



Monitor MetroCluster IP switch health

ONTAP MetroCluster

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Monitor MetroCluster IP switch health

Learn about switch health monitoring in a MetroCluster IP configuration

The Ethernet switch health monitor (CSHM) is responsible for ensuring the operational health of Cluster and Storage network switches and collecting switch logs for debugging purposes.

Important notes for configuring CSHM in a MetroCluster IP configuration

This section contains the generic steps for configuring SNMPv3 and log collection on Cisco, Broadcom, and NVIDIA SN2100 switches. You must follow the steps for a switch firmware version that is supported in a MetroCluster IP configuration. Refer to the [Hardware Universe](#) to verify the supported firmware versions.

In a MetroCluster configuration, you configure health monitoring on the local cluster switches only.

For log collection with Broadcom and Cisco switches, a new user should be created on the switch for each cluster with log collection enabled. In a MetroCluster configuration, this means that MetroCluster 1, MetroCluster 2, MetroCluster 3, and MetroCluster 4 all require a separate user to be configured on the switches. These switches do not support multiple SSH keys for the same user. Any additional log collection setup performed overwrites any pre-existing SSH keys for the user.

Before you configure the CSHM, you should disable unused ISLs to avoid any unnecessary ISL alerts.

Configure SNMPv3 to monitor the health of MetroCluster IP switches

In MetroCluster IP configurations, you can configure SNMPv3 to monitor the health of IP switches.

This procedure shows the generic steps for configuring SNMPv3 on a switch. Some of the switch firmware versions listed might not be supported in a MetroCluster IP configuration.

You must follow the steps for a switch firmware version that is supported in a MetroCluster IP configuration. Refer to the [Hardware Universe](#) to verify the supported firmware versions.

- SNMPv3 is only supported on ONTAP 9.12.1 and later.
- ONTAP 9.13.1P12, 9.14.1P9, 9.15.1P5, 9.16.1 and later versions fix these two issues:
 - For ONTAP health monitoring of Cisco switches, SNMPv2 traffic might still be seen after switching to SNMPv3 for monitoring
 - False-positive switch fan and power alerts when SNMP failures occur

About this task

The following commands are used to configure an SNMPv3 username on **Broadcom**, **Cisco**, and **NVIDIA** switches:

Broadcom switches

Configure an SNMPv3 username NETWORK-OPERATOR on Broadcom BES-53248 switches.

- For **no authentication**:

```
snmp-server user SNMPv3UserNoAuth NETWORK-OPERATOR noauth
```

- For **MD5/SHA authentication**:

```
snmp-server user SNMPv3UserAuth NETWORK-OPERATOR [auth-md5|auth-sha]
```

- For **MD5/SHA authentication with AES/DES encryption**:

```
snmp-server user SNMPv3UserAuthEncrypt NETWORK-OPERATOR [auth-md5|auth-sha] [priv-aes128|priv-des]
```

The following command configures an SNMPv3 username on the ONTAP side:

```
security login create -user-or-group-name SNMPv3_USER -application snmp -authentication-method usm -remote-switch-ipaddress ADDRESS
```

The following command establishes the SNMPv3 username with CSHM:

```
cluster1::*> system switch ethernet modify -device DEVICE -snmp-version SNMPv3 -community-or-username SNMPv3_USER
```

Steps

1. Set up the SNMPv3 user on the switch to use authentication and encryption:

```
show snmp status
```

```
(sw1) (Config) # snmp-server user <username> network-admin auth-md5
<password> priv-aes128 <password>

(cs1) (Config) # show snmp user snmp

      Name          Group Name      Auth  Priv
      Meth  Meth      Remote Engine ID
-----  -----
<username>      network-admin      MD5   AES128
8000113d03d8c497710bee
```

2. Set up the SNMPv3 user on the ONTAP side:

```
security login create -user-or-group-name <username> -application
snmp -authentication-method usm -remote-switch-ipaddress
10.231.80.212
```

```
cluster1::*> security login create -user-or-group-name <username>
-application snmp -authentication-method usm -remote-switch
-ipaddress 10.231.80.212
```

Enter the authoritative entity's EngineID [remote EngineID]:

Which authentication protocol do you want to choose (none, md5, sha, sha2-256)

[none]: **md5**

Enter the authentication protocol password (minimum 8 characters long):

Enter the authentication protocol password again:

Which privacy protocol do you want to choose (none, des, aes128)

