

# Partner

## How to Configure an SNMP Host MIB Device

V014

2026/02/05



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## Preface

This document explains how to configure **SNMP Host MIB devices** in **N-Cloud/N-Reporter**.

**N-Cloud / N-Reporter** supports **Host Resources MIB** for monitoring host system status.

The examples are based on Red Hat, CentOS, Debian, Ubuntu, AIX, FreeBSD, and Windows environments with SNMP installed.

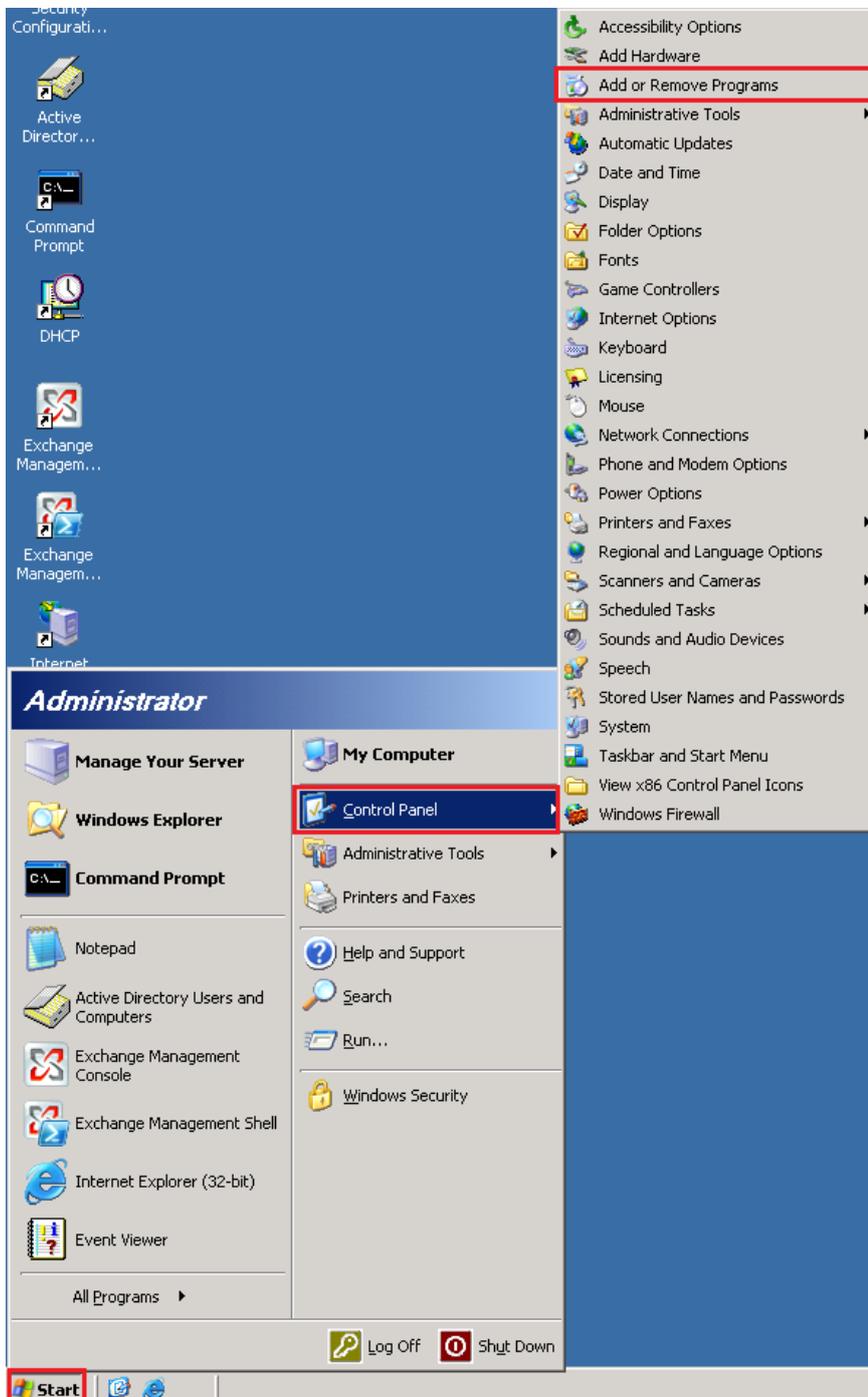
**Note:** This guide is for reference only. For detailed or vendor-specific settings, please consult the device or software vendor.

# 1. Windows

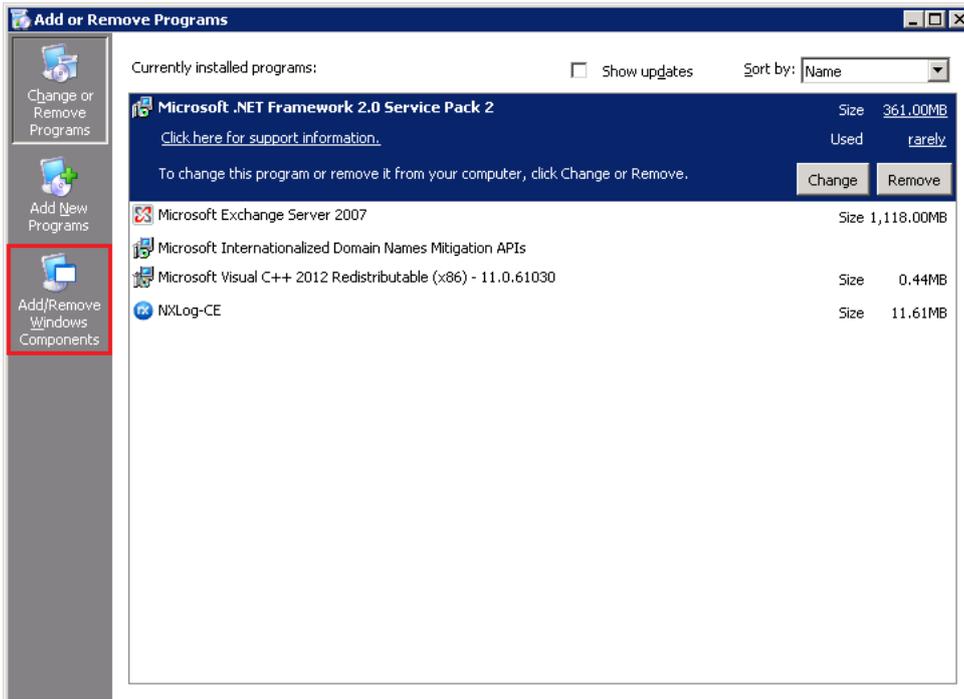
## 1.1 Windows Server 2003

### 1.1.1 Install the SNMP Service

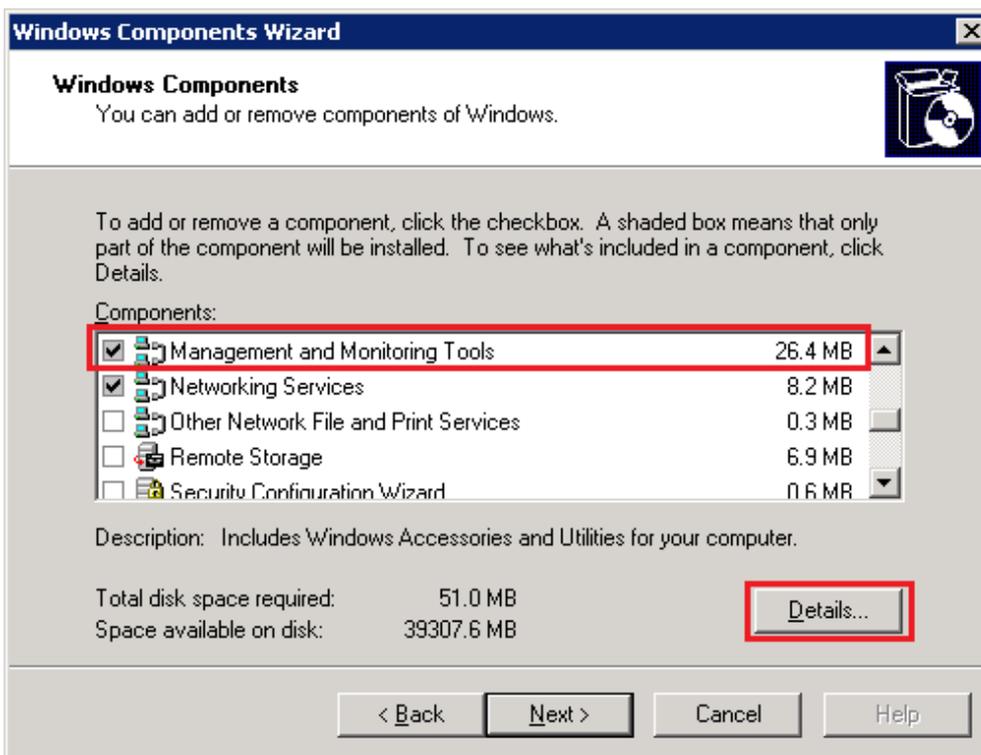
(1) Click “Start → Control Panel → Add or Remove Programs.”



