

# Step-by-Step Guide to Monitoring Interfaces Using Interface Groups

This document describes how to configure monitoring to include interfaces that are not polled by default. To do so, it uses the following two scenarios:

- Change Monitoring Settings for a group of interfaces with common attributes
- Change Monitoring Settings for a group of interfaces without common attributes



To exclude interfaces from being monitored, you can set the Management Mode to **Not Managed** or **Out of Service**. See the *NNMi Help for Administrators* for more information about Management Mode.

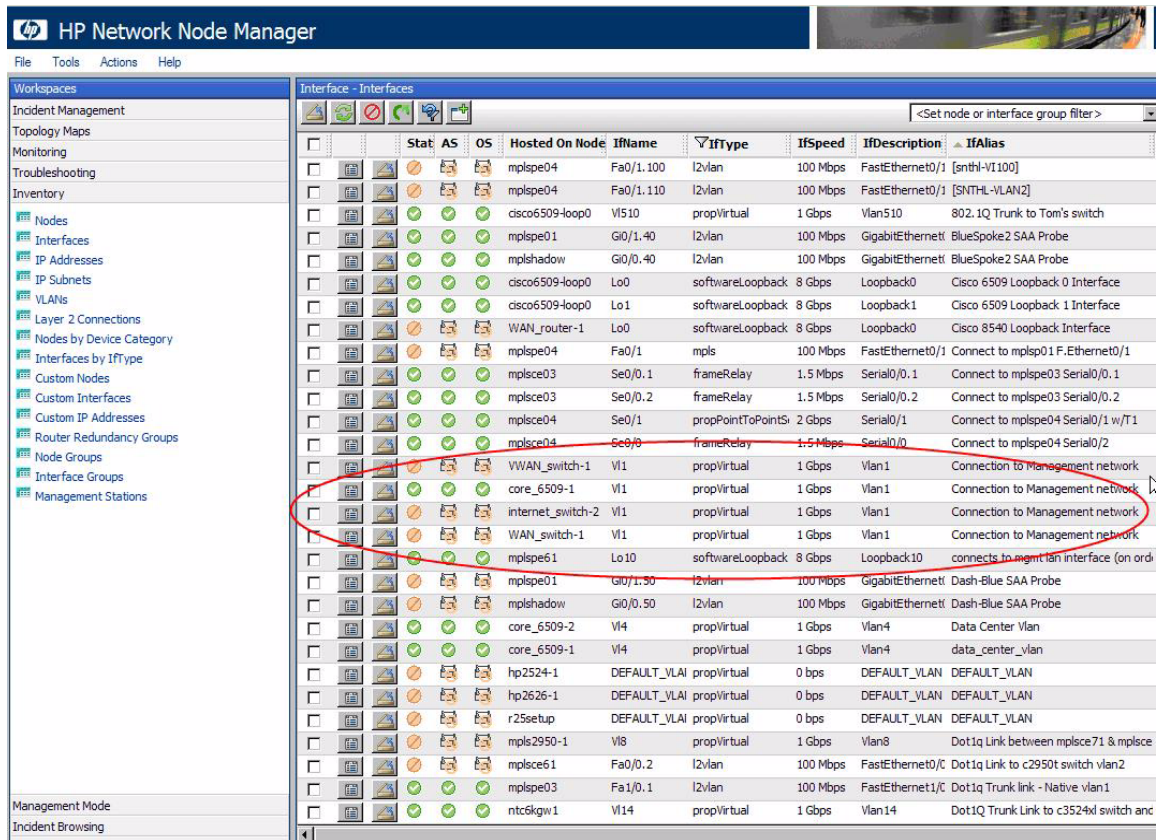
Note that some screen captures might be different from those that appear in the most recent NNMi console.

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## Change Monitoring Settings for a Group of Interfaces with Common Attributes

This scenario describes how to change the monitoring settings for interfaces that share the common `ifAlias`: **Connection to Management network**.

As shown in the following example, some of these interfaces are monitored and others are not.



HP Network Node Manager

File Tools Actions Help

Workspaces

- Incident Management
- Topology Maps
- Monitoring
- Troubleshooting
- Inventory
- Nodes
- Interfaces
- IP Addresses
- IP Subnets
- VLANs
- Layer 2 Connections
- Nodes by Device Category
- Interfaces by IfType
- Custom Nodes
- Custom Interfaces
- Custom IP Addresses
- Router Redundancy Groups
- Node Groups
- Interface Groups
- Management Stations

