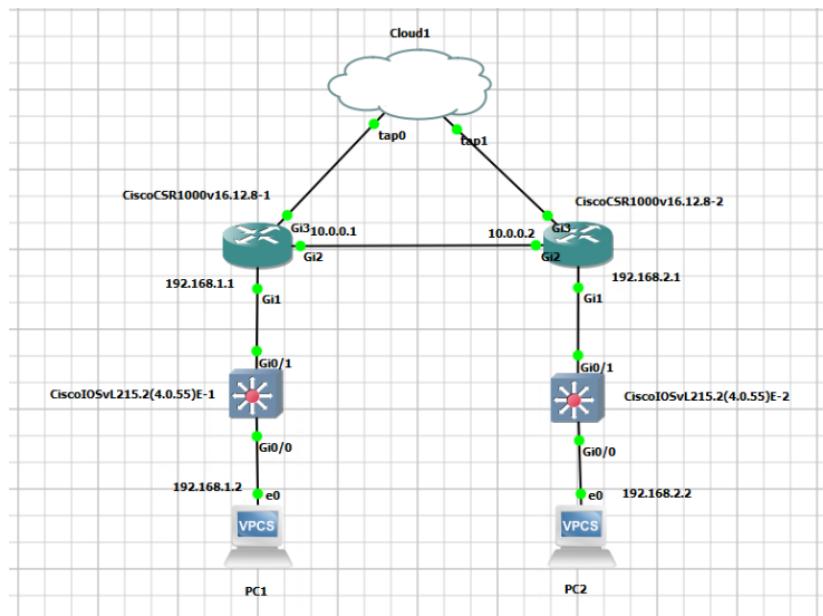


Step 1 – Create the GNS3 topology as per below



Step 2 -

- Assign IP address to PC1 (192.168.1.2) and PC2 (192.168.2.2)

PC1:

IP 192.168.1.2/24 192.168.1.1

Show IP

PC2:

IP 192.168.2.2/24 192.168.2.1

Show IP

Step 3-

- Assign the IP address to R1 Gi1 (192.168.1.1) , Gi2 (10.0.0.1) and R2 Gi1 (192.168.2.1), Gi2 (10.0.0.2)

Router 1:

```
Int gi1  
ip address 192.168.1.1 255.255.255.0  
No shut
```

```
Int gi2  
ip address 10.0.0.1 255.0.0.0  
No shut
```

Router 2:

```
Int gi 1  
ip address 192.168.2.1 255.255.255.0  
no shut
```

```
int gi 2  
ip address 10.0.0.2 255.0.0.0  
no shut
```

Step 4:

- **Run the OSPF protocol and advertise the routes**

Router 1

```
Router ospf 10
Network 192.168.1.0 0.0.0.255 area 1
Network 10.0.0.0 0.0.0.255 area 1
```

Router 2

```
Router ospf 10
Network 192.168.2.0 0.0.0.255 area 1
Network 10.0.0.0 0.0.0.255 area 1
```

Step 5:

- **Configure the SNMP in both the router R1 and R2**

```
snmp-server community public ro
snmp-server community private rw
snmp-server enable traps
snmp-server host 172.20.0.11 traps version 2c public udp-port 1162
snmp-server manager
Show snmp host
```

Save the configuration

Wr

Node Discovery on Open NMS

- Open NMS: <http://172.20.0.11:8980/opennms> (admin/admin)
- Configure the SNMP Community string

Path - Home/admin/configure SNMP Community by IP

The screenshot shows the OpenNMS Horizon web interface. At the top, there is a navigation bar with links for Search, Info, Status, Reports, Dashboards, Maps, Help, and a user account for 'admin'. On the far right of the navigation bar, there is a red circle highlighting a gear icon. Below the navigation bar, the main content area has a breadcrumb trail: Home / Admin. Under the 'Admin' section, there are two main categories: 'OpenNMS System' and 'Provisioning'. In the 'Provisioning' category, several options are listed, including 'Manually Add an Interface', which is highlighted with a red underline. To the right of the main content area, there is a 'Descriptions' panel containing detailed explanations for various configuration items. The 'Configure SNMP Community Names by IP Address' section is also highlighted with a red underline.

The screenshot shows a modal dialog titled 'Updating]SNMP Configuration'. Inside the dialog, there is a 'General Parameters' tab. The form contains the following fields:

| | |
|------------------|-------------|
| Version | v2c |
| Default: v2c | |
| First IP Address | 172.20.0.60 |
| Last IP Address | 172.20.0.80 |
| Location | Default |

v1/v2c specific parameters

| | |
|------------------------|--------------------------------------|
| Read Community String | <input type="text" value="public"/> |
| | Default: public |
| Write Community String | <input type="text" value="private"/> |
| | Default: private |

Save Options

| | |
|--------------|-------------------------------------|
| Send Event | <input checked="" type="checkbox"/> |
| | Default: enabled |
| Send Locally | <input type="checkbox"/> |
| | Default: disabled |

Save Config **Cancel**

- Home/admin/provisioning requisition
- Add requisition

Please enter the name for the new requisition ×

Cancel **OK**

- Edit the Core network requisition and delete the source definition which are not needed like DNS, FTP, IMAP, ICMP, LDAP, NRPE, POP3, SMTP, WS-MAN

| Requisitions (2) | | | | | |
|------------------|---------------------------|-------------|---------------|-------------------|---------|
| Requisition Name | Last Update | Last Import | Nodes Defined | Nodes in Database | Actions |
| selfmonitor | 2023-12-11T03:19:10+05:30 | Never | 1 | 1 | |
| Core Network | 2023-12-12T19:37:53+05:30 | Never | 0 | 0 | |

| Foreign Source Definition for Requisition Core Network | | | | | |
|--------------------------------------------------------|------------------------------------------------------------|------------------------------------------|---------|--------------------------------|---------------------|
| FS Definition | | | | Actions | |
| Last Modified 2023-12-12T19:41:44+05:30 | Scan Interval | <input type="text" value="1d"/> | | | |
| Detectors | Policies | | | | |
| | | | | Search/Filter Detectors | Add Detector |
| Name | Class | Parameters | Actions | | |
| HTTP | org.opennms.netmgt.provision.detector.simple.HttpDetector | [No parameters] | | | |
| HTTPS | org.opennms.netmgt.provision.detector.simple.HttpsDetector | [No parameters] | | | |
| ICMP | org.opennms.netmgt.provision.detector.icmp.IcmpDetector | [No parameters] | | | |
| SNMP | org.opennms.netmgt.provision.detector.snmp.SnmpDetector | [No parameters] | | | |
| SSH | org.opennms.netmgt.provision.detector.ssh.SshDetector | [No parameters] | | | |
| OpenNMS-JVM | org.opennms.netmgt.provision.detector.jmx.Jsr160Detector | port : 18980 factory : PASSWORD_CIFAR | | | |

- Discovery configuration to discover the Router 1 & Router 2

The screenshot shows the OpenNMS Horizon Admin interface. In the top navigation bar, under 'Admin', there is a link to 'Configure Discovery'. This link is highlighted with a red box. The main content area shows 'General Settings' and 'Advanced configuration' sections. Under 'Advanced configuration', there is a 'Task chunk size' field set to 100. At the bottom of the page, there is a 'Save and Restart Discovery' button.

The screenshot shows the 'Add Include Range to Discovery' dialog box. It includes fields for 'Begin IP Address' (172.20.0.60), 'End IP Address' (172.20.0.80), 'Timeout (milliseconds)' (2000), 'Retries' (1), 'Foreign Source' (Core Network), and 'Location' (Default). There is also an 'Action' sidebar on the right with buttons for 'Delete', 'Add New', and 'Add New' (repeated multiple times). A red arrow points to the 'Include Ranges' section, which displays 'No include ranges found.' A red underline is also present under the 'Save and Restart Discovery' button at the bottom of the dialog.

- Go to Manage provisioning requisition

The screenshot shows the OpenNMS Horizon Admin interface. In the top navigation bar, there is a red circle around the user icon labeled 'admin'. Below the navigation bar, the left sidebar has sections for 'OpenNMS System' (System Configuration, Configure Users, Groups and On-Call Roles) and 'Provisioning' (Manage Provisioning Requisitions, Import and Export Asset Information, Manage Surveillance Categories, Configure Discovery). The 'Manage Provisioning Requisitions' link is highlighted with a red box. The right panel contains descriptive text about users, groups, and roles, and another section about managing provisioning requisitions.

