HP Network Node Manager i Software

Forcing an Interface to be Polled

Software Version 9.00

This document describes how to force NNMi to poll an interface, detailing an alternate solution, which we believe is better than previously published methods. This document provides a step-by-step example of the recommended process.

CONTENTS

Problem Statement

By default, NNMi uses SNMP to monitor interfaces that are connected in the NNMi topology or router interfaces that host an IP address. You may run into situations that require NNMi to use SNMP to monitor additional interfaces. This paper describes the steps you need to complete to do this.

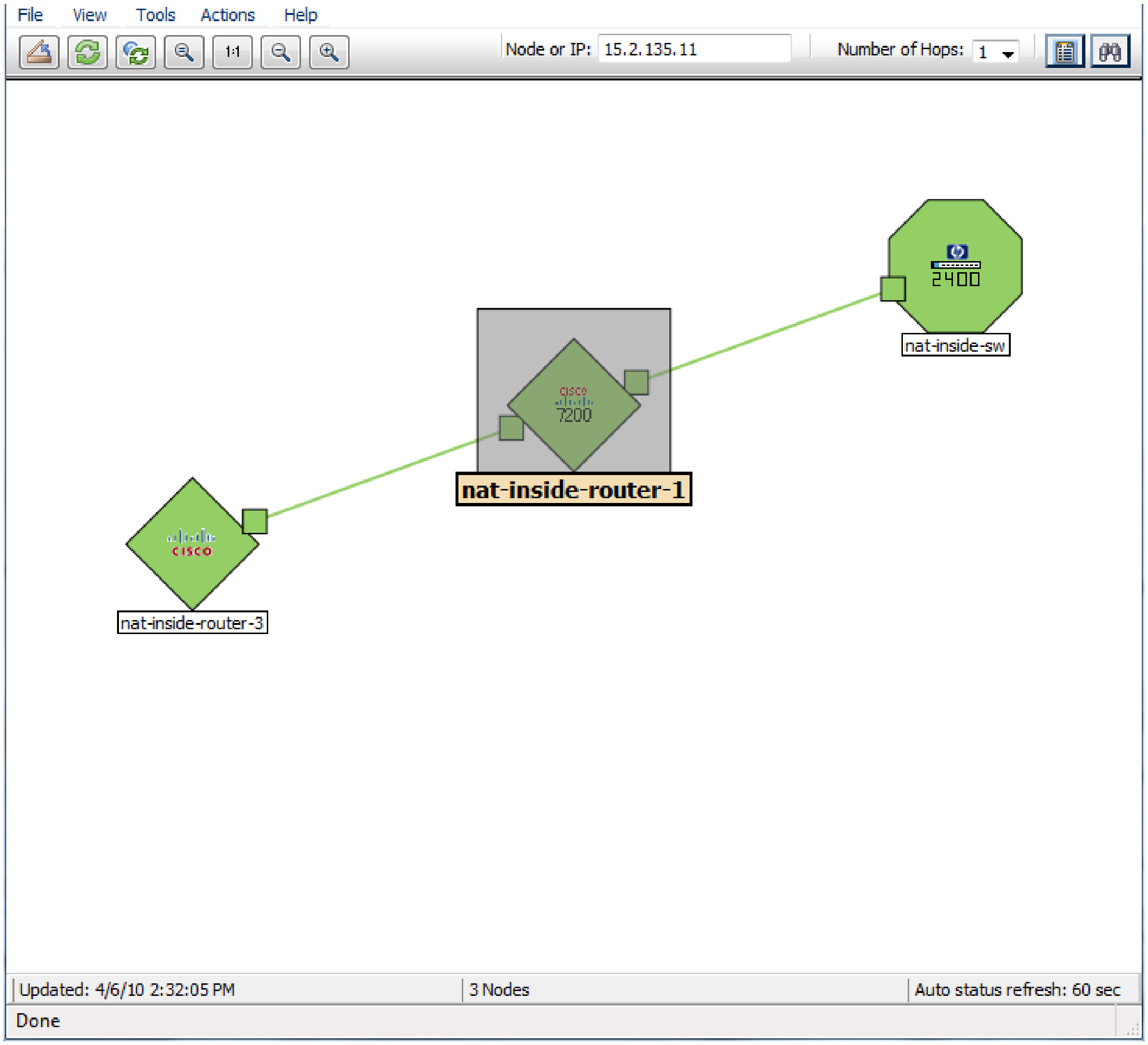
Solution

The easiest way to configure NNMi to monitor an interface is to create a monitoring configuration policy that monitors interfaces with a specific custom attribute. After you create this new monitoring policy, you need to put the specific custom attribute on the interface. Finally, from the NNMi console, run a configuration poll on the node to let NNMi know that it needs to monitor the interface.

Solution Example

Refer to the node called `nat-inside-router-1 in` Figure 1. This node currently only has two connected interfaces, `Fa0/0` and `Fa1/0`.

