HP Network Node Manager i Software

Step-by-Step Guide to Custom Poller

Software Version 9.00



This document steps through an example of setting up the Custom Poller to monitor a MIB that NNMi does not monitor by default. The Custom Poller is only available with NNMi 8.11 or greater.

NOTE: In NNMi 9.00, if you are logged in a "root" (Unix) or "administrator" (Windows), then no user name or password is required for most command line tools.

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Setting Up Your MIB

Step 1: Identify the MIB Variable You Want to Poll

To begin, identify a MIB variable that you want to poll.

This example monitors the disk usage on Microsoft PCs using the rfc2790-HOST-RESOURCES-MIB. This MIB is shipped with NNMi under the following directory:

```
%NnmInstallDir%\misc\nnm\snmp-mibs\Standard
```

The %NnmInstallDir% location depends on your operating system:

Windows 2008

```
%NnmInstallDir% =
<drive>\Program Files(x86)\HP\HP BTO Software\
```

Windows 2003

```
%NnmInstallDir% =
<drive>\Program Files(x86)\HP\HP BTO Software\
```

UNIX

```
$NnmInstallDir = /opt/OV/
```

This example uses rfc2790-HOST-RESOURCES-MIB for the following reasons:

- The availability of Microsoft PCs makes this example easy to test
- You can easily increase disk space usage to change the resultant query and trigger a State change

Step 2: Ensure the MIB Includes Supported Types

Make sure you are familiar with the MIB you will be using. This is especially important because the variables used must have a type that NNMi supports. See "Troubleshooting Tips" for a list of supported MIB variables.

- 1 First, check whether the MIB is loaded by selecting Configuration > Loaded MIBs. The rfc2790-HOST-RESOURCES-MIB should appear in the Loaded MIBs view. Because the MIB is loaded in NNMi, you can study the MIB using the Loaded MIBs view:
 - $a\quad$ Click the check box that precedes the MIB you want to view.
 - b Select Actions > Display MIB File.

NOTE: Alternatively, you could view the MIB file in a text editor.

An excerpt from the rfc2790-HOST-RESOURCES-MIB is shown below:

```
HrStorageEntry ::= SEQUENCE {
hrStorageIndex Integer32,
hrStorageType AutonomousType,
hrStorageDescr DisplayString,
```

```
hrStorageAllocationUnits Integer32,
hrStorageSize Integer32,
hrStorageUsed Integer32,
hrStorageAllocationFailures Counter32
}
```

As shown in the example excerpt, hrStorageDescr is of type DisplayString. hrStorageUsed is of type Integer32 and hrStorageAllocationUnits is of type Integer32. The NNMi Custom Poller supports both of these types.

According to the MIB definition, hrStorageUsed is the size of the storage measured in hrStorageAllocationUnits. To measure the amount of storage used in kilobytes (KB) on the "C:" drive, this example uses the following MIB expression:

```
((hrStorageUsed / 1000) * hrStorageAllocationUnits)
```

```
This example also uses the hrStorageDescr to identify the "C:" drive.
```

Step 3: Load the Required MIB

NNMi's Custom Poller requires that the MIB be loaded onto the NNMi management server.

Using the **Loaded MIBs** view described in "Step 2: Ensure the MIB Includes Supported Types", we can determine that the rfc2790-HOST-RESOURCES-MIB is loaded in NNMi as shown in the following example:

🍈 Network Node Manag	ger	User Name: system User Role: Administrator Sign out
File Tools Actions Help		
Workspaces	MIB - Loaded MIBs	
Incident Management		69 - 84 of 145
Topology Maps		
Monitoring	A Name	
Troubleshooting	EtherLike-MIB	.1.3.6.1.2.1.35 snmp-mibs/Standard/rfc3635-EtherLike-MIB.mib
Inventory	FOUNDRY-SN-ROOT-MIB	.1.3.6.1.4.1.1991 snmp-mibs/Vendor/Foundry/FOUNDRY-SN-ROO
Management Mode	FRAME-RELAY-DTE-MIB	.1.3.6.1.2.1.10.32 snmp-mibs/Standard/rfc2115-FRAME-RELAY-DT
Incident Browsing	📄 🛅 🖾 FtpServer-MIB	.1.3.6.1.4.1.311.1.7.2 snmp-mibs/Vendor/Microsoft/ftp.mib
Frame Relay	HC-RMON-MIB	.1.3.6.1.2.1.16.20.5 snmp-mibs/Standard/rfc3273-HC-RMON-MIB.mit
Frame Relay (WS)	HOST-RESOURCES-MIB	.1.3.6.1.2.1.25.7.1 snmp-mibs/Standard/rfc2790-HOST-RESOURCE:
Integration Module Configuration	HOST-RESOURCES-TYPES	.1.3.6.1.2.1.25.7.4 snmp-mibs/Standard/rfc2790-HOST-RESOURCE
Configuration	HP-ICF-OID	snmp-mibs/Vendor/Hewlett-Packard/ProCurve/h
Communication Configuration 📩	HP-SN-AGENT-MIB	.1.3.6.1.4.1.11.2.3.7.11 snmp-mibs/Vendor/Hewlett-Packard/hpEtherSwi
Discovery Configuration	HP-SN-ROOT-MIB	.1.3.6.1.4.1.11 snmp-mibs/Vendor/Hewlett-Packard/hpEtherSwi
Monitoring Configuration	HP-SN-SWITCH-GROUP	.1.3.6.1.4.1.11.2.3.7.11 snmp-mibs/Vendor/Hewlett-Packard/hpEtherSwi
Custom Poller Configuration		.1.3.6.1.4.1.11 snmp-mibs/Vendor/Hewlett-Packard/hp-unix
Incident Configuration	HttpServer-MIB	.1.3.6.1.4.1.311.1.7.3 snmp-mibs/Vendor/Microsoft/http.mib
Trap Forward Configuration		.1.3.6.1.2.1.84 snmp-mibs/Vendor/Cisco/TANA-RTPROTO-MIB.m
Configuration		1.3.6.1.2.1.30 spmp-mibs/Standard/TANAifType-MIB mib
Status Configuration		1.2 spmp-mibs/JEEE/JEEE80.23J ACJMIB mib
Global Network Management		
User Interface Configuration	•	• • • • • • • • • • • • • • • • • • •
🕮 Node Groups 🗸 👻	Updated: 4/8/10 11:59:41 AM	Total: 145 Selected: 0 Filter: OFF Auto refresh: OFF
NNMi's self monitoring has detected a prob	Solution (Major). Please see Help → System Information	$n \rightarrow$ Health for details.
Done		✓ Trusted sites Protected Mode: Off € 100% ▼

