Hewlett Packard Enterprise

HPE Network Node Manager i Software 10.20

Configure NNMi to Collect Network Based Application Recognition (NBAR) Statistics Using Custom Poller Collections

White Paper

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Introduction

Follow these instructions to use the Custom Poller Collections provided by NNMi to collect Network Based Application Recognition (NBAR) Statistics for Cisco devices. The NBAR data collected gives you insight into the application protocols traversing interfaces within your network infrastructure. After the Custom Poller Collection is created, you can establish thresholds related to the NBAR statistics to generate incidents in NNMi. You can also use NNM iSPI Performance for Metrics to Graph the Custom Poller Collections.

Note:
Custom Poller is not supported in a Global Network Management solution.

This document steps you through the following procedures to configure NNMi to collect Network Based Application Recognition (NBAR) statistics using Custom Poller Collections provided by NNMi:

1. Load the NBAR MIB
2. Configure the NNMi Custom Poller Collections
3. Create a Node Group of the Nodes to Custom Poll
4. Create Custom Poller Policies
5. Verify the Custom Poller Configurations

It also describes the following optional procedures:

- Configure Thresholds for the Custom Poller Collections
- Use the NNM iSPI Performance for Metrics to Graph Custom Poller Collections

Step 1: Load the NBAR MIB

1. Change to the following directory:

- **Windows**:
  %NnmInstallDir%\misc\nnm\snmp-mibs\Vendor\Cisco
- **UNIX**:
  $NnmInstallDir/misc/nnm/snmp-mibs/Vendor/Cisco

2. Load the Cisco NBAR MIB:

- **Windows**:
  nnmloadmib.ovpl -load CISCO-NBAR-PROTOCOL-DISCOVERY-MIB.my
- **UNIX**:
  nnmloadmib.ovpl -load CISCO-NBAR-PROTOCOL-DISCOVERY-MIB.my

3. Navigate to the following directory:

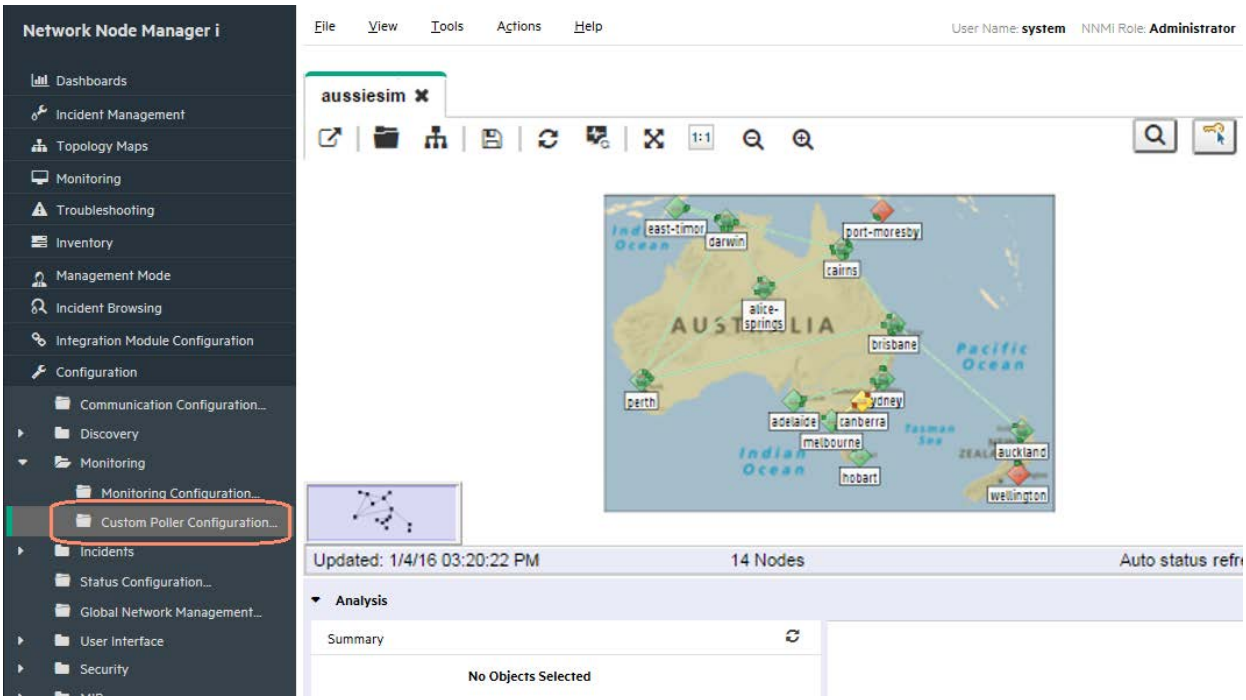
- **Windows**:
  %NnmInstallDir%\newconfig\HPNmsCustPoll\nbar
- **UNIX**:
  $NnmInstallDir/newconfig/HPNmsCustPoll/nbar

4. Import the configuration XML files in the following order.
   Ignore any warnings such as, “NOTE: Could not satisfy dependency nodegroup for custpoll”
   a. nnmconfigimport.ovpl -f nbarAuthor.xml
   b. nnmconfigimport.ovpl -f nbarMibexpr.xml
   c. nnmconfigimport.ovpl -f nbarCustpoll.xml

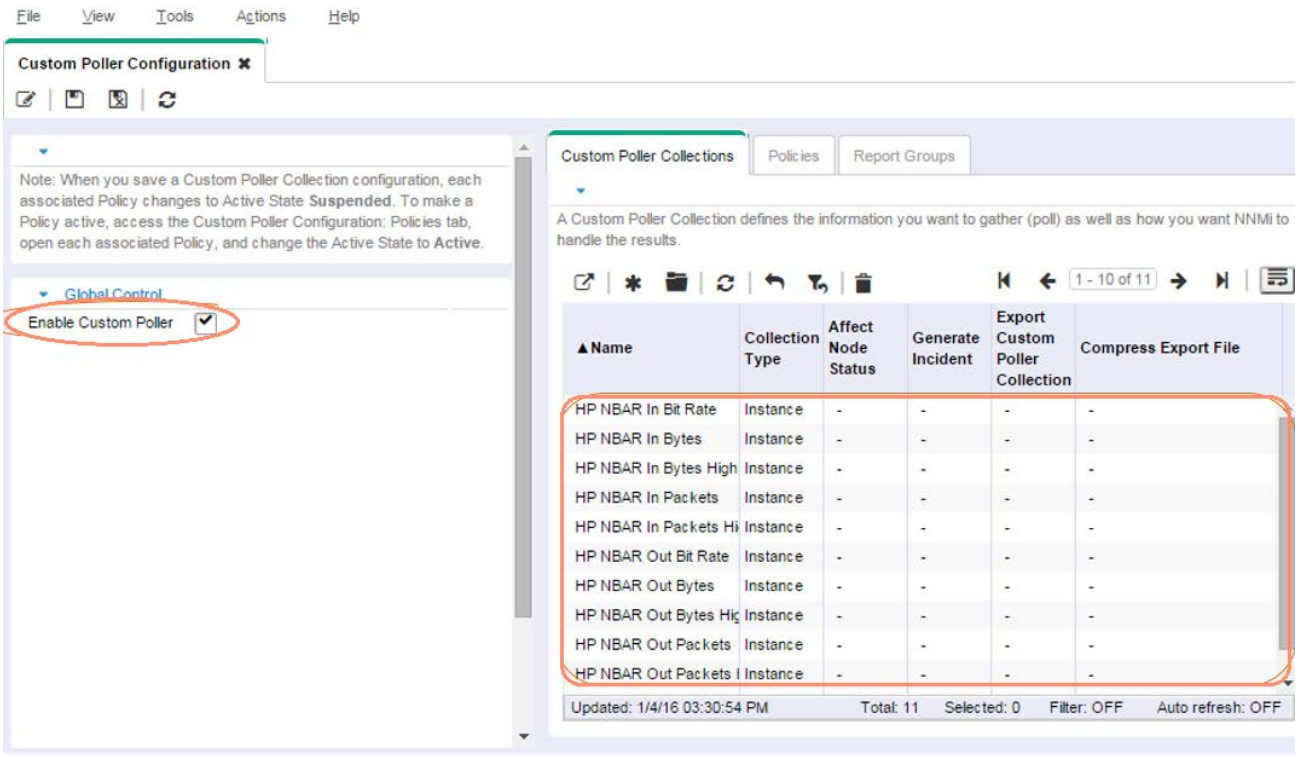
Step 2: Configure the NNMi Custom Poller Collections

Tip: Use these instructions as guidelines for configuring the HP NBAR Custom Poller Collections.