Figure 1: The nat-inside-router-1 Node

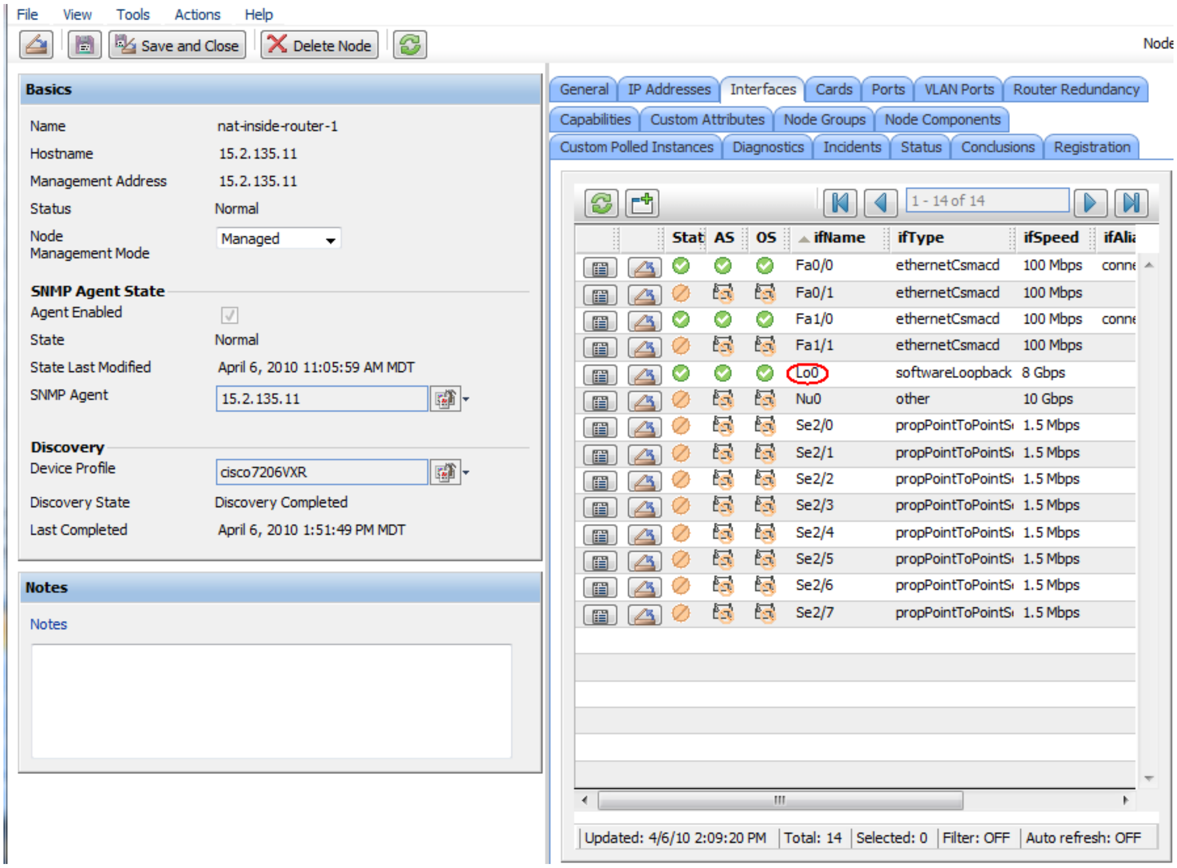


Node or IP: 15.2.135.11

Updated: 4/6/10 2:32:05 PM | 3 Nodes | Auto status refresh: 60 sec

Router `nat-inside-router-1` also has a loopback interface that NNMi is monitoring because it has an IP address hosted on the loopback interface. Suppose you also need to monitor Fa1/0. See the Setting up Polling section to learn how to monitor Fa1/0.

Figure 2: Router nat-inside-router-1 Loopback Interface



Basics

Name: nat-inside-router-1
Hostname: 15.2.135.11
Management Address: 15.2.135.11
Status: Normal
Node Management Mode: Managed

SNMP Agent State

Agent Enabled: ☑
State: Normal
State Last Modified: April 6, 2010 11:05:59 AM MDT
SNMP Agent: 15.2.135.11

Discovery

Device Profile: cisco7206VXR
Discovery State: Discovery Completed
Last Completed: April 6, 2010 1:51:49 PM MDT

Notes

Notes

1 - 14 of 14

Stat	AS	OS	ifName	ifType	ifSpeed	ifAlia
✓	✓	✓	Fa0/0	ethernetCsmacd	100 Mbps	conne
⊘	⊘	⊘	Fa0/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Fa1/0	ethernetCsmacd	100 Mbps	conne
⊘	⊘	⊘	Fa1/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Lo0	softwareLoopback	8 Gbps	
⊘	⊘	⊘	Nu0	other	10 Gbps	
⊘	⊘	⊘	Se2/0	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/1	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/2	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/3	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/4	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/5	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/6	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/7	propPointToPointS	1.5 Mbps	

Updated: 4/6/10 2:09:20 PM | Total: 14 | Selected: 0 | Filter: OFF | Auto refresh: OFF

Setting up Polling

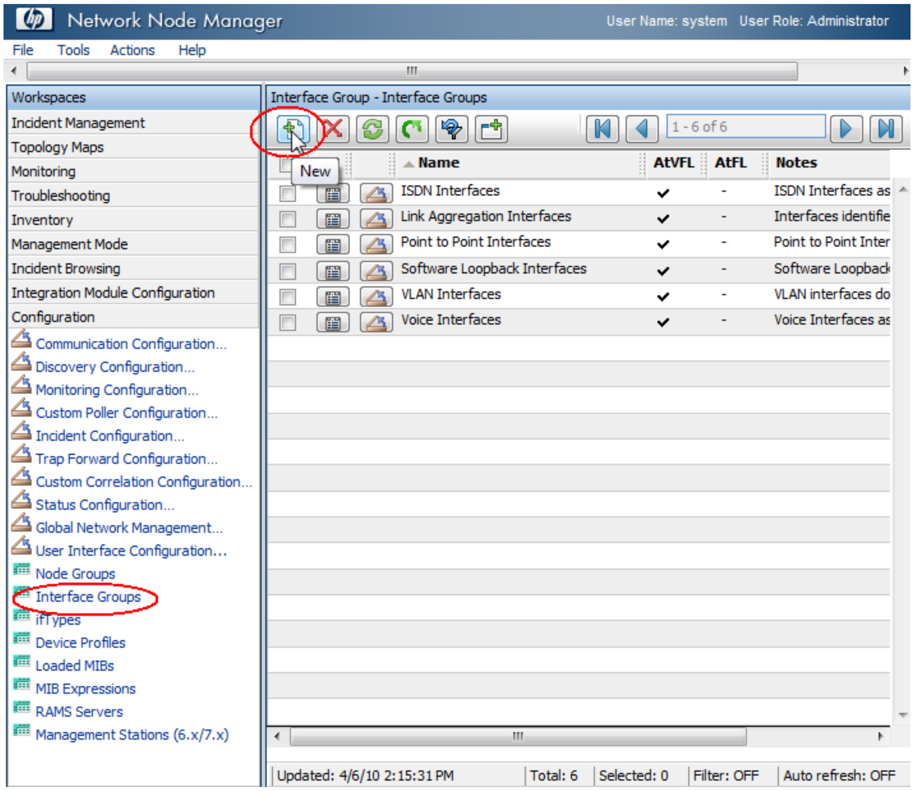
This section describes a *one-time action* that you do not need to do for each additional managed interface.

Creating an Interface Group

The first step is to create an interface filter based on custom attributes.

1. From the NNMi console, click **Configuration**.
2. Click **Interface Groups**.
3. Click the **New** button to create a new `Interface Group` as shown in Figure 2.