Management Mode

Incident Browsing

Interface - Interfaces

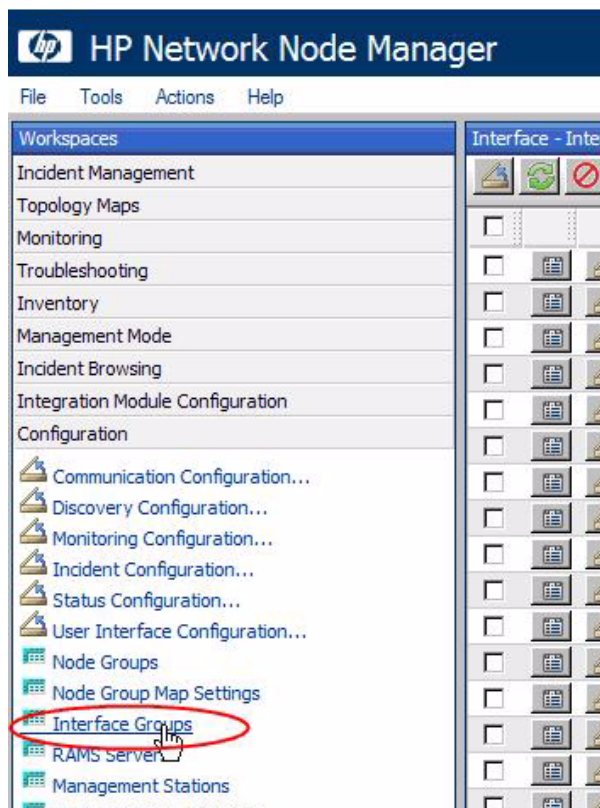
<Set node or interface group filter>

	Stat	AS	OS	Hosted On Node	IfName	IfType	IfSpeed	IfDescription	IfAlias
<input type="checkbox"/>				mpls04	Fa0/1.100	I2vlan	100 Mbps	FastEthernet0/1	[snthl-V1100]
<input type="checkbox"/>				mpls04	Fa0/1.110	I2vlan	100 Mbps	FastEthernet0/1	[SNTHL-VLAN2]
<input type="checkbox"/>				cisco6509-loop0	Vl510	propVirtual	1 Gbps	Vlan510	802.1Q Trunk to Tom's switch
<input type="checkbox"/>				mpls01	Gi0/1.40	I2vlan	100 Mbps	GigabitEthernet	BlueSpoke2 SAA Probe
<input type="checkbox"/>				mplshadow	Gi0/0.40	I2vlan	100 Mbps	GigabitEthernet	BlueSpoke2 SAA Probe
<input type="checkbox"/>				cisco6509-loop0	Lo0	softwareLoopback	8 Gbps	Loopback0	Cisco 6509 Loopback 0 Interface
<input type="checkbox"/>				cisco6509-loop0	Lo1	softwareLoopback	8 Gbps	Loopback1	Cisco 6509 Loopback 1 Interface
<input type="checkbox"/>				WAN_router-1	Lo0	softwareLoopback	8 Gbps	Loopback0	Cisco 8540 Loopback Interface
<input type="checkbox"/>				mpls04	Fa0/1	mpls	100 Mbps	FastEthernet0/1	Connect to mpls01 F.Ethernet0/1
<input type="checkbox"/>				mpls03	Se0/0.1	frameRelay	1.5 Mbps	Serial0/0.1	Connect to mpls03 Serial0/0.1
<input type="checkbox"/>				mpls03	Se0/0.2	frameRelay	1.5 Mbps	Serial0/0.2	Connect to mpls03 Serial0/0.2
<input type="checkbox"/>				mpls04	Se0/1	propPointToPointS	2 Gbps	Serial0/1	Connect to mpls04 Serial0/1 w/T1
<input type="checkbox"/>				mpls04	Se0/0	frameRelay	1.5 Mbps	Serial0/0	Connect to mpls04 Serial0/2
<input type="checkbox"/>				VWAN_switch-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				core_6509-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				internet_switch-2	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				WAN_switch-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				mpls01	Lo10	softwareLoopback	8 Gbps	Loopback10	connects to mpls01 interface (on ord
<input type="checkbox"/>				mpls01	Gi0/1.30	I2vlan	100 Mbps	GigabitEthernet	Dash-Blue SAA Probe
<input type="checkbox"/>				mplshadow	Gi0/0.50	I2vlan	100 Mbps	GigabitEthernet	Dash-Blue SAA Probe
<input type="checkbox"/>				core_6509-2	Vl4	propVirtual	1 Gbps	Vlan4	Data Center Vlan
<input type="checkbox"/>				core_6509-1	Vl4	propVirtual	1 Gbps	Vlan4	data_center_vlan
<input type="checkbox"/>				hp2524-1	DEFAULT_VLAI	propVirtual	0 bps	DEFAULT_VLAN	DEFAULT_VLAN
<input type="checkbox"/>				hp2626-1	DEFAULT_VLAI	propVirtual	0 bps	DEFAULT_VLAN	DEFAULT_VLAN
<input type="checkbox"/>				r25setup	DEFAULT_VLAI	propVirtual	0 bps	DEFAULT_VLAN	DEFAULT_VLAN
<input type="checkbox"/>				mpls2950-1	Vl8	propVirtual	1 Gbps	Vlan8	Dot1q Link between mpls71 & mplsce
<input type="checkbox"/>				mpls01	Fa0/0.2	I2vlan	100 Mbps	FastEthernet0/2	Dot1q Link to c2950t switch vlan2
<input type="checkbox"/>				mpls03	Fa1/0.1	I2vlan	100 Mbps	FastEthernet1/0	Dot1q Trunk link - Native vlan1
<input type="checkbox"/>				ntc6kgw1	Vl14	propVirtual	1 Gbps	Vlan14	Dot1q Trunk Link to c3524x switch and

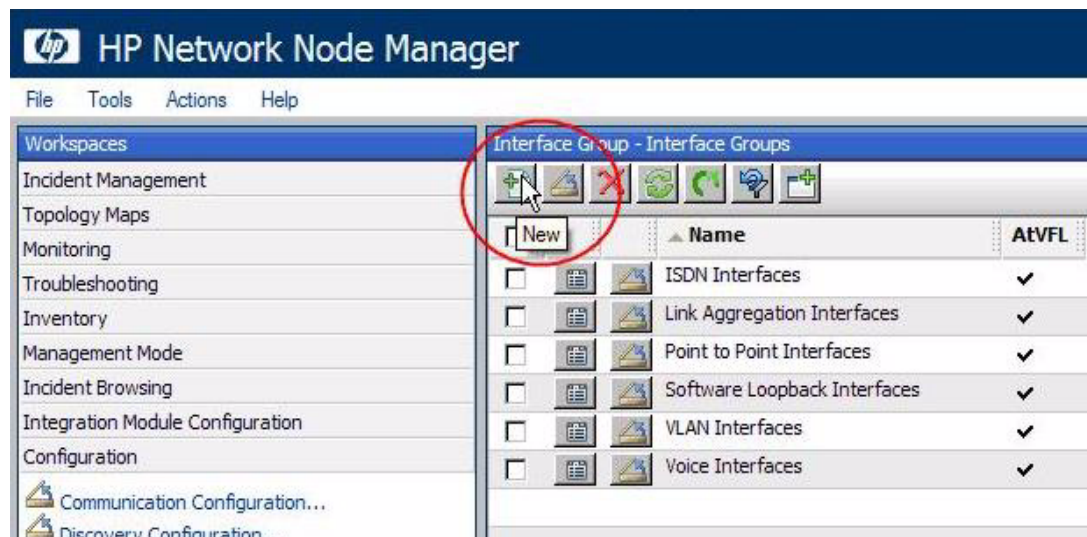
## Step 1: Create an Interface Group Using an ifAlias Filter

To create an interface group based on an ifAlias value:

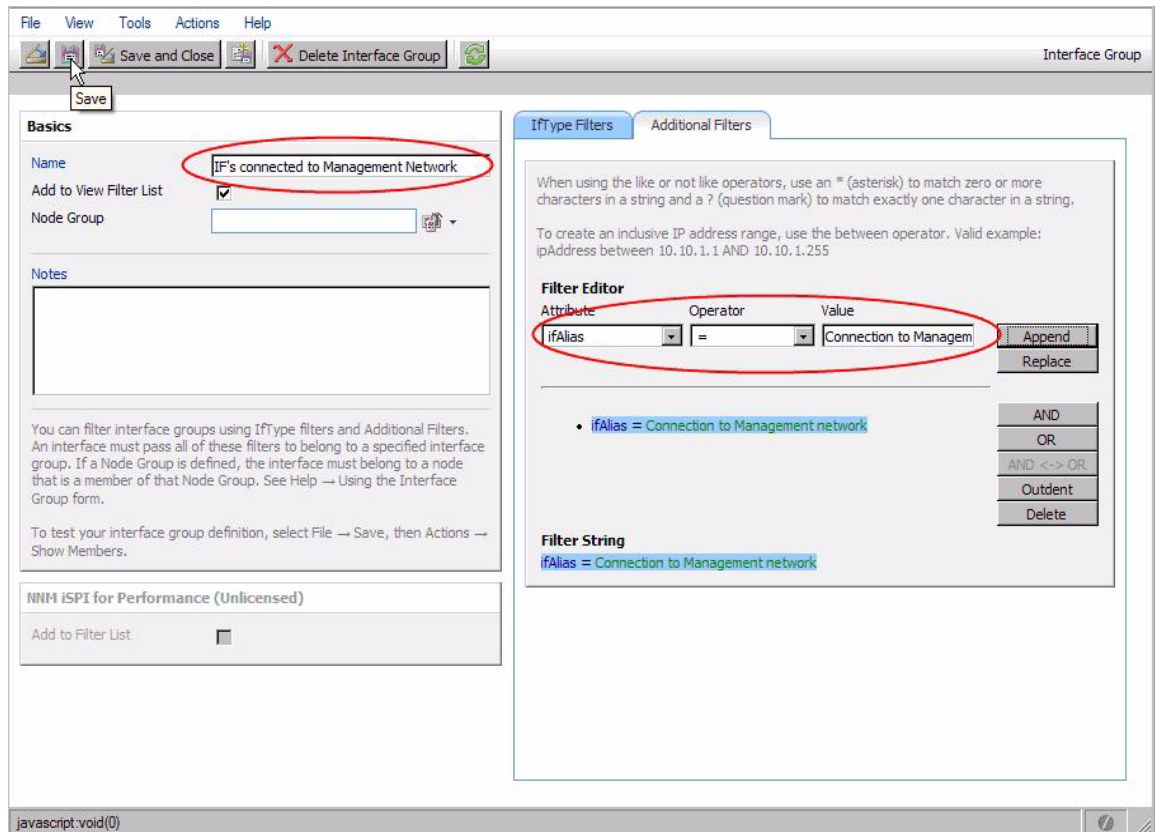
- 1 Navigate to the **Configuration** workspace
- 2 Select **Interface Groups**.



3 Click  **New**.








































- 4 In the **Name** attribute, enter: **IFs connected to Management Network**.
- 5 Select the **Additional Filters** tab.
- 6 In the **Attribute** field, select **ifAlias** from the drop down menu.
- 7 In the **Operator** field, select **=** from the drop down menu.
- 8 In the **Value** field, enter: **Connection to Management**.
- 9 Click **Save** to save the configuration.



To examine the results of the interface group filter, use the **Actions** menu.

#### 10 Select **Actions->Show Members**.

NNMi displays the list of interfaces that matched the filter.

File View Tools Actions Help											
    		IF's connected to Management Network (Interfaces)					 		1 - 6 of 6		
<input type="checkbox"/>			Stat	AS	OS	Hosted On Node	IfName	IfType	IfSpeed	IfDescription	▲ IfAlias
<input type="checkbox"/>	 				internet_switch-2	VI1	propVirtual	1 Gbps	Vlan1		Connection to Management network
<input type="checkbox"/>	 				dave_test	VL1	ethernetCsmacd	10 Mbps	VLAN1		Connection to Management network
<input type="checkbox"/>	 				core_6509-1	VI1	propVirtual	1 Gbps	Vlan1		Connection to Management network
<input type="checkbox"/>	 				WAN_router-1	Fa0/0/1	ethernetCsmacd	100 Mbps	FastEthernet0/0/1		Connection to Management network
<input type="checkbox"/>	 				WAN_switch-1	VI1	propVirtual	1 Gbps	Vlan1		Connection to Management network
<input type="checkbox"/>	 				VWAN_switch-1	VI1	propVirtual	1 Gbps	Vlan1		Connection to Management network

#### 11 Close the **Interface Group** form.

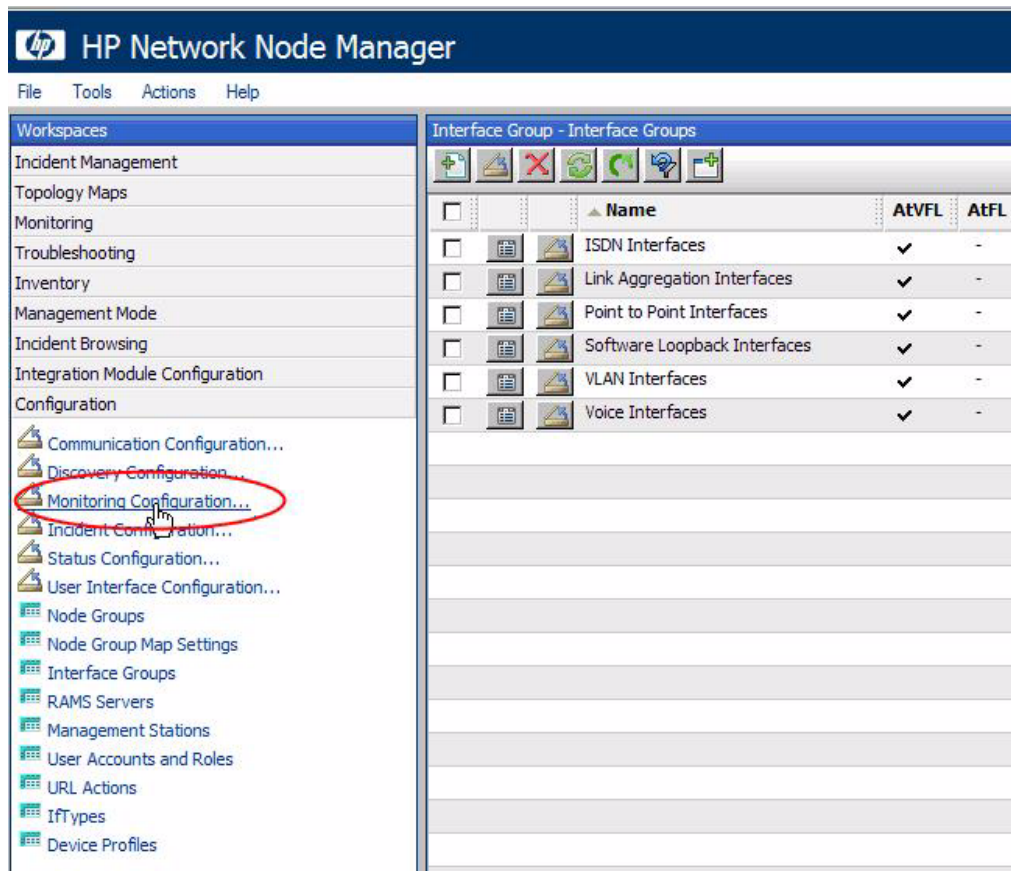
Next, we apply a polling policy to monitor all of these interfaces.