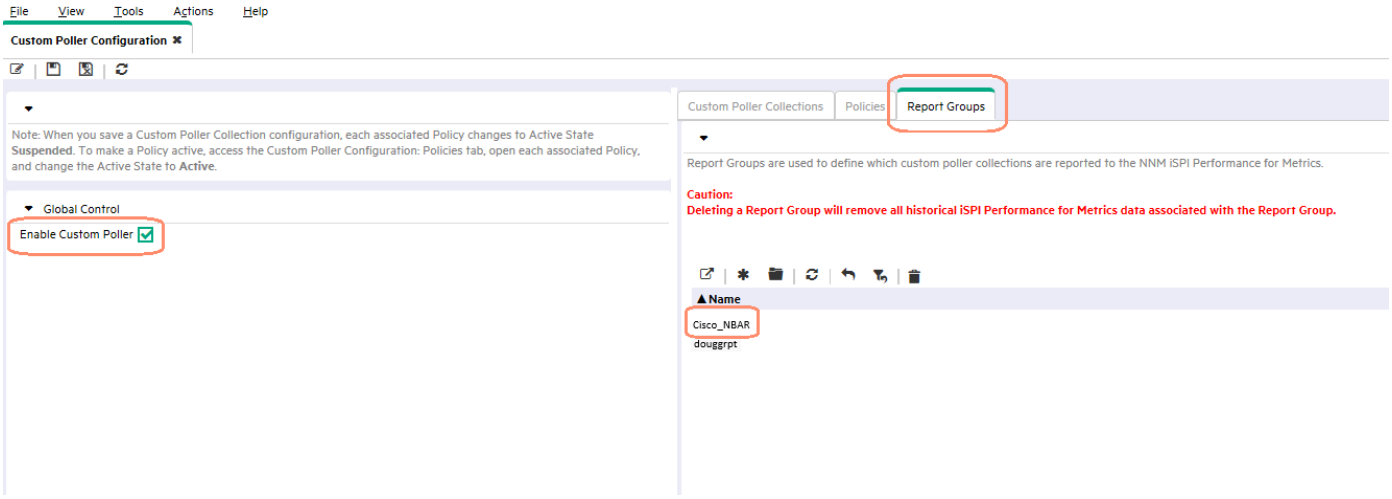
1. From the NNMi console, open the Configuration workspace.
2. Expand the Monitoring folder.
3. Select Custom Poller Configuration.



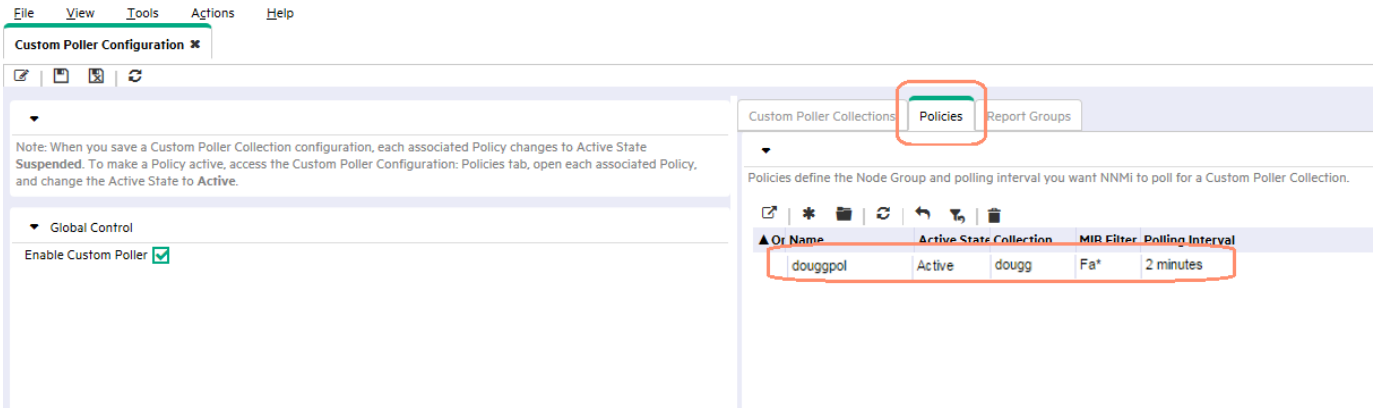
4. Confirm that the NNMi HPE NBAR Custom Poller Collections appear in the NNMi console and that the Enable Custom Poller box is checked as shown in the following example.



5. Navigate to the **Report Groups** tab.
6. Confirm that the Report Group **Cisco_NBAR** appears in the table view.



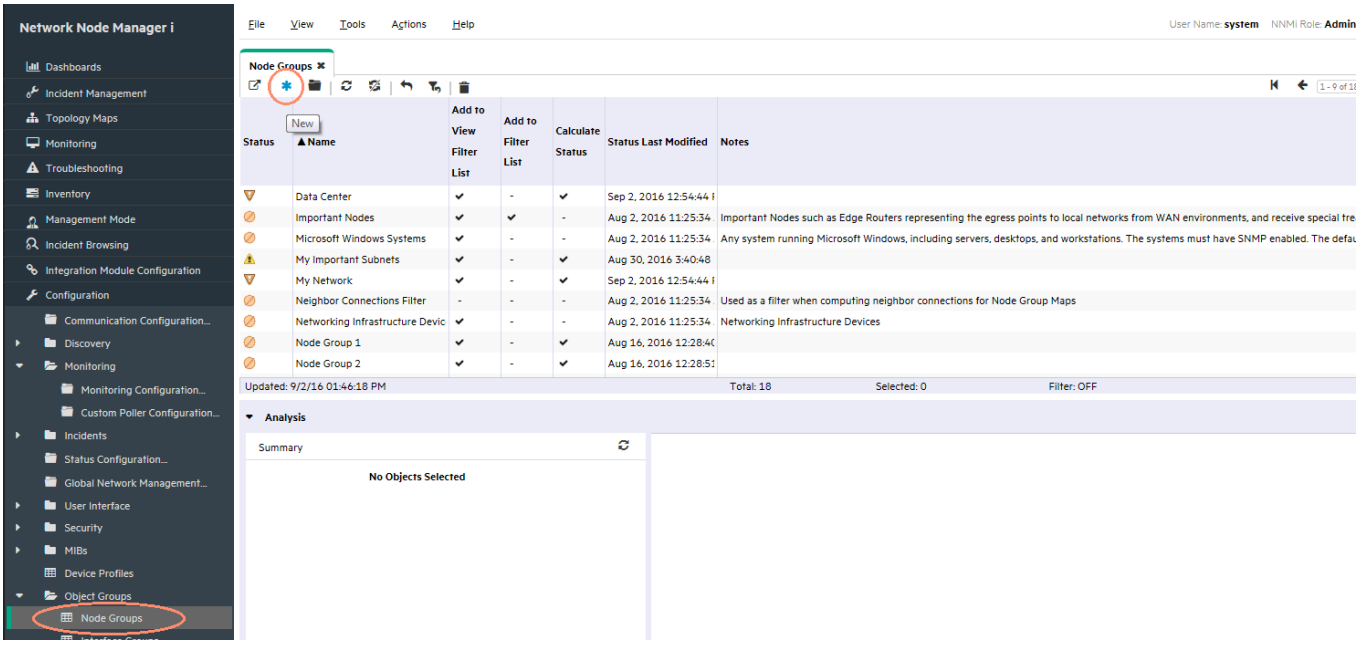
7. Navigate to the **Policies** tab to confirm no Policies are listed for these Custom Poller Collections.