Figure 3: Opening the Interface Group Form



Network Node Manager User Name: system User Role: Administrator

File Tools Actions Help

Workspaces
- Incident Management
- Topology Maps
- Monitoring
- Troubleshooting
- Inventory
- Management Mode
- Incident Browsing
- Integration Module Configuration
- Configuration
  - Communication Configuration...
  - Discovery Configuration...
  - Monitoring Configuration...
  - Custom Poller Configuration...
  - Incident Configuration...
  - Trap Forward Configuration...
  - Custom Correlation Configuration...
  - Status Configuration...
  - Global Network Management...
  - User Interface Configuration...
  - Node Groups
  - Interface Groups
  - ifTypes
  - Device Profiles
  - Loaded MIBs
  - MIB Expressions
  - RAMS Servers
  - Management Stations (6.x/7.x)

Interface Group - Interface Groups

New

1 - 6 of 6

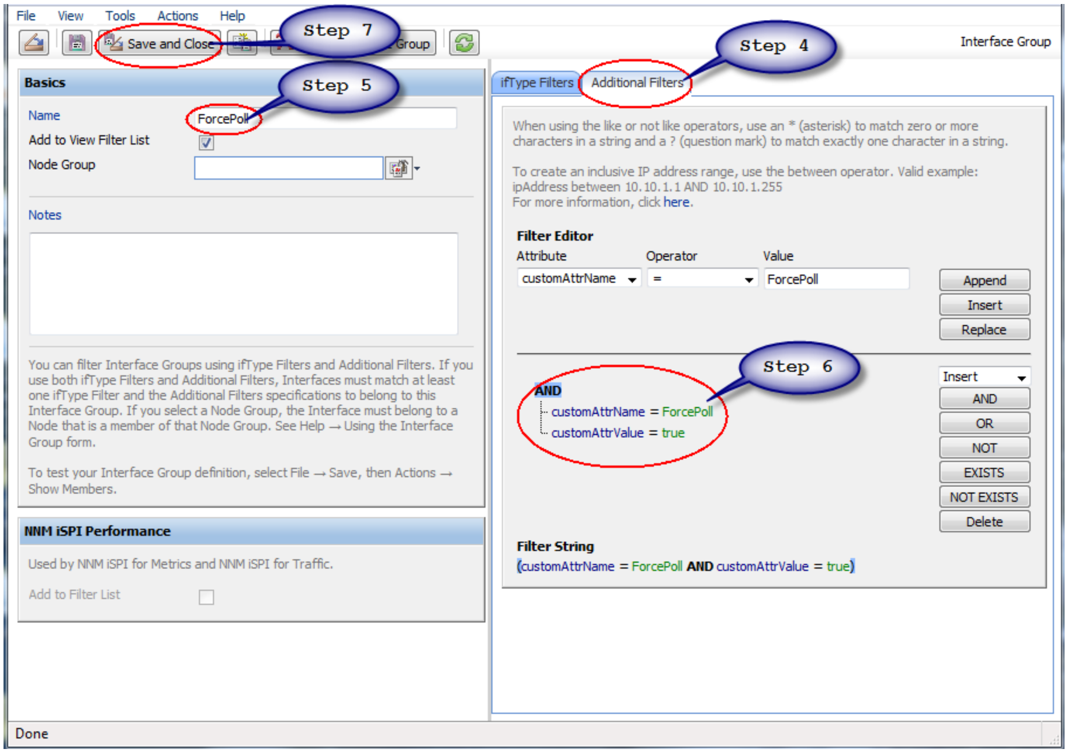
Name	AtVFL	AtFL	Notes
ISDN Interfaces	✓	-	ISDN Interfaces as
Link Aggregation Interfaces	✓	-	Interfaces identifie
Point to Point Interfaces	✓	-	Point to Point Inter
Software Loopback Interfaces	✓	-	Software Loopback
VLAN Interfaces	✓	-	VLAN interfaces do
Voice Interfaces	✓	-	Voice Interfaces as

Updated: 4/6/10 2:15:31 PM | Total: 6 | Selected: 0 | Filter: OFF | Auto refresh: OFF

See Figure 4 for steps 4 through 7.

4. Click the **Additional Filters** tab.
5. For this example, name this group `ForcePoll`.
6. Set the `customAttrValue` to `true`; then click **AND** to AND the customAttrvalue (`true`) with the CustomAttrrName (`ForcePoll`).
7. Click **Save and Close** the `Interface Group` form; click **Save and Close** for any outer forms as well.

Figure 4: Creating a New Interface Group



Basics

Name: ForcePoll

Add to View Filter List: ☑

Node Group:

Notes

You can filter Interface Groups using ifType Filters and Additional Filters. If you use both ifType Filters and Additional Filters, Interfaces must match at least one ifType Filter and the Additional Filters specifications to belong to this Interface Group. If you select a Node Group, the Interface must belong to a Node that is a member of that Node Group. See Help → Using the Interface Group form.

To test your Interface Group definition, select File → Save, then Actions → Show Members.

NNM iSPI Performance

Used by NNM iSPI for Metrics and NNM iSPI for Traffic.

Add to Filter List: □

When using the like or not like operators, use an * (asterisk) to match zero or more characters in a string and a ? (question mark) to match exactly one character in a string.

To create an inclusive IP address range, use the between operator. Valid example:
ipAddress between 10.10.1.1 AND 10.10.1.255
For more information, click here.

Filter Editor

Attribute	Operator	Value
customAttrName	=	ForcePoll

```
AND
├ customAttrName = ForcePoll
└ customAttrValue = true
```

Filter String

(customAttrName = ForcePoll **AND** customAttrValue = true)

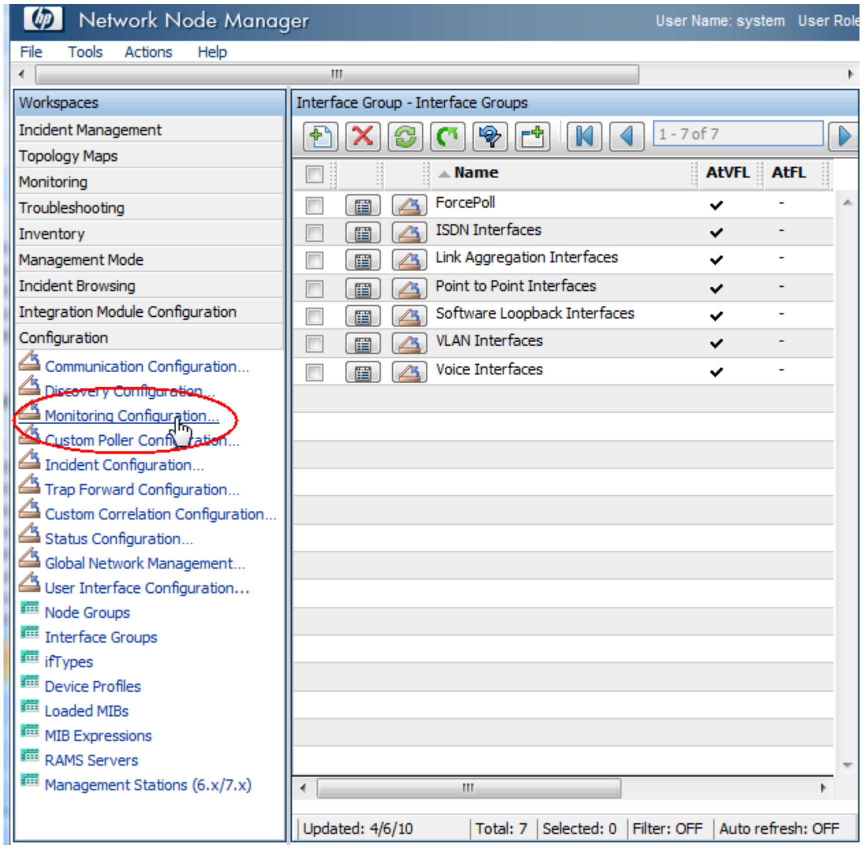
Done

Creating a Monitoring Configuration Policy

The next step is to create a monitoring configuration policy by following these steps:

1. Click the **Monitoring Configuration** workspace.

Figure 5: Click the Monitoring Configuration Workspace



Network Node Manager   User Name: system User Role

File Tools Actions Help

Workspaces
- Incident Management
- Topology Maps
- Monitoring
- Troubleshooting
- Inventory
- Management Mode
- Incident Browsing
- Integration Module Configuration
- Configuration
  - Communication Configuration...
  - Discovery Configuration...
  - Monitoring Configuration...
  - Custom Poller Configuration...
  - Incident Configuration...
  - Trap Forward Configuration...
  - Custom Correlation Configuration...
  - Status Configuration...
  - Global Network Management...
  - User Interface Configuration...
  - Node Groups
  - Interface Groups
  - ifTypes
  - Device Profiles
  - Loaded MIBs
  - MIB Expressions
  - RAMS Servers
  - Management Stations (6.x/7.x)

Interface Group - Interface Groups   1 - 7 of 7

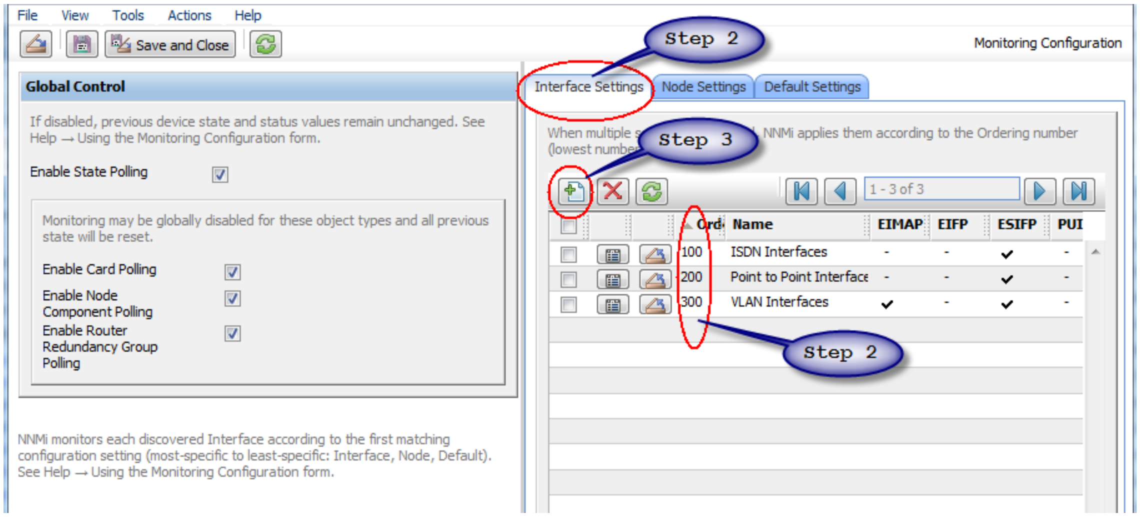
Name	AtVFL	AtFL
ForcePoll	✓	-
ISDN Interfaces	✓	-
Link Aggregation Interfaces	✓	-
Point to Point Interfaces	✓	-
Software Loopback Interfaces	✓	-
VLAN Interfaces	✓	-
Voice Interfaces	✓	-

Updated: 4/6/10 | Total: 7 | Selected: 0 | Filter: OFF | Auto refresh: OFF

See Figure 6 for steps 2 through 3.

2. Click the **Interface Settings** tab; then write down the current ordering values.
3. Click the **New** icon.

Figure 6: Opening the Interface Settings Form



File View Tools Actions Help

Save and Close   Monitoring Configuration

Global Control

If disabled, previous device state and status values remain unchanged. See Help → Using the Monitoring Configuration form.

Enable State Polling ☑

Monitoring may be globally disabled for these object types and all previous state will be reset.

Enable Card Polling ☑

Enable Node Component Polling ☑

Enable Router Redundancy Group Polling ☑

NNMi monitors each discovered Interface according to the first matching configuration setting (most-specific to least-specific: Interface, Node, Default). See Help → Using the Monitoring Configuration form.

Interface Settings | Node Settings | Default Settings

When multiple s... NNMi applies them according to the Ordering number (lowest numbe...

1 - 3 of 3

Ord	Name	EIMAP	EIFP	ESIFP	PUI
100	ISDN Interfaces	-	-	✓	-
200	Point to Point Interface	-	-	✓	-
300	VLAN Interfaces	✓	-	✓	-