## Step 2: Apply a Polling Policy to the Interface Group

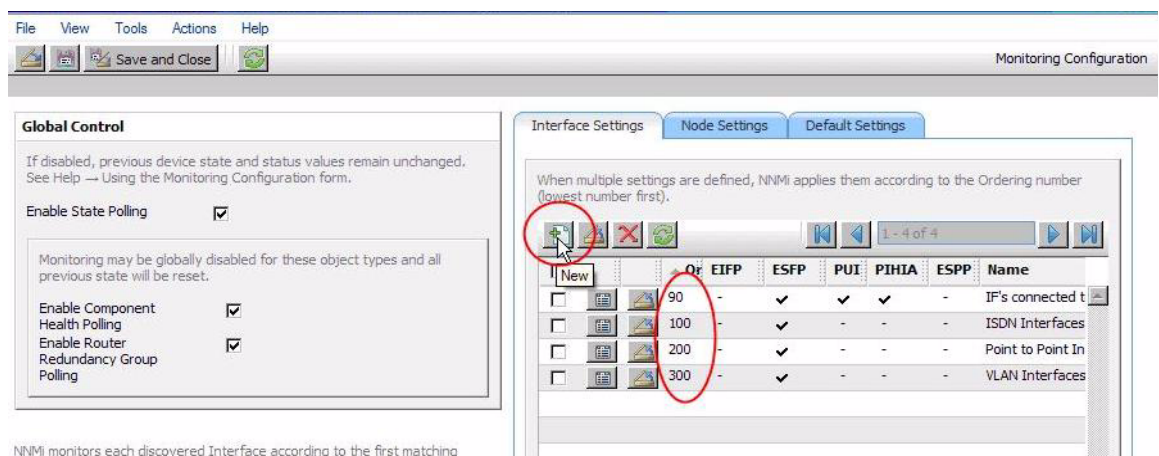
To apply a polling policy, use the **Monitoring Configuration** option in the **Configuration** workspace.

- 1 Navigate to the **Configuration** workspace.
- 2 Select **Monitoring** Configuration.




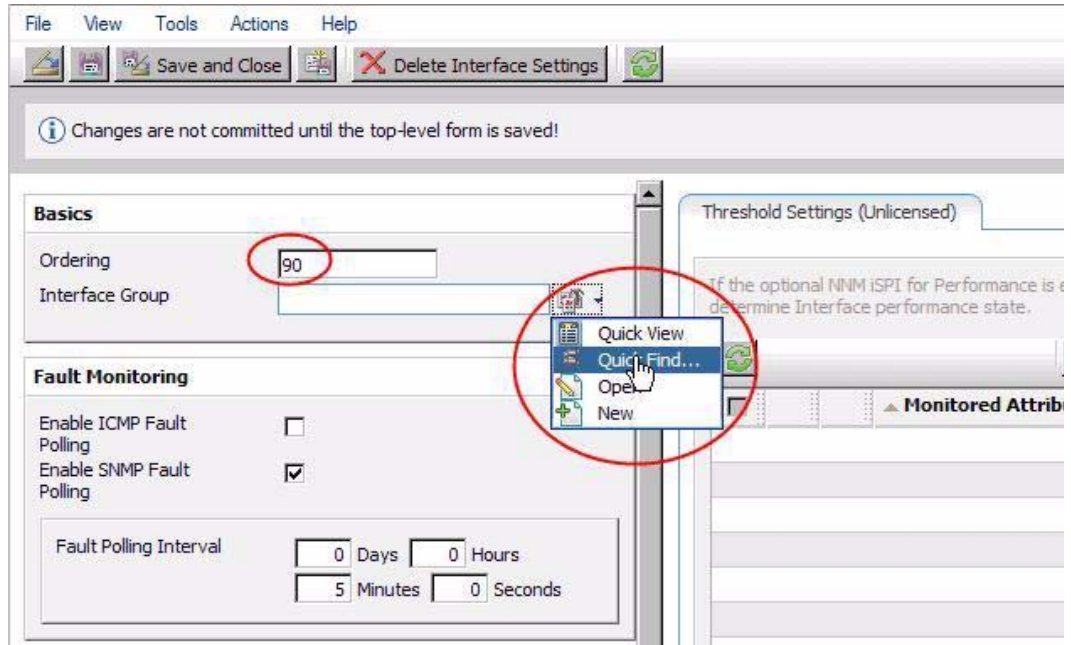


- 3 Click  **New** to create a new **Interface Settings** entry.
- 4 Take note of the current ordering values. The new entry must be a higher priority (lower number) than other polling policies in this list.



- 5 In the **Ordering** attribute, enter **90**.

- 6 Click  **Lookup** and then **Quick Find** to select the newly created interface group.



Next, extend the scope of the default polling so that NNMi always polls these interfaces.

- 7 Click **Enable SNMP Fault Polling**.
- 8 Click **Poll Unconnected Interfaces**.
- 9 Click **Poll Interfaces Hosting IP Addresses**.

10 Click **Save and Close** to save the configuration and close the form.

File View Tools Actions Help

Save and Close Delete Interface Settings

Changes are not committed until the top-level form is saved!

**Basics**

Ordering: 80

Interface Group: Poll no matter what interfaces

**Fault Monitoring**

Enable ICMP Fault Polling: ☐

Enable SNMP Fault Polling: ☒

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

**Performance Monitoring (Unlicensed)**

Configuration for the optional NNM iSPI for Performance.

Enable SNMP 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: ☒

Monitor IP Addresses: ☐

**Threshold Settings (Unlicensed)**

If the optional NNM iSPI for Performance is enabled, set the low Interface performance state.

Monitored Attribute: HV HVR H

Updated: 10/22/08 6:40:21 PM Total: 0 Selected: 0

javascript:void(0)

In the table view on the **Interface Settings** tab you should see the new interface settings value.

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 Component Health Polling: ☒

Enable Router Redundancy Group Polling: ☒

**Interface Settings** Node Settings Default Settings


When multiple settings are defined, NNMi applies them according to the Ordering number (lowest number first).

Order	ETEP	ESPP	PUI	PIHIA	ESPP	Name	Note
90	-	✓	✓	✓	-	IF's connected to Management	
100	-	✓	-	-	-	ISDN Interfaces	ISDN
200	-	✓	-	-	-	Point to Point Interfaces	Point
300	-	✓	-	-	-	VLAN Interfaces	VLAN