Sync the discovered nodes:

The screenshot shows the 'Provisioning Requisitions' list page. The top navigation bar includes a search bar and several buttons: Refresh, Quick Add Node, Edit Default FS, Reset Default, and Add Requisition. The main table lists two requisitions:

| Requisition Name | Last Update | Last Import | Nodes Defined | Nodes in Database | Actions |
|------------------|---------------------------|-------------|---------------|-------------------|---------|
| Core Network | 2024-01-13T11:19:30+05:30 | Never | 2 | 2 | |
| selfmonitor | 2023-11-08T11:34:27+05:30 | Never | 1 | 1 | |

Node Management on Open NMS

Go to info → nodes → select node

| Node Interfaces | | | |
|-----------------------------------------------------------------------------------|--------------|-----------------|---------|
| IP Interfaces | | SNMP Interfaces | |
| Search/Filter IP Interfaces <input type="text"/> <input type="button" value="Q"/> | | | |
| IP Address <input type="button" value="A"/> | IP Host Name | SNMP ifIndex | Managed |
| 10.0.0.1 | 10.0.0.1 | 3 | M |
| 172.20.0.98 | 172.20.0.98 | 1 | M |
| 192.168.1.1 | 192.168.1.1 | 2 | M |



: Go to Status → Events → All Events

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Normal <input type="button" value="Edit"/> 2024-05-18T08:41:26+05:30 <input type="button" value="Details"/> Default <input type="button" value="Edit"/> 201b71ed-8a7c-4f6c-a5e3-d00f51cd56a2 <input type="button" value="Edit"/> 172.20.0.71 <input type="button" value="Edit"/> Default <input type="button" value="Edit"/> 172.20.0.71 <input type="button" value="Edit"/> | uei.opennms.org/internal/discovery/hardwareInventorySuccessful <input type="button" value="Edit"/> notifications for event | The hardware discovery (SnmpMetadataProvisioningAdapter) on node 172.20.0.71 (IP address 172.20.0.71) has been completed successfully. |
| Warning <input type="button" value="Edit"/> 2024-05-18T08:41:25+05:30 <input type="button" value="Details"/> Default <input type="button" value="Edit"/> 201b71ed-8a7c-4f6c-a5e3-d00f51cd56a2 <input type="button" value="Edit"/> 172.20.0.71 <input type="button" value="Edit"/> Default <input type="button" value="Edit"/> 172.20.0.71 <input type="button" value="Edit"/> | uei.opennms.org/nodes/reinitializePrimarySnmpInterface <input type="button" value="Edit"/> notifications for event | SNMP information on 172.20.0.71 is being refreshed for data collection purposes. |
| Normal <input type="button" value="Edit"/> 2024-05-18T08:41:15+05:30 <input type="button" value="Details"/> Default <input type="button" value="Edit"/> 201b71ed-8a7c-4f6c-a5e3-d00f51cd56a2 <input type="button" value="Edit"/> 172.20.0.72 <input type="button" value="Edit"/> Default <input type="button" value="Edit"/> 172.20.0.72 <input type="button" value="Edit"/> | uei.opennms.org/internal/discovery/hardwareInventorySuccessful <input type="button" value="Edit"/> notifications for event | The hardware discovery (SnmpMetadataProvisioningAdapter) on node 172.20.0.72 (IP address 172.20.0.72) has been completed successfully. |

Go to Status → Notifications → All outstanding notices and acknowledges notices

| Event ID | Severity | Sent Time | Source Loc. | Responder |
|-------------------------------------------------------------------------|----------|---------------------------|--------------|------------|
| 274 | Warning | 2024-05-18T08:38:01+05:30 | Default ↗️✉️ | admin ↗️✉️ |
| OpenNMS has discovered a new node named 172.20.0.72. Please be advised. | | | | |
| 253 | Warning | 2024-05-18T08:35:41+05:30 | Default ↗️✉️ | admin ↗️✉️ |
| OpenNMS has discovered a new node named 172.20.0.71. Please be advised. | | | | |

Go to Status → Notifications → all acknowledged notices

| Event ID | Severity | Sent Time | Source Loc. | Responder | Respond Time | Node |
|-------------------------------------------------------------------------|----------|---------------------------|--------------|------------|---------------------------|------------------|
| 274 | Warning | 2024-05-18T08:38:01+05:30 | Default ↗️✉️ | admin ↗️✉️ | 2024-05-18T08:47:15+05:30 | 172.20.0.72 ↗️✉️ |
| OpenNMS has discovered a new node named 172.20.0.72. Please be advised. | | | | | | |
| 253 | Warning | 2024-05-18T08:35:41+05:30 | Default ↗️✉️ | admin ↗️✉️ | 2024-05-18T08:47:15+05:30 | 172.20.0.71 ↗️✉️ |
| OpenNMS has discovered a new node named 172.20.0.71. Please be advised. | | | | | | |

Go to Reports → Resource Graphs → select Node and select all

Node: 172.20.0.71

Resources

Search/Filter Resources

Select All

SNMP Node Data

Node-level Performance Data

SNMP Interface Data

Gi1 (192.168.1.1, 1 Gbps)
 Gi2 (10.0.0.1, 1 Gbps)
 Gi3 (172.20.0.71, 1 Gbps)

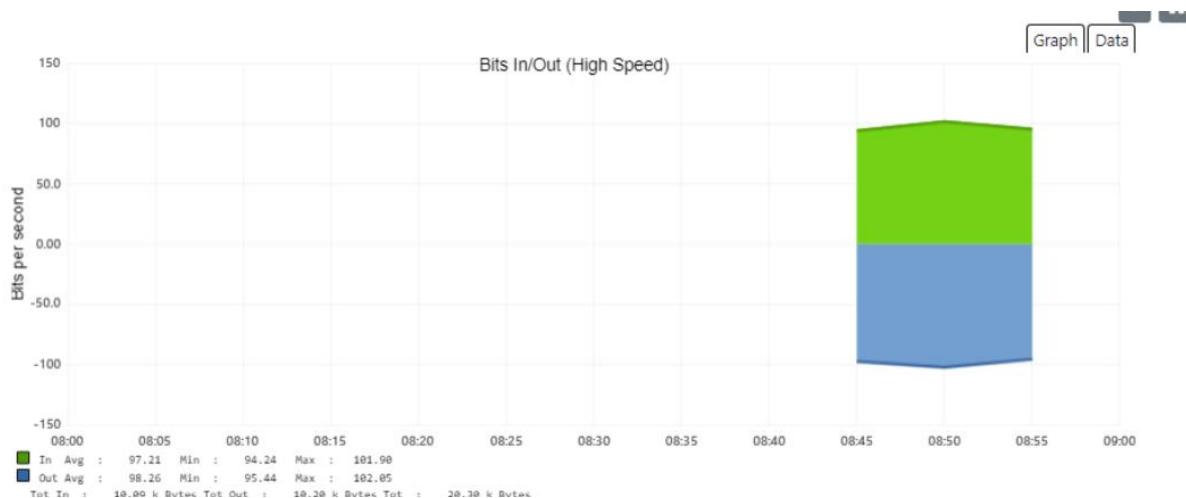
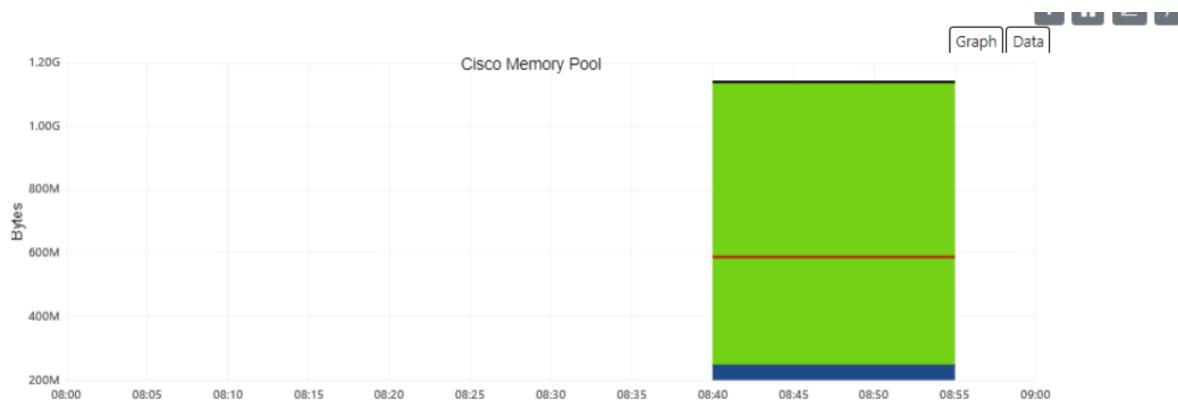
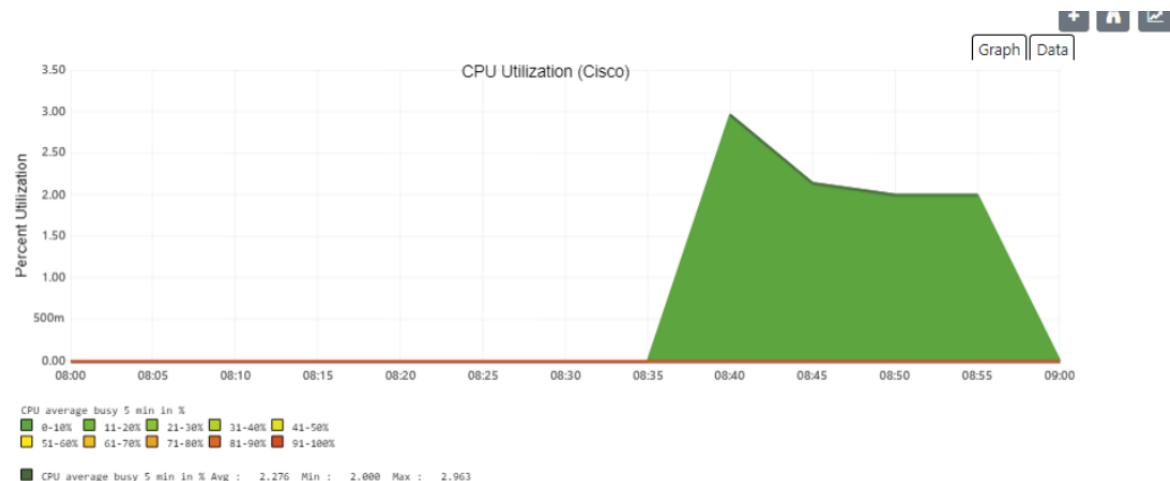
Response Time