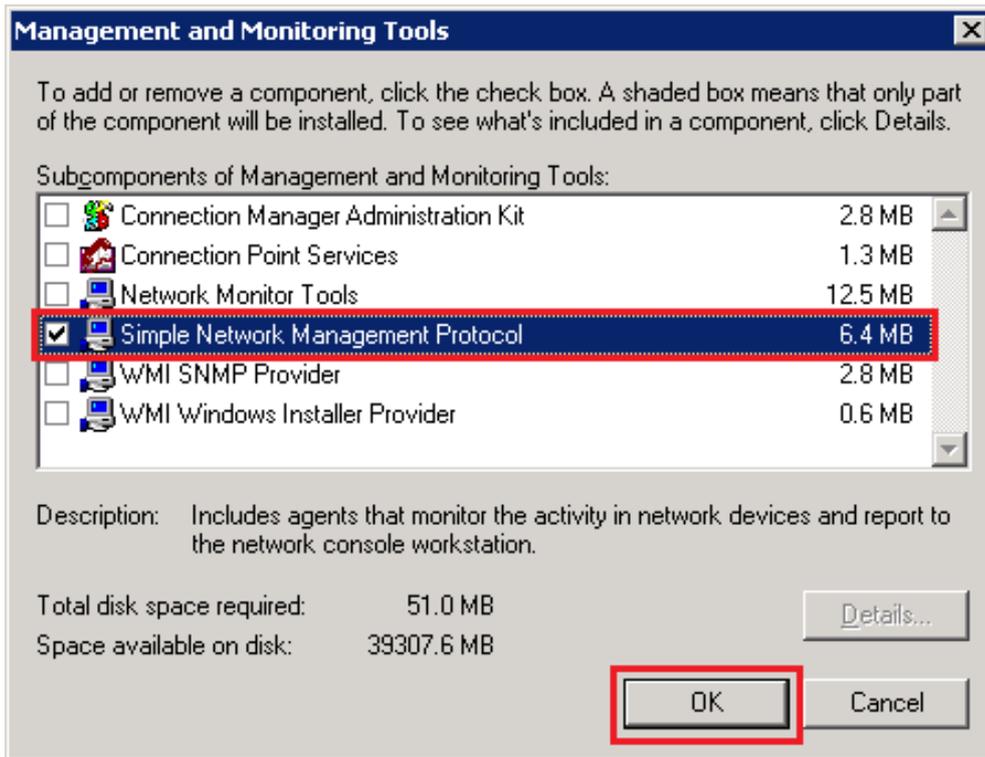
(2) Click “Add/Remove Windows Components.”



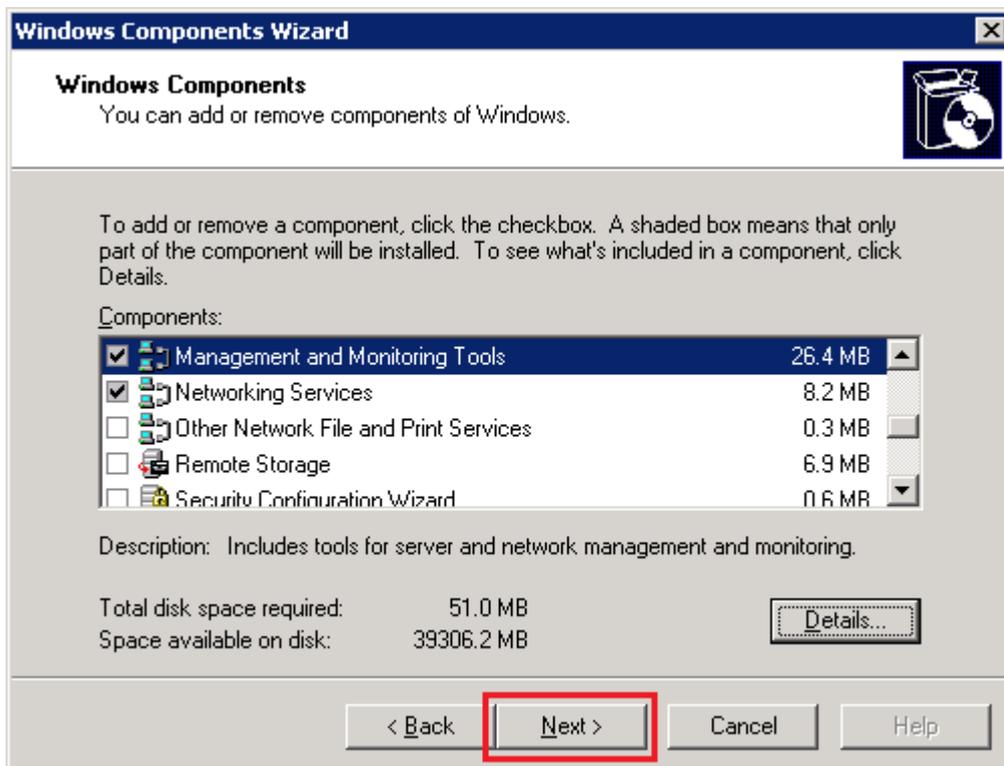
(3) Select “Management and Monitoring Tools” → click “Details”.



(4) Check "Simple Network Management Protocol (SNMP)" → click "OK."



(5) Click "Next" to begin installing the component.

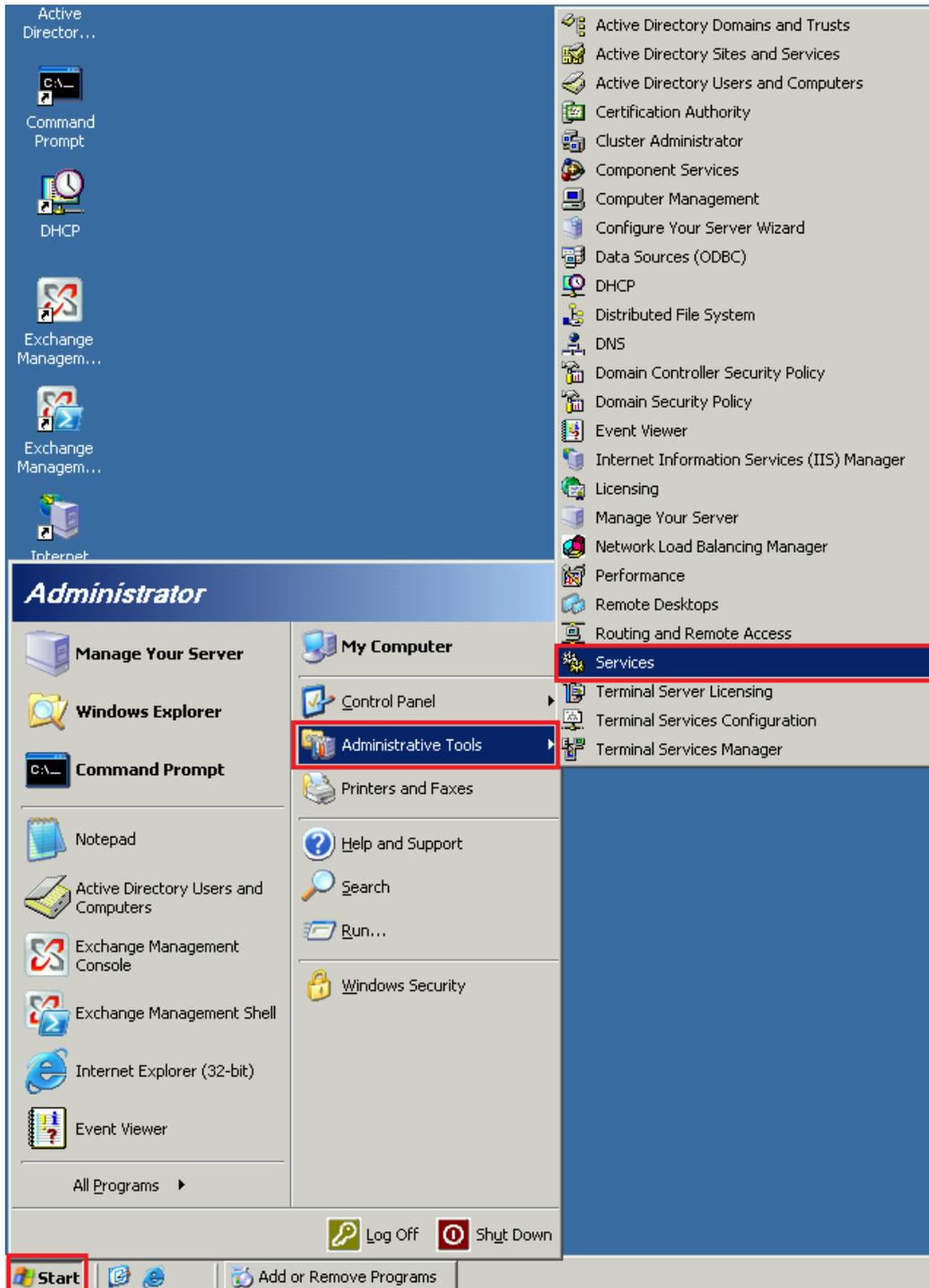


(6) Click “Finish” to complete the installation.