11 Click **Save and Close** to save the configuration and close the form.

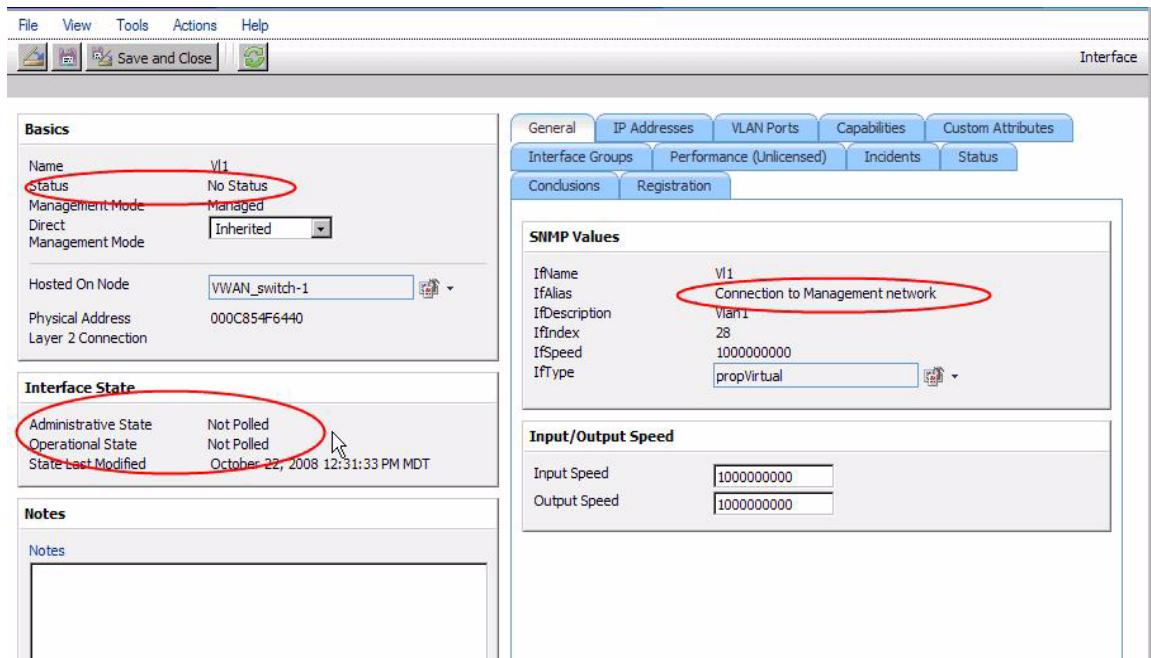
Next, we will verify that the interfaces are being polled.

### Step 3: Verify the Interfaces are Polled

- 1 Navigate to an Interfaces view; for example **Inventory --> Interfaces**.
- 2 Click the  **Open** icon that precedes an interface whose ifAlias is Connection to Management Network.

► If the NNMi console indicates **No Status** for an interface, this most likely indicates a delay in the Status update.

In the following example the interface Status still displays **No Status**.



The screenshot shows the NNMi console interface for a specific interface. The 'Basics' tab is selected, showing the following details:

- Name: V11
- Status: No Status
- Management Mode: Managed
- Direct Management Mode: Inherited
- Hosted On Node: VWAN\_switch-1
- Physical Address: 000C854F6440
- Layer 2 Connection: (empty)

The 'Interface State' section shows:

- Administrative State: Not Polled
- Operational State: Not Polled
- State Last Modified: October 22, 2008 12:31:33 PM MDT

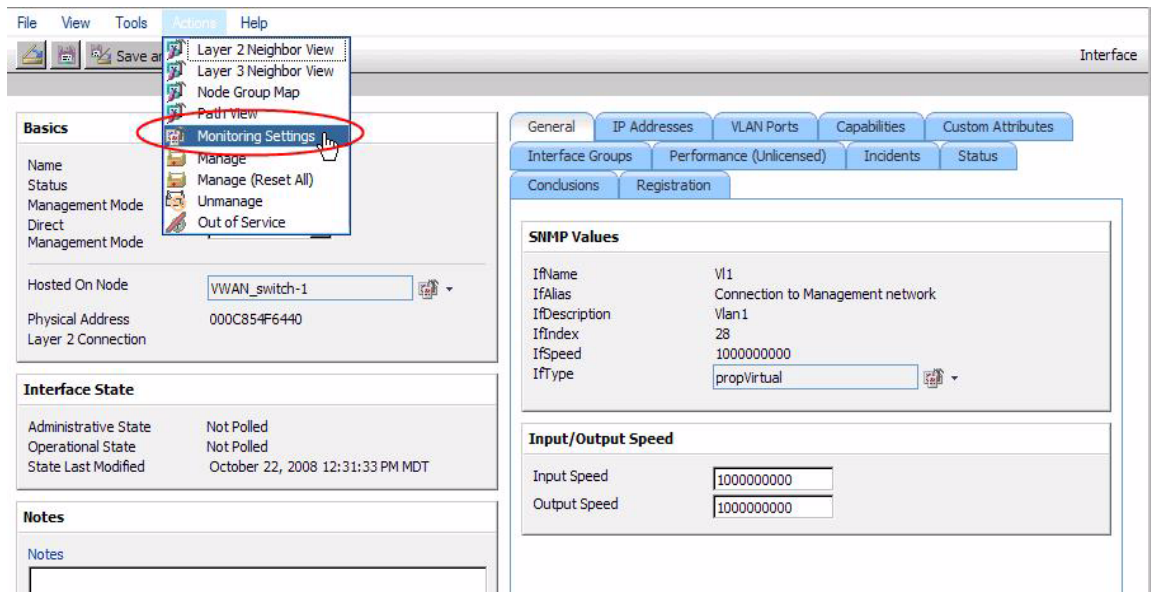
The 'SNMP Values' section shows:

- IfName: V11
- IfAlias: Connection to Management network
- IfDescription: Vlan1
- IfIndex: 28
- IfSpeed: 1000000000
- IfType: propVirtual

The 'Input/Output Speed' section shows:

- Input Speed: 1000000000
- Output Speed: 1000000000

- 3 To more quickly resolve the Status on the selected interface, perform a status poll on the node by selecting **Actions --> Monitoring Settings**.



The screenshot shows the NNMi console interface with the 'Actions' menu open. The 'Monitoring Settings' option is selected. The interface details are the same as in the previous screenshot.

The 'Actions' menu options are:

- Layer 2 Neighbor View
- Layer 3 Neighbor View
- Node Group Map
- Path View
- Monitoring Settings (selected)
- Manage
- Manage (Reset All)
- Unmanage
- Out of Service

As shown in the following example output, the interface is part of the interface group we created and **Enable SNMP Fault Polling** is selected.



## Monitoring Configuration for V11 on node VWAN\_switch-1

SNMP Monitoring Summary	
Fault SNMP Polling Enabled	true
Fault Polling Interval	0 days 0 hours 5 minutes 0 seconds
Performance Polling Enabled	false
Performance Polling Interval	0 days 0 hours 5 minutes 0 seconds
Management Mode	Managed

Monitoring Settings Applied	
Type	Interface Settings
Interface Group	IF's connected to Management Network
Node Group	None
Fault SNMP Polling Enabled	true
Fault Polling Interval	0 days 0 hours 5 minutes 0 seconds
Performance Polling Enabled	false
Performance Polling Interval	0 days 0 hours 5 minutes 0 seconds
Poll Unconnected Interfaces	true
Is this interface connected?	no
Poll Interfaces Hosting IP Addresses	true
Does this interface host IP addresses?	yes

The following table view indicates NNMi is polling all interfaces in the group.