Response Time for 172.20.0.71

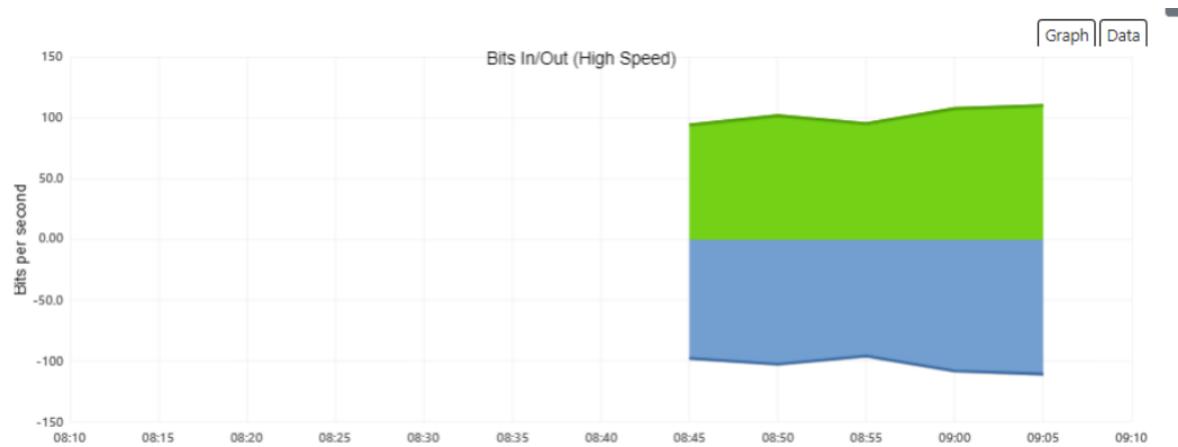
Service Status

Service Status for 172.20.0.71

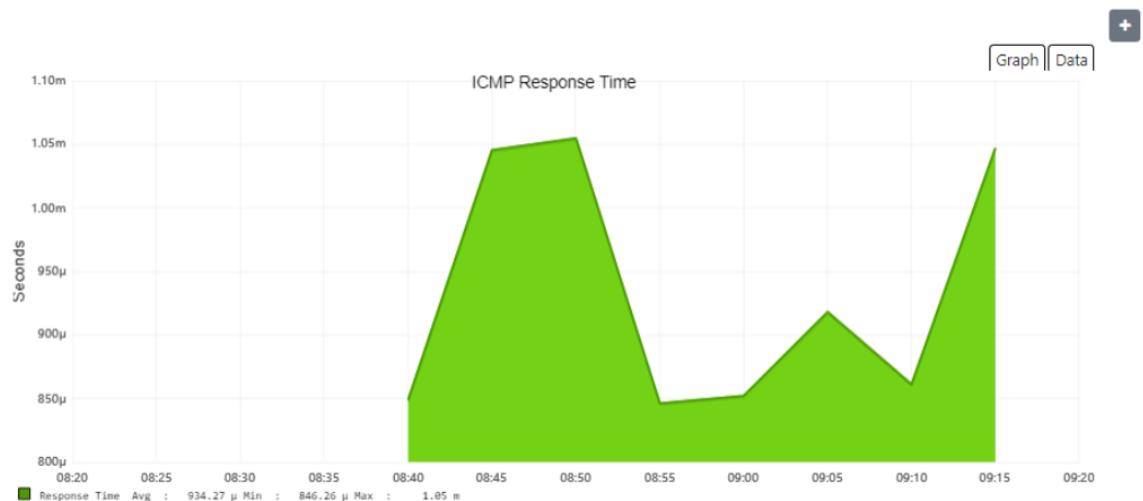
Click on Graph Selection and select time period last hour



Ping PC1 to PC2 and observe more packets bits in Out



Ping PC1 to PC2 and observe ICMP Response time graph

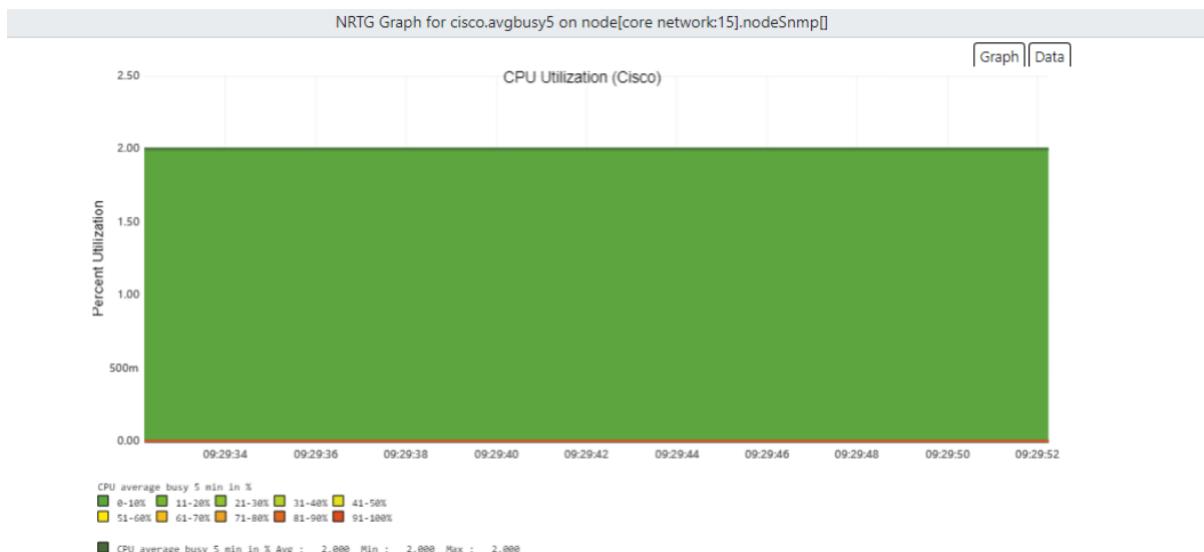


Raw values

Date/Time

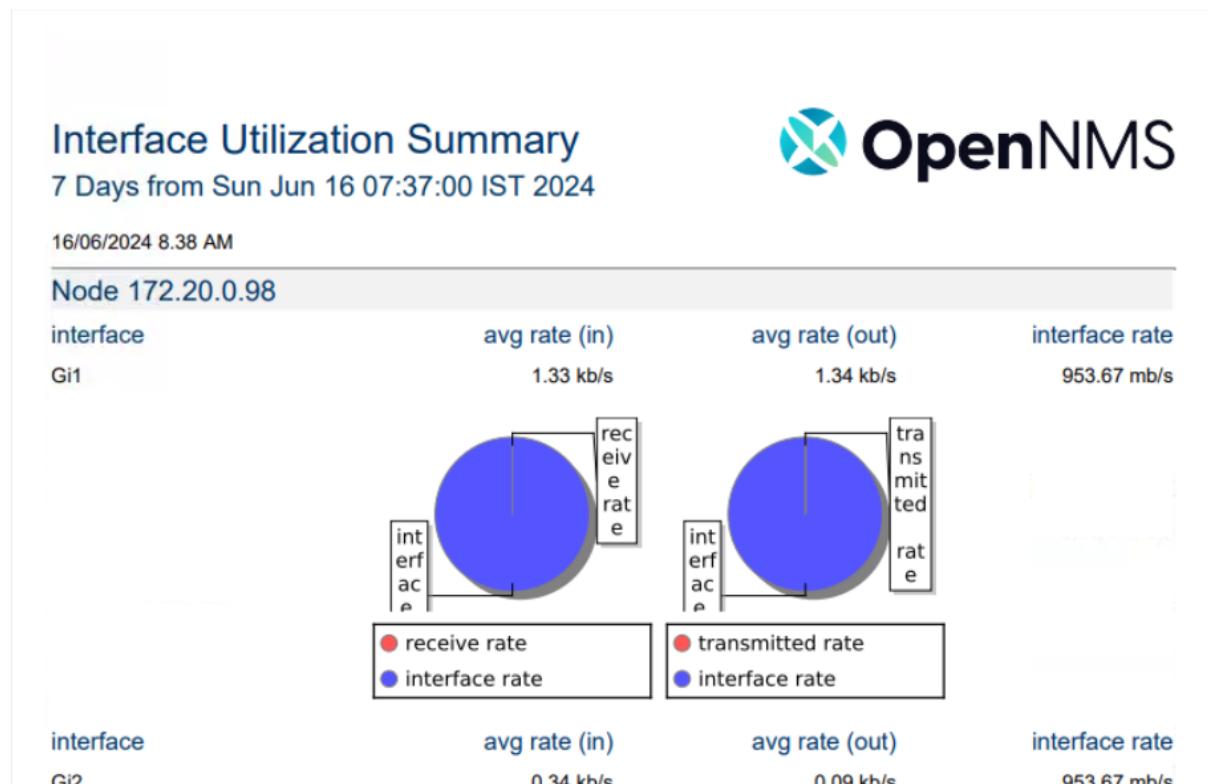
| Date/Time | Response Time |
|--------------------------|---------------|
| Sat May 18 09:20:00 2024 | NaN |
| Sat May 18 09:15:00 2024 | 1.05m |
| Sat May 18 09:10:00 2024 | 861μ |
| Sat May 18 09:05:00 2024 | 918μ |
| Sat May 18 09:00:00 2024 | 852μ |
| Sat May 18 08:55:00 2024 | 846μ |
| Sat May 18 08:50:00 2024 | 1.05m |
| Sat May 18 08:45:00 2024 | 1.05m |
| Sat May 18 08:40:00 2024 | 849μ |
| Sat May 18 08:35:00 2024 | NaN |
| Sat May 18 08:30:00 2024 | NaN |
| Sat May 18 08:25:00 2024 | NaN |
| Sat May 18 08:20:00 2024 | NaN |

Reports → Resource Graph ---NRTG (Near real time graph)