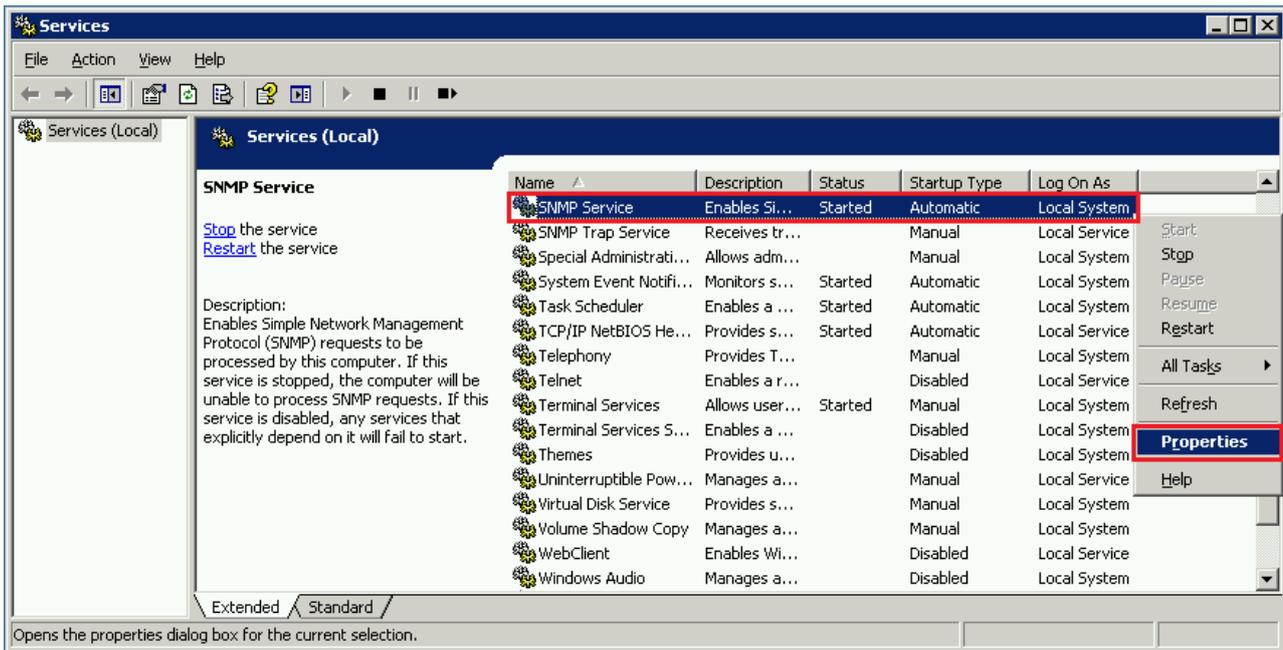


## 1.1.2 Configure the SNMP Service

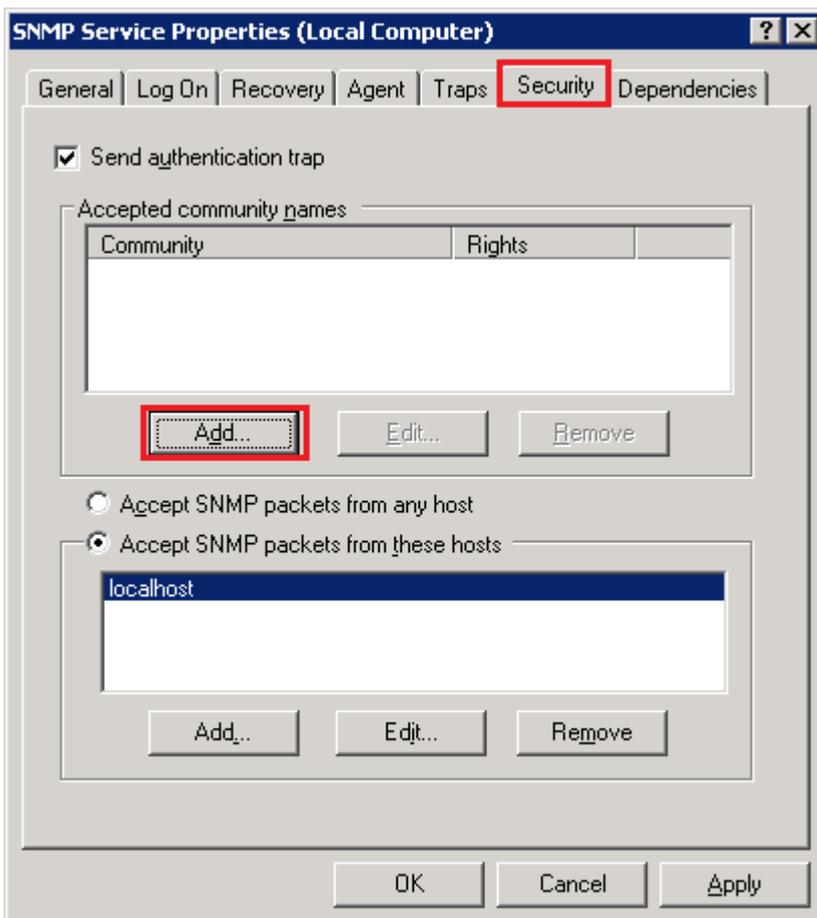
(1) Click “Start → Administrative Tools → Services.”



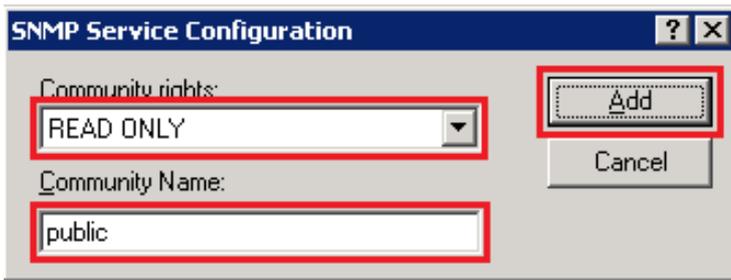
(2) Locate SNMP Service, verify Startup type is set to Automatic, then right-click and select “Properties.”



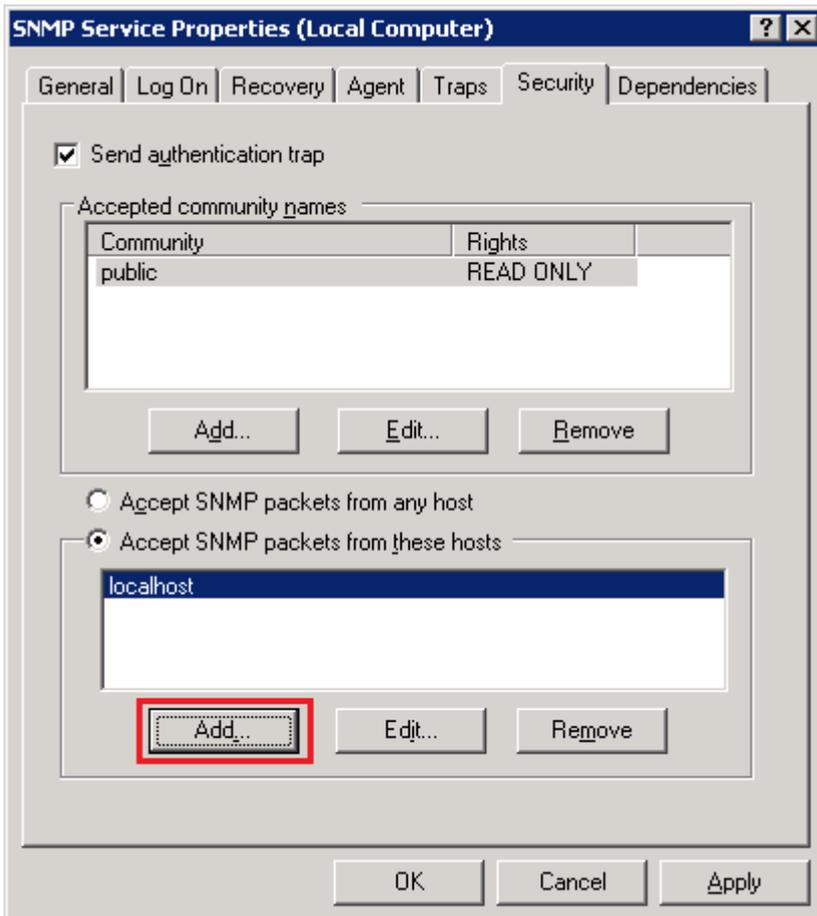
(3) Go to the “Security” tab and click “Add.”