File View Tools Actions Help									
IF's connected to Management Network (Interfaces)									
	Stat	AS	OS	Hosted On Node	IfName	IfType	IfSpeed	IfDescription	IfAlias
<input type="checkbox"/>				internet_switch-2	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				dave_test	VL1	ethernetCsmacd	10 Mbps	VLAN1	Connection to Management network
<input type="checkbox"/>				core_6509-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				WAN_router-1	Fa0/0/1	ethernetCsmacd	100 Mbps	FastEthernet0/0/1	Connection to Management network
<input type="checkbox"/>				WAN_switch-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network
<input type="checkbox"/>				VWAN_switch-1	Vl1	propVirtual	1 Gbps	Vlan1	Connection to Management network

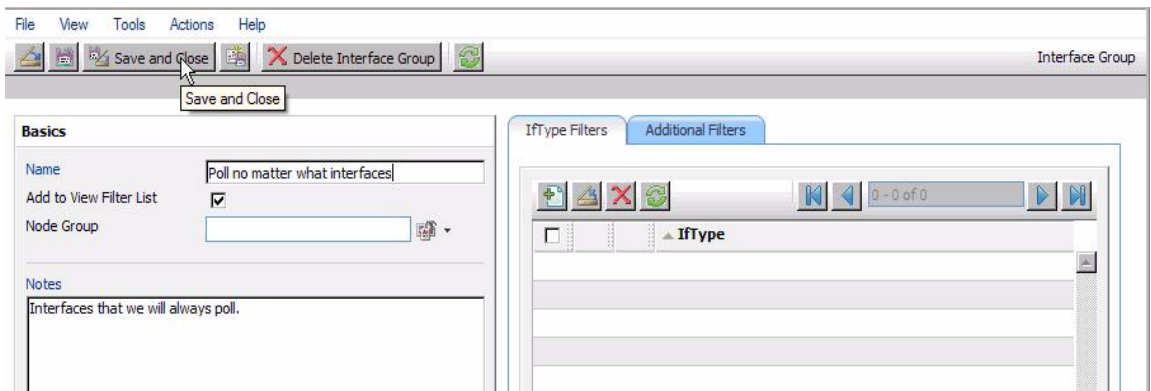
## Change Monitoring Settings for a Group of Interfaces that Do Not Have Common Attributes

In this example, the interfaces do not have one common attribute. To force these interfaces polled to be polled, we create an interface group that is based on a combination of attributes.

## Step 1: Create an Interface Group


In this step create an interface group named **Poll no matter what interfaces**.

- 1 Navigate to the **Configuration** workspace.
- 2 Select **Interface Groups**.
- 3 Click  **New**.
- 4 In the **Name** attribute, enter: **Poll no matter what interfaces**.
- 5 Click **Save and Close** to save the configuration.

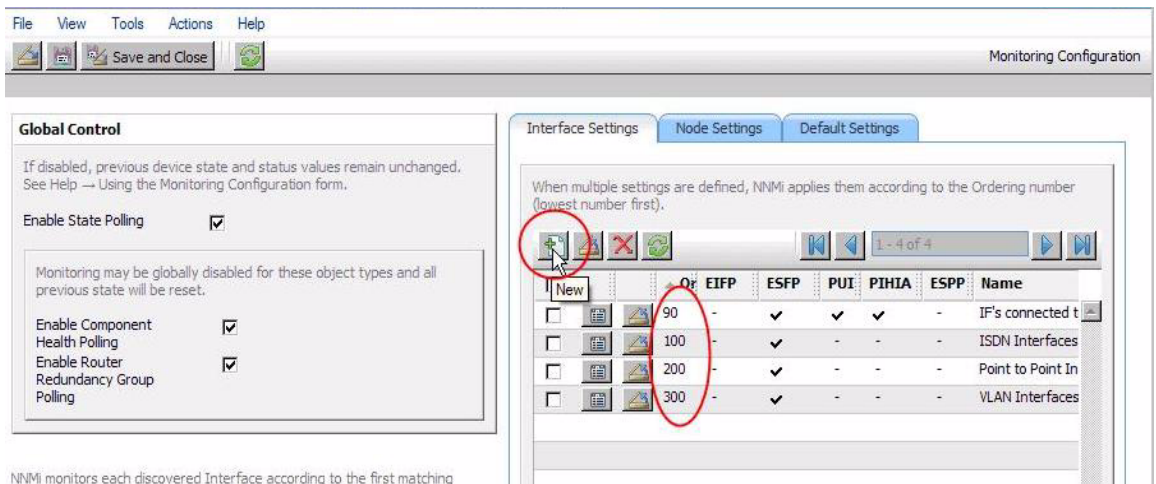


Next, navigate to **Monitoring Configuration** and apply a polling policy to this interface group.


## Step 2: Apply a Polling Policy to the Interface Group

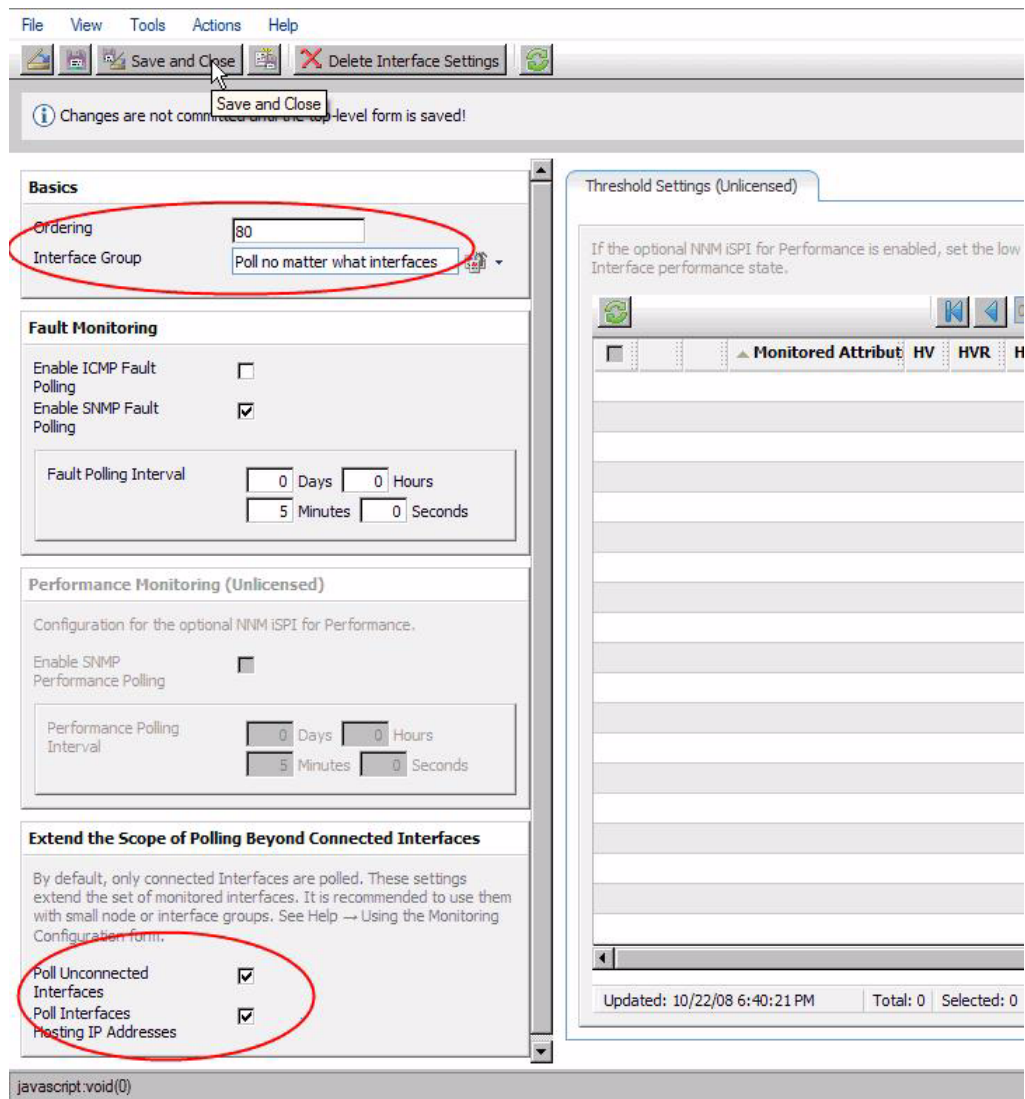
- 1 Navigate to the **Configuration** workspace
- 2 Select **Monitoring Configuration**.
- 3 Navigate to the **Interface Settings** tab.
- 4 Click  **New**.