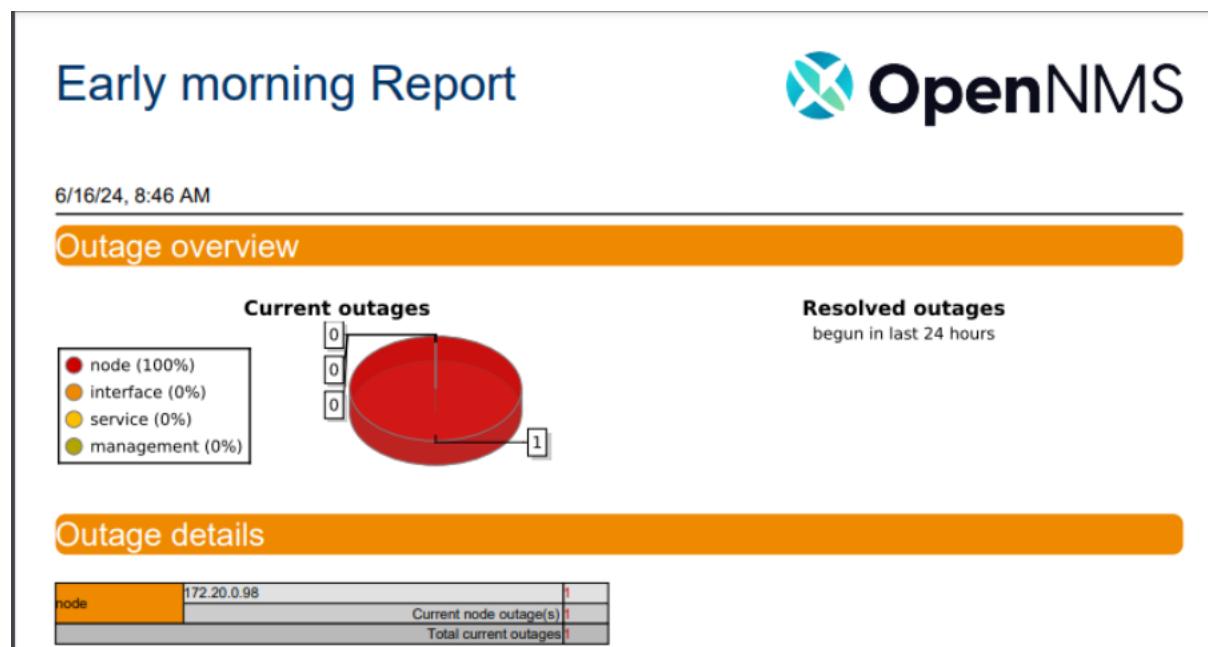
Go to Reports → Dashboard Reports → Serial Interface utilization summary

Select the Start data and generate the report..



Go to Reports → Dashboard Reports → Early Morning report

Check Outages, Alarm, Notifications and events summary reports..



Go to Reports → Dashboard Reports → Event analysis report

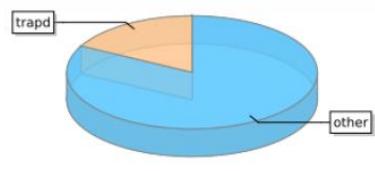
Validate the event based on source and hour

Event Analysis



2024/06/16 08:55:47

All events by source



| Event source | Tally |
|--------------|-------|
| other | 432 |
| trapd | 90 |
| Total | 522 |

(blue other 432 (83%) orange trapd 90 (17%))

Events per hour and by source

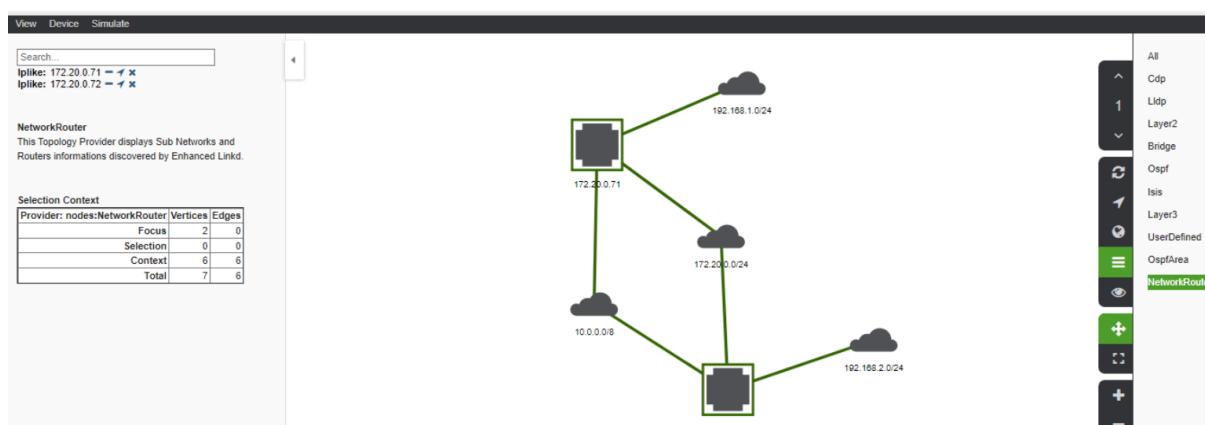
Total average processed events per hour

last 30 days



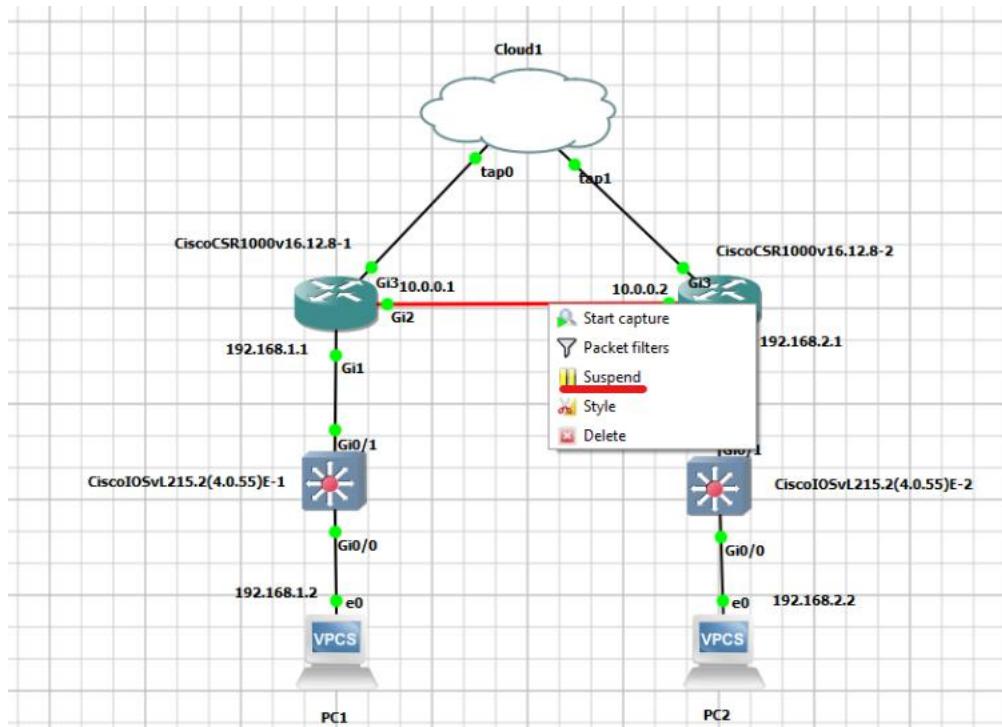
Activate Window
Go to Settings to activate

Go to Maps → Topology , Search the router IP links

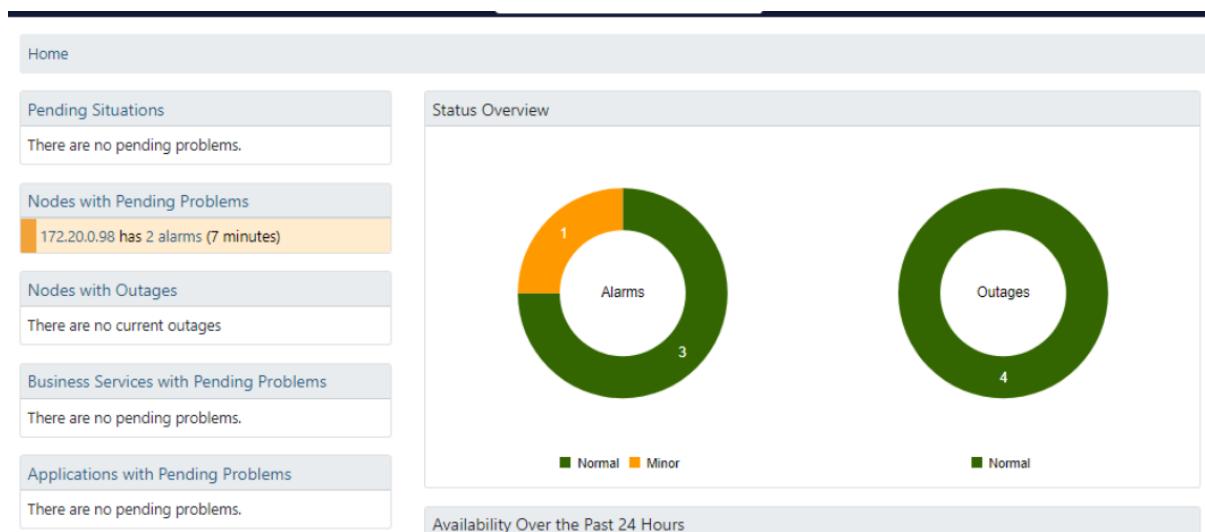


Generate the SNMP Traps

Generate the SNMP traps via suspend the link between Router 1 and Router 2, it will generate the SNMP alarms for link down and OSPF state change traps



Dashboard View:



Check the alarms in NMS , Interface down and OSPF state change alarms would be appeared on NMS.