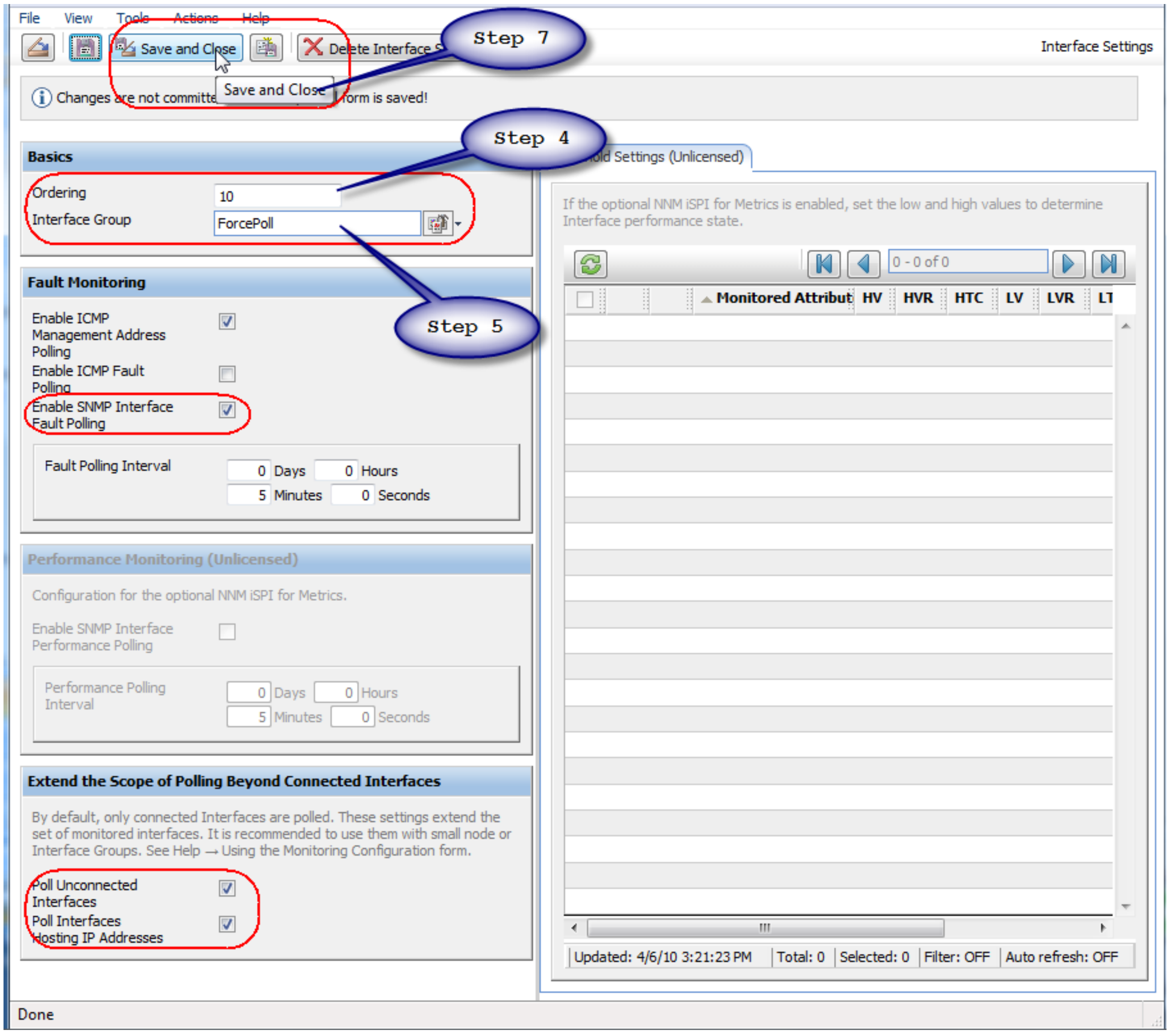
4. In the `Interface Settings` form shown in Figure 7, enter an `Ordering` value that is lower (higher priority) than the values that you wrote down from the previous form. Entering a lower value causes this policy to apply to all interfaces with this Custom Attribute setting.
5. Select `ForcePoll` as the Interface Group.

IMPORTANT: You **MUST** select the following check boxes:

- **Enable SNMP Interface Fault Polling**
- **Poll Unconnected Interfaces** under `Extend the Scope of Polling Beyond Connected Interfaces`
- **Poll Interfaces Hosting IP Addresses** under `Extend the Scope of Polling Beyond Connected Interfaces`

6. Select the `Enable ICMP Fault Polling` check box if you want to ping any IP addresses hosted on this interface.
   Note: This example does not include any IP addresses hosted on this interface.
7. Click **Save and Close** on this form; click **Save and Close** for any outer forms as well.

Figure 7: Configuring the Monitoring Settings



Changes are not committe... form is saved!

Basics

Ordering: 10
Interface Group: ForcePoll

Fault Monitoring

Enable ICMP Management Address Polling ☑
Enable ICMP Fault Polling ☐
Enable SNMP Interface Fault Polling ☑

Fault Polling Interval: 0 Days 0 Hours 5 Minutes 0 Seconds

Performance Monitoring (Unlicensed)

Configuration for the optional NNM iSPI for Metrics.

Enable SNMP Interface Performance Polling ☐

Performance Polling Interval: 0 Days 0 Hours 5 Minutes 0 Seconds

Extend the Scope of Polling Beyond Connected Interfaces

By default, only connected Interfaces are polled. These settings extend the set of monitored interfaces. It is recommended to use them with small node or Interface Groups. See Help → Using the Monitoring Configuration form.

Poll Unconnected Interfaces ☑
Poll Interfaces Hosting IP Addresses ☑

...old Settings (Unlicensed)

If the optional NNM iSPI for Metrics is enabled, set the low and high values to determine Interface performance state.

0 - 0 of 0

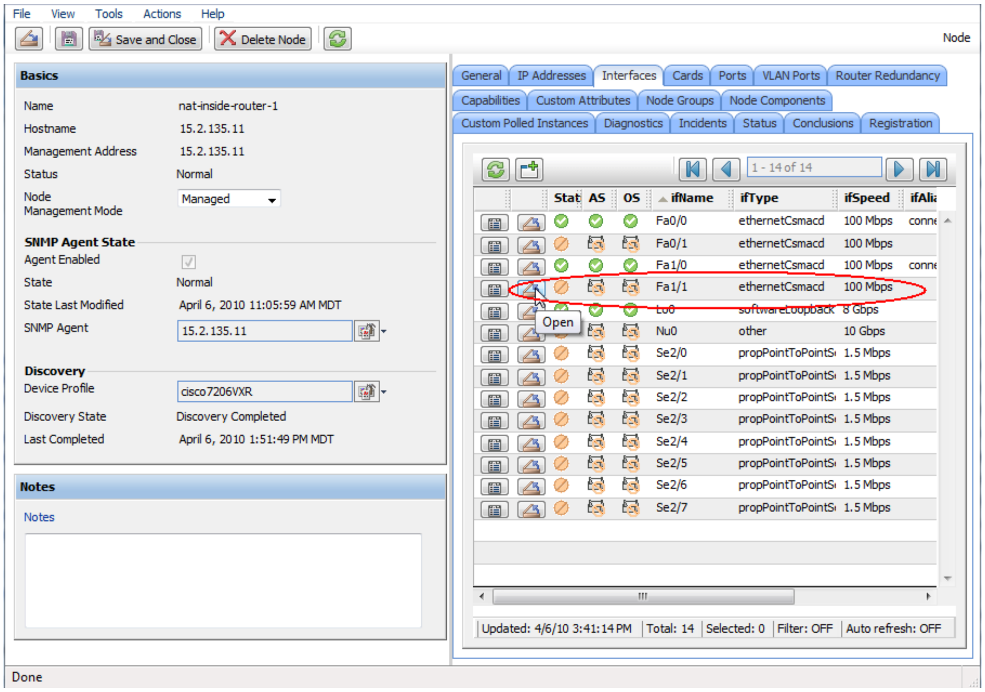
☐	Monitored Attribut	HV	HVR	HTC	LV	LVR	LT

Updated: 4/6/10 3:21:23 PM | Total: 0 | Selected: 0 | Filter: OFF | Auto refresh: OFF

Done

Put the Custom Attribute on the Required Interface

1. Open the interface that you want to force to be polled. This is interface `Fa1/1` in this example.



Basics

Name nat-inside-router-1
Hostname 15.2.135.11
Management Address 15.2.135.11
Status Normal
Node Management Mode Managed