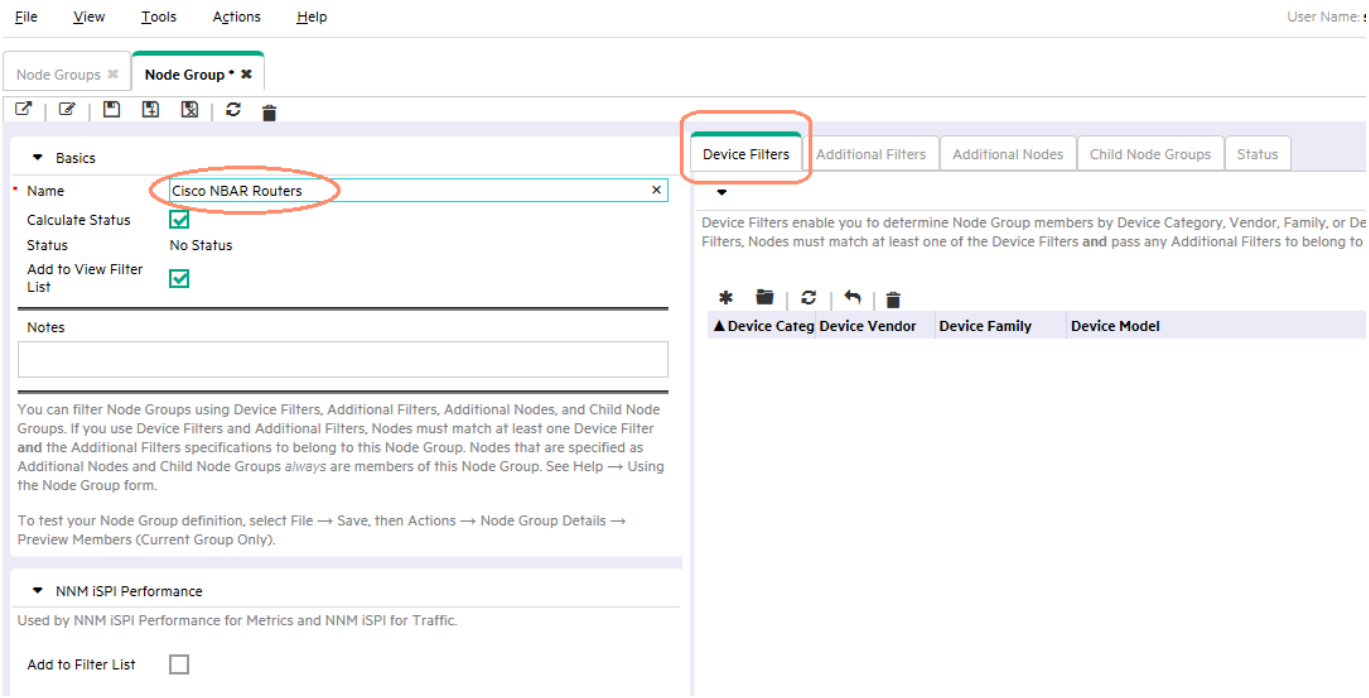
Step 3: Create a Node Group of the Nodes to Custom Poll

Next, create a Node Group that contains nodes that support the NBAR MIB and that you want to Custom Poll.

1. Navigate to the Configuration workspace.
2. Expand the Object Groups folder.
3. Select **Node Groups**.

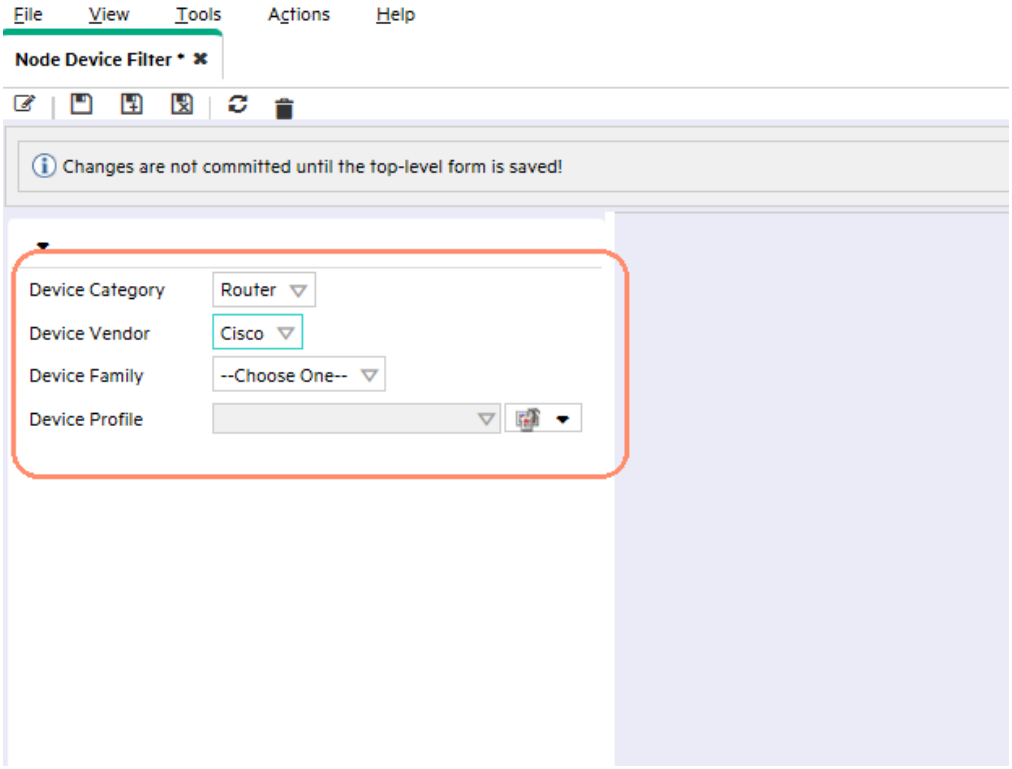


4. Click the * (New) icon to create a new Node Group**.**
5. Enter the Node Group name. For example, you might want to create a Node Group named **Cisco NBAR Routers.**
6. Navigate to the **Device Filters** tab**.**
7. Click the * (New) icon**.**