| Ack ▾ | ID | Situation | Severity | Node | Count | Last | Log Msg |
|--------------------------|----|--------------------------|----------|-------------|-------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | 45 | <input type="checkbox"/> | Minor | 172.20.0.71 | 1 | 2024-05-18T09:36:34+05:30 | Agent Interface Down (linkDown Trap) |
| <input type="checkbox"/> | 44 | <input type="checkbox"/> | Normal | 172.20.0.71 | 1 | 2024-05-18T09:36:34+05:30 | ospfOriginateLsa trap received ospfRouterId=192.168.1.1 ospfLsdbAreaId=0.0.0.1 ospfLsdbType=1 ospfLsdbLsid=192.168.1.1 ospfLsdbRouterId=192.168.1.1 |
| <input type="checkbox"/> | 43 | <input type="checkbox"/> | Warning | 172.20.0.71 | 1 | 2024-05-18T09:36:34+05:30 | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=1 |
| <input type="checkbox"/> | 42 | <input type="checkbox"/> | Normal | 172.20.0.71 | 1 | 2024-05-18T09:36:33+05:30 | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=7 |
| <input type="checkbox"/> | 41 | <input type="checkbox"/> | Normal | 172.20.0.71 | 1 | 2024-05-18T09:36:33+05:30 | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=5 |
| <input type="checkbox"/> | 40 | <input type="checkbox"/> | Minor | 172.20.0.72 | 1 | 2024-05-18T09:36:30+05:30 | Agent Interface Down (linkDown Trap) |

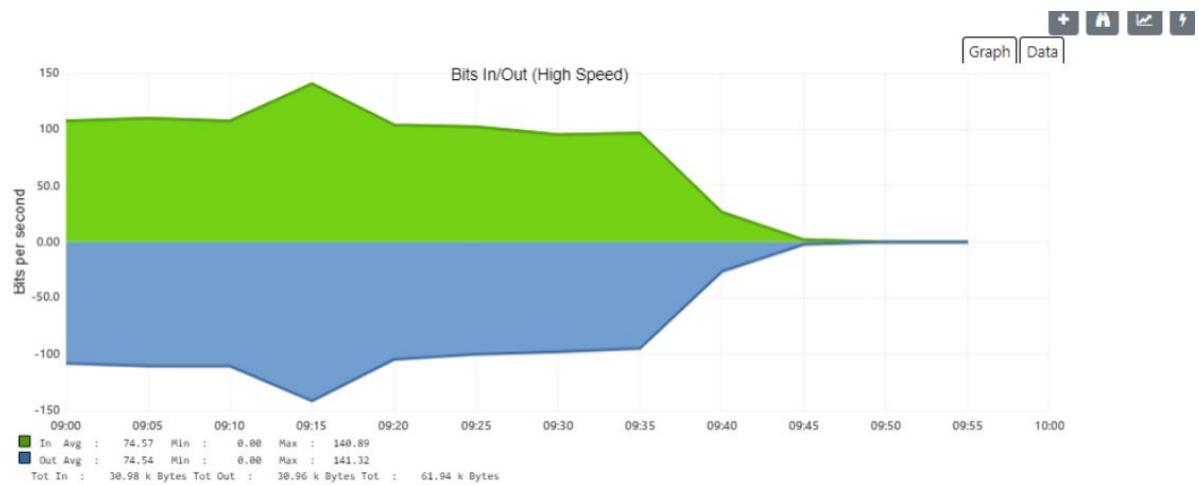
Click on Advance alarm search and select Minor and Warning alarm

| Star | Unsaved filter | ▼ | Alarm(s) outstanding ✕ | Alarm is not a situation ✕ | Severity OR Filter: "[WARNING, MINOR]" ✕ | | |
|-----------------------------------------------------------------|----------------|--------------------------|------------------------|----------------------------|------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| Results 1-4 of 4, Show: <input type="button" value="10"/> Items | | | | | | | |
| Ack ▾ | ID | Situation | Severity | Node | Count | Last | Log Msg |
| <input type="checkbox"/> | 45 | <input type="checkbox"/> | Minor | 172.20.0.71 | 1 | 2024-05-18T09:36:34+05:30 | Agent Interface Down (linkDown Trap) |
| <input type="checkbox"/> | 43 | <input type="checkbox"/> | Warning | 172.20.0.71 | 1 | 2024-05-18T09:36:34+05:30 | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=1 |
| <input type="checkbox"/> | 40 | <input type="checkbox"/> | Minor | 172.20.0.72 | 1 | 2024-05-18T09:36:30+05:30 | Agent Interface Down (linkDown Trap) |
| <input type="checkbox"/> | 37 | <input type="checkbox"/> | Warning | 172.20.0.72 | 1 | 2024-05-18T09:36:29+05:30 | ospfifStateChange trap received ospfRouterId=192.168.2.1 ospfIfIpAddress=10.0.0.2 ospfAddressLessIf=0 ospfIfState=1 |

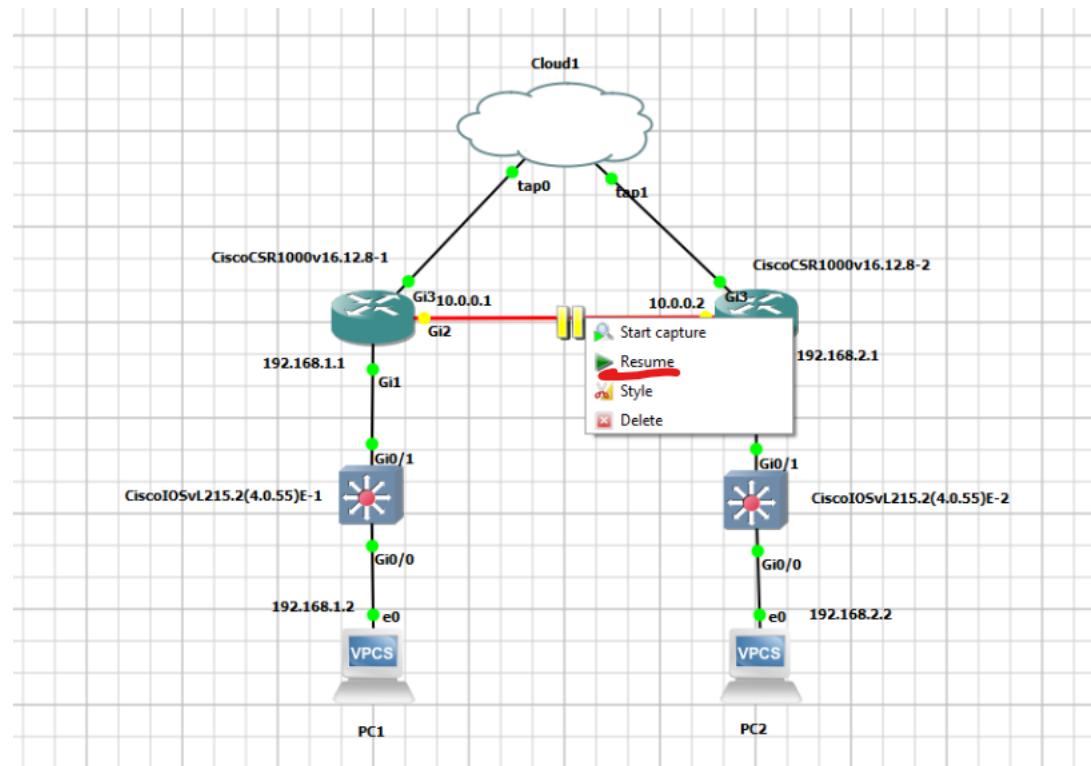
Acknowledge all the alarms

| Star | Unsaved filter | ▼ | Alarm(s) acknowledged ✕ |
|-----------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Results 1-4 of 4, Show: <input type="button" value="10"/> Items | | | |
| UnAck ▾ | ID | Situation | Severity |
| <input type="checkbox"/> | 45 | <input type="checkbox"/> | Minor |
| UEI <input type="checkbox"/> | Sev. <input type="checkbox"/> | 172.20.0.71 <input type="checkbox"/> | Default <input type="checkbox"/> |
| | | Agent Interface Down (linkDown Trap) | |
| <input type="checkbox"/> | 43 | <input type="checkbox"/> | Warning |
| UEI <input type="checkbox"/> | Sev. <input type="checkbox"/> | 172.20.0.71 <input type="checkbox"/> | Default <input type="checkbox"/> |
| | | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=1 | |
| <input type="checkbox"/> | 40 | <input type="checkbox"/> | Minor |
| UEI <input type="checkbox"/> | Sev. <input type="checkbox"/> | 172.20.0.72 <input type="checkbox"/> | Default <input type="checkbox"/> |
| | | Agent Interface Down (linkDown Trap) | |
| <input type="checkbox"/> | 37 | <input type="checkbox"/> | Warning |
| UEI <input type="checkbox"/> | Sev. <input type="checkbox"/> | 172.20.0.72 <input type="checkbox"/> | Default <input type="checkbox"/> |
| | | ospfifStateChange trap received ospfRouterId=192.168.2.1 ospfIfIpAddress=10.0.0.2 ospfAddressLessIf=0 ospfIfState=1 | |
| Node / Interface | Node Location | Service | Count Last / First Event Time Event Source Location Acknowledged By |
| 172.20.0.71 <input type="checkbox"/> | Default <input type="checkbox"/> | | 1 2024-05-18T09:36:34+05:30 <input type="checkbox"/> Default <input type="checkbox"/> 2024-05-18T09:36:34+05:30 <input type="checkbox"/> |
| 172.20.0.71 <input type="checkbox"/> | | | |
| 172.20.0.72 <input type="checkbox"/> | Default <input type="checkbox"/> | | 1 2024-05-18T09:36:30+05:30 <input type="checkbox"/> Default <input type="checkbox"/> 2024-05-18T09:36:30+05:30 <input type="checkbox"/> |
| 172.20.0.72 <input type="checkbox"/> | | | |
| Event Source Location | Acknowledged By | | |
| Default <input type="checkbox"/> | admin <input type="checkbox"/> | | |
| Default <input type="checkbox"/> | admin <input type="checkbox"/> | | |
| Default <input type="checkbox"/> | admin <input type="checkbox"/> | | |
| Default <input type="checkbox"/> | admin <input type="checkbox"/> | | |