SNMP Agent State

Agent Enabled ☑
State Normal
State Last Modified April 6, 2010 11:05:59 AM MDT
SNMP Agent 15.2.135.11

Discovery

Device Profile cisco7206VXR
Discovery State Discovery Completed
Last Completed April 6, 2010 1:51:49 PM MDT

Notes

Notes

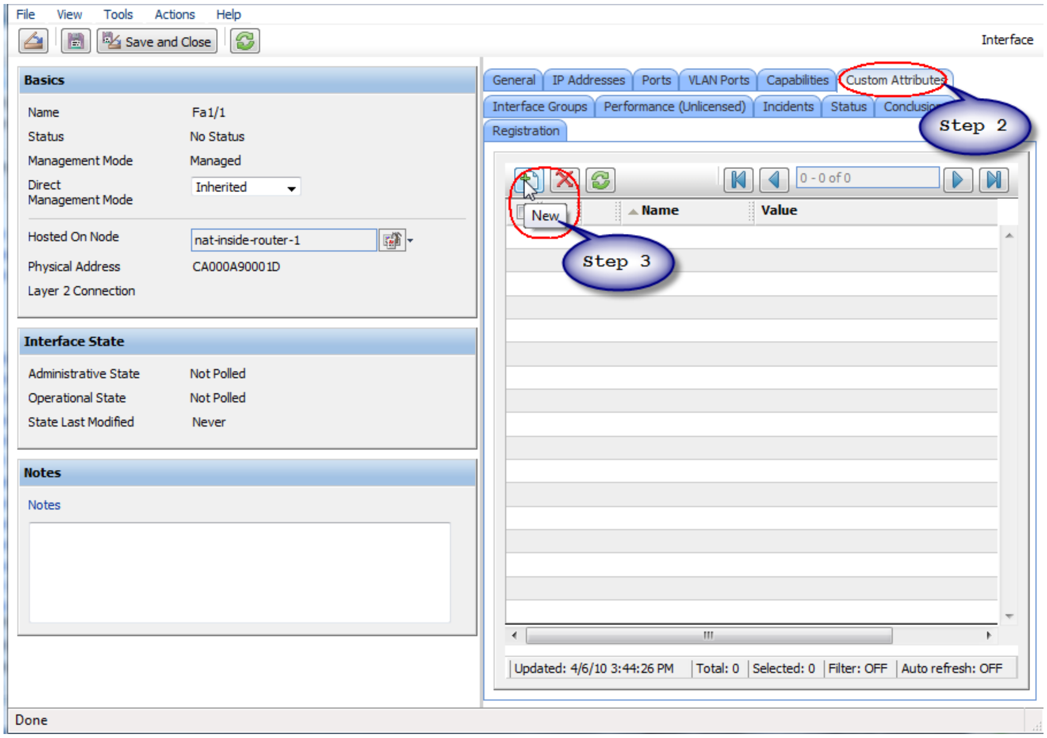
Stat	AS	OS	ifName	ifType	ifSpeed	ifAli
✓	✓	✓	Fa0/0	ethernetCsmacd	100 Mbps	conn
⊘	⊘	⊘	Fa0/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Fa1/0	ethernetCsmacd	100 Mbps	conn
⊘	⊘	⊘	Fa1/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Lo0	softwareLoopback	8 Gbps	
⊘	⊘	⊘	Nu0	other	10 Gbps	
⊘	⊘	⊘	Se2/0	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/1	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/2	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/3	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/4	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/5	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/6	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/7	propPointToPointS	1.5 Mbps	

Updated: 4/6/10 3:41:14 PM | Total: 14 | Selected: 0 | Filter: OFF | Auto refresh: OFF

See Figure 8 for steps 2 and 3.

2. Click the **Custom Attributes** tab.
3. Click the **New** button.

Figure 8: Adding the New Custom Attribute



Basics

Name Fa1/1
Status No Status
Management Mode Managed
Direct Management Mode Inherited
Hosted On Node nat-inside-router-1
Physical Address CA000A90001D
Layer 2 Connection

Interface State

Administrative State Not Polled
Operational State Not Polled
State Last Modified Never

Notes

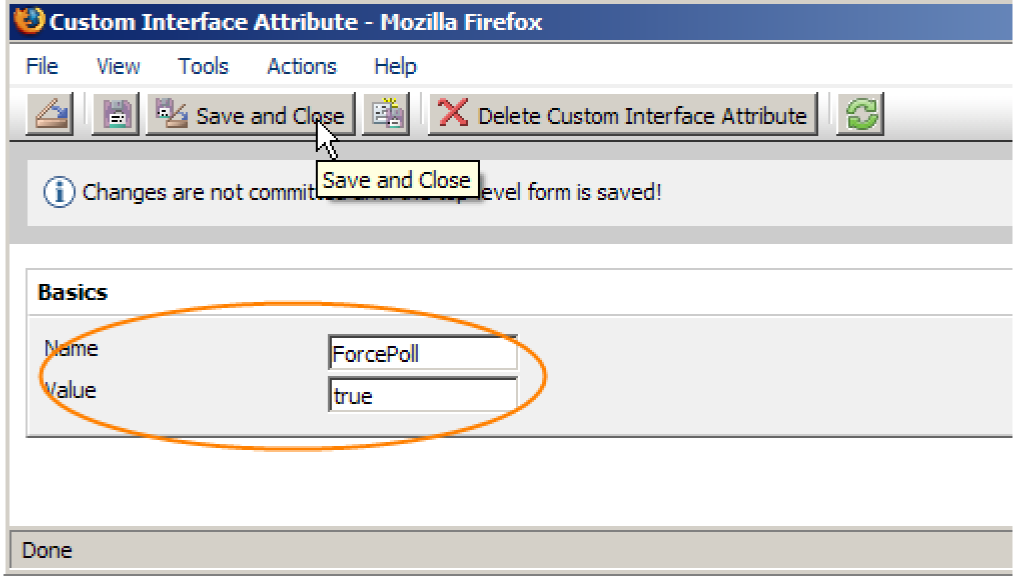
Notes

Name	Value

Updated: 4/6/10 3:44:26 PM | Total: 0 | Selected: 0 | Filter: OFF | Auto refresh: OFF

4. Set the `Name` to `ForcePoll` and the `Value` to `true`. Note that this text is case sensitive.

5. Click **Save and Close**; click **Save and Close** for any outer forms as well.


Custom Interface Attribute - Mozilla Firefox
File
View
Tools
Actions
Help
Save and Close
Delete Custom Interface Attribute
Save and Close

Changes are not commit evel form is saved!