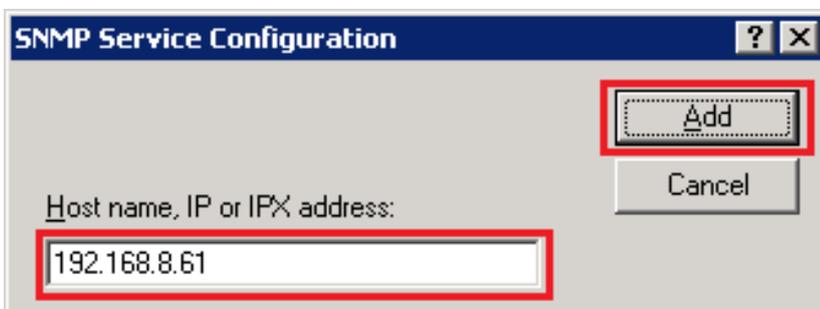
(4) Set “Community rights” to “Read Only,” enter a community name (example: [public](#)), then click “Add.”



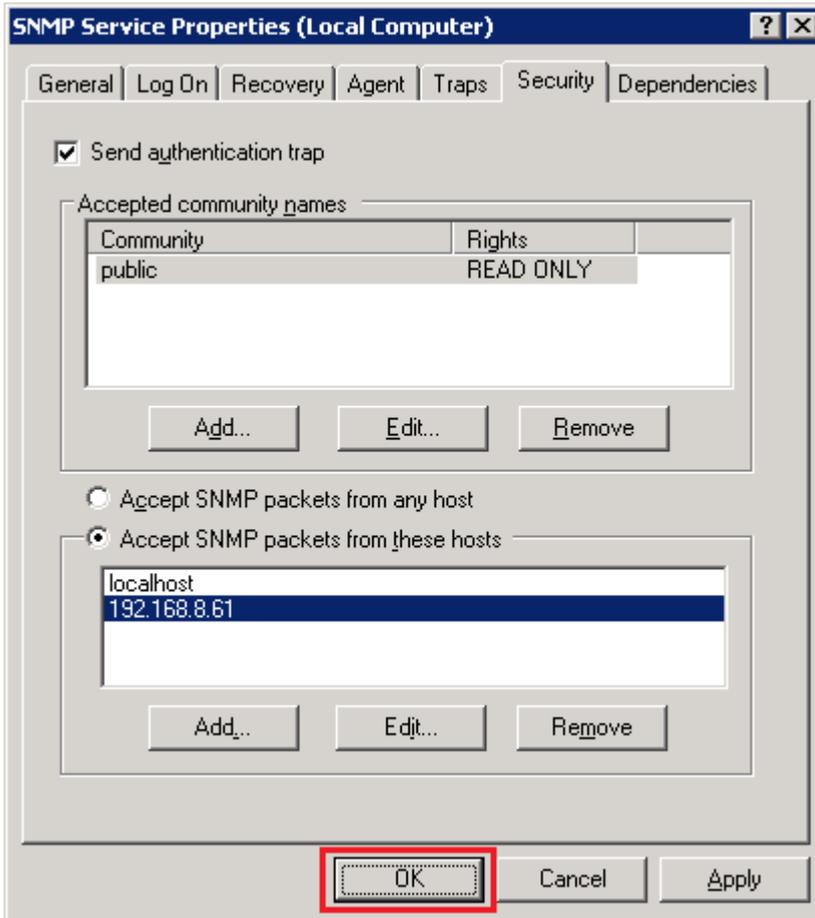
(5) Under “Accept SNMP packets from these hosts,” click “Add.”



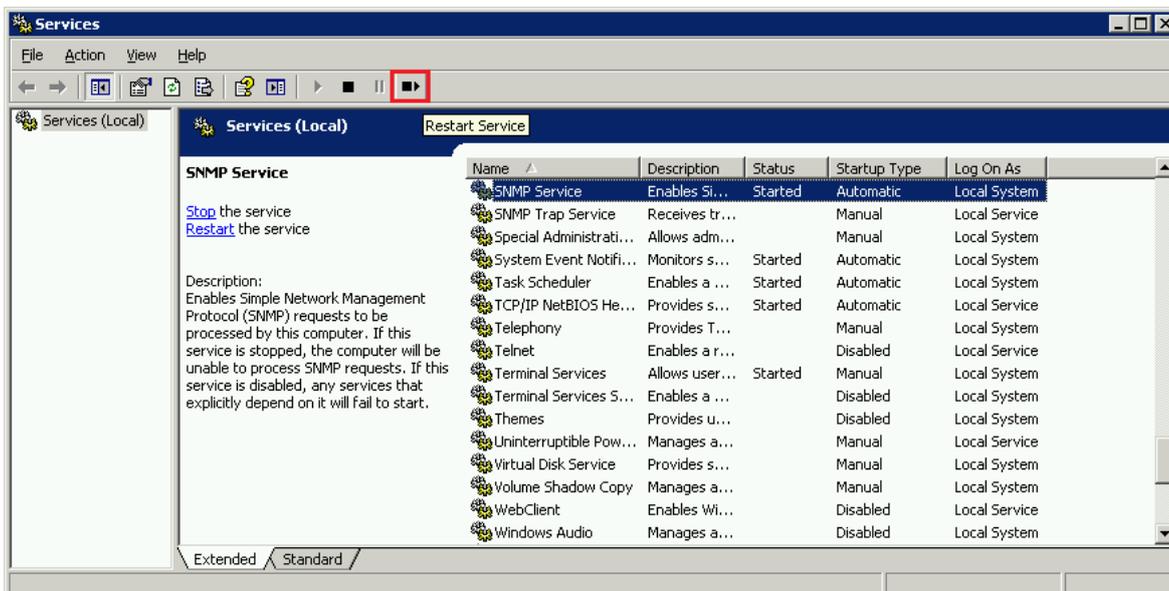
(6) Enter the host name or IP address of N-Reporter (example: [192.168.8.161](#)), then click “Add.”



(7) Click “OK” to save the settings.



(8) Click  to restart the SNMP Service to apply the changes.



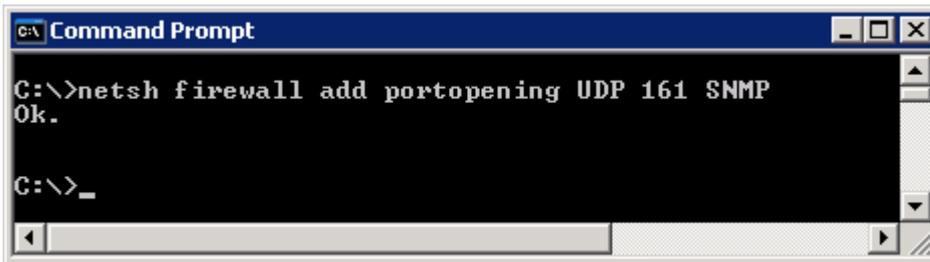
### 1.1.3 Configure the Firewall

(1) Open "Command Prompt."