TIP: To check whether the MIB is already loaded, you can also run the nnmloadmib.ovpl -list command. Look for the desired MIB in the results.

If the MIB had not been loaded, you can load it with the **Tools** > **Load MIB...** or the nnmloadmib.ovpl -load command.

Step 4: Use the MIB Browser to View Current MIB Variable Values

Next, use the MIB Browser to perform an SNMP query and become familiar with the MIB variable values returned from the node. In this example, the node is a Windows PC server.

- 1. Select a node that has a Device Category of Server (🧊).
- 2. Select Actions > Browse MIB.

Ø Network	vork Node Manager	
File Tools	Actions Help	
Workspaces 🖇	🌮 Layer 2 Neighbor View	5
Incident Mana	🎉 Layer 3 Neighbor View	
Topology Maps	🖉 Node Group Map	
Monitoring	🦻 Path View	Stat DC 🔺 Name
Troubleshootin	🗓 Graphs 🕨 🕨	· 🔼 🛇 💣 cheese
Inventory	Ping (from server)	🔼 📀 💣 ENDNODE14
I Nodes	Trace Route (from server)	🔄 📀 💣 FTCNNMIMASTER
🎟 Interfaces	Communication Settings	🔼 📀 💣 mimicweb
🏧 IP Address	Monitoring Settings	🔁 📀 💣 nnmsaw1vm02
🕮 IP Subnets	Browse MIB	🔁 📀 💣 ntclaptop3
VLANs	Status Poll 💟 Configuration Poll	🔁 📀 💣 NTCLAPTOP4
Cards		🔁 📀 💣 NTCNAS
Node Com		🛛 🔄 💣 r23setup
Eaver 2 Co	Management Mode Run Diagnostics (iSPI NET only)	🔁 📀 💣 slug
I Nodes by I	Show Attached End Nodes	[🖉 💕 tcvm20

In the **Node** attribute you should see the name of the node you selected.

- 3. In the **OID** attribute, enter hrStorageTable.
- 4. Click the 🕨 Start SNMP Walk icon.

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e cheese.cnd.hp.com		Community String (optional)
hrStorageTable		
OID		Value
늘 host.hrStorage.hrStorageTable.hrStorageEntry		
▶ 🧰 hrStorageIndex		
▶ 🧰 hrStorageType		
🔻 🚞 hrStorageDesor		
1		A3
2		C:\ Label: Serial Number 30366068
<u></u> 3		D:1
4		Virtual Memory
5		Physical Memory
🔻 🚞 hrStorageAllocationUnits		
1		0
2		4096
3		0
4		65536
6	m	65536
▶ 🚞 hrStorageSize		
🔻 🚞 hrStorageUsed		
1		0
2		2911099
3		0
4		32704
<u></u> 6		14428
InstorageAllocationFailures		
Expand Selected Collapse Selected		Find
P walk complete		Total: 35

To check the storage used on the "C:" drive, look for the string from the hard disk that begins with $C:\backslash$.

As shown in the example above, one of the strings in the **Value** column begins with C:\. You can see the vale for hrStorageAllocationUnits is 4096 on this drive. The hrStorageUsed value is 2911099.

Next, you need to enable Custom Poller so that you can use it to specify the MIB Expression you want NNMi to poll.

Setting Up a Custom Poll

Step 1: Enable Custom Poller

Custom Poller is not enabled by default.

To enable Custom Poller:

- 1. Navigate to the **Configuration** workspace.
- 2. Select Custom Poller Configuration.

🍈 Network Node Manag	er				
File Tools Actions Help					
Workspaces	Node -	Nodes	;		
Incident Management	\mathbf{x}	2	0	Ci	<u>ا چا</u>
Topology Maps				<u> </u>	ii nc
Monitoring				Sta	
Troubleshooting				0	
Inventory				0	
Management Mode				\odot	111
Incident Browsing				V	444 474
Integration Module Configuration				\odot	1
Configuration				0	1
Communication Configuration				\bigcirc	ੱ
Discovery Configuration				0	ੱ
Monitoring Configuration				0	<u>TT</u>
Custom Poller Configuration	Г		4	\bigcirc	444
Trans Someond Configuration			4	0	111
Custom Correlation Configuration		(m)	4	0	111
Status Configuration		<u></u>		Ö	111
Global Network Management		<u></u>		ŏ	111
🛆 User Interface Configuration		<u> </u>		ŏ	*** * \$ *
I Node Groups		<u> </u>		ŏ	888
Interface Groups				~	**
🎟 ifTypes				-	***
🕮 Device Profiles				<u> </u>	
Eloaded MIBs				<u> </u>	***
MIB Expressions			4	0	100
RAMS Servers				0	ATM
Management Stations (6.x/7.x)				0	1

3. Click to check **Enable Custom Poller**.

4. Click Save and Close.

File View Tools Actions Help	
🚈 📓 😼 Save and Close	
Note: When you save a Custom Willer Collection configuration, each associated Policy changes to Active State "Suspended". To make a Policy	Custom Poller Collections Policies Report Groups
active, access the Custom Poller Configuration: Policies tab, open each associated Policy, and change the Active State to "Active".	A Custom Poller Collection defines the information you war you want NNMi to handle the results.
Global Control	
Enable Custom Poller	□ ■ Name ANS GI I

Step 2: Create a Custom Poller Collection

After you enable Custom Poller, you are ready to create a Custom Poller Collection. A Custom Poller Collection defines the information you want to gather (poll) as well as how NNMi reacts to the gathered data.