Note the **Ordering** values so we can make this interface group a higher priority.



Next, configure the **Ordering** value, and extend the scope of polling.

- 5 In the **Ordering** attribute, enter **80**.
- 6 Click  **Lookup** and then **Quick Find** to select the newly created interface group.
- 7 Click **Enable SNMP Fault Polling**.
- 8 Click **Poll Unconnected Interfaces**.
- 9 Click **Poll Interfaces Hosting IP Addresses**.
- 10 Click **Save and Close** to save the changes and close the **Interface Settings** form.
- 11 Click **Save and Close** to save the configuration and close the **Monitoring Settings** form.



File View Tools Actions Help

Save and Close Delete Interface Settings

Changes are not committed and the top-level form is saved!

**Basics**

Ordering: 80

Interface Group: Poll no matter what interfaces

**Fault Monitoring**

Enable ICMP Fault Polling: ☐

Enable SNMP Fault Polling: ☒

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

**Performance Monitoring (Unlicensed)**

Configuration for the optional NNM iSPI for Performance.

Enable SNMP 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: ☒

**Threshold Settings (Unlicensed)**

If the optional NNM iSPI for Performance is enabled, set the low Interface performance state.

Monitored Attributes: HV HVR H

Updated: 10/22/08 6:40:21 PM Total: 0 Selected: 0

### Step 3: Add Interfaces to the Interface Group

Now we are ready to add interfaces to the interface group we just created.

Suppose you are looking at a node and want to force an interface to be polled on the node shown in the following example.

**Basics**

Name: c2900xl-1  
 Hostname: c2900xl-1.company.com  
 Management Address: 10.2.123.34  
 Status: Normal  
 Node: Managed  
 Management Mode: Managed

**SNMP Agent State**

SNMP Supported: ☒  
 State: Normal  
 State Last Modified: October 22, 2008 12:38:14 PM MDT  
 SNMP Agent: c2900xl-1.company.com

**Discovery**

Device Profile: ciscoCat2912XL  
 Discovery State: Discovery Completed  
 Last Completed: October 22, 2008 12:34:39 PM MDT


**Notes**

Notes

**Interfaces**

Stat	AS	OS	IfName	IfType	IfSpeed	IfAlias	Layer 2
			Vl1	ethernetC	10 Mbps	Mgmt-VLAN for c29	
			Fa0/1	ethernetC	100 Mbps	HSRP Dot1q Trunk	c2900xl-
			Fa0/2	ethernetC	100 Mbps	HSRP Dot1q Trunk	c2900xl-
			Fa0/3	ethernetC	100 Mbps	HSRP Dot1q Trunk	c2900xl-
			Fa0/4	ethernetC	100 Mbps	Link to end-node nt	
			Fa0/5	ethernetC	100 Mbps		
			Fa0/6	ethernetC	100 Mbps		
			Fa0/7	ethernetC	100 Mbps		
			Fa0/8	ethernetC	100 Mbps		
			Fa0/9	ethernetC	100 Mbps		
			Fa0/10	ethernetC	100 Mbps		
			Fa0/11	ethernetC	100 Mbps		
			Fa0/12	ethernetC	100 Mbps		4kfc5uj!
			Nu0	other	10 Gbps		
			Vl2	ethernetC	10 Mbps	Connect vrf-blue-vj	

The example node has an interface Fa0/7 that is not polled. There is nothing unique about this interface other than its name and that it is on this node.

- 1 Note the interface name and node name (IfName and Hostname).
- 2 Navigate to the **Configuration** workspace.
- 3 Select **Interface Groups** to view the list of interface groups.
- 4 Click the  **Open** icon that precedes the Poll no matter what interfaces interface group.

**Workspaces**

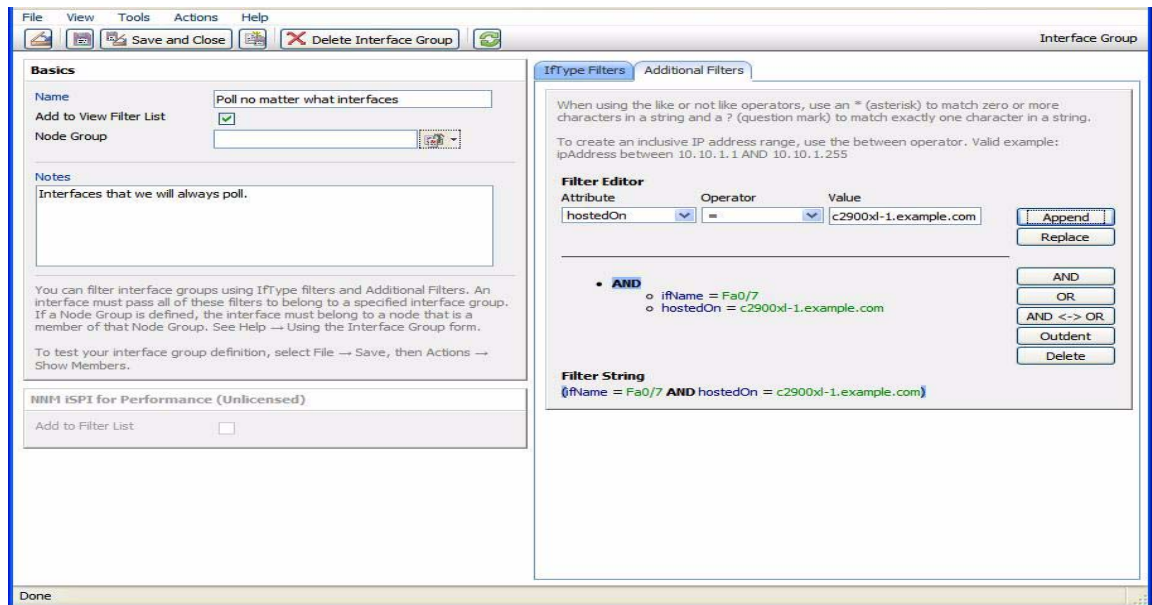
- Incident Management
- Topology Maps
- Monitoring
- Troubleshooting
- Inventory
- Management Mode
- Incident Browsing
- Integration Module Configuration
- Configuration
- Communication Configuration...
- Discovery Configuration...
- Monitoring Configuration...
- Test Configuration...