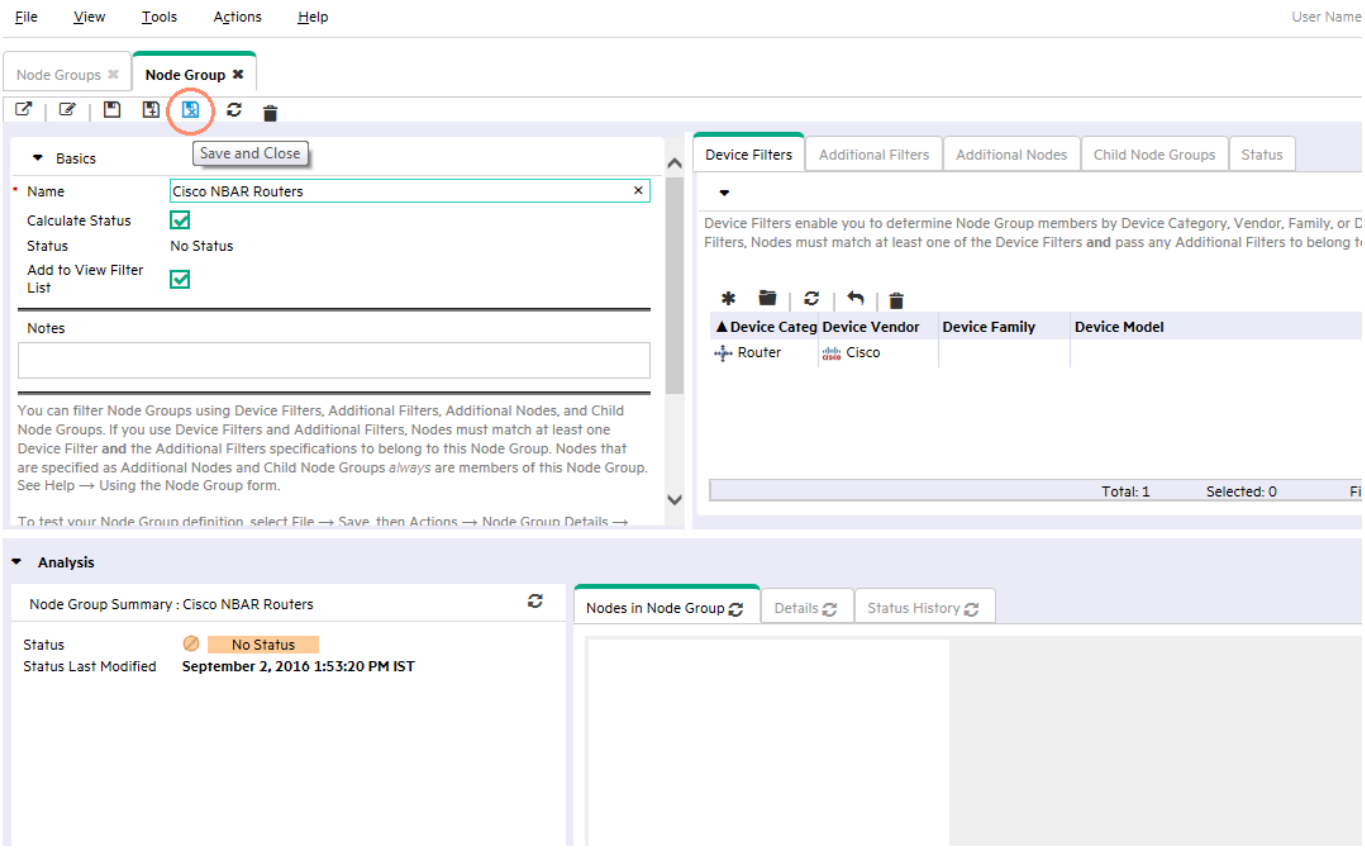


8. In the Device Category drop-down menu, select **Router.**
9. In the Device Vendor drop-down menu, select **Cisco**.

Tip: You can choose to narrow your selection using the Device Family, Device Profile, or Additional Filters



10. Click **Save and Close** to save your changes and close the Node Device Filter form.
11. Click **Save and Close** Icon to save your changes and close the Node Group form.



This Node Group will be used with the HP NBAR Custom Poller Collections.

Step 4: Create Custom Poller Policies

Next, create a Policy for each of the HP NBAR Custom Poller Collections you want to use. For example, if you are interested in collecting HP NBAR In Packets and HP NBAR Out Packets, then you must create a policy for each of these Custom Poller Collections.

Before you begin, you need to obtain a list of the NBAR protocol names on the router. To do so, you can use the SNMP walk command against the router as show in the following example:

`nnmsnmpwalk.ovpl -c <comm_str> <node_name> .1.3.6.1.4.1.9.9.244.1.2.1.1.2.N`

In the previous command line, **N** is the ifIndex of an interface that has NBAR enabled.

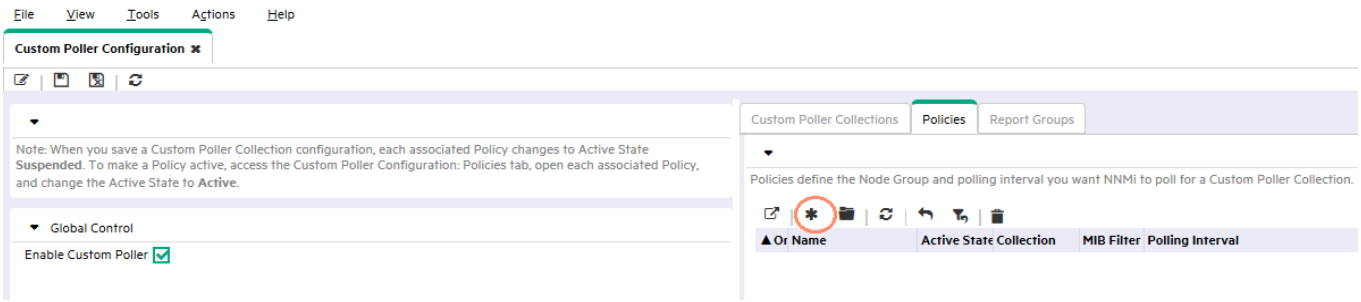
The following table shows the resulting protocol number and name obtained from a CISCO device using the SNMP walk command:

Protocol Number	Protocol Name	Protocol Number	Protocol Name	Protocol Number	Protocol Name
1	ftp	29	secure-nntp	57	citrix
2	http	30	notes	58	fasttrack
3	egp	31	ntp	59	gnutella
4	gre	32	pcanywhere	60	kazaa2
5	icmp	33	pop3	61	custom-01

6	eigrp	34	secure-pop3	62	custom-02
7	ipinip	35	pptp	63	custom-03
8	ipsec	36	rip	64	custom-04
9	ospf	37	rsvp	65	custom-05
10	bgp	38	smtp	66	custom-06
11	cuseeme	39	snmp	67	custom-07
12	dhcp	40	socks	68	custom-08
13	dns	41	ssh	69	custom-09
14	finger	42	syslog	70	custom-10
15	gopher	43	telnet	71	Rtsp
16	secure-http	44	secure-telnet	72	Rtp
17	imap	45	secure-ftp	73	Mgcp
18	secure-imap	46	xwindows	74	Skinny
19	irc	47	printer	75	h323
20	secure-irc	48	novadigm	76	Sip
21	kerberos	49	tftp	77	Rtcp
22	l2tp	50	exchange	78	Edonkey
23	ldap	51	vdolive	79	Winmx
24	secure-ldap	52	sqlnet	80	Bittorrent
25	sqlserver	53	rcmd	81	Directconnect
26	netbios	54	netshow	82	Skype
27	nfs	55	sunrpc	83	Unknown
28	nntp	56	streamwork		

To create a Custom Poller Policy:

1. Select the **Configuration** Workspace.
2. Expand the **Monitoring** folder.
3. Select **Customer Poller Configuration**.
4. Navigate to the **Policies** tab.
5. Click the * (New) icon.



Enter the information for each policy as shown in the example that follows.