(2) Enable SNMP port 161 (UDP).

```
C:\> netsh firewall add portopening UDP 161 SNMP
```



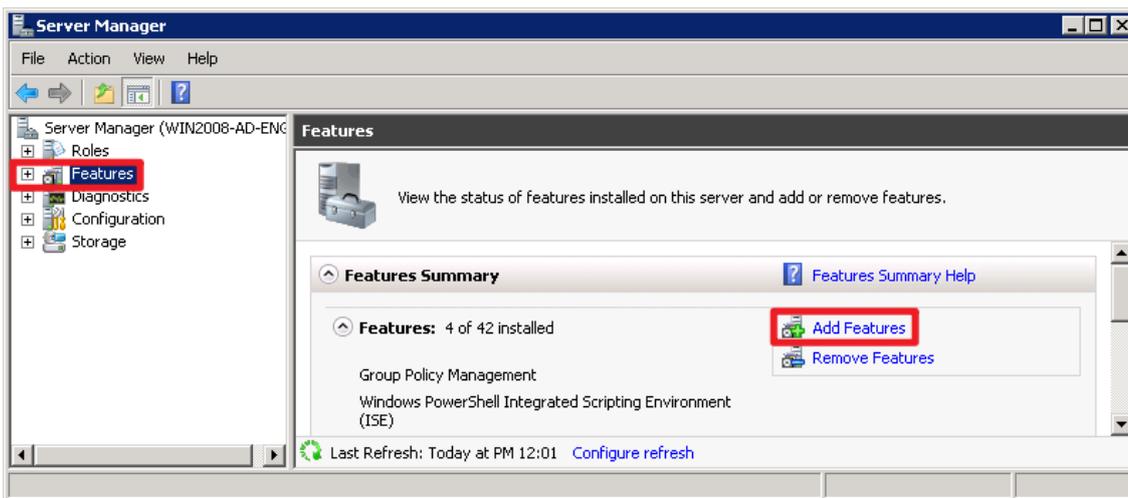
## 1.2 Windows Server 2008

### 1.2.1 Install the SNMP Service

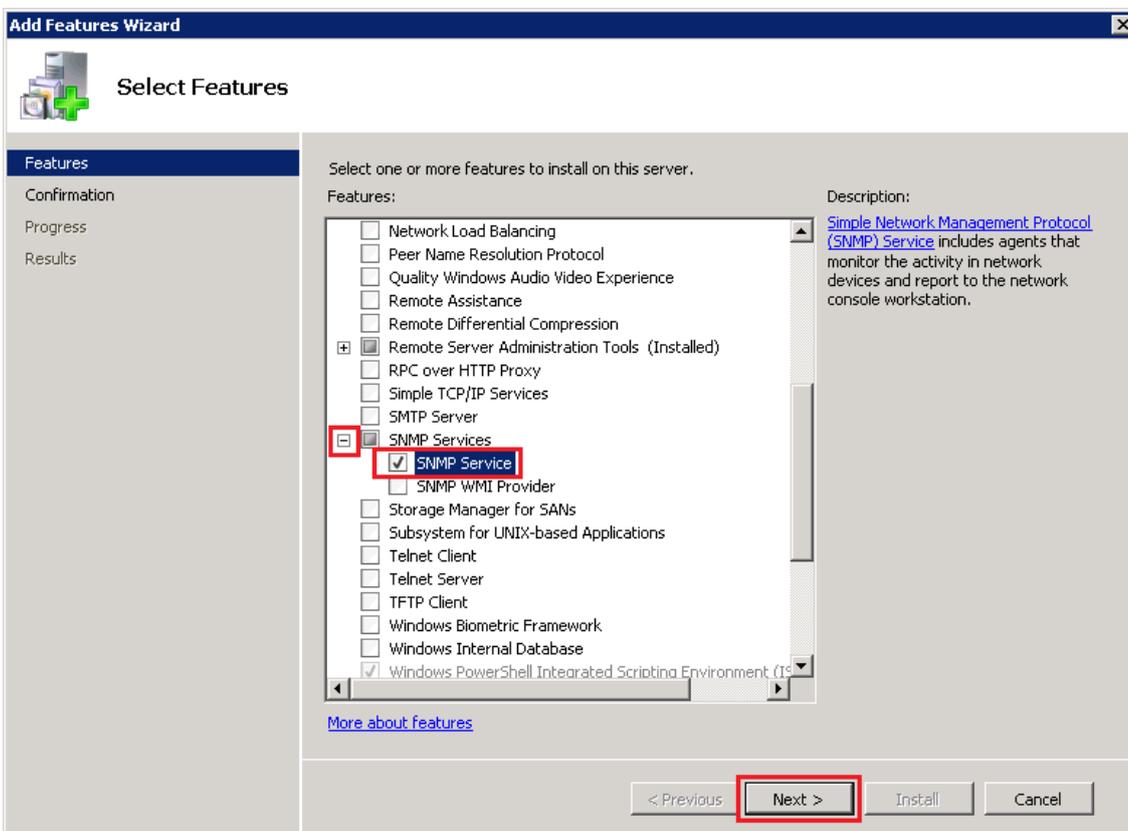
(1) Open “Server Manager.”



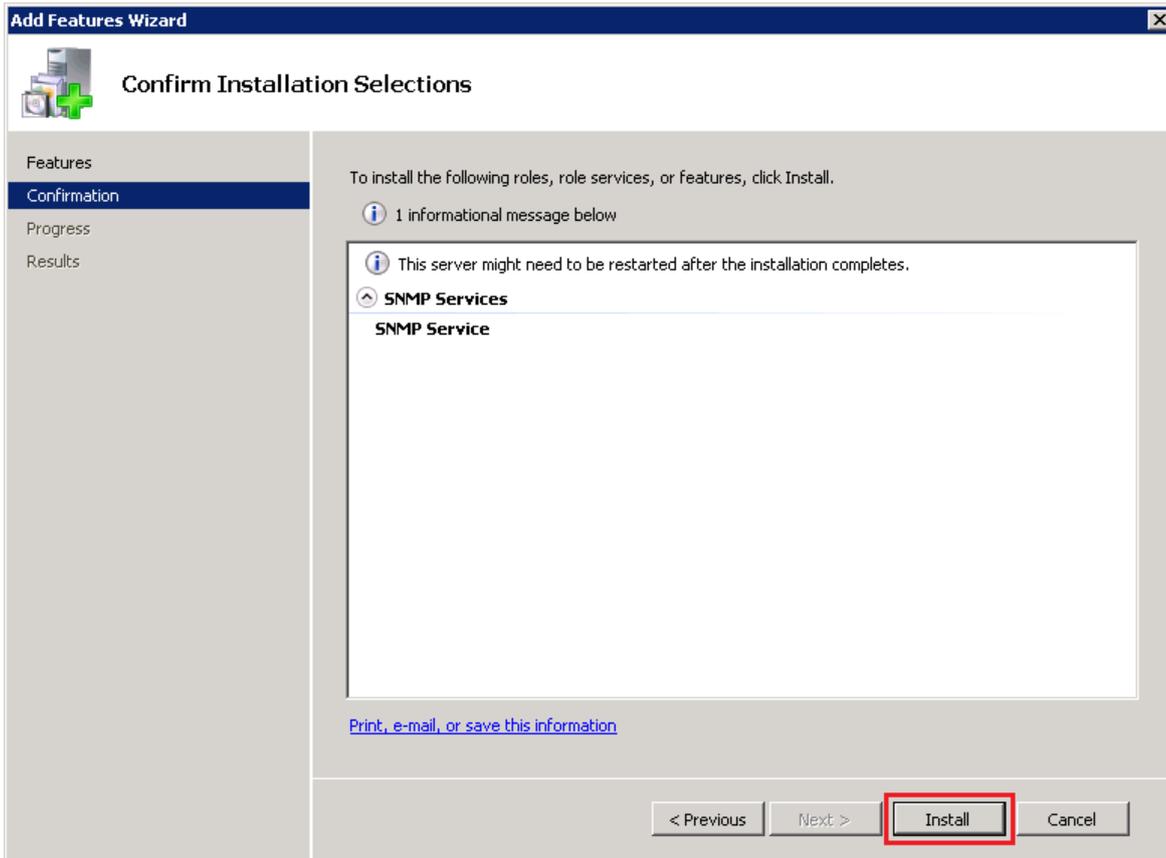
(2) Click “Features” → Add Features.