In addition to a Custom Poller Collection, you should define at least one Custom Poller Policy. Each policy specifies the Node Group on which you apply the Custom Poller Collection.

A diagram of the hierarchy of Custom Poller Collections is depicted below:



In our example, we are required to provide a MIB Filter value to select the disks we want NNMi to monitor. If we do not specify a MIB Filter Variable and MIB Filter, NNMi assumes the MIB variable does not have multiple instances.

To create our Custom Poller Collection:

- 1. Open the same Custom Poller Configuration form as described in Step 1: Enable Custom Poller:
 - a. Navigate to the **Configuration** workspace.
 - b. Select Custom Poller Configuration.
- 2. Navigate to the Custom Poller Collections tab.
- 3. Click the 🛍 New icon.

File View Tools Actions Help	
🚈 📓 😼 Save and Close	Custom Poller Configuration
Note: When you save a Custom Poller Collection configuration, each associated Policy changes to Active State "Suspended". To make a Policy active, access the Custom Poller Configuration: Policies tab, open each associated Policy, and change the Active State to "Active". Global Control Enable Custom Poller	Custom Poller Collections Policies Report Groups A Custom Poller Collection defines the information you want to gather (poll) as well as how yearWant, NIMM to handle the results. New Name ANS GI ECPC CEF Description

4. In the **Name** attribute of the Custom Poller Collections form, name the Collection DiskStorageUsed.

5. Click to check Affect Node Status, Generate Incident and Export Custom Poller Collection.

Next, we need to specify a MIB expression.

6. In the MIB Expression attribute, click 🛍 New to open a New MIB Expression form.

File View Tools Actions Help			
🙆 📳 🋂 Save and Close	Delete Custom Polle	er Co	Collection Custom Poller Collection
Basics		î	Comparison Maps
When modifying an existing Custom I will be suspended when the modifical	Poller Collection, all associated Policies tions are saved.		Optional. Use Comparison Maps to associate the returned value of a MIB Expression to a Polled Instance State. NNM uses Comparison Maps when Threshold settings are not configured or when Threshold settings return a Normal State.
Affect Node Status Generate Incident Export Custom Poller Collection Compress Export File	a geoseo		Or., CO Comparison V., State Mapping
Variable MIB Expression Required for multiple instance (repea Variable is the MIB variable whose va determine which instances of the MII also specify a MIB Filter value when of MIB Filter Variable	ting) MIB Variables only. Tr III Quick View slue you want to use as a f Quick Find 3 Expression to Custom Pol creating the associated Pol New	E	
Threshold Optional. The Threshold specifies mir Expression that is polled. A value out Polled Instance State.	nimum and maximum values for the MIB tside either defined range changes the		
High State High Value High Value Rearm High Trigger Count			
Low State	▼	-	Uppated: 4/6/10 3:00:52 PM Total: 0 Selected: 0 Hiter: OFF Auto refresh: OFF

 Enter in a Unique Key, Name and Author. This example uses the author Customer, which is the default.

Next, create the MIB expression.

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Basics When modifying an existing MIB Expression, all Custom Poller Polkies associated with variables that use this MIB Expression will be suppended when the modifications are saved. To test your MIB Expression. You will be acked to select a Node. Unique Key Connwrcompany.mibexpr.DiskStorageUsed Name DiskStorageUsed Author Customer Display fulfication Display Variable Display Variable Display Filter Display Pilter Display Pilter Display Filter	iile View Tools Actions Help	MIB Expression
When modifying an existing MIB Expression, all Custom Poller Policies associated with variables that use this MIB Expression will be suspended when To test your MIB Expression definition, select File Save, then Actions Craph MIR Expression definition, select A Node Unique Key Com.mycompany.mbexpr.DiskStorageUsed Author Customer DiskStorageUsed Display numeric MIB OIDs in the Expression Display Filter <th>Basics</th> <th>Expression</th>	Basics	Expression
	When modifying an existing MIB Expression, all Custom Poller Policies associated with variables that use this MIB Expression will be suspended when the modifications are saved. To test your MIB Expression definition, select File → Save, then Actions → Graph MIB Expression. You will be acked to select a Node. Unique Key com.mycompany.mibexpr.DiskStorageUsed Name DiskStorageUsed Author Customer	Expression To view an example of creating a MIB Expression, click here. Expression Display numeric MIB OIDs in the Expression Display numeric MIB OIDs in the Expression Conversion Algorithm Display Variable Display Filter

8. Write out the expression before working with the user interface. In this example, the MIB expression is:

((hrStorageSize / 1000) * hrStorageAllocationUnits)

9. When specifying the expression, you want to begin by inserting all of the operands. The operands in this expression include / and *.

Basics		Expression	
When modifying an associated with vari the modifications an To test your MIB Exoressia Graph MIB Exoressia	existing MIB Expression, all Custom Poller Policies ables that use this MIB Expression will be suspended when e saved. pression definition, select File \rightarrow Save, then Actions \rightarrow m. You will be asked to salect a Node.	Expression To view an example of creating a MIB Expr	ression, click here.
Unique Key Com.my Name DiskSto Author Custor	com.mycompany.mibexpr.DiskStorageUsed DiskStorageUsed Customer	MIB Variable	
		Constant Value + - *	Enter /, <> Delete OK ¹ Clear Cancel

- 10. After you select each operand, place the cursor in the location where you want to insert a MIB variable.
- 11. Navigate the MIB Variable tree to select the hrStorageUsed and hrStorageAllocationUnits variables.
- 12. Add the constant 1000.