Basics

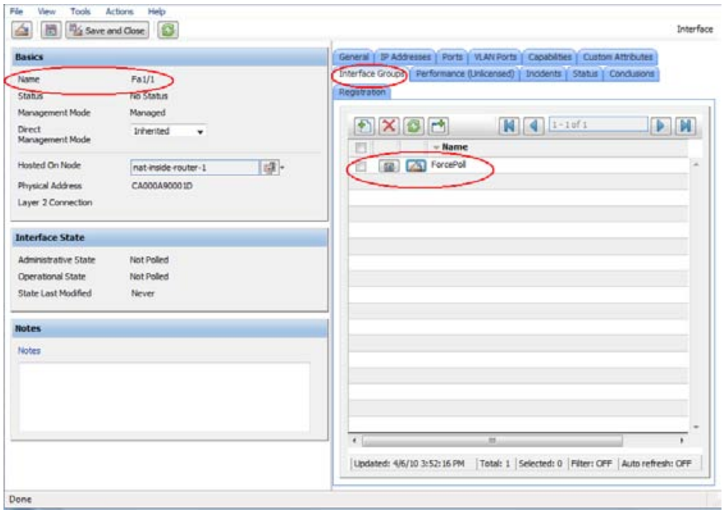
Name ForcePoll

Value true

Done

6. Reopen the form; then click the **Interface Groups** tab. NNMi shows that interface `Fa1/1` is now in the `ForcePoll` group.

Figure 9: Interface Fa1/1 is in the ForcePoll Group



Basics

Name Fa1/1

Status No Status

Management Mode Managed

Direct Management Mode Inherited

Hosted On Node nat-inside-router-1

Physical Address CA000A90001D

Layer 2 Connection

Interface State

Administrative State Not Polled

Operational State Not Polled

State Last Modified Never

Notes

Notes

Name
ForcePoll

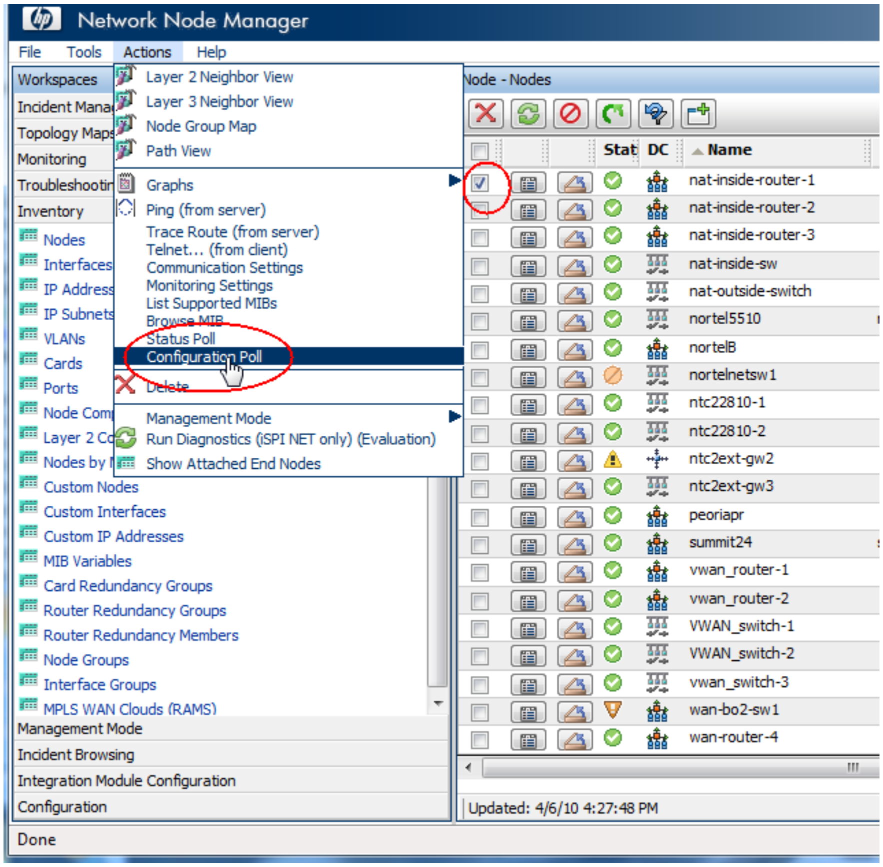
Updated: 4/6/10 3:52:16 PM | Total: 1 | Selected: 0 | Filter: OFF | Auto refresh: OFF

Run a Configuration Poll and a Status Poll on the Node

See Figure 10 for steps 1 and 2.

1. You must run a configuration poll on the node in order to activate the `ForcePoll` monitoring configuration policy.
2. Follow the configuration poll by a status poll to get the most up-to-date status.

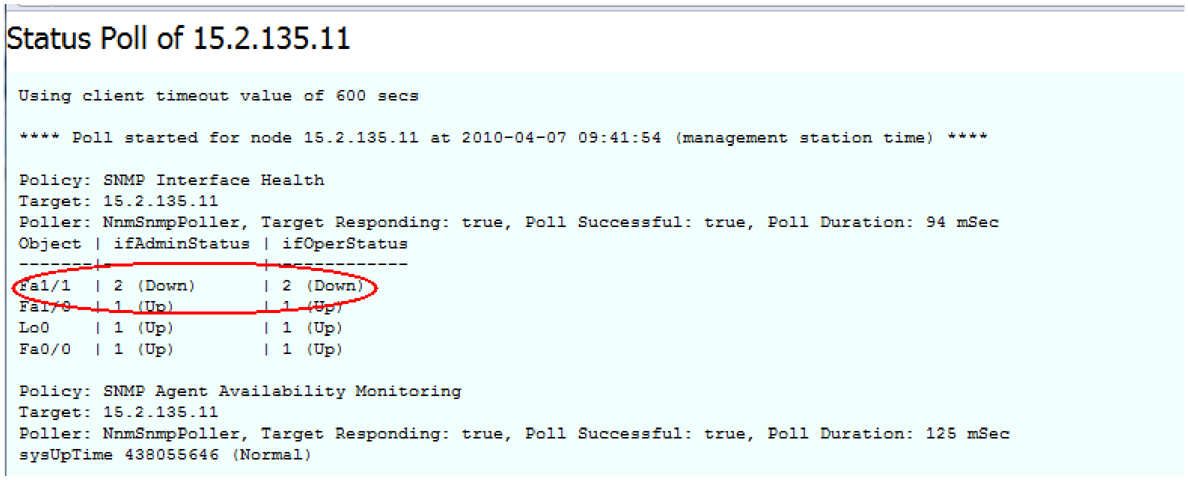
Figure 10: Run a Configuration Poll and a Status Poll