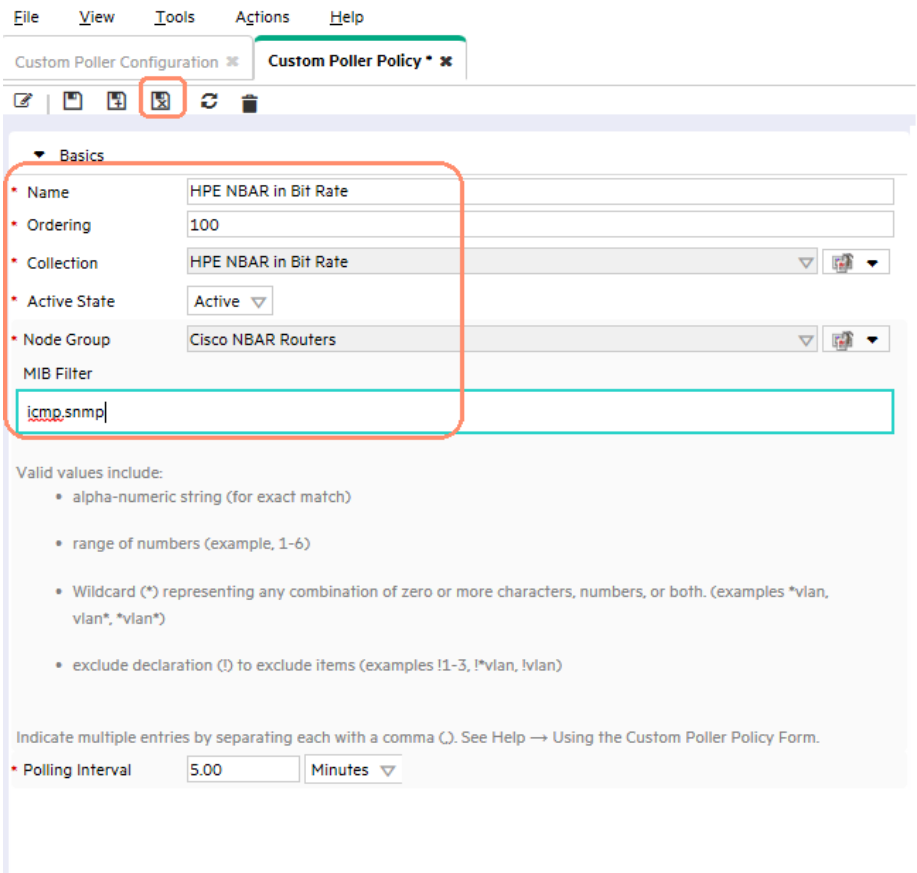
Tip: Use an ordering of 100 for all your policies. This will leave you room to modify ordering in the future.

Note the following when selecting the MIB Filter:

- The MIB Filter requires that you use protocol names. You MUST use the names of the protocols that appear in the output list of the `snmpwalk.ovpl` command as shown in the previous example (for example, **snmp**, **icmp** or **http**).
- If you want to use more than one protocol, enter the protocol values as a comma separated list as shown in the example that follows.
- Do not use * as the filter. When using an asterisk (*) as the MIB Filter, NBAR routers return an instance even if the value of traffic is zero. This creates too many collections per node.

Tip: The name of the Policy does not need to be the same as the Custom Poller Collection.

6. Click **Save and Close** to save your changes and close the Custom Poller Policy form.

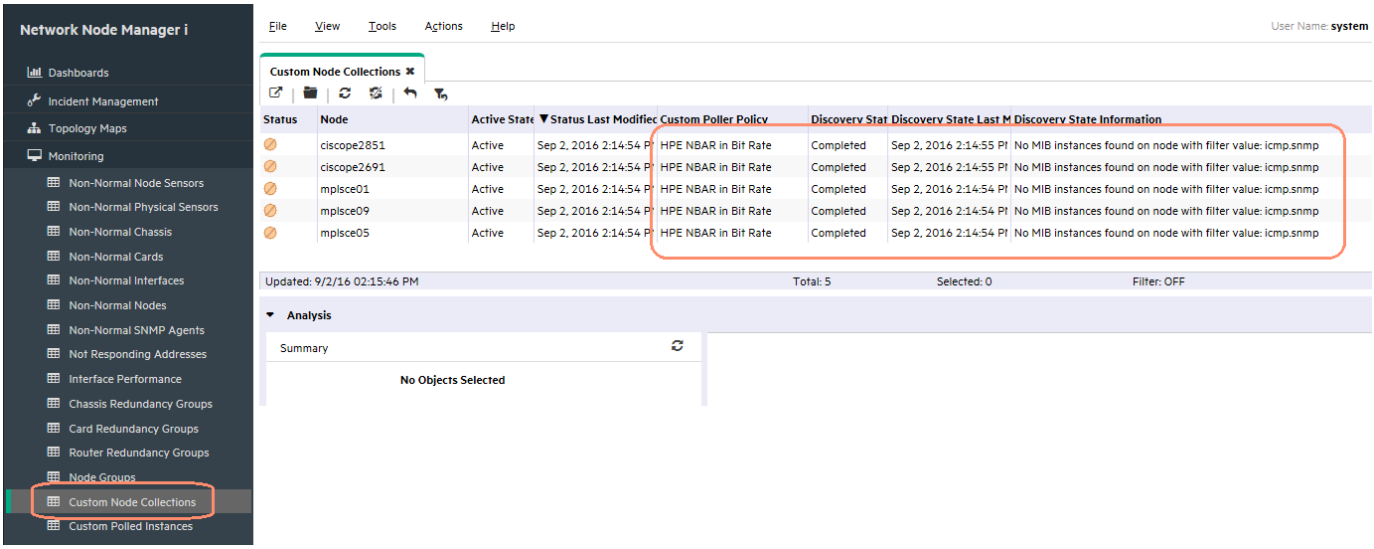


7. Click **Save and Close** to save your changes and close the **Custom Poller Configuration** form.

Step 5: Verify the Custom Poller Configurations

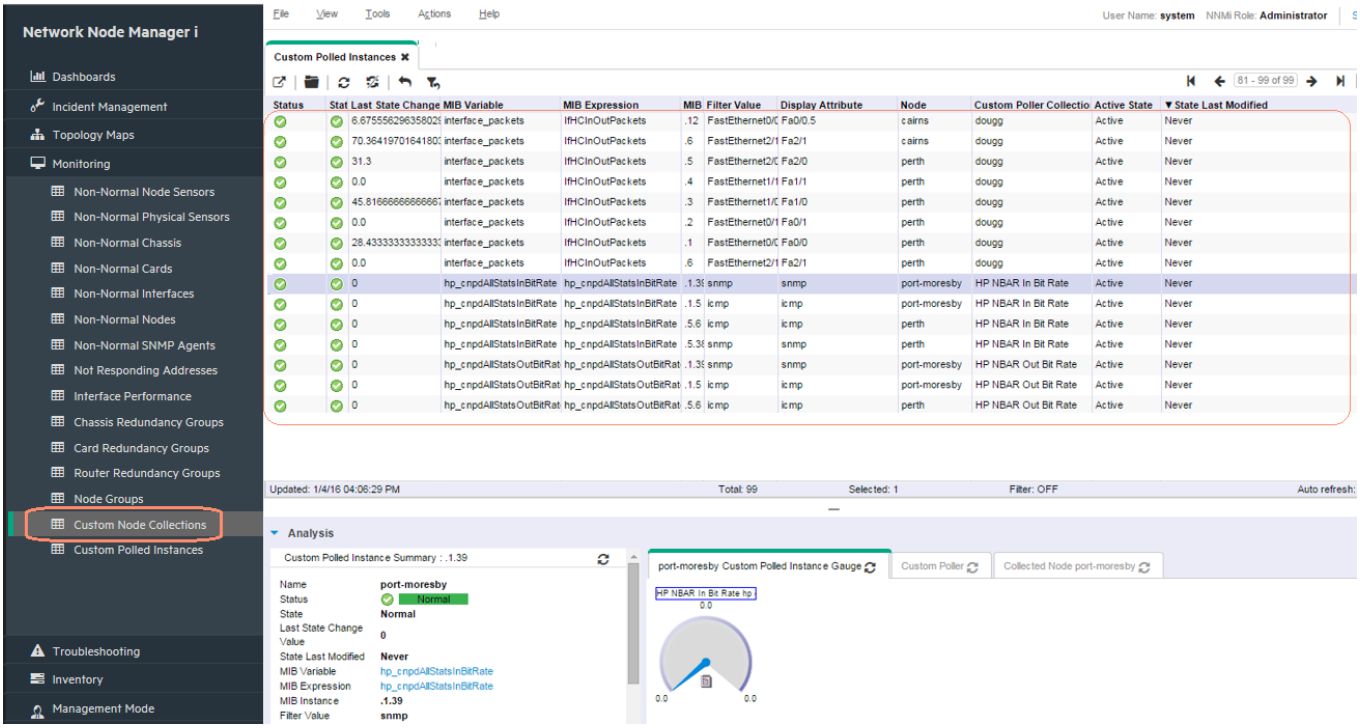
Use the **Monitoring** workspace to confirm the HPE NBAR statistics are collected.