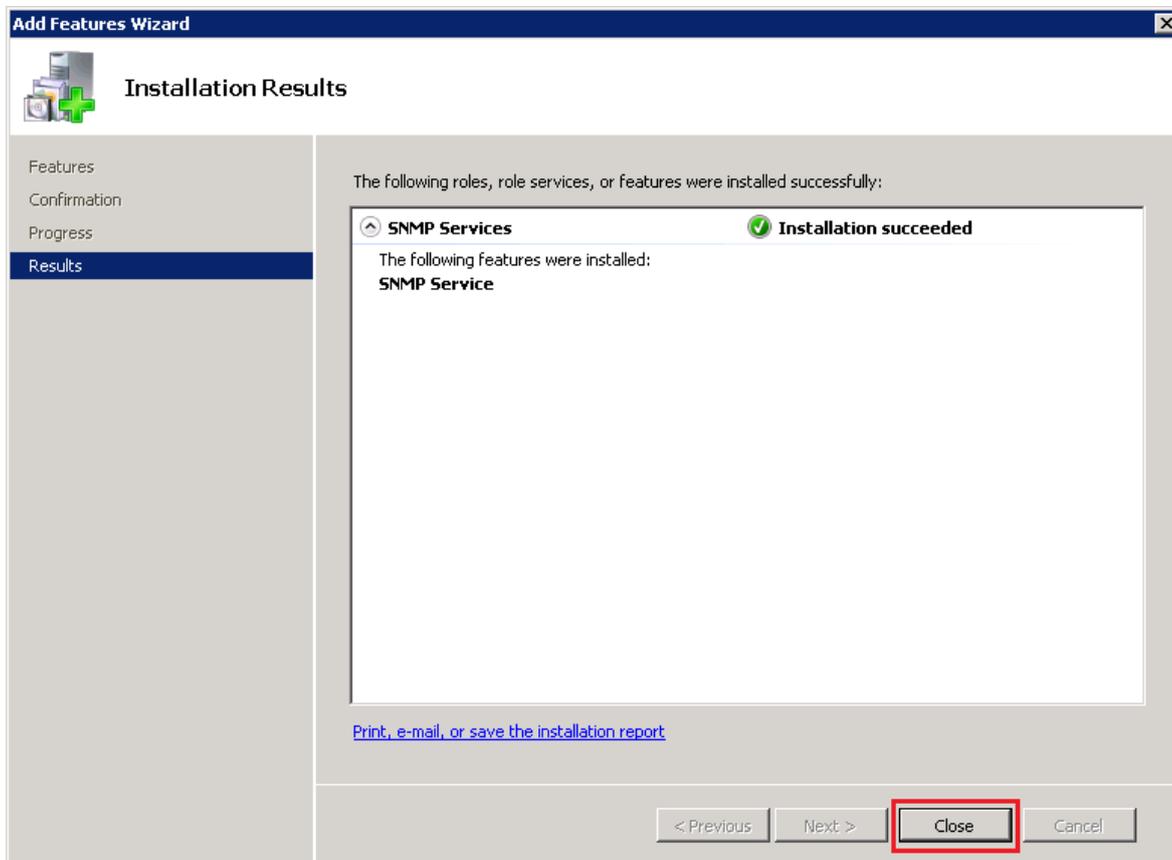
(3) Expand “SNMP Services,” select “SNMP Service,” then click “Next.”



(4) Click "Install."



(5) Click "Close" to complete the installation.

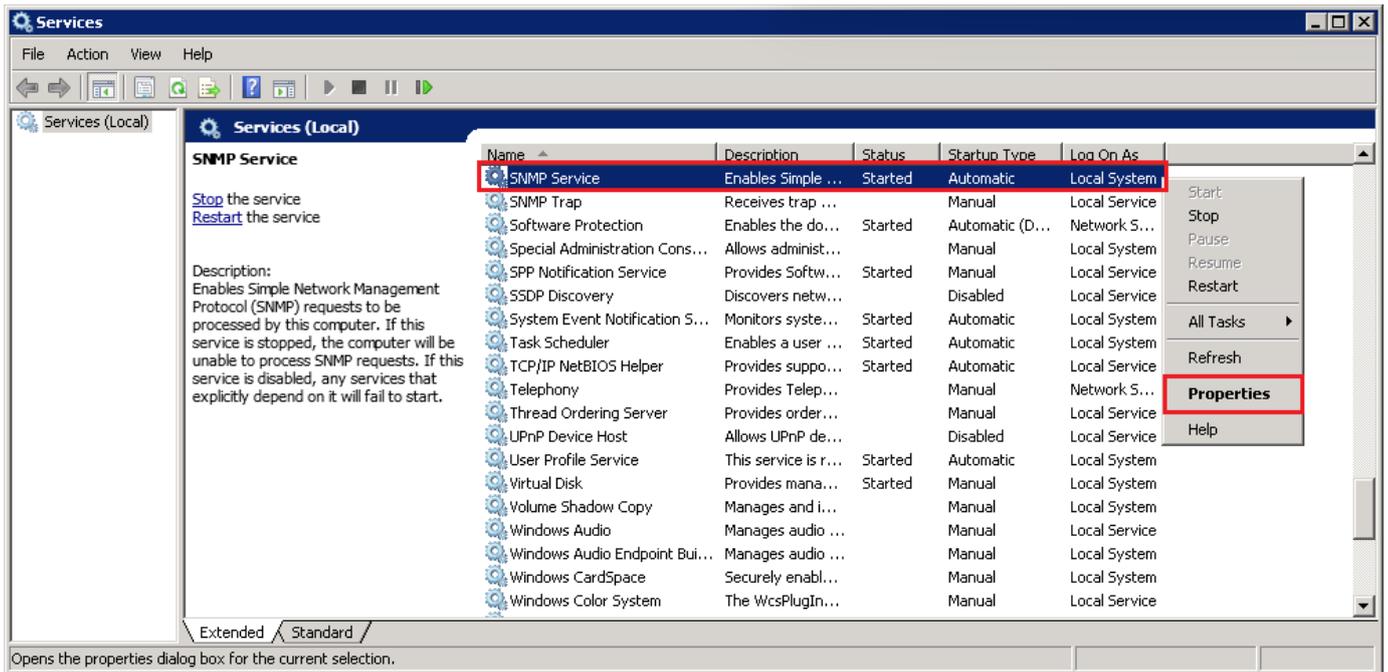


## 1.2.2 Configure the SNMP Service

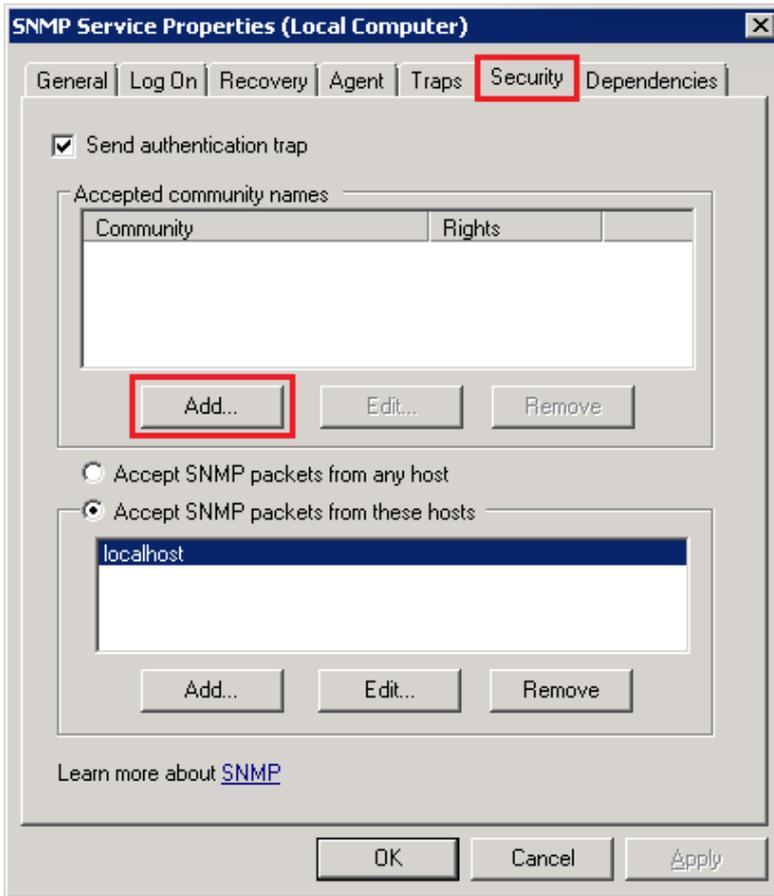
(1) Open “Service.”



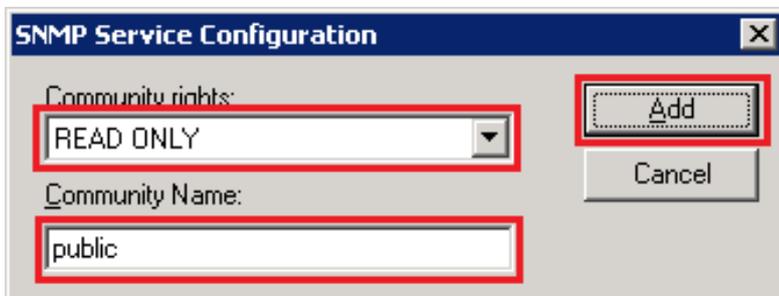
(2) Locate SNMP Service, verify that the Startup type is set to “Automatic,” then right-click and select “Properties.”