[none]: **aes128**

Enter privacy protocol password (minimum 8 characters long):

Enter privacy protocol password again:

3. Configure CSHM to monitor with the new SNMPv3 user:

```
system switch ethernet show-all -device "sw1" -instance
```

```

cluster1::*> system switch ethernet show-all -device "sw1
(b8:59:9f:09:7c:22)" -instance

Device Name: sw1
IP Address: 10.228.136.24
SNMP Version: SNMPv2c
Is Discovered: true
DEPRECATED-Community String or SNMPv3 Username: -
Community String or SNMPv3 Username: cshm1!
Model Number: BES-53248
Switch Network: cluster-network
Software Version: 3.9.0.2
Reason For Not Monitoring: None <---- should
display this if SNMP settings are valid
Source Of Switch Version: CDP/ISDP
Is Monitored ?: true
Serial Number of the Device: QTFCU3826001C
RCF Version: v1.8X2 for
Cluster/HA/RDMA

cluster1::*>
cluster1::*> system switch ethernet modify -device "sw1" -snmp
-version SNMPv3 -community-or-username <username>

```

4. After waiting the CSHM polling period, verify that the serial number is populated for the Ethernet switch.

```
system switch ethernet polling-interval show
```

```

cluster1::*> system switch ethernet polling-interval show
    Polling Interval (in minutes): 5

cluster1::*> system switch ethernet show-all -device "sw1" -instance
    Device Name: sw1
    IP Address: 10.228.136.24
    SNMP Version: SNMPv3
    Is Discovered: true
    DEPRECATED-Community String or SNMPv3 Username: -
    Community String or SNMPv3 Username: <username>
    Model Number: BES-53248
    Switch Network: cluster-network
    Software Version: 3.9.0.2
    Reason For Not Monitoring: None <---- should
    display this if SNMP settings are valid
    Source Of Switch Version: CDP/ISDP
    Is Monitored ?: true
    Serial Number of the Device: QTFCU3826001C
    RCF Version: v1.8X2 for
    Cluster/HA/RDMA

```

Cisco switches

Configure an SNMPv3 username SNMPv3_USER on Cisco 9336C-FX2 switches:

- For **no authentication**:

```
snmp-server user SNMPv3_USER NoAuth
```

- For **MD5/SHA authentication**:

```
snmp-server user SNMPv3_USER auth [md5|sha] AUTH-PASSWORD
```

- For **MD5/SHA authentication with AES/DES encryption**:

```
snmp-server user SNMPv3_USER AuthEncrypt auth [md5|sha] AUTH-
PASSWORD priv aes-128 PRIV-PASSWORD
```

The following command configures an SNMPv3 username on the ONTAP side:

```
security login create -user-or-group-name SNMPv3_USER -application snmp
-authentication-method usm -remote-switch-ipaddress ADDRESS
```

The following command establishes the SNMPv3 username with CSHM:

```
system switch ethernet modify -device DEVICE -snmp-version SNMPv3  
-community-or-username SNMPv3 USER
```

Steps

1. Set up the SNMPv3 user on the switch to use authentication and encryption:

show snmp user

```
(sw1) (Config) # snmp-server user SNMPv3User auth md5 <auth_password>  
priv aes-128 <priv password>
```

```
(sw1) (Config) # show snmp user
```

SNMP USERS			

User	Auth	Priv(enforce)	Groups
acl_filter			

admin	md5	des (no)	network-admin
SNMPv3User	md5	aes-128 (no)	network-operator

NOTIFICATION TARGET USERS (configured for sending V3 Inform)			

User Auth Priv

(sw1) (Config) #

2. Set up the SNMPv3 user on the ONTAP side:

```
security login create -user-or-group-name <username> -application
snmp -authentication-method usm -remote-switch-ipaddress
10.231.80.212
```

```
cluster1::*> system switch ethernet modify -device "sw1
(b8:59:9f:09:7c:22)" -is-monitoring-enabled-admin true

cluster1::*> security login create -user-or-group-name <username>
-application snmp -authentication-method usm -remote-switch
-ipaddress 10.231.80.212
```

Enter the authoritative entity's EngineID [remote EngineID]:

Which authentication protocol do you want to choose (none, md5, sha, sha2-256)

[none]: **md5**

Enter the authentication protocol password (minimum 8 characters long):

Enter the authentication protocol password again:

Which privacy protocol do you want to choose (none, des, aes128)

[none]: **aes128**

Enter privacy protocol password (minimum 8 characters long):