1. Navigate to the **Monitoring** workspace.
2. Select **Custom Node Collections**.
3. Confirm that NNMi has created **Custom Node Collections** for the nodes in the Node Group that you associated with the Custom Poller Collection.



Next, confirm the instances that are polled on these nodes.

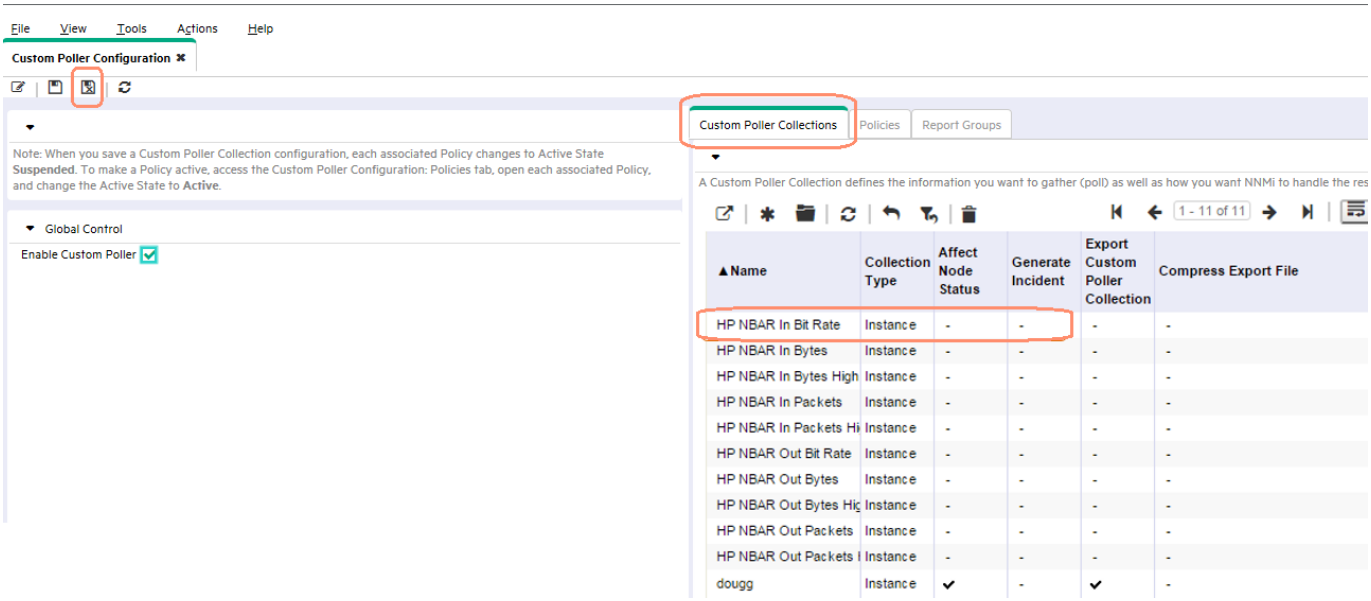
4. From the Monitoring workspace, select Custom Polled Instances.
5. Verify the instances that are polled on these nodes.


Network Node Manager i
Dashboards
Incident Management
Topology Maps
Monitoring
Non-Normal Node Sensors
Non-Normal Physical Sensors
Non-Normal Chassis
Non-Normal Cards
Non-Normal Interfaces
Non-Normal Nodes
Non-Normal SNMP Agents
Not Responding Addresses
Interface Performance
Chassis Redundancy Groups
Card Redundancy Groups
Router Redundancy Groups
Node Groups
Custom Node Collections
Custom Polled Instances
Troubleshooting
Inventory
Management Mode
File View Tools Actions Help
User Name: system NNMi Role: Administrator
Custom Polled Instances
Status Stat Last State Change MIB Variable MIB Expression MIB Filter Value Display Attribute Node Custom Poller Collectio Active State ▼State Last Modified
Updated: 1/4/16 04:06:29 PM
Total: 99
Selected: 1
Filter: OFF
Auto refresh:
Analysis
Custom Polled Instance Summary : .1.39
Name port-moresby
Status Normal
State Normal
Last State Change
Value 0
State Last Modified Never
MIB Variable hp_cnpdAllStatsInBitRate
MIB Expression hp_cnpdAllStatsInBitRate
MIB Instance .1.39
Filter Value snmp
port-moresby Custom Polled Instance Gauge
Custom Poller
Collected Node port-moresby
HP NBAR In Bit Rate hp
0.0
0.0
0.0

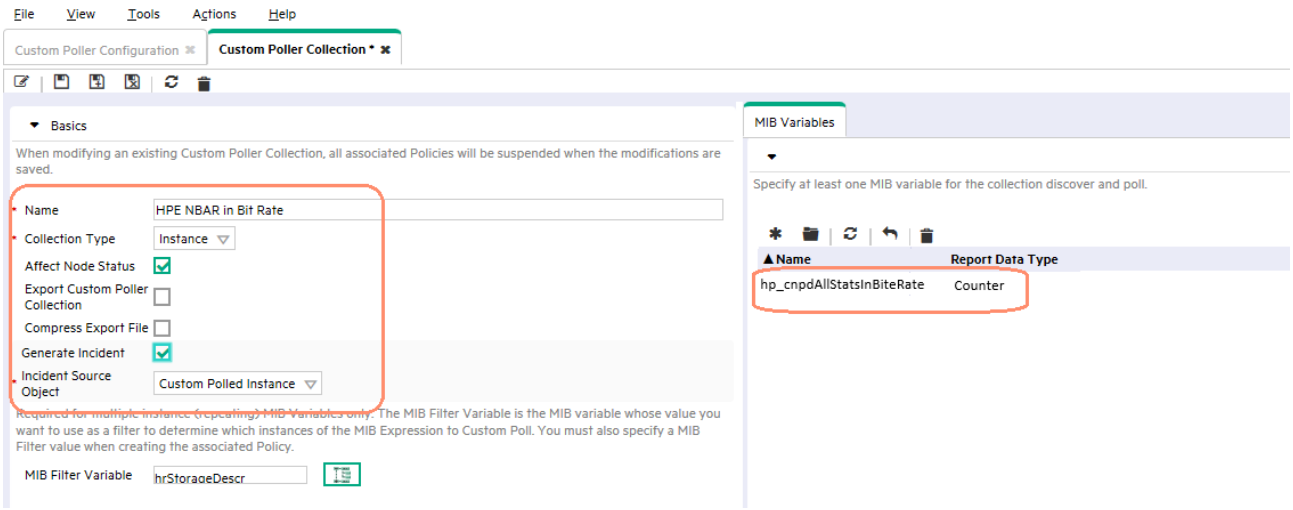
Optional: Configure Thresholds for the Custom Poller Collections