Basics		Expression
When modifying an e associated with vari	existing MIB Expression, all Custom Poller Policies ables that use this MIB Expression will be suspended when	Expression
the modifications are	e saved.	To view an example of creating a MIB Expression, click here.
To test your MIB Exp Graph MIB Expressio	pression definition, select File \rightarrow Save, then Actions \rightarrow n. You will be asked to select a Node.	Expression
Unique Key	com.mycompany.mibexpr.DiskStorageUsed	(thrStorageUsed / 1000) hrStorageAllocationUnits)
Name	DiskStorageUsed	
Author	Customer 2	MIB Variable .1.3.6.1.2.1.25.2.3.1.4
		1000 Enter
		OK Clear Cancel

13. Click Save and Close.

Next you must specify a MIB Filter Variable. This example uses hrStorageDescr.

14. From the MIB Filter Variable entry, navigate to the hrStorageDescr value.

File View Tools Actions Help		
🔄 📓 🋂 Save and Close 🏥 🗙	Delete Custom Poller Collection	Custom Poller Collection
Basics	MIR Variable Selector	~~
When modifying an existing Custom Poller Coll will be suspended when the modifications are Name DiskStorageUse Affect Node Status Image: Collection Generate Incident Image: Collection Export Custom Poller Image: Collection Compress Export File Image: Collection Variable DiskStorageUse MIB Expression DiskStorageUse Variable is the MIB variable whose value you of determine which instances of the MIB Express also specify a MIB Filter value when creating to MIB Filter Variable MIB Filter Variable Image: Collection Threshold Optional. The Threshold specifies minimum and Expression that is polled. A value outside eithe Polled Instance State. High State Image: Count High Value Image: Count	ection, all a saved. d d (1) mb-2 (1) system (2) interfaces (3) at (3) at (4) ip (5) icmp (6) (cp (7) udp (6) (cp (7) udp (7) udp (10) transmission (11) srmp (11) srstmapolyses (11) hrstorageTable (11) hrstorageT	sociate the returned value of a MIB Expression to a mparison Maps when Threshold settings are not as return a Normal State. Image: Comparison Vali State Mapping Image: Comparison Vali State Mapping
Low State	Updated: 3/30/10 8:17	7:11 PM Total: 0 Selected: 0 Filter: OFF Auto refresh: OFF
Done		

Finally, set a threshold to trigger an alarm. This example uses 12100000 as the threshold value with a rearm value of 12000000. The alarm triggers with just one sample above the threshold.

🛓 📓 💁 Save and Close 斗 🗙 Delete Custom Poller Collection	Custom Poller Colle
asics	Comparison Maps
Asics When modifying an existing Custom Poller Collection, all associated Policies will the suspended when the modifications are saved. Name DiskStorageUsed Affect Node Status F Senerate Incident F Second Custom Poller F Compress Export File Custom Poller F Required for multiple instance (repeating) MIB Variables only. The MIB Filter to	Comparison Maps Optional. Use Comparison Maps to associate the returned value of a MIB Expression to a Polled Instance State. NW/I uses Comparison Maps when Threshold settings are not configured or whe Threshold settings return a Normal State.
letermine which instances of the MIB Expression to Custom Poll. You must also pecify a MIB Filter value when creating the associated Policy. IIB Filter Variable hrStorageDescr Fhreshold Optional. The Threshold specifies minimum and maximum values for the MIB Expression that is polled. A value outside either defined range changes the volled Instance State. High State Critical High Value 12100000 High Value Rearm 1200000 High Trigger Count 1 Low State Value Valu	
letermine which instances of the MIB Expression to Custom Poll. You must also pecify a MIB Filter value when creating the associated Policy. IIB Filter Variable hrstorageDescr Threshold Optional. The Threshold specifies minimum and maximum values for the MIB Expression that is polled. A value outside either defined range changes the volled Instance State. High Value 12100000 High Value Rearm 1200000 High Trigger Count 1 Low State ↓ Low State ↓ Low Value Low Value Rearm ↓	

15. In the **High Value** attribute, enter 12100000.

- 16. In the High Value Rearm attribute, enter 12000000.
- 17. Click Save and Close.

You now have a Custom Poller Collection.

Next, you create a policy for the Custom Poller Collection that looks for C: at the start of the value.

Step 3: Create a Policy for a Custom Poller Collection

A Policy defines which Node Groups are participating in this Custom Poller Collection and how often the variable is polled. It is also used to define the MIB filter to select specific instances. You can create more than one Policy associated with a Custom Poller Collection.

1. To begin, navigate to the **Policies** tab and select the 🛍 New icon.

File View Tools Actions Help	Custom Poller Configura
Note: When you save a Custom Poller Collection configuration, each associated Policy changes to Active State "Suspended". To make a Policy active, access the Custom Poller Configuration: Policies tab, open each associated Policy, and change the Active State to "Active".	Custom Poler Collections Policies Report Groups Policies define the Node Group and poling interval you want NNM to poll for a Custom Poller Collection.
Global Control	Name Active State Orderi Collection

2. In the **Name** attribute, enter WindowsUsedDiskSpace.

NNMi displays this name in the incident browser, whenever an associated incident is generated for the Custom Poll.

Next specify the ordering.

Because you can create more than one Policy associated with a Custom Poller Collection, you need to specify an order to remove ambiguity when a node is matched to more than one policy.

For example, you might want a Custom Poller Collection to run against a Node Group for Routers and a Node Group for Switches. You also might want to poll the routers every 5 minutes and the switches every 8 minutes.