Ping PC1 and PC2 and observe the Bits In/Out reports



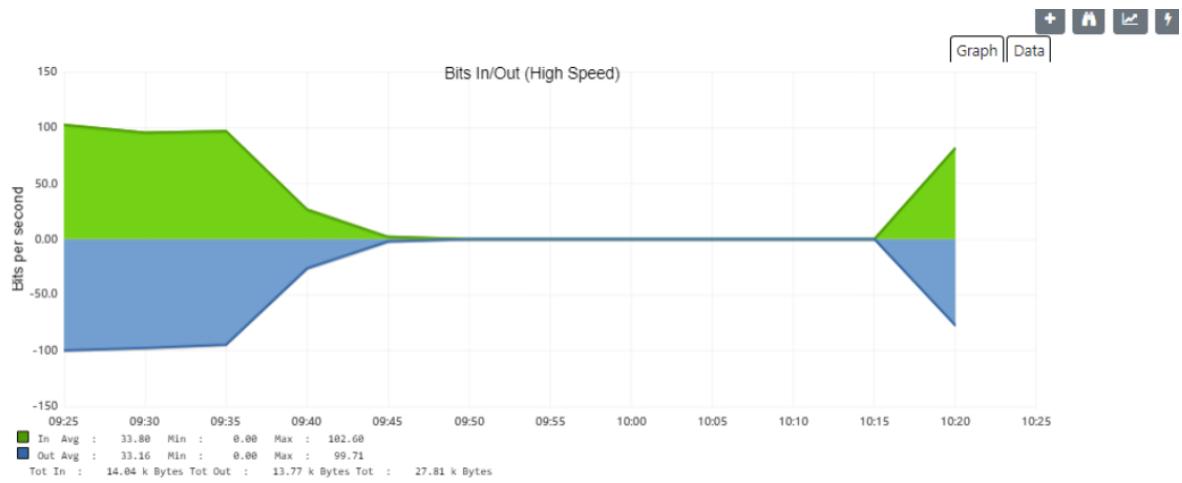
Recover the link status



Check the alarms in NMS, all the alarms will be cleared

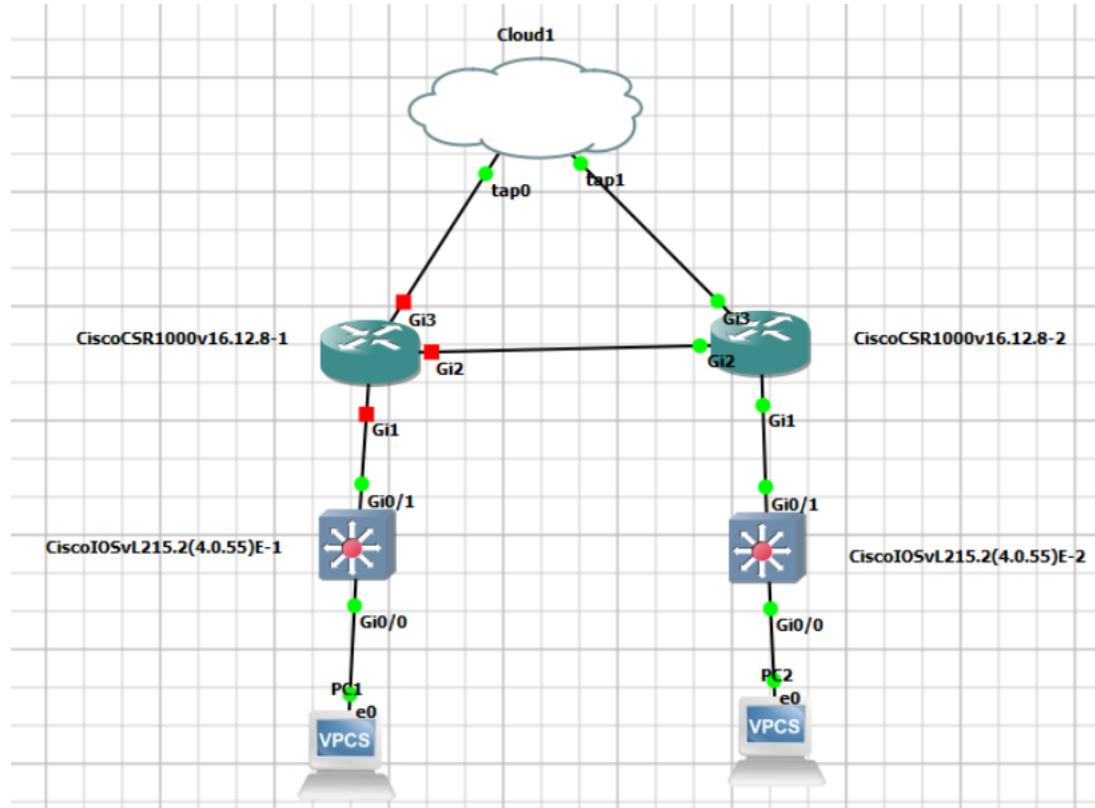
| | |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| □ 95 □ | Cleared 172.20.0.78 1 2024-01-13T11:31:51+05:30 Agent Interface Up (linkUp Trap) |
| □ 92 □ | Cleared 172.20.0.78 2 2024-01-13T11:32:48+05:30 ospfIfStateChange trap received ospfRouterId=192.168.1.1 ospfIfIpAddress=10.0.0.1 ospfAddressLessIf=0 ospfIfState=6 |
| □ 90 □ | Cleared 172.20.0.77 1 2024-01-13T11:31:58+05:30 Agent Interface Up (linkUp Trap) |
| □ 88 □ | Cleared 172.20.0.77 1 2024-01-13T11:32:41+05:30 ospfIfStateChange trap received ospfRouterId=192.168.2.1 ospfIfIpAddress=10.0.0.2 ospfAddressLessIf=0 ospfIfState=5 |

: Ping PC1 and PC2 and observe the Bits In/Out reports



Generate the Outage-

Stop the Router 1, communication between Node and NMS server get stopped



Alarms will be generated at NMS server

| Results 1-2 of 2, Show: 20 ▾ Items | | | | | | |
|------------------------------------|----|-------------------------------------|----------|-------------------------------------------------|-------|---------------------------------------------------------------------------------------------------|
| Ack | ID | Situation | Severity | Node | Count | Last |
| <input type="checkbox"/> | 51 | <input checked="" type="checkbox"/> | Major | 172.20.0.71 <input checked="" type="checkbox"/> | 1 | 2024-05-18T10:30:58+05:30 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 50 | <input checked="" type="checkbox"/> | Minor | 172.20.0.71 <input checked="" type="checkbox"/> | 1 | 2024-05-18T10:30:45+05:30 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |

The table displays two alarm entries. The first entry is a Major alarm for node 172.20.0.71, indicating it is down. The second entry is a Minor alarm for the same node, stating that SNMP data collection on interface 172.20.0.71 failed.

Check the SNMP availability for the node, it get reduced from 100% and keep decreasing...

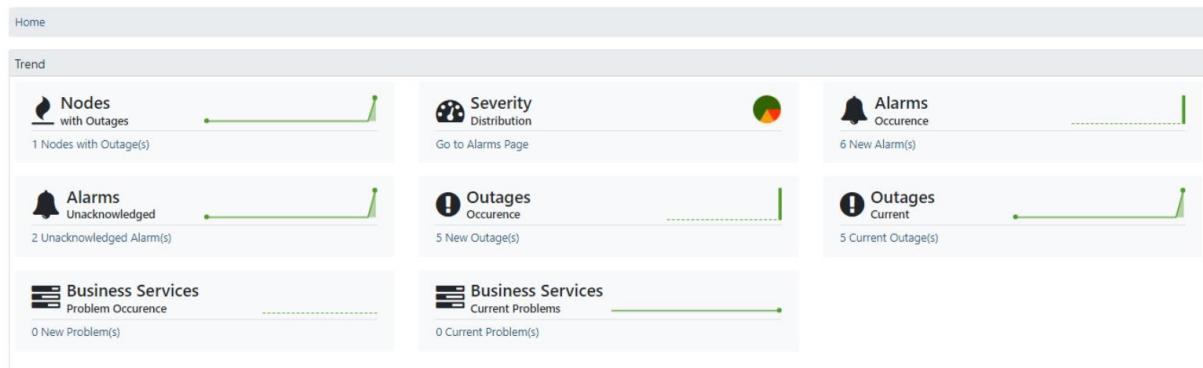
| Availability | | | | | | | | | | | | | | |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--|
| 172.20.0.98 | 10:00 | 12:00 | 14:00 | 16:00 | 18:00 | 20:00 | 22:00 | 00:00 | 02:00 | 04:00 | 06:00 | 08:00 | 99.927% | |
| HTTP | | | | | | | | | | | | | 99.927% | |
| HTTPS | | | | | | | | | | | | | 99.927% | |
| ICMP | | | | | | | | | | | | | 99.927% | |
| SNMP | | | | | | | | | | | | | 99.927% | |
| SSH | | | | | | | | | | | | | 99.927% | |

| Availability | | | | | | | | | | | | | | | |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|---------------|---------|
| Availability (last 24 hours) | | | | | | | | | | | | | | | 99.045% |
| 10.0.0.1 | 10:00 | 12:00 | 14:00 | 16:00 | 18:00 | 20:00 | 22:00 | 00:00 | 02:00 | 04:00 | 06:00 | 08:00 | 99.045% | Not Monitored | |
| 172.20.0.98 | 10:00 | 12:00 | 14:00 | 16:00 | 18:00 | 20:00 | 22:00 | 00:00 | 02:00 | 04:00 | 06:00 | 08:00 | 99.045% | | |
| HTTP | | | | | | | | | | | | | 99.045% | | |
| HTTPS | | | | | | | | | | | | | 99.045% | | |
| ICMP | | | | | | | | | | | | | 99.045% | | |
| SNMP | | | | | | | | | | | | | 99.045% | | |
| SSH | | | | | | | | | | | | | 99.045% | | |
| 192.168.1.1 | | | | | | | | | | | | | Not Monitored | | |