**Interface Group - Interface Groups**

Name	AtVFL	AtFL	Notes
IF's connected to Management Network	✓	-	
ISDN Interfaces	✓	-	ISDN Interfaces as identified by interface
Link Aggregation Interfaces	✓	-	Interfaces identified as aggregators (also
Point to Point Interfaces	✓	-	Point to Point Interfaces are usually asso
Poll no matter what interfaces	✓	-	Interfaces that we will always poll.
Software Loopback Interfaces	✓	-	Software Loopback Interfaces are used o
VLAN Interfaces	✓	-	VLAN interfaces do not return reliable per
Voice Interfaces	✓	-	Voice Interfaces as identified by interface



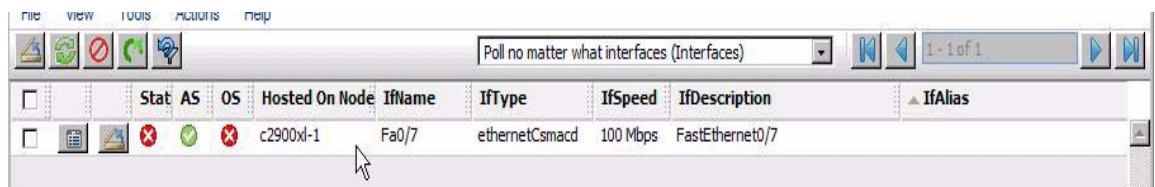
Next, we add an additional filter that is an AND expression between the `hostedOn` attribute and the `ifName` attribute.



5 Click **Save and Close** to save the interface group with the new filter.

6 Check the membership with **Actions->Show Members**.

You should see the interface, which may not yet have a Status.



7 You can also confirm the interface settings by selecting the interface and choosing **Actions->Monitoring Settings**.

## Monitoring Configuration for Fa0/7 on node c2900xl-1

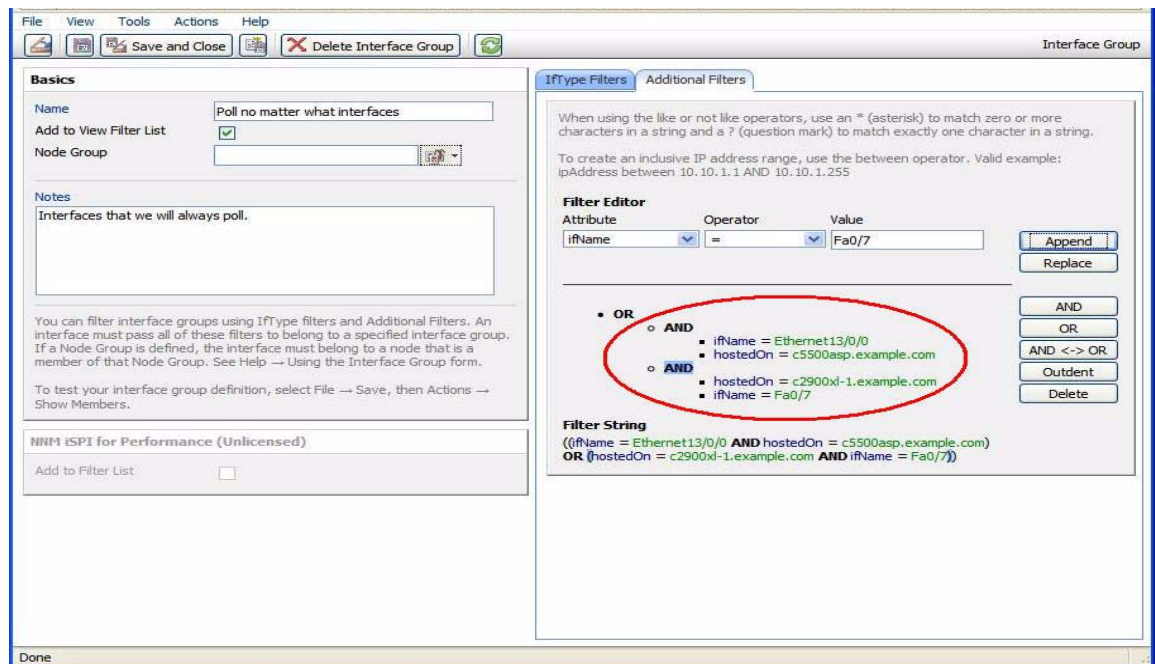
SNMP Monitoring Summary	
Fault SNMP Polling Enabled	true
Fault Polling Interval	0 days 0 hours 5 minutes 0 seconds
Performance Polling Enabled	false
Performance Polling Interval	0 days 0 hours 5 minutes 0 seconds
Management Mode	Managed

Monitoring Settings Applied	
Type	Interface Settings
Interface Group	Poll no matter what interfaces
Node Group	None
Fault SNMP Polling Enabled	true
Fault Polling Interval	0 days 0 hours 5 minutes 0 seconds
Performance Polling Enabled	false
Performance Polling Interval	0 days 0 hours 5 minutes 0 seconds
Poll Unconnected Interfaces	true
Is this interface connected?	no
Poll Interfaces Hosting IP Addresses	true

As you encounter other interfaces that you want to force to be polled, you can add them to this interface group.

To add another interface to the group we add an outer OR condition to the original filter as shown in the following example. Then, you can continue adding interfaces using nested AND expression underneath the OR condition.



When using the Additional Filter Editor note the following:

- Place the cursor at the location in the Filter String where you want to append or replace the contents.
- Save your changes often.
- When you need to start over, exit the configuration form without saving your changes. This returns the Filter Expression to the last saved state.
- To determine which interfaces are forced to be polled, use **Actions --> Show Members**.

Continue to use this interface group to poll any interfaces that cannot be selected using a general purpose filter.