If a node is both a switch and a router, then it is not allowed to be polled twice by the same collection. You might decide that if a node is both a switch and a router, it is important that it be polled more quickly (using the Router policy). Therefore, you use a higher priority order number for the Router Policy. When you specify an order, the node is matched against the highest priority policy (lowest Ordering number).

Because we have only one Policy for a Collection, we do not need to be concerned about this order.

- 3. In the Ordering attribute, accept the default value of 1.
- 4. Use the Quick Find pull down menu to select the Collection that we previously defined.
- 5. Change the Active State to Active.
- 6. Use the Quick Find pull down menu to select the Microsoft Windows Systems Node Group.

Next, specify the MIB Filter.

 Recall that the values from our SNMP walk, the C drive always started with C:. Therefore, in the MIB Filter attribute, enter C:* as the filter. Avoid matching all instances by entering the asterisk (*) as the filter. This could lead to a large number of matches and adversely affect NNMi Custom Poller performance.

Finally, specify the Polling Interval.

In NNMi, you cannot force a Custom Poll. (The Status Poll or Configuration Poll options from the Actions menu do not include the Custom Poller.) Therefore, while initially setting up your Custom Polls, you might want to set the Polling Interval fairly short, so you do not have to wait a long time for each poll cycle.

8. Set the Polling Interval attribute to **1** minute for easier testing.

TIP: As a best practice, after you have set up your Custom Polls as desired, select a longer Polling Interval. Using short Polling Intervals can adversely affect NNMi Custom Poller performance.

9. Click Save and Close to save your Policy.

TIP: If you make a change to a Custom Poller Collection configuration after you save it (for example, change the **High Value**), NNMi automatically changes the Active State of the associated Custom Poller Policies to Suspended. If this occurs, open the Policy configuration and change the Active State back to Active.

File View Tools Actions Help	
🚈 📓 😼 Save and Close 📓 🗙 Delete Custom Poller Policy 🚱	Custom Poller Policy
Basics Save and Close	
Name WindowsUsedDiskS Ordering 1 Collection DiskStorageUsed Active State Active	
Node Group Microsoft Windows Systems	
C:* Valid values include: alpha-numeric string (for exact match) range of numbers (example, 1-6) wildcard (*) representing one or more non-numeric characters (examples *Vlan, vlan*, *vlan*) exclude declaration (!) to exclude items (examples !1-3, !*vlan, !vlan) Indicate multiple entries by separating each with a comma (,). See Help → Using the Custom Poller Policy Form.	
Polling Interval 0 Days 0 Hours 1 Minutes 0 Seconds	
Done	

View the Results of Your Custom Poll

Step 1: View the Node Collections Associated with Custom Poller Policies

After you configure your Custom Poller Collections, you can view the Custom Poller objects. NNMi identifies these objects as Custom Node Collections.

To view Custom Node Collections:

- 1. Navigate to the Monitoring workspace.
- 2. Select Custom Node Collections.

NNMi displays a table view of all Custom Node Collections that includes:

- The Custom Node Collection status.
- The topology node associated with the Custom Node Collection.
- The Active State for the associated policy.

- The date and time the Status was last modified.
- The name of each policy associated with each Custom Node Collection.
- Discovery information regarding the MIB Expression on each topology node, such as Discovery State, the time stamp when the Discovery State was last modified, and Discovery State Information.

File Tools Actions Help	
Workspaces	Custom Node Collection - Custom Node Collections
Incident Management Topology Maps Monitoring Im Non-Normal Node Components Im Non-Normal Cards Im Non-Normal Interfaces Im Not Responding Addresses Im Interface Performance Im Card Redundancy Groups Router Redundancy Groups Im Router Redundancy Groups Im Custom Node Collections Im Custom Polled Instances	Stat Node Active State Status Last Modifie Policy Discovery State Discovery State Last Mar 30, 2010 8:41 PM Image: Stat Image: Status Last Modifie Policy Discovery State Discovery State Last Mar 30, 2010 8:41 PM Image: Status Last Mar 30, 2010 8:41 PM WindowsUsedDiskSpace Completed Mar 30, 2010 8:43:16 PM Image: Status Last Mar 30, 2010 8:41 PM WindowsUsedDiskSpace Completed Mar 30, 2010 8:43:16 PM

TIP: The same node name can be listed in the Custom Node Collections view multiple times if it has multiple Custom Poller Collections applied to it. These are not "Nodes" but "Node Collections".

Step 2: View the Details of a Custom Node Collection

To view the details for a specific Custom Node Collection, click the A Open icon that precedes the Node Collection of interest.

As shown in the example below, you can see any incidents that have been generated, the Status history, Conclusions, and Polled Instances.

asics			Incidents	2.85	IS C	onclusions Custo	m Polled	Instances			
lode utive State	cheese	7律 -	0	-				NA	1-1 d 1	Þ	N
tatus	Normal			1	Stat	Last State Chan	- MI	Node	Custom Polle	er Collection	A
olicy	WindowsUsedDiskSpace	-	52	4	0	12,074,299.392	.2	cheese	DiskStorageUs	ed	Ai_
iscovery State	Completed										
iscovery State Last lodified iscovery State information	April 7, 2010 9:40:06 AM MDT	-									
		-	- -								ž

Step 3: View Details of a Polled Instance

Another useful view is the **Custom Polled Instances** view. The first time the specified MIB variable is discovered, the results appear in a Polled Instance object. The Polled Instance object is updated whenever a change in the MIB Expression's State is detected and includes the most recent polled value that caused the State to change.

NOTE: The Custom Polled Instance value does not necessarily reflect the most recent polled value. It is the value that caused the State change.

To view Custom Polled Instances:

- 1. Navigate to the **Monitoring** workspace.
- 2. Select Custom Polled Instances.

