Apr 19 09:07 .engineInfo   --------- Engine file created as engine ID
is configured
LAB:card1-cpu0#
```

Step 2. Restart SNMP Process

Once the configuration of the snmp-engine ID is complete, just restart the SNMP process once.

```
[local]LAB# show task resources | grep snmp
 1/0 snmp             0 0.10%   65% 27.86M 90.00M   18 2000    --    -- -   good

[local]LAB#

[local]LAB# task kill facility snmp instance 0
```

Lastly, check that logs/KPIs are pushed to the server, as a resolution to the issue.