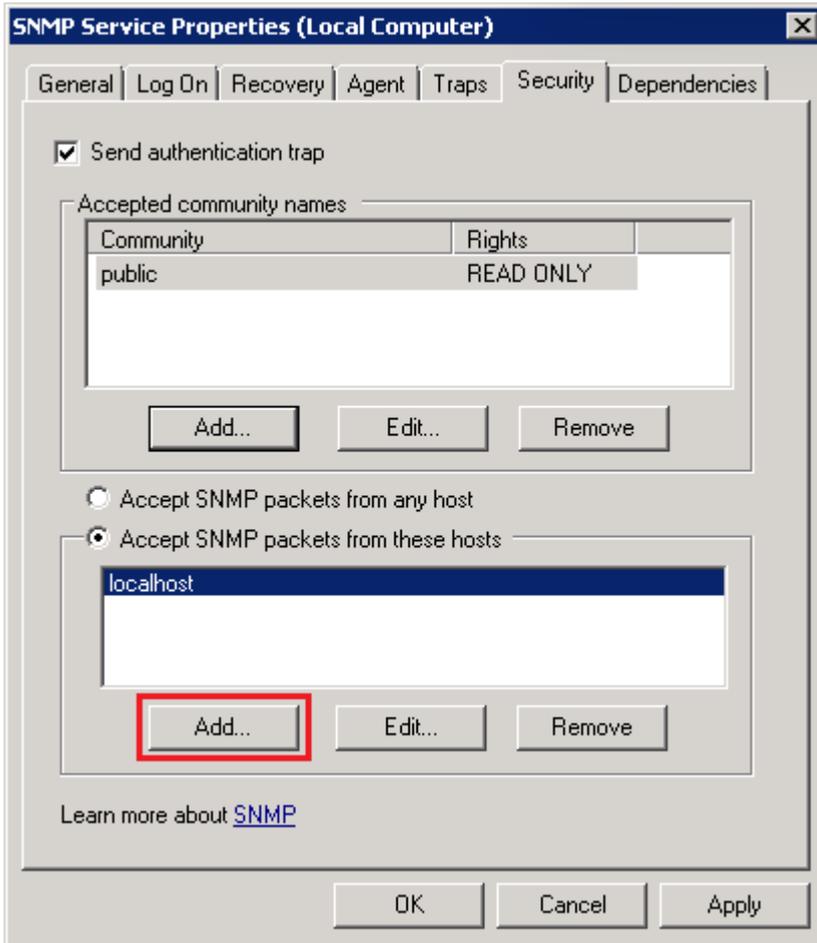
(3) Go to the “Security” tab and click “Add.”



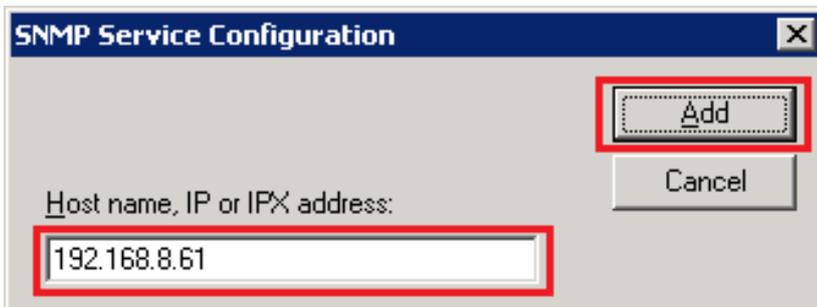
(4) Set “Community rights” to “Read Only,” enter a community name (example: public), then click “Add.”



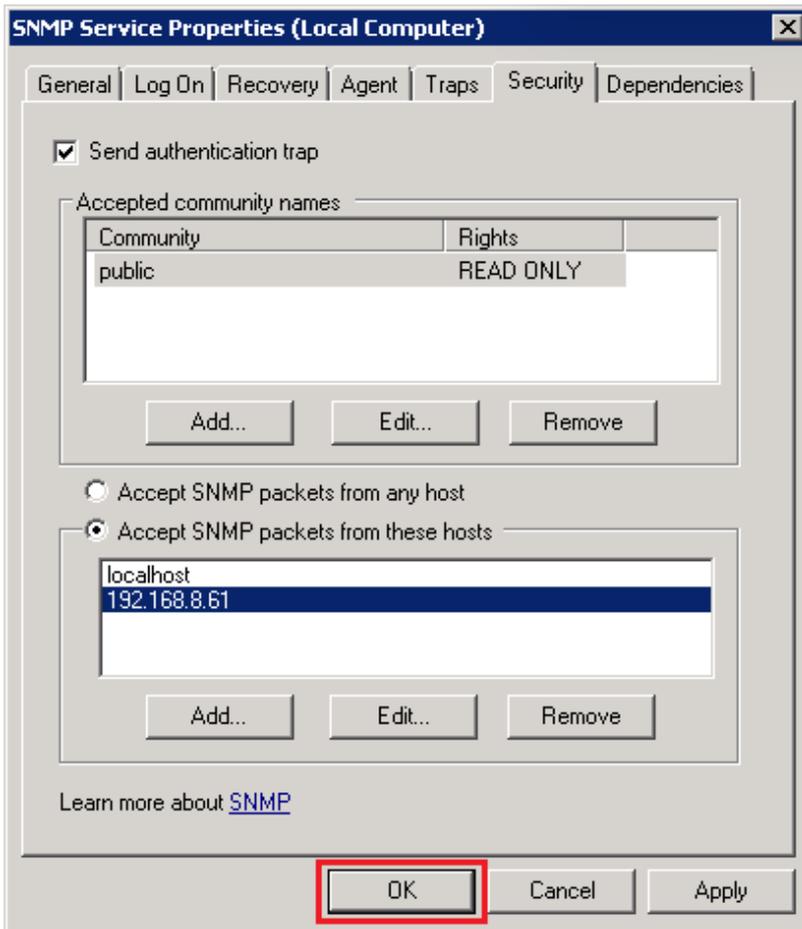
(5) Under “Accept SNMP packets from these hosts,” click “Add.”



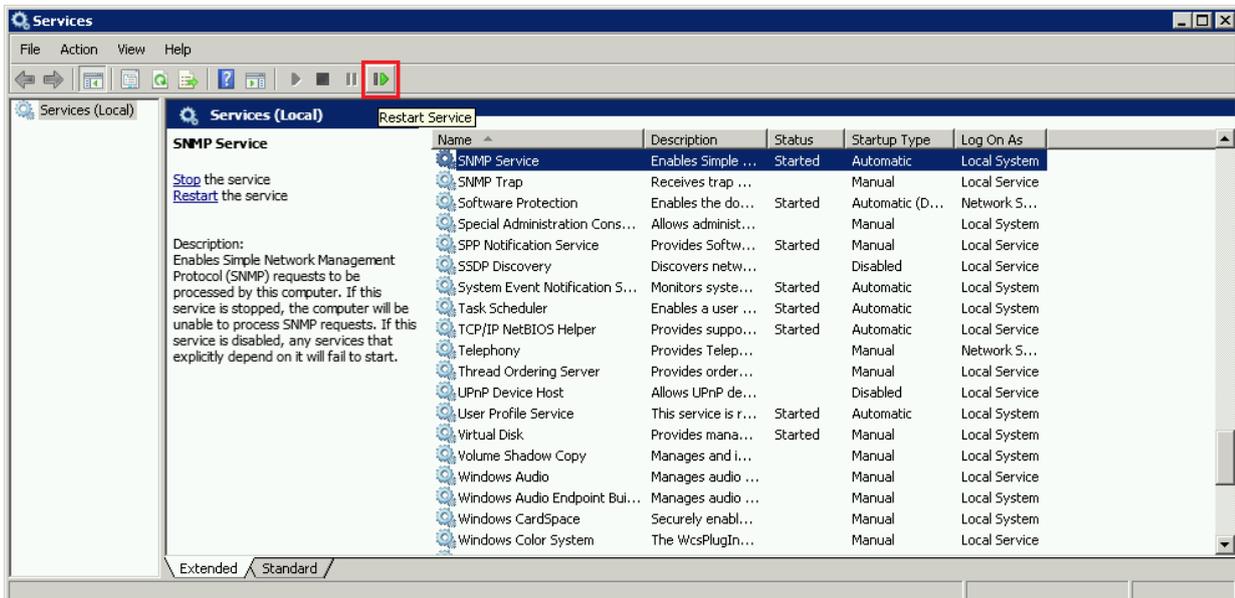
(6) Enter the host name or IP address of N-Reporter (example: 192.168.8.61), then click “Add.”



(7) Click "OK" to save the settings.



(8) Click  to restart the SNMP Service to apply the changes.