This view allows you to easily see all the Polled Instances that are polled by a specific Custom Poller Collection. For example, you can sort the view based on the MIB variable to see all the Polled Instances for a particular Custom Poller Collection.

This table does not include the Custom Poller Collection Name. However, it lists the names of the MIB Variable being polled. Each collection has only one MIB Expression. Therefore, if you use a unique name for your Custom Poller Collection variables, it is easy to associate the Custom Poller Collection with the MIB Expression.

As shown in the example below, another server has the C drive mapped to MIB Suffix (or instance) .1 rather than .2.

File Tools Actions Help	-									
Workspaces	Custo	m Polled	i Instar	nce - C	lustom Polled Instanc	es				
Incident Management	3	0	CIL							
Topology Maps	-		-							
Monitoring				Stat	Last State Chang	MI	- Node	Custom Poller Collection	Active State	State Last Modified
Troubleshooting	10	1	13	8	25,809,061.888	.1	charisma	DiskStorageUsed	Active	Apr 1, 2010 6:18:05 PM
Inventory	0	1	13	0	11,923,087.36	.2	cheese	DiskStorageUsed	Active	Apr 3, 2010 9:23:32 AM
Management Mode		500	1	0	10,629,169.152	.2	cover	DiskStorageUsed	Active	Never
Incident Browsing	Г	100	4	0	5,500,579.84	.2	DEMO-OVPI	DiskStorageUsed	Active	Never
Integration Module Configuration		100	13	0	42,897,698.816	.2	dewolf	DiskStorageUsed	Active	Apr 1, 2010 3:16:02 PM
Configuration	Г	52	13	0	17,283,848.192	.1	dexterity	DiskStorageUsed	Active	Apr 1, 2010 6:21:46 PM
Communication Configuration		52	4	0	35,255,386.112	.2	dougg	DiskStorageUsed	Active	Apr 1, 2010 6:26:17 PM
Discovery Configuration	Г	122	13	0	39,066,861.568	.2	drseattle	DiskStorageUsed	Active	Apr 1, 2010 2:20:56 PM
Monitoring Configuration		50	13	0	12,042.104	.2	ENDNODE14	DiskStorageUsed	Active	Mar 30, 2010 8:38:25 PM
Custom Poller Configuration	Г	100	4	0	13,277,384.704	.2	esxvc	DiskStorageUsed	Active	Apr 1, 2010 6:19:11 PM
A Trap Ecourard Cooling aution		122	28	0	16,947,322.88	.2	etm-bpi	DiskStorageUsed	Active	Apr 1, 2010 6:18:09 PM

Step 4: Evaluate the Results of the Custom Poll

To evaluate the results of our example Custom Poll, trigger the threshold to see the changed State and the generated incident.

1. Copy a few large files onto the disk of the PC to increase the disk usage.

As shown in the example below, copying a few large files onto the disk of the PC causes the Status of the Custom Node Collection to change to Critical.

() Network Node Mana	iger						Uper Narte: system 1
File Tools Actions Help	Cartana and an and a second	an a strangered					
Workspaces	Custom Node Collec	tion - Custom Node Co	lections				
Incident Management Transions Mana	00	*					N
Monitoring	D	Stat VNode	Active State	- Status Last Modifie	Policy	Discovery State	Discovery State Last * Discovery Sta
Non-Normal Node Components Non-Normal Cards Non-Normal Interfaces Non-Normal Nodes Not Responding Addresses Distratice Performance Card Redundancy Groups Node Groups Node Groups Custom Node Collections Custom Node Collections Custom Node Collections		0 dheese	Active	Mar 31, 2010 10:09 PM	WindowsUsedDiskSpace	Completed	Apr 1, 2010 3:43:12 PM

NOTE: The Custom Node Collection Status is not necessarily equivalent to the Status of the Source Node.

2. Open the Custom Poller Collection to see that the value of hrStorageUsed is above the **High** Value threshold. (This is the value that triggered the State change.)

🕘 Custom Node Collection : "com.hp.ov.nms.model.core.Node{discover;	yLastCompleted = 5at Apr 03 09:43:09 MDT 2010, discoveryState = Discover 💶 💌
bttp://deploywin2.cnd.hp.com/nnm/protected/api.jsp?cmd=showForm&entity	/ClassName=com.hp.ov.nms.custompoller.model.CPnode&id=2147775061&binderId=ConsoleBir 🏠
File View Tools Actions Help	
	Custom Node Collection
Basics	Incidents Status Conclusions Custom Polled Instances
Node cheese	□ [1 - 1 of 1
Active State Active	Chall Last Chall Milling
Status Critical	Stat Last State Lhan MI Node Lustom Poller Loli
Policy WindowsUsedDiskSpace 🗊 🕶	🛅 🖾 12,967,661.568 .2 cheese DiskStorageUsed 🔼
Discovery State Completed	
Discovery State Last April 3, 2010 9:43:09 AM MDT Modified	2
Discovery State Information	

3. Navigate to the Incidents tab to see that an incident was generated.

Ø Network Node Mana	ger User Name: system: User Role: Adm
File Tools Actions Help	
Workspaces	Incident - Open Key Incidents
Incident Management Open Key Incidents Unassigned Open Key Incidents	Last Week <
*** My Open Incidents	

The Incident message presents the various names used in creating the Custom Poller Collection. You can change this message by editing the Incident Configuration.

- 4. Select Configuration > Incident Configuration.
- 5. Select Management Event Configuration.
- 6. Click the CustomPollCritical incident configuration.

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7. To view the listing of possible Custom Attributes, open a Custom Poller incident and select the **Custom Attributes** tab.