Enter privacy protocol password again:

3. Configure CSHM to monitor with the new SNMPv3 user:

```
system switch ethernet show-all -device "sw1" -instance
```

```

cluster1::*> system switch ethernet show-all -device "sw1" -instance

Device Name: sw1
IP Address: 10.231.80.212
SNMP Version: SNMPv2c
Is Discovered: true
SNMPv2c Community String or SNMPv3 Username: cshm1!
Model Number: N9K-C9336C-FX2
Switch Network: cluster-network
Software Version: Cisco Nexus
Operating System (NX-OS) Software, Version 9.3(7)
Reason For Not Monitoring: None <---- displays
when SNMP settings are valid

Source Of Switch Version: CDP/ISDP
Is Monitored ?: true
Serial Number of the Device: QTFCU3826001C
RCF Version: v1.8X2 for
Cluster/HA/RDMA

cluster1::*>
cluster1::*> system switch ethernet modify -device "sw1" -snmp
-version SNMPv3 -community-or-username <username>
cluster1::*>

```

4. Verify that the serial number to be queried with the newly created SNMPv3 user is the same as detailed in the previous step after the CSHM polling period has completed.

```
system switch ethernet polling-interval show
```

```

cluster1::*> system switch ethernet polling-interval show
    Polling Interval (in minutes): 5

cluster1::*> system switch ethernet show-all -device "sw1" -instance

    Device Name: sw1
    IP Address: 10.231.80.212
    SNMP Version: SNMPv3
    Is Discovered: true
    SNMPv2c Community String or SNMPv3 Username: SNMPv3User
    Model Number: N9K-C9336C-FX2
    Switch Network: cluster-network
    Software Version: Cisco Nexus
    Operating System (NX-OS) Software, Version 9.3(7)
    Reason For Not Monitoring: None <---- displays
when SNMP settings are valid

    Source Of Switch Version: CDP/ISDP
    Is Monitored ?: true
    Serial Number of the Device: QTFCU3826001C
    RCF Version: v1.8X2 for
Cluster/HA/RDMA

cluster1::*>

```

NVIDIA - CL 5.4.0

Configure an SNMPv3 username SNMPv3_USER on NVIDIA SN2100 switches running CLI 5.4.0:

- For **no authentication**:

```
nv set service snmp-server username SNMPv3_USER auth-none
```

- For **MD5/SHA authentication**:

```
nv set service snmp-server username SNMPv3_USER [auth-md5|auth-sha]
AUTH-PASSWORD
```

- For **MD5/SHA authentication with AES/DES encryption**:

```
nv set service snmp-server username SNMPv3_USER [auth-md5|auth-sha]
AUTH-PASSWORD [encrypt-aes|encrypt-des] PRIV-PASSWORD
```

The following command configures an SNMPv3 username on the ONTAP side:

```
security login create -user-or-group-name SNMPv3_USER -application snmp  
-authentication-method usm -remote-switch-ipaddress ADDRESS
```

The following command establishes the SNMPv3 username with CSHM:

```
system switch ethernet modify -device DEVICE -snmp-version SNMPv3  
-community-or-username SNMPv3_USER
```