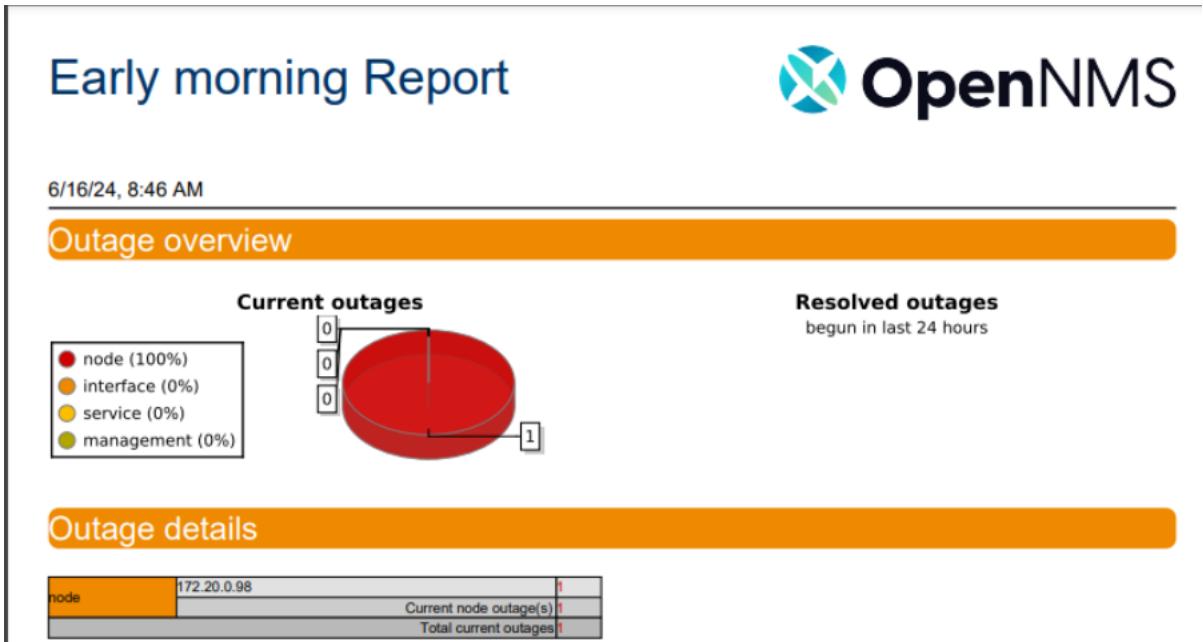
Click on Status → Outages → all outages

| Home / Outages / List | | | | | | | | | | | | | | | | |
|------------------------------------|----------------|-------------------------|---------------|-------------|---------|---------------------------|------|-------------|--|--|--|--|--|--|--|--|
| Current | Resolved | Both Current & Resolved | | | | | | | | | | | | | | |
| Results 1-5 of 5, Show: 20 ▾ Items | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| ▼ ID | Foreign Source | Node | Node Location | Interface | Service | Down | Up | Perspective | | | | | | | | |
| 18 | Core Network | 172.20.0.71 | Default | 172.20.0.71 | ICMP | 2024-05-18T10:30:58+05:30 | DOWN | none | | | | | | | | |
| 17 | Core Network | 172.20.0.71 | Default | 172.20.0.71 | HTTP | 2024-05-18T10:30:58+05:30 | DOWN | none | | | | | | | | |
| 16 | Core Network | 172.20.0.71 | Default | 172.20.0.71 | SSH | 2024-05-18T10:30:58+05:30 | DOWN | none | | | | | | | | |
| 15 | Core Network | 172.20.0.71 | Default | 172.20.0.71 | SNMP | 2024-05-18T10:30:58+05:30 | DOWN | none | | | | | | | | |
| 14 | Core Network | 172.20.0.71 | Default | 172.20.0.71 | HTTPS | 2024-05-18T10:30:58+05:30 | DOWN | none | | | | | | | | |

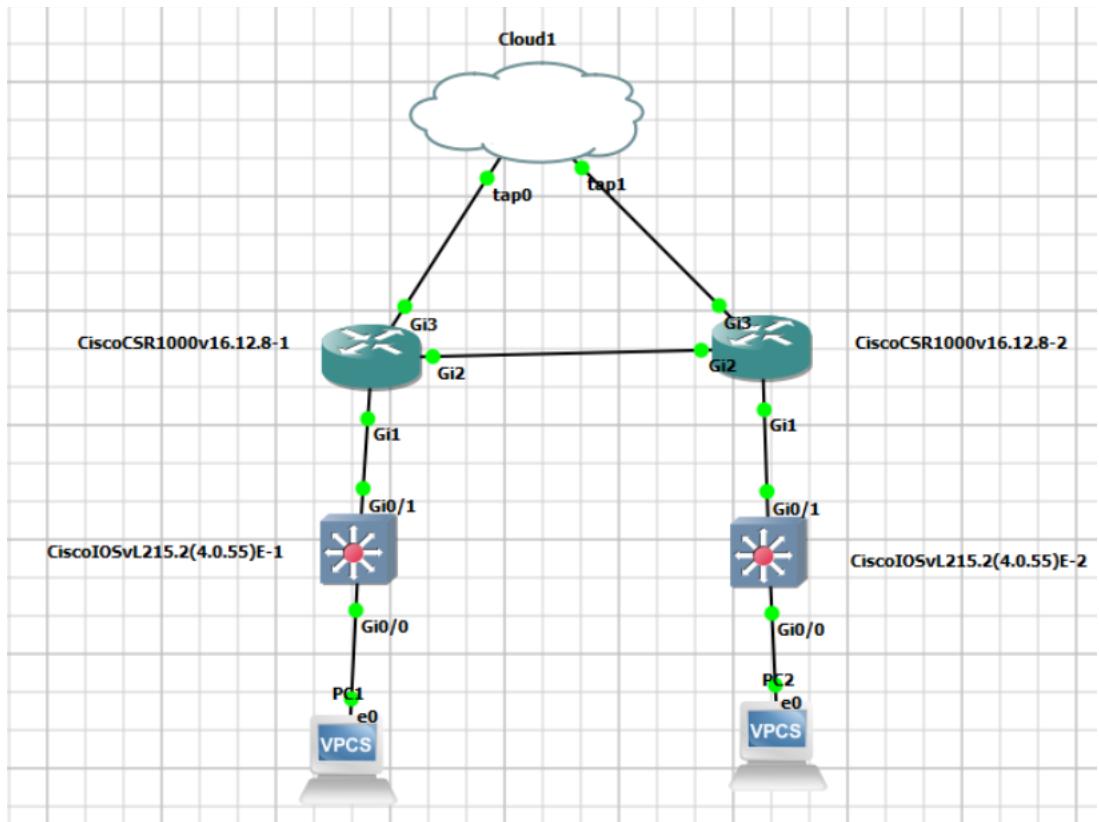
Click on Status → Trend



Go to Reports → Dashboard Reports → Early Morning report

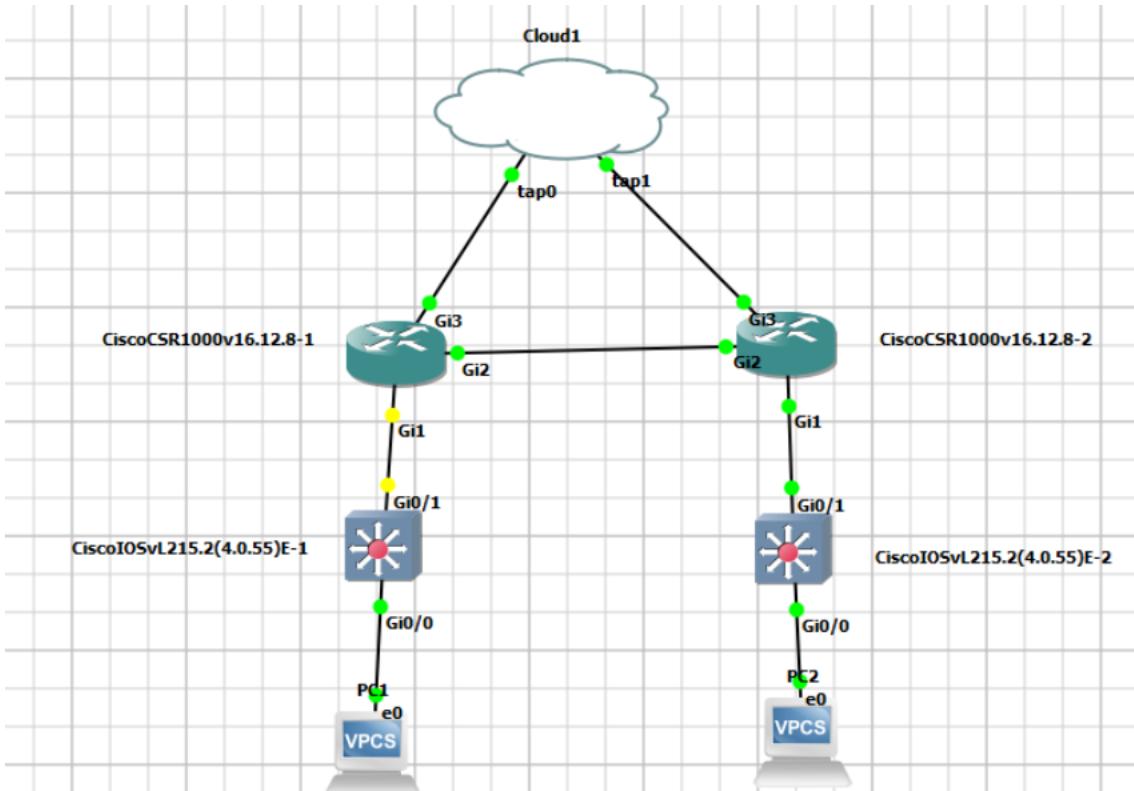


Recover the Faults



| Ack | ID | Situation | Severity | Node | Count | Last | Log Msg |
|--------------------------|----|--------------------------|----------|-------------|-------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | 58 | <input type="checkbox"/> | Cleared | 172.20.0.71 | 1 | 2024-05-18T11:26:42+05:30 | <input type="checkbox"/> <input type="checkbox"/> Node 172.20.0.71 is up. |
| <input type="checkbox"/> | 57 | <input type="checkbox"/> | Cleared | 172.20.0.71 | 1 | 2024-05-18T11:30:43+05:30 | <input type="checkbox"/> <input type="checkbox"/> SNMP data collection on interface 172.20.0.71 previously failed and has been restored. |