You might also want to configure thresholds for these Custom Poller Collections:

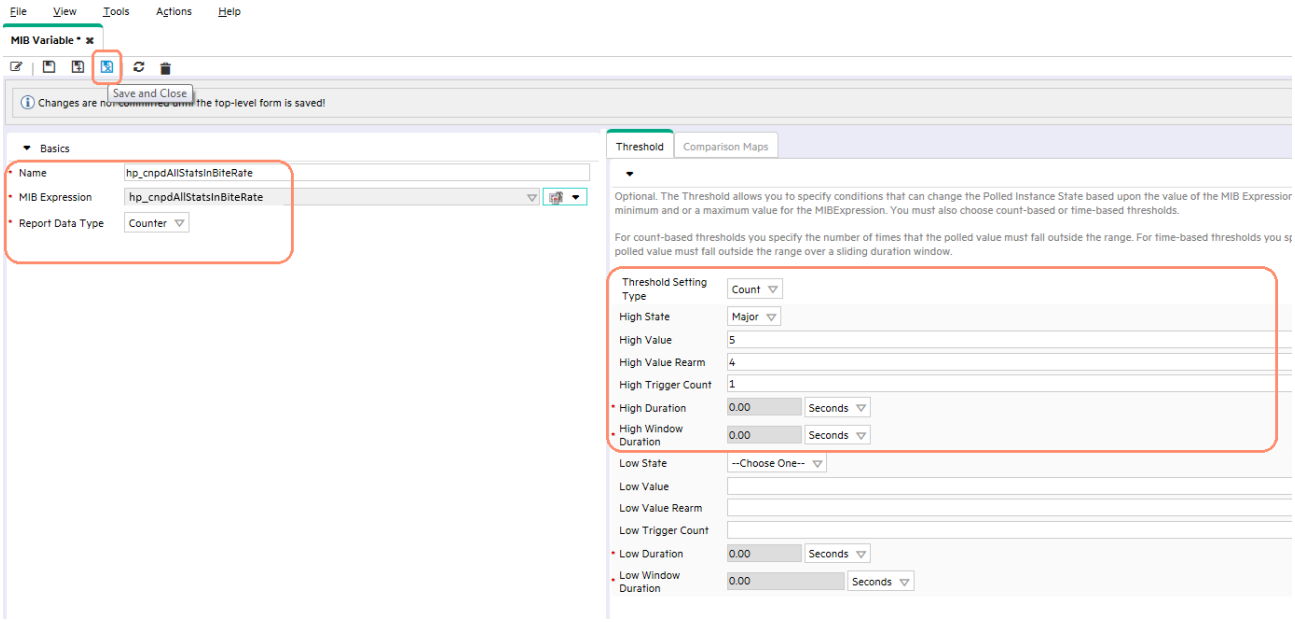
1. From the Custom Poller Configuration form, navigate to Custom Poller Collections tab.
2. Double -click the Custom Poller Collection; for example, HPE NBAR in Bit Rate.



3. Check “Affect Node Status” and “Generate Incident” Check Boxes, then double click on the MIB variable “hp_cnpdAllStatsInBiteRate”.



4. Set the Threshold Values, then click the “Save and Close” buttons on the MIB Variable form and the Custom Poller Collection form.

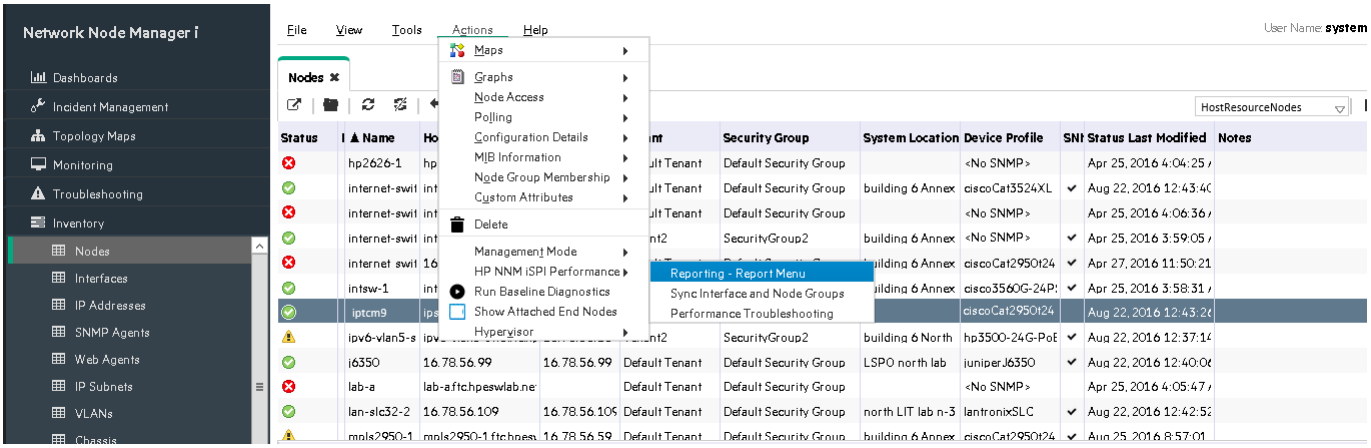

File
View
Tools
Actions
Help
MIB Variable *
Save and Close
Changes are not committed until the top-level form is saved!
Basics
Name
hp_cnpdAllStatsInBiteRate
MIB Expression
hp_cnpdAllStatsInBiteRate
Report Data Type
Counter
Threshold
Comparison Maps
Optional. The Threshold allows you to specify conditions that can change the Polled Instance State based upon the value of the MIB Expressior
minimum and or a maximum value for the MIBExpression. You must also choose count-based or time-based thresholds.
For count-based thresholds you specify the number of times that the polled value must fall outside the range. For time-based thresholds you sp
polled value must fall outside the range over a sliding duration window.
Threshold Setting Type
Count
High State
Major
High Value
5
High Value Rearm
4
High Trigger Count
1
High Duration
0.00
Seconds
High Window Duration
0.00
Seconds
Low State
--Choose One--
Low Value
Low Value Rearm
Low Trigger Count
Low Duration
0.00
Seconds
Low Window Duration
0.00
Seconds

Optional: Use the iSPI Performance for Metrics to Graph Custom Poller Collections