🛓 🔡 🧏 Save and	l Close 🗙 Delete Incident 🚱						Incid
asics		Genera	Correlated Parent	s Correlated (hildren O	ustom Attributes Diagnostic	:s
Message		Registr	ation				
WindowsUsedDiskSpace/I ((hrStorageUsed / 1000) :tate.	DiskStorageUsed for variable DiskStora(* hrStorageAllocationUnits)) is in the C	geUsed RITICAL				1 - 8 of 8	
			▲ Name		Туре	Yalue	
)evency			cia.customp	oller.collection	String	DiskStorageUsed	<u></u>
monty Seconda Chaba	None -		cia.customp	oller.lastValue	String	12,967,661.568	
irecycle State	Registered		cia.customp	oller.policy	String	WindowsUsedDiskSpace	
ource Node			cia.customp	oller.state	String	CRITICAL	
iource Node	cheese		📔 🔼 cia.customp	oller.variable.de	: String		
iource Object	WindowsUsedDiskSpace	· E	📔 🔼 cia.customp	oller.variable.e>	String	((hrStorageUsed / 1000) *	hrSt
			📔 🔼 cia.customp	oller.variable.na	: String	DiskStorageUsed	
Assigned To			com.hp.ov.	nms.apa.sympto	: String	PolledInstanceCritical	
otes				N			
0123				И			
lotes							
							-
		•					
		Upo	lated: 4/3/10 9:56:14	AM Total: 8	Selected:	U Filter: OFF Auto refresh	: OFF

- 8. For example, to display the most recent value that caused the Custom Node Collection Status to change, you might want to include the Custom Attribute **cia.LastValue** in your message.
- 9. To verify that the Status of the Source Node has changed to Critical, open the Source Node or select a Node View or Map.



After you verify that the Custom Poll is successful and NNMi properly indicates that the disk space is Critical, return the disk to its previous State.

10. Delete the large file from the PC.

11. Verify the Custom Node Collection's Status has returned to Normal, by opening the Custom Node Collection form and navigating to the **Status** tab.

		Custom Node Collection
Basics		Incidents Status Conclusions Custom Polled Instances
Node	cheese 🔐 -	Overall Status
Active State Status	Active Normal	Status Normal Status Last Modified April 3, 2010 10:02:06 AM MDT
Policy	WindowsUsedDiskSpace	
Discovery State	Completed	Status History
Discovery State Last Modified Discovery State Information	April 3, 2010 9:43:09 AM MDT	
		Image: Constraint of the state of

12. Verify that the incident has been closed by returning to the Incident form for the generated incident.

J I	
File View Tools Actions Help	
🚈 📓 😼 Save and Close 🗙 Delete Incident	Incident
Basics	General Correlated Parents Correlated Children Custom Attributes Diagnostics
Message	Registration
WindowsUsedDiskSpace/DiskStorageUsed for variable DiskStorageUsed (((hrStorageUsed / 1000) * hrStorageAllocationUnits)) is in the CRITICAL	Details
state.	Name CustomPollCritical
Severity Critical	Category Performance 💌
Priority None	Family Custom Poller
Lifecycle State Closed	Origin NINMi
	Correlation Nature Root Cause
Source Node cheese	
Source Object WindowsUsedDiskSpace	Duplicate Count 0
	RCA Active
Assigned To	Correlation Notes
	Incident duration: 17 minutes, 51 seconds, 360 ms Time incident detected: Saturday, April 3, 2010 9:44:15 AM MDT
Netes	Time incident resolved: Saturday, April 3, 2010 10:02:06 AM MDT.
Notes	Incident cancelled by: CustomPollNormal.
Notes	
	First Occurrence Time April 3, 2010 9:44:15 AM MDT
	Last Occurrence Time April 3, 2010 9:44:15 AM MDT
	Origin Occurrence April 3, 2010 9:44:15 AM MDT
I	Time

10. Return to the Custom Polled Instances view to verify the value of the MIB Expression is below the **High State** threshold.

🧑 Network Node Manag	jer u
File Tools Actions Help	
Workspaces	Custom Polled Instance - Custom Polled Instances
Incident Management Topology Mans	
Monitoring	🗖 Stat Last State Chance MI 🛛 🖓 Node 🛛 Custom Poller Collection Active State Last Modified
Non-Normal Node Components	Image: Second
 Non-Normal Interfaces Non-Normal Nodes 	6
Not Responding Addresses	
Interface Performance Card Redundancy Groups	
Router Redundancy Groups	
Node Groups	
Custom Node Collections	
Custom Polled Instances	

11. After completing your initial testing, set the poll rate back to the desired value; for example, 5 minutes.

Export the Custom Poller Collection

NNMi enables you to store all the Custom Poller samples to a Command Separated Values (CSV) file.

To enable this feature, check to enable **Export Custom Poller Collection**. This causes NNMi to generate CSV files for each collection.

Note: The exported CSV file contains all samples, not just the samples that trigger a state change.

The CSV files are located in the following directory:

%NnmDataDir%/shared/nnm/databases/custompoller/export/final

The %NnmDataDir% location depends on your operating system:

Windows 2008

```
%NnmDataDir% =
<drive>\ProgramData\HP\HP BTO Software\
```

Windows 2003

```
%NnmDataDir% =
<drive>\Documents and Settings\All Users\Application Data\HP\HP BTO
Software\
```

UNIX

\$NnmDataDir = /var/opt/OV/



The CSV files can be imported into Microsoft Excel for easy viewing and graphing.