Steps

1. Set up the SNMPv3 user on the switch to use authentication and encryption:

```
net show snmp status
```

```
cumulus@sw1:~$ net show snmp status  
Simple Network Management Protocol (SNMP) Daemon.  
-----  
Current Status           active (running)  
Reload Status            enabled  
Listening IP Addresses  all vrf mgmt  
Main snmpd PID          4318  
Version 1 and 2c Community String  Configured  
Version 3 Usernames     Not Configured  
-----  
cumulus@sw1:~$  
cumulus@sw1:~$ net add snmp-server username SNMPv3User auth-md5  
<password> encrypt-aes <password>  
cumulus@sw1:~$ net commit  
--- /etc/snmp/snmpd.conf      2020-08-02 21:09:34.686949282 +0000  
+++ /run/nclu/snmp/snmpd.conf 2020-08-11 00:13:51.826126655 +0000  
@@ -1,26 +1,28 @@  
# Auto-generated config file: do not edit. #  
agentaddress udp:@mgmt:161  
agentxperms 777 777 snmp snmp  
agentxsocket /var/agentx/master  
createuser _snmptrapusernameX  
+createuser SNMPv3User MD5 <password> AES <password>  
ifmib_max_num_ifaces 500  
iquerysecname _snmptrapusernameX  
master agentx  
monitor -r 60 -o laNames -o laErrMessage "laTable" laErrorFlag != 0  
pass -p 10 1.3.6.1.2.1.1.1 /usr/share/snmp/sysDescr_pass.py  
pass_persist 1.2.840.10006.300.43
```

```

/usr/share/snmp/ieee8023_lag_pp.py
pass_persist 1.3.6.1.2.1.17 /usr/share/snmp/bridge_pp.py
pass_persist 1.3.6.1.2.1.31.1.1.1.18
/usr/share/snmp/snmpifAlias_pp.py
pass_persist 1.3.6.1.2.1.47 /usr/share/snmp/entity_pp.py
pass_persist 1.3.6.1.2.1.99 /usr/share/snmp/entity_sensor_pp.py
pass_persist 1.3.6.1.4.1.40310.1 /usr/share/snmp/resq_pp.py
pass_persist 1.3.6.1.4.1.40310.2
/usr/share/snmp/cl_drop_cntrs_pp.py
pass_persist 1.3.6.1.4.1.40310.3 /usr/share/snmp/cl_poe_pp.py
pass_persist 1.3.6.1.4.1.40310.4 /usr/share/snmp/bgpun_pp.py
pass_persist 1.3.6.1.4.1.40310.5 /usr/share/snmp/cumulus-status.py
pass_persist 1.3.6.1.4.1.40310.6 /usr/share/snmp/cumulus-sensor.py
pass_persist 1.3.6.1.4.1.40310.7 /usr/share/snmp/vrf_bgpun_pp.py
+rocommunity cshml! default
rouser _snmptrapusernameX
+rouser SNMPv3User priv
sysobjectid 1.3.6.1.4.1.40310
sysservices 72
-rocommunity cshml! default

```

net add/del commands since the last "net commit"

User	Timestamp	Command
SNMPv3User	2020-08-11 00:13:51.826987	net add snmp-server username
SNMPv3User		auth-md5 <password> encrypt-aes <password>
cumulus@sw1:~\$		
cumulus@sw1:~\$ net show snmp status		
Simple Network Management Protocol (SNMP) Daemon.		
Current Status		active (running)
Reload Status		enabled
Listening IP Addresses		all vrf mgmt
Main snmpd PID		24253
Version 1 and 2c Community String		Configured
Version 3 Usernames		Configured <---- Configured
here		
cumulus@sw1:~\$		

2. Set up the SNMPv3 user on the ONTAP side:

```
security login create -user-or-group-name SNMPv3User -application
snmp -authentication-method usm -remote-switch-ipaddress
10.231.80.212
```

```
cluster1::*> security login create -user-or-group-name SNMPv3User
-application snmp -authentication-method usm -remote-switch
-ipaddress 10.231.80.212
```

Enter the authoritative entity's EngineID [remote EngineID]:

Which authentication protocol do you want to choose (none, md5, sha, sha2-256)

[none]: **md5**

Enter the authentication protocol password (minimum 8 characters long):

Enter the authentication protocol password again:

Which privacy protocol do you want to choose (none, des, aes128)

[none]: **aes128**

Enter privacy protocol password (minimum 8 characters long):

Enter privacy protocol password again:

3. Configure CSHM to monitor with the new SNMPv3 user:

```
system switch ethernet show-all -device "sw1 (b8:59:9f:09:7c:22)"
-instance
```

```

cluster1::*> system switch ethernet show-all -device "sw1
(b8:59:9f:09:7c:22)" -instance
                                         Device Name: sw1
                                         (b8:59:9f:09:7c:22)
                                         IP Address: 10.231.80.212
                                         SNMP Version: SNMPv2c
                                         Is Discovered: true
                                         DEPRECATED-Community String or SNMPv3 Username: -
                                         Community String or SNMPv3 Username: cshm1!
                                         Model Number: MSN2100-CB2FC
                                         Switch Network: cluster-network
                                         Software Version: Cumulus Linux
                                         version 5.4.0 running on Mellanox Technologies Ltd. MSN2100
                                         Reason For Not Monitoring: None
                                         Source Of Switch Version: LLDP
                                         Is Monitored ?: true
                                         Serial Number of the Device: MT2110X06399 <-----
serial number to check
                                         RCF Version: MSN2100-RCF-v1.9X6-
                                         Cluster-LLDP Aug-18-2022

cluster1::*>
cluster1::*> system switch ethernet modify -device "sw1
(b8:59:9f:09:7c:22)" -snmp-version SNMPv3 -community-or-username
SNMPv3User