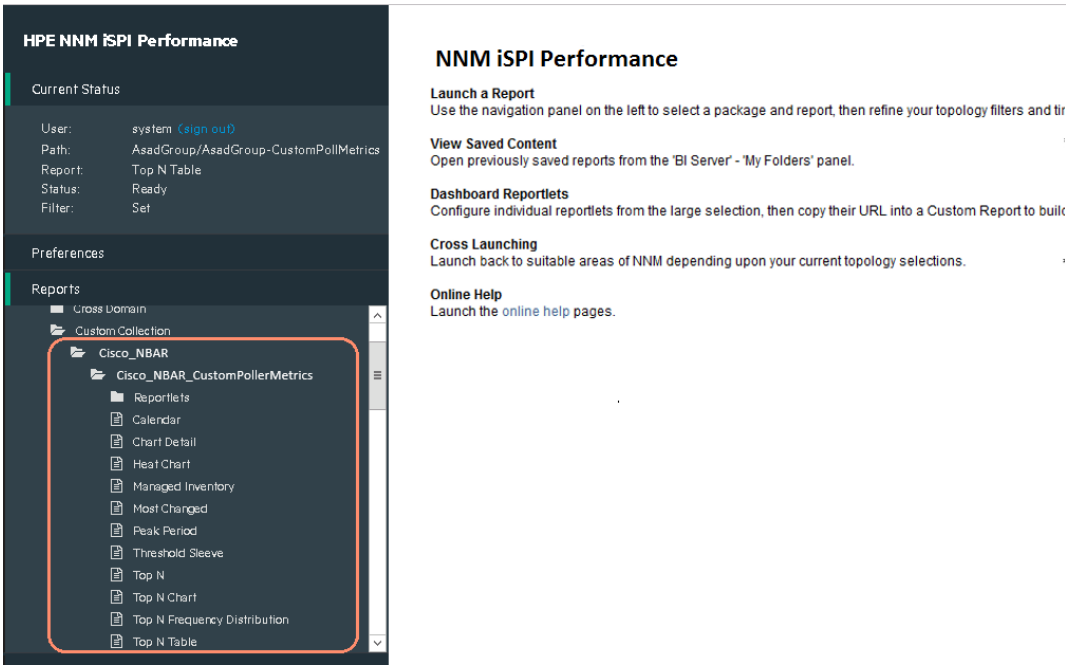
If you have the iSPI Performance for Metrics license, you can graph these collections.

Note:
You MUST have iSPI Performance for Metrics 10.10 to perform these steps.

1. Navigate to the **Actions** menu.
2. Select **HP NNM iSPI Performance**.
3. Select **Reporting** – **Report Menu**.

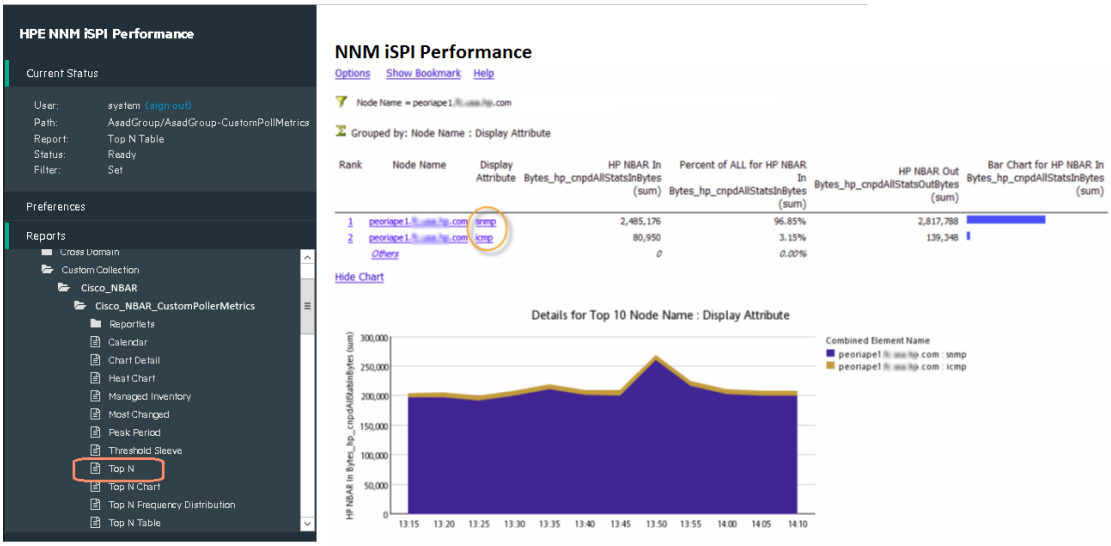


4. Confirm the Custom Collection section appears in the Reports list.



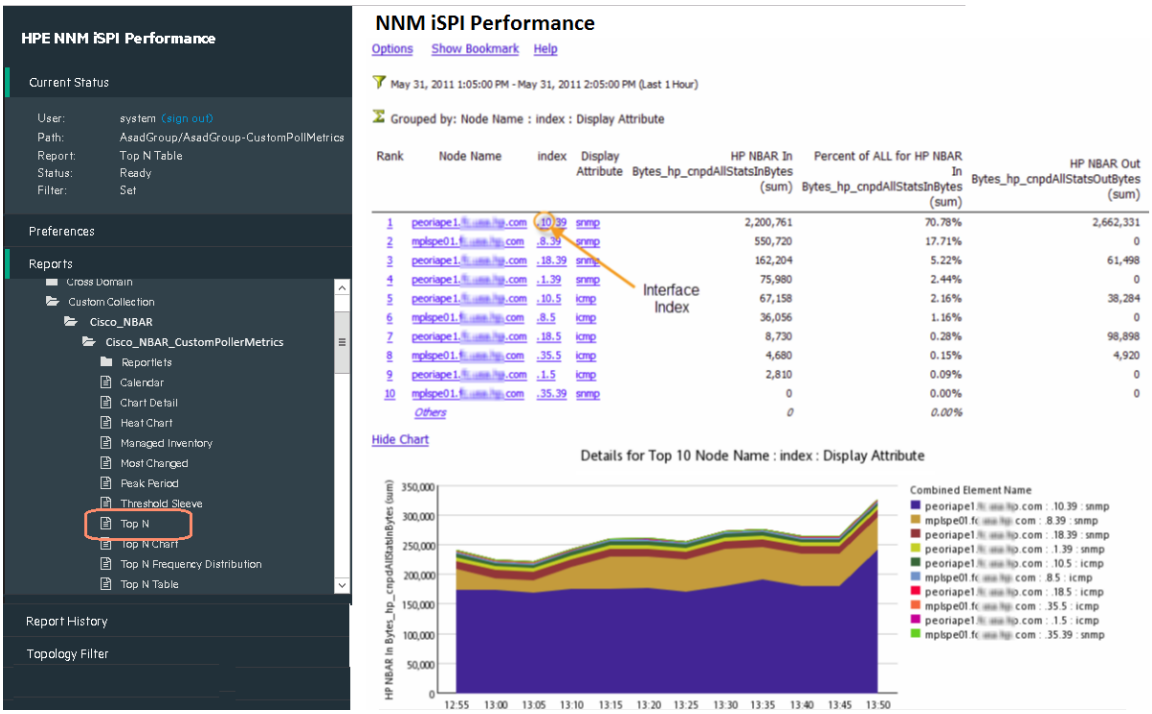
5. Next, access the report of your choice and select the metrics you want.

For example, the report in the following example shows the TopN traffic for a specific node (all NBAR interfaces aggregated) over the previous hour. Only SNMP and ICMP traffic is shown because the example MIB Filter included only **snmp** and **icmp**.



The following report shows the TopN traffic (SNMP and ICMP only) on multiple nodes on specific interfaces.

Tip: The specific interface index is the leftmost number in the Index field. The rightmost number represents the protocol.



Conclusion

This document described how to use NNMi Custom Poller Collections to collect Network Based Application Recognition (NBAR) Statistics for Cisco devices. It also described the following optional procedures:

- Configure thresholds for the Custom Poller Collections
- Use NNM iSPI Performance for Metrics to graph Custom Poller Collections

Use these procedures when you want information about the application protocols traversing interfaces within your network infrastructure.

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Product name and version: NNMi 10.20

Document title: Configure BI Server to Save and Write Reports to a Directory

Feedback:

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