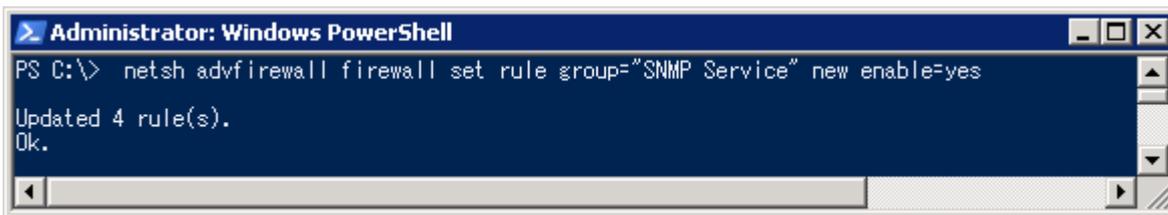
## 1.2.3 Configure the Firewall

(1) Open "Windows PowerShell."



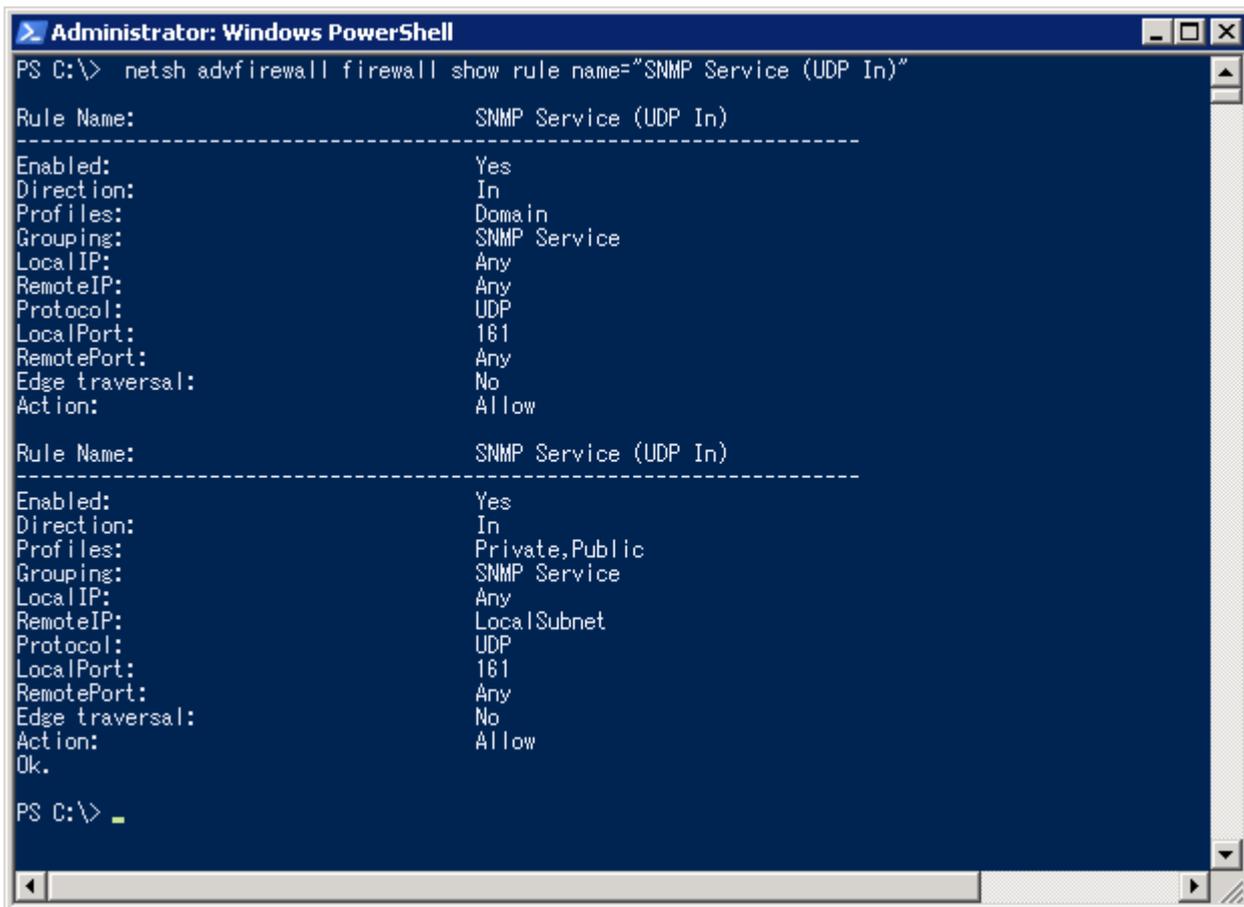
(2) Enter the command below to allow SNMP through the firewall:

```
C:\> netsh advfirewall firewall set rule group="SNMP Service" new enable=yes
```



(3) Verify the SNMP firewall rule status:

```
C:\> netsh advfirewall firewall show rule name="SNMP Service (UDP In)"
```



## 1.3 Windows Server 2012

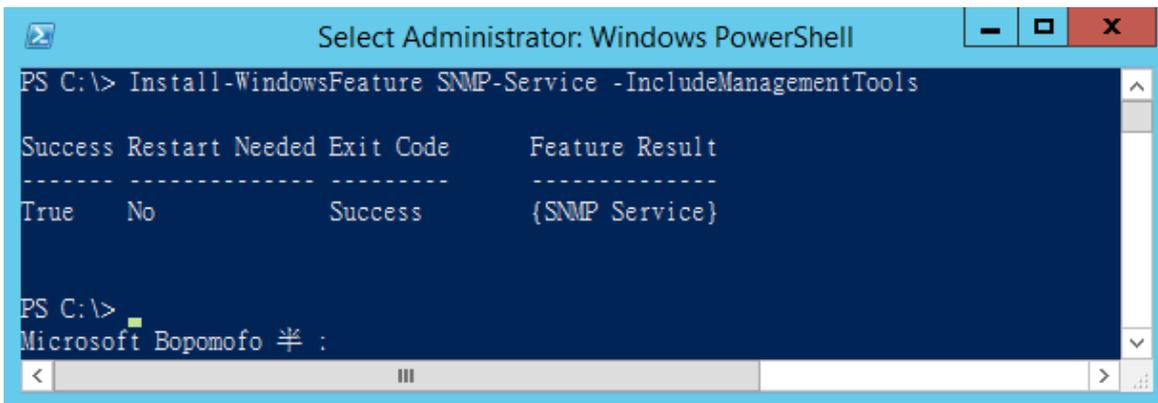
### 1.3.1 Install the SNMP Service

(1) Open "Windows PowerShell."



(2) Install the SNMP Service and management tools:

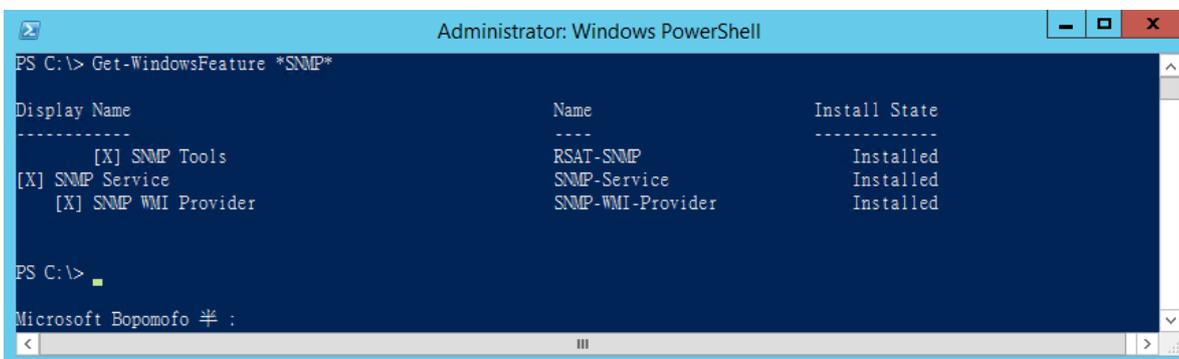
```
C:\> Install-WindowsFeature SNMP-Service -IncludeManagementTools
```

A screenshot of a Windows PowerShell window titled "Select Administrator: Windows PowerShell". The command executed is "Install-WindowsFeature SNMP-Service -IncludeManagementTools". The output shows a table with columns: Success, Restart Needed, Exit Code, and Feature Result. The result for the {SNMP Service} feature is Success, with no restart needed and an exit code of 0. The window also shows the Microsoft Bopomofo character and a scroll bar.

Success	Restart Needed	Exit Code	Feature Result
True	No	Success	{SNMP Service}

(3) Verify the SNMP Service installation:

```
C:\> Get-WindowsFeature *SNMP*
```

A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The command executed is "Get-WindowsFeature \*SNMP\*". The output shows a table with columns: Display Name, Name, and Install State. The results show that RSAT-SNMP, SNMP-Service, and SNMP-WMI-Provider are all installed. The window also shows the Microsoft Bopomofo character and a scroll bar.