Generate Trap by suspending link between router and SW



| Ack | ID | Situation | Severity | Node | Count | Last | Log Msg |
|--------------------------|----|-------------------------------------|----------|-------------|-------|---------------------------|------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | 62 | <input checked="" type="checkbox"/> | Minor | 172.20.0.71 | 1 | 2024-05-18T11:34:28+05:30 | Agent Interface Down (linkDown Trap) |
| <input type="checkbox"/> | 60 | <input checked="" type="checkbox"/> | Warning | 172.20.0.71 | 1 | 2024-05-18T11:34:27+05:30 | ospfifStateChange trap received ospfRouterId=192.168.1.1 ospfifipAddress=192.168.1.1 ospfAddressLessIf=0 ospfifState=1 |

Recover the fault

Configure Notification - Event notification to be generated when some one try accessing OpenNMS with incorrect credentials on WebUI

OpenNMS Horizon 2024-06-16T09:43:36+05:30

Search... Search Info Status Reports Dashboards Maps Help admin 1 0 + ⚙

Home / Admin

OpenNMS System

- System Configuration
 - Configure Users, Groups and On-Call Roles

Provisioning

- Manage Provisioning Requisitions
- Import and Export Asset Information
- Manage Surveillance Categories
- Configure Discovery
- Run Single Discovery Scan
- Configure SNMP Community Names by IP Address
- Manually Add an Interface
- Delete Nodes
- Configure External Requisitions
- Configure Geocoder Service
- Secure Credentials Vault

Event Management

- Manually Send an Event
- Configure Notifications**
- Customize Event Configurations

Descriptions

Configure Users, Groups and On-Call Roles: Add, modify or delete existing users. Groups contain users. Roles are built from groups and provide a mechanism to implement calendar-based on-call staff rotations. (User: A person, Group: Administrators, Role: On Duty Staff)

Manage Provisioning Requisitions: Add nodes, interfaces and services to OpenNMS based partly or completely on the contents of a Requisition rather than strictly by having OpenNMS discover the network.

Import and Export Asset Information: Export and import data into OpenNMS's asset inventory. The comma-delimited file format is supported by most spreadsheet and database applications.

Manage Surveillance Categories: Manage surveillance categories (also known as node categories) and edit the list of nodes belonging to each category.

Configure Discovery: Set up the IP addresses (individual addresses and/or ranges) that you want OpenNMS to scan periodically in order to detect new nodes.

Manually Add an Interface: Trigger a scan of an IPv4 or IPv6 interface. If the IP address of the interface is contained in the IP address tables of an existing node, the interface will be added into the node. Otherwise, a new node will be created.

Delete Nodes: Permanently delete nodes from the database.

Secure Credentials Vault: Encrypt credentials the OpenNMS system uses.

OpenNMS Horizon 2024-06-16T09:44:11+05:30

Search... Search Info Status Reports Dashboards Maps Help admin 1 0 + ⚙

Home / Admin / Configure Notifications

Configure Notifications

- Configure Event Notifications**
- Configure Destination Paths
- Configure Path Outages

Event Notifications

Each event can be configured to send a notification whenever that event is triggered. This wizard will walk you through the steps needed for configuring an event to send a notification.

Destination Paths

OpenNMS Horizon 2024-06-16T09:44:44+05:30

Search... Search Info Status Reports Dashboards Maps Help admin 1 0 + ⚙

Home / Admin / Configure Notifications / Event Notifications

| Event Notifications | | | | |
|---------------------|---------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------|-------------------------------------------------|
| Actions | Notification | Event | UEI | + Add New Event Notification |
| Edit Delete | <input type="radio"/> Off <input checked="" type="radio"/> On | Authentication fail | OpenNMS-defined internal event: an authentication failure has occurred in WebUI | uei.opennms.org/internal/authentication/failure |
| Edit Delete | <input type="radio"/> Off <input checked="" type="radio"/> On | High Threshold | OpenNMS-defined threshold event: highThresholdExceeded | uei.opennms.org/threshold/highThresholdExceeded |
| Edit Delete | <input type="radio"/> Off <input checked="" type="radio"/> On | High Threshold Rearmed | OpenNMS-defined threshold event: highThresholdRearmed | uei.opennms.org/threshold/highThresholdRearmed |
| | <input type="radio"/> Off <input checked="" type="radio"/> On | Low Threshold | OpenNMS-defined threshold event: lowThresholdExceeded | uei.opennms.org/threshold/lowThresholdExceeded |

Choose the event UEI that will trigger this notification.

Events

authentication

ACS-TRAP-MIB defined trap event: avtAcsAuthenticationFailureTrap
ACS-TRAP-MIB defined trap event: avtAcsPortAuthenticationFailureTrap
AIRESPACE-WIRELESS-MIB defined trap event: bsnAuthenticationFailure
ALCATEL-IND1-SESSION-MGR-MIB defined trap event: sessionAuthenticationTrap
AVCT-CCM-TRAP-MIB defined trap event: avtCcmUserAuthenticationFailureTrap
CISCO-CIDS-MIB defined trap event: ciscoCidsError: Authentication Token Expired
CONTIVITY-TRAPS-V1-MIB defined trap event: authenticationFailure
CYCLADES-AC5000-TRAP-MIB defined trap event: cyAcsAuthenticationFailureTrap
CYCLADES-AC5000-TRAP-MIB defined trap event: cyAcsPortAuthenticationFailureTrap
DSR1021-TRAP-MIB defined trap event: bvUserAuthenticationFailureTrap
IPVREMS-MIB defined trap event: ipvrEmsTrapInformationalSNMPAuthenticationFailure
OpenNMS-defined internal event: an authentication failure has occurred in WebUI
OpenSSH-defined event: authentication refused
PM-TRAP-MIB defined trap event: avtPmAuthenticationFailureTrap
POSIX-defined event: su authentication failure
PowerNet-MIB defined trap event: codeAuthenticationDone
SNI-SERVER-CONTROL-MIB defined trap event: sieScUserAuthenticationFailure
SNMPv2-MIB defined trap event: authenticationFailure
SONICWALL-FIREWALL-TRAP-MIB defined trap event: authenticationFailure
SYMBOL-DSSS-ENTERPRISE-PRIVATE-MIB defined trap event: authenticationFailure

Click Next → Skip Result Validation

Home / Admin / Configure Notifications / Choose Path

Choose the destination path and enter the information to send via the notification

Name: Authentication fail

Description: Authentication Fail over WebUI

Var-Bind: Name: Value:

Auth

Failed

Parameter:

Add Parameter

Choose A Path: Browser

Text Message: Wrong Username and Password

Short Message: 111-%noticeid%

Email Subject: Notice %#noticeid%

| Event Notifications | | | | | + Add New Event Notification |
|----------------------|------------------------|-------------------------------------|---------------------|---------------------------------------------------------------------------------|-------------------------------------------------|
| Actions | Notification | Event | UEI | | |
| Edit | Delete | <input checked="" type="radio"/> On | Authentication fail | OpenNMS-defined internal event: an authentication failure has occurred in WebUI | uei.opennms.org/internal/authentication/failure |

Home / Admin

OpenNMS System

- System Configuration
 - Configure Users, Groups and On-Call Roles

Provisioning

- Manage Provisioning Requisitions
- Import and Export Asset Information
- Manage Surveillance Categories
- Configure Discovery
- Run Single Discovery Scan
- Configure SNMP Community Names by IP Address
- Manually Add an Interface
- Delete Nodes
- Configure External Requisitions
- Configure Geocoder Service
- Secure Credentials Vault

Event Management

- Manually Send an Event
- Configure Notifications
- Customize Event Configurations

Notification Status: On Off [Update](#)

Descriptions

Configure Users, Groups and On-Call Roles
are built from group person, Group: Admin

Manage Provisioning
on the contents of a

Import and Export
delimited file format

Manage Surveillance Categories
list of nodes belonging to a

Configure Discovery
scan periodically in case a node moves

Manually Add an Interface
contained in the IP address range a node will be created

Delete Nodes: Permanent deletion of a node

Secure Credentials Vault
Manage secure credentials for users

Manually Send an Event
Send an event message to a specific node or group

Try accessing Open NMS WebUI with incorrect username/password and event would be generated.

Go to Status → Events → all events

| | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------|---------|--------------------------------------|
| 783 | Minor | 2024-06-16T09:40:21+05:30 | Default | 201b71ed-8a7c-4f6c-a5e3-d00f51cd56a2 |
| uei.opennms.org/internal/authentication/failure Edit notifications for event | | | | |
| OpenNMS user 'onos' (may be blank) has failed to login from 172.20.0.43. The failure event is BadCredentialsException with the message 'Bad credentials'. | | | | |