```

4. Verify that the serial number to be queried with the newly created SNMPv3 user is the same as detailed in the previous step after the CSHM polling period has completed.

```
system switch ethernet polling-interval show
```

```

cluster1::*> system switch ethernet polling-interval show
    Polling Interval (in minutes): 5

cluster1::*> system switch ethernet show-all -device "sw1
(b8:59:9f:09:7c:22)" -instance
    Device Name: sw1
    (b8:59:9f:09:7c:22)
        IP Address: 10.231.80.212
        SNMP Version: SNMPv3
        Is Discovered: true
        DEPRECATED-Community String or SNMPv3 Username: -
        Community String or SNMPv3 Username: SNMPv3User
        Model Number: MSN2100-CB2FC
        Switch Network: cluster-network
        Software Version: Cumulus Linux
        version 5.4.0 running on Mellanox Technologies Ltd. MSN2100
        Reason For Not Monitoring: None
        Source Of Switch Version: LLDP
        Is Monitored ?: true
        Serial Number of the Device: MT2110X06399 <----
serial number to check
        RCF Version: MSN2100-RCF-v1.9X6-
Cluster-LLDP Aug-18-2022

```

NVIDIA - CL 5.11.0

Configure an SNMPv3 username SNMPv3_USER on NVIDIA SN2100 switches running CLI 5.11.0:

- For **no authentication**:

```
nv set system snmp-server username SNMPv3_USER auth-none
```

- For **MD5/SHA authentication**:

```
nv set system snmp-server username SNMPv3_USER [auth-md5|auth-sha]
AUTH-PASSWORD
```

- For **MD5/SHA authentication with AES/DES encryption**:

```
nv set system snmp-server username SNMPv3_USER [auth-md5|auth-sha]
AUTH-PASSWORD [encrypt-aes|encrypt-des] PRIV-PASSWORD
```

The following command configures an SNMPv3 username on the ONTAP side:

```
security login create -user-or-group-name SNMPv3_USER -application snmp  
-authentication-method usm -remote-switch-ipaddress ADDRESS
```

The following command establishes the SNMPv3 username with CSHM:

```
system switch ethernet modify -device DEVICE -snmp-version SNMPv3  
-community-or-username SNMPv3_USER
```

Steps

1. Set up the SNMPv3 user on the switch to use authentication and encryption:

```
nv show system snmp-server
```

```
cumulus@sw1:~$ nv show system snmp-server  
    applied  
-----  
[username]      SNMPv3_USER  
[username]      limiteduser1  
[username]      testuserauth  
[username]      testuserauthaes  
[username]      testusernoauth  
trap-link-up  
    check-frequency 60  
trap-link-down  
    check-frequency 60  
[listening-address] all  
[readonly-community] $nvsec$94d69b56e921aec1790844eb53e772bf  
state          enabled  
cumulus@sw1:~$
```

2. Set up the SNMPv3 user on the ONTAP side:

```
security login create -user-or-group-name SNMPv3User -application  
snmp -authentication-method usm -remote-switch-ipaddress  
10.231.80.212
```

```
cluster1::*> security login create -user-or-group-name SNMPv3User  
-application snmp -authentication-method usm -remote-switch  
-ipaddress 10.231.80.212
```

Enter the authoritative entity's EngineID [remote EngineID]:

Which authentication protocol do you want to choose (none, md5, sha, sha2-256)

[none]: **md5**

Enter the authentication protocol password (minimum 8 characters long):

Enter the authentication protocol password again:

Which privacy protocol do you want to choose (none, des, aes128)

[none]: **aes128**

Enter privacy protocol password (minimum 8 characters long):

Enter privacy protocol password again:

3. Configure CSHM to monitor with the new SNMPv3 user:

```
system switch ethernet show-all -device "sw1 (b8:59:9f:09:7c:22)"  
-instance
```

```

cluster1::*> system switch ethernet show-all -device "sw1
(b8:59:9f:09:7c:22)" -instance
                                         Device Name: sw1
(b8:59:9f:09:7c:22)
                                         IP Address: 10.231.80.212
                                         SNMP Version: SNMPv2c
                                         Is Discovered: true
DEPRECATED-Community String or SNMPv3 Username: -
                                         Community String or SNMPv3 Username: cshm1!
                                         Model Number: MSN2100-CB2FC
                                         Switch Network: cluster-network
                                         Software Version: Cumulus Linux
version 5.11.0 running on Mellanox Technologies Ltd. MSN2100
                                         Reason For Not Monitoring: None
                                         Source Of Switch Version: LLDP
                                         Is Monitored ?: true
                                         Serial Number of the Device: MT2110X06399 <-----
serial number to check
                                         RCF Version: MSN2100-RCF-v1.9X6-
Cluster-LDP Aug-18-2022

cluster1::*>
cluster1::*> system switch ethernet modify -device "sw1
(b8:59:9f:09:7c:22)" -snmp-version SNMPv3 -community-or-username
SNMPv3User

```

4. Verify that the serial number to be queried with the newly created SNMPv3 user is the same as detailed in the previous step after the CSHM polling period has completed.

```
system switch ethernet polling-interval show
```

```

cluster1::*> system switch ethernet polling-interval show
    Polling Interval (in minutes): 5

cluster1::*> system switch ethernet show-all -device "sw1
(b8:59:9f:09:7c:22)" -instance
    Device Name: sw1
(b8:59:9f:09:7c:22)
    IP Address: 10.231.80.212
    SNMP Version: SNMPv3
    Is Discovered: true
    DEPRECATED-Community String or SNMPv3 Username: -
        Community String or SNMPv3 Username: SNMPv3User
        Model Number: MSN2100-CB2FC
        Switch Network: cluster-network
        Software Version: Cumulus Linux
    version 5.11.0 running on Mellanox Technologies Ltd. MSN2100
        Reason For Not Monitoring: None
        Source Of Switch Version: LLDP
        Is Monitored ?: true
        Serial Number of the Device: MT2110X06399 <----
serial number to check
    RCF Version: MSN2100-RCF-v1.9X6-
Cluster-LLDP Aug-18-2022

```

Configure log collection on a MetroCluster IP switch

In a MetroCluster IP configuration, you can configure log collection to collect switch logs for debugging purposes.

 On Broadcom and Cisco switches, a new user is required for each cluster with log collection. For example, MetroCluster 1, MetroCluster 2, MetroCluster 3, and MetroCluster 4 all require a separate user to be configured on the switches. Multiple SSH keys for the same user is not supported.

About this task

The Ethernet switch health monitor (CSHM) is responsible for ensuring the operational health of Cluster and Storage network switches and collecting switch logs for debugging purposes. This procedure guides you through the process of setting up collection, requesting detailed **Support** logs, and enabling an hourly collection of **Periodic** data that is collected by AutoSupport.

NOTE: If you enable FIPS mode, you must complete the following:



1. Regenerate SSH keys on the switch using the vendor instructions.
2. Regenerate SSH keys in ONTAP using `debug system regenerate-systemshell-key-pair`
3. Re-run log collection setup routine using the `system switch ethernet log setup-password` command

Before you begin

- The user must have access to the `switch show` commands. If these are not available, create a new user and grant the necessary permissions to the user.
- Switch health monitoring must be enabled for the switch. Verify this by ensuring the `Is Monitored:` field is set to **true** in the output of the `system switch ethernet show` command.
- For log collection with Broadcom and Cisco switches:
 - The local user must have network admin privileges.
 - A new user should be created on the switch for each cluster setup with log collection enabled. These switches do not support multiple SSH keys for the same user. Any additional log collection setup performed overwrites any pre-existing SSH keys for the user.
- For support log collection with NVIDIA switches, the `user` for log collection must be permitted to run the `cl-support` command without having to provide a password. To allow this usage, run the command:

```
echo '<user> ALL = NOPASSWD: /usr/cumulus/bin/cl-support' | sudo EDITOR='tee -a' visudo -f /etc/sudoers.d/cumulus
```

Steps

ONTAP 9.15.1 and later

1. To set up log collection, run the following command for each switch. You are prompted to enter the switch name, username, and password for log collection.