	Stat	Name
☑	✓	nat-inside-router-1
☐	✓	nat-inside-router-2
☐	✓	nat-inside-router-3
☐	✓	nat-inside-sw
☐	✓	nat-outside-switch
☐	✓	nortel5510
☐	✓	nortelB
☐	⊘	nortelnetsw1
☐	✓	ntc22810-1
☐	✓	ntc22810-2
☐	⚠	ntc2ext-gw2
☐	✓	ntc2ext-gw3
☐	✓	peoriapr
☐	✓	summit24
☐	✓	vwan_router-1
☐	✓	vwan_router-2
☐	✓	VWAN_switch-1
☐	✓	VWAN_switch-2
☐	✓	vwan_switch-3
☐	▽	wan-bo2-sw1
☐	✓	wan-router-4

You can see NNMi poll the node in the Status Poll output shown in Figure 11

Figure 11: Status Poll Output

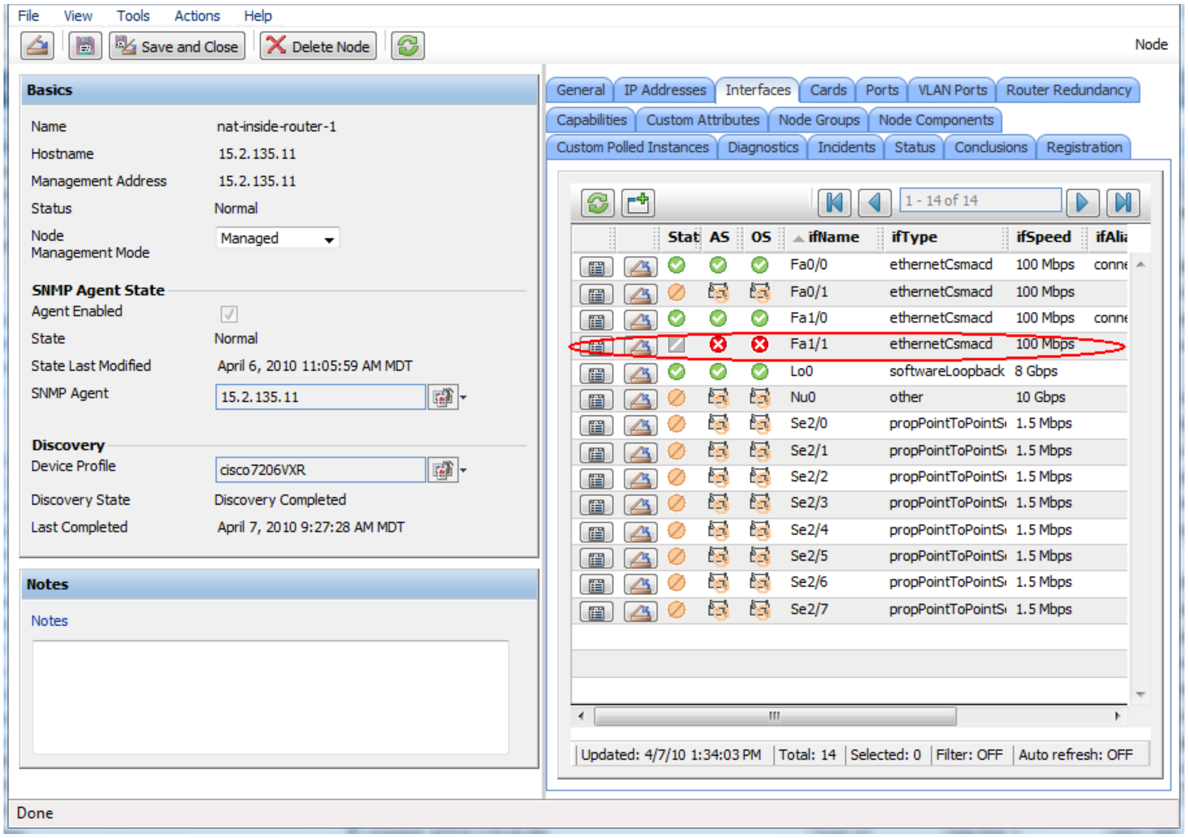


Status Poll of 15.2.135.11

```
Using client timeout value of 600 secs

**** Poll started for node 15.2.135.11 at 2010-04-07 09:41:54 (management station time) ****

Policy: SNMP Interface Health
Target: 15.2.135.11
Poller: NnmSnmpPoller, Target Responding: true, Poll Successful: true, Poll Duration: 94 mSec
Object | ifAdminStatus | ifOperStatus
-------|---------------|-------------
Fa1/1  | 2 (Down)      | 2 (Down)
Fa1/0  | 1 (Up)        | 1 (Up)
Lo0    | 1 (Up)        | 1 (Up)
Fa0/0  | 1 (Up)        | 1 (Up)

Policy: SNMP Agent Availability Monitoring
Target: 15.2.135.11
Poller: NnmSnmpPoller, Target Responding: true, Poll Successful: true, Poll Duration: 125 mSec
sysUpTime 438055646 (Normal)
```

3. After you refresh the node form, you see NNMi polling the interface. Although there are better examples, as the status of this interface is currently `Administratively Down`, the combined procedures still explain how to solve the initial problem.

Figure 12: Shows Interface Down



Basics

Name: nat-inside-router-1
Hostname: 15.2.135.11
Management Address: 15.2.135.11
Status: Normal
Node Management Mode: Managed

SNMP Agent State

Agent Enabled: ☑
State: Normal
State Last Modified: April 6, 2010 11:05:59 AM MDT
SNMP Agent: 15.2.135.11

Discovery

Device Profile: cisco7206VXR
Discovery State: Discovery Completed
Last Completed: April 7, 2010 9:27:28 AM MDT

Notes

Notes

1 - 14 of 14

Stat	AS	OS	ifName	ifType	ifSpeed	ifAlia
✓	✓	✓	Fa0/0	ethernetCsmacd	100 Mbps	conne
⊘	⊘	⊘	Fa0/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Fa1/0	ethernetCsmacd	100 Mbps	conne
□	✗	✗	Fa1/1	ethernetCsmacd	100 Mbps	
✓	✓	✓	Lo0	softwareLoopback	8 Gbps	
⊘	⊘	⊘	Nu0	other	10 Gbps	
⊘	⊘	⊘	Se2/0	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/1	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/2	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/3	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/4	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/5	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/6	propPointToPointS	1.5 Mbps	
⊘	⊘	⊘	Se2/7	propPointToPointS	1.5 Mbps	

Updated: 4/7/10 1:34:03 PM | Total: 14 | Selected: 0 | Filter: OFF | Auto refresh: OFF

Conclusion

NNMi is flexible enough to assist you if you need to use SNMP to monitor additional interfaces. You can configure NNMi to monitor additional interfaces using a monitoring configuration policy and a specific custom attribute that you define. You then add this attribute to the interface, so that the interface can be monitored using SNMP. You can accomplish this by following the steps presented in this paper.

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Acknowledgements

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