2	A	8	C		D	E	F	G	н	
21	B DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.135	cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.	6/1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312174234.00	31250	0.2	11928150	
21	9 DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.13	cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.	6 / 1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312202984.00	28750	0.2	11928150	
22	DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.13	6 cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.)	6/1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312232984.00	30000	0.2	11928150	
22	1 DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.13	5 cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.	5 / 1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312262984.00	30000	0.2	11928150	
22	2 DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.13	5 cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.	6 / 1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312292984.00	30000	0.2	11928150	
22	3 DiskStorageUsed_20100403102732859.csv:0d6b5062-f6d1-44ca-b9dd-113165ae9	9c 15.2.127.13	5 cheese.cnd.hp.com	((.1.3.6.1.2.1.25.2.3.1.	6/1000) * .1.3.6.1.2.1.25.2.3.1.4)	1270312324218.00	31234	0.2	11928228	
22										
22	5									
22 22 22 23 23 23 23 23 23 23 23 23 23 2	6 1340000 7 1320000 9 1280000 0 1280000 1 1260000 1 1200000 2 1200000 3 1200000 4 1200000 6 1360000 6 1340000			Series1						
23 23 24	8	214 214 285 285 356 427 428	569 540 731 732 732 853 924 924 925	1208						

Create the Report Groups from Custom Collections

NOTE: The Report Groups feature is enabled only if you have the license for iSPI Performance for Metrics 9.00.

To create as a Report Group from a Custom Collection:

- 1. Navigate to the **Configuration** workspace.
- 2. Select Custom Poller Configuration.
- 3. Navigate to the Report Groups tab.

File View Tools Actions Help	
🔄 🛅 🏂 Save and Close	Custom Poller Configuration
Note: When you save a Custom Poller Collection configuration, each associated Policy changes to Active State "Suspended". To make a Policy active, access the Custom Poller Configuration: Policies tab, open each associated Policy, and change the Active State to "Active".	Custom Poller Collections Policies Report Groups Report Groups are used to define which custom poller collections are reported to the NNM
Global Control	Caution:
Enable Custom Poller	data associated with the Report Group.
	► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►

 In the Name attribute, enter the report name that you want to appear in the iSPI Performance for Metrics reports tab.

File View Tools Actions Help Image: Construction of the second construction of the sec	. Report Gr
Basics Name TestReport1	Report Collections Caution: Deleting a Report Collection will remove all historical iSPI Performance for Metrics data associated with the Report Collection. Image: Collection will remove all historical iSPI Performance for Metrics data associated with the Report Collection. Image: Collection will remove all historical iSPI Performance for Metrics data Associated with the Report Collection. Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data Image: Collection will remove all historical iSPI Performance for Metrics data

- 5. Click the 🔁 New icon to add a new Report Collection.
- 6. Select the Custom Poller Collection for which you want the data to be reported.
- 7. Select the type of data on which you want to report.

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File View Tools Actions Help Image: Save and Close Image
Basics Custom Poller Collection Report Data Type Gauge Percent Counter

- 8. Click **Save and Close** on each of the Custom Poller configuration forms.
- 9. Wait for 15 to 30 mins and select Actions → Reporting Menu.

As shown in the following example, iSPI Performance for Metrics created the additional tab:

🧑 🛛 NNM iSPI Pe	erformance		Re	eport Menu
Help				
Report Links				
BI Server Portal				
Network Topology S	elf Diagnostics Interfac	e Health Component	Health IP Multicast_Flow	v
IP Multicast Interface	MPLS LSR_Node L3 \	/PN_VRF MPLS LSR_I	nterface Avaya IP Telep	hony CDR Cisco IP
TestReport1				
Calendar D W M + + Commence of the second Commence of the second Com	Chart Detail	Heat Chart	Managed Inventory	Most Changed H D W M

d) Select the H option (Hourly) of the Top N report to see the results.



Troubleshooting Tips

NNMi provides feedback on common errors. This section describes some common types of feedback.

For Custom Poller Collections, NNMi supports queries of the following types (as defined in the MIB). Watch for possible aliases on the types.

Supported MIB Expression Type	Supported MIB Filter Variable Type
INTEGER, Integer32	INTEGER, Integer32
Unsigned32	Unsigned32
Counter, Counter32, Counter64	Gauge, Gauge32
Gauge, Gauge32	OCTET STRING
TimeTicks	IpAddress
OCTET STRING	

If you set up a Custom Poller Collection using a MIB Expression or MIB Filter Variable of an unsupported type, NNMi displays an error in the Discovery State. NNMi also provides some additional information about the failure in the Discovery Information attribute.

	Custor	n Poller	Node - Custom	Node Collection	ns				
		2	0 🔨 🖗					1-4 of 4	N
			Status	🔺 Node	Active	Policy	Discovery State	Discovery Information	
			🔼 📀	KSMITH32	Active	WindowsUsedDiskSpace	Completed		-
			🔼 🖉	KSMITH32	Active	StorageType	Failed <	Custom Poller does not support MIB type found for MIB Poll variable .1.3.6.1.2.1.25.2.1.	•
			🔼 📀	fcov-wadmir	Active	WindowsUsedDiskSpace	Completed		
			🔼 🖉	fcov-wadmir	Active	StorageType	Failed	Custom Poller does not support MIB type found for MIB Poll variable .1.3.6.1.2.1.25.2.1.	•
I						k k			

If no Polled Instances pass the defined filter, you also see a notification in the Discovery Information attribute.

Cu	stom	Poller	Node	- Custom I	Node Collection	าร				
4	3	3	<u>)</u> (ا 😤 ا	-4-	_			₩ ◀ 1-2of2	
Г	1	1		Status	▲ Node	Active	Policy	Discovery State	Discovery Information	
Γ				0	KSMITH32	Active	WindowsUsedDiskSpace	Completed	Information: no MIB instances were found on this node with MIB Filter + J:*	
Г	1			0	fcov-wadmir	Active	WindowsUsedDiskSpace	Completed <	Information: no MIB instances were found on this node with MIB Filter + J:*>>	
									Real Provide American Science Provide American	

Custom Poller log messages can be found in the nnm.*.log and nnm-trace.*.log files.