NOTE: If answering **y** to the user specification prompt, make sure that the user has the necessary permissions as outlined in [Before you begin](#).

```
system switch ethernet log setup-password
```

```
cluster1::*> system switch ethernet log setup-password
```

```
Enter the switch name: <return>
```

```
The switch name entered is not recognized.
```

```
Choose from the following list:
```

```
cs1
```

```
cs2
```

```
cluster1::*> system switch ethernet log setup-password
```

```
Enter the switch name: cs1
```

```
Would you like to specify a user other than admin for log collection? {y|n}: n
```

```
Enter the password: <enter switch password>
```

```
Enter the password again: <enter switch password>
```

```
cluster1::*> system switch ethernet log setup-password
```

```
Enter the switch name: cs2
```

```
Would you like to specify a user other than admin for log collection? {y|n}: n
```

```
Enter the password: <enter switch password>
```

```
Enter the password again: <enter switch password>
```



For CL 5.11.1, create the user **cumulus** and respond **y** to the following prompt: Would you like to specify a user other than admin for log collection? {y|n}: **y**

2. Enable periodic log collection:

```
system switch ethernet log modify -device <switch-name> -periodic -enabled true
```

```
cluster1::*> system switch ethernet log modify -device cs1 -periodic  
-enabled true
```

Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] **y**

cs1: Periodic log collection has been scheduled to run every hour.

```
cluster1::*> system switch ethernet log modify -device cs2 -periodic  
-enabled true
```

Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] **y**

cs2: Periodic log collection has been scheduled to run every hour.

```
cluster1::*> system switch ethernet log show
```

	Periodic	Periodic
Support		
Switch	Log	Enabled
Log State	Log	State
cs1	true	scheduled
never-run		
cs2	true	scheduled
never-run		
2 entries were displayed.		

3. Request support log collection:

```
system switch ethernet log collect-support-log -device <switch-name>
```

```
cluster1::*> system switch ethernet log collect-support-log -device  
cs1
```

cs1: Waiting for the next Ethernet switch polling cycle to begin support collection.

```
cluster1::*> system switch ethernet log collect-support-log -device  
cs2
```

cs2: Waiting for the next Ethernet switch polling cycle to begin support collection.

```
cluster1::*> *system switch ethernet log show  
Support Periodic Periodic  
Switch Log Enabled Log State  
Log State  
  
cs1 false halted  
initiated  
cs2 true scheduled  
initiated  
2 entries were displayed.
```

4. To view all details of log collection, including the enablement, status message, previous timestamp and filename of periodic collection, the request status, status message, and previous timestamp and filename of support collection, use the following:

```
system switch ethernet log show -instance
```

```

cluster1::*> system switch ethernet log show -instance

        Switch Name: cs1
        Periodic Log Enabled: true
        Periodic Log Status: Periodic log collection has been
scheduled to run every hour.
        Last Periodic Log Timestamp: 3/11/2024 11:02:59
        Periodic Log Filename: cluster1:/mroot/etc/log/shm-
cluster-info.tgz
        Support Log Requested: false
        Support Log Status: Successfully gathered support logs
- see filename for their location.
        Last Support Log Timestamp: 3/11/2024 11:14:20
        Support Log Filename: cluster1:/mroot/etc/log/shm-
cluster-log.tgz

        Switch Name: cs2
        Periodic Log Enabled: false
        Periodic Log Status: Periodic collection has been
halted.
        Last Periodic Log Timestamp: 3/11/2024 11:05:18
        Periodic Log Filename: cluster1:/mroot/etc/log/shm-
cluster-info.tgz
        Support Log Requested: false
        Support Log Status: Successfully gathered support logs
- see filename for their location.
        Last Support Log Timestamp: 3/11/2024 11:18:54
        Support Log Filename: cluster1:/mroot/etc/log/shm-
cluster-log.tgz
2 entries were displayed.

```

ONTAP 9.14.1 and earlier

1. To set up log collection, run the following command for each switch. You are prompted to enter the switch name, username, and password for log collection.

NOTE: If answering **y** to the user specification prompt, make sure that the user has the necessary permissions as outlined in [Before you begin](#).

```
system switch ethernet log setup-password
```

```
cluster1::*> system switch ethernet log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
  cs1
  cs2

cluster1::*> system switch ethernet log setup-password

Enter the switch name: cs1
Would you like to specify a user other than admin for log
collection? {y|n}: n

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster1::*> system switch ethernet log setup-password

Enter the switch name: cs2

Would you like to specify a user other than admin for log
collection? {y|n}: n

Enter the password: <enter switch password>
Enter the password again: <enter switch password>
```



For CL 5.11.1, create the user **cumulus** and respond **y** to the following prompt: Would you like to specify a user other than admin for log collection? {y|n}: **y**

2. To request support log collection and enable periodic collection, run the following command. This starts both types of log collection: the detailed Support logs and an hourly collection of Periodic data.

```
system switch ethernet log modify -device <switch-name> -log-request
true
```

```
cluster1::*> system switch ethernet log modify -device cs1 -log  
-request true
```

Do you want to modify the cluster switch log collection configuration? {y|n}: [n] **y**

Enabling cluster switch log collection.

```
cluster1::*> system switch ethernet log modify -device cs2 -log  
-request true
```

Do you want to modify the cluster switch log collection configuration? {y|n}: [n] **y**

Enabling cluster switch log collection.

Wait for 10 minutes and then check that the log collection completes:

```
system switch ethernet log show
```

 If any error statuses are reported by the log collection feature (visible in the output of `system switch ethernet log show`), see [Troubleshoot log collection](#) for further details.

Manage the monitoring of Ethernet switches in a MetroCluster IP configuration

In most cases, Ethernet switches are automatically discovered by ONTAP and monitored by CSHM. The Reference Configuration File (RCF) applied to the switch, among other things, enables the Cisco Discovery Protocol (CDP) and/or the Link Layer Discovery Protocol (LLDP). However, you might need to manually add a switch that is not discovered or remove a switch that is no longer in use. You can also stop active monitoring while retaining the switch in the configuration, such as during maintenance.

Create a switch entry so that ONTAP can monitor it

About this task

Use the `system switch ethernet create` command to manually configure and enable monitoring for a specified Ethernet switch. This is helpful if ONTAP does not add the switch automatically, or if you previously removed the switch and want to re-add it.

```
system switch ethernet create -device DeviceName -address 1.2.3.4 -snmp  
-version SNMPv2c -community-or-username cshm1! -model NX3132V -type  
cluster-network
```

A typical example is adding a switch named [DeviceName], with IP address 1.2.3.4, and SNMPv2c credentials set to **cshm1!**. Use **-type storage-network** instead of **-type cluster-network** if you are configuring a storage switch.

Disable monitoring without deleting the switch

If you want to pause or stop monitoring for a certain switch, but still retain it for future monitoring, modify its **is-monitoring-enabled-admin** parameter instead of deleting it.

For example:

```
system switch ethernet modify -device DeviceName -is-monitoring-enabled  
-admin false
```

This lets you preserve switch details and configuration without generating new alerts or re-discoveries.

Remove a switch you no longer need

Use **system switch ethernet delete** to delete a switch that has been disconnected or is no longer required:

```
system switch ethernet delete -device DeviceName
```

By default, this command succeeds only if ONTAP does not currently detect the switch through CDP or LLDP. To remove a discovered switch, use the **-force** parameter:

```
system switch ethernet delete -device DeviceName -force
```

When **-force** is used, the switch might be re-added automatically if ONTAP detects it again.

Verify Ethernet switch monitoring in a MetroCluster IP configuration

The Ethernet switch health monitor (CSHM) automatically attempts to monitor the switches that it discovers; however, monitoring might not happen automatically if the switches are not configured correctly. You should verify that the health monitor is properly configured to monitor your switches.

Confirm monitoring of the connected Ethernet switches

About this task

To confirm that the connected Ethernet switches are being monitored, run:

```
system switch ethernet show
```

If the `Model` column displays **OTHER** or the `IS Monitored` field displays **false**, then ONTAP cannot monitor the switch. A value of **OTHER** typically indicates that ONTAP does not support that switch for health monitoring.

The `IS Monitored` field is set to **false** for the reason specified in the `Reason` field.



If a switch is not listed in the command output, ONTAP likely has not discovered it. Confirm that the switch is cabled correctly. If necessary, you can add the switch manually. See [Manage the monitoring of Ethernet Switches](#) for further details.

Confirm firmware and RCF versions are up to date

Make sure that the switch is running the latest supported firmware and that a compatible reference configuration file (RCF) has been applied. More information is available on the [NetApp Support Downloads page](#).

By default, the health monitor uses SNMPv2c with the community string **cshm1!** for monitoring, but SNMPv3 can also be configured.

If you need to change the default SNMPv2c community string, make sure that the desired SNMPv2c community string has been configured on the switch.

```
system switch ethernet modify -device SwitchA -snmp-version SNMPv2c  
-community-or-username newCommunity!
```



See [Optional: Configure SNMPv3](#) for details on configuring SNMPv3 for use.

Confirm management network connection

Verify that the switch's management port is connected to the management network.

A correct management port connection is required for ONTAP to perform SNMP queries and log collection.

Related information

- [Troubleshoot alerts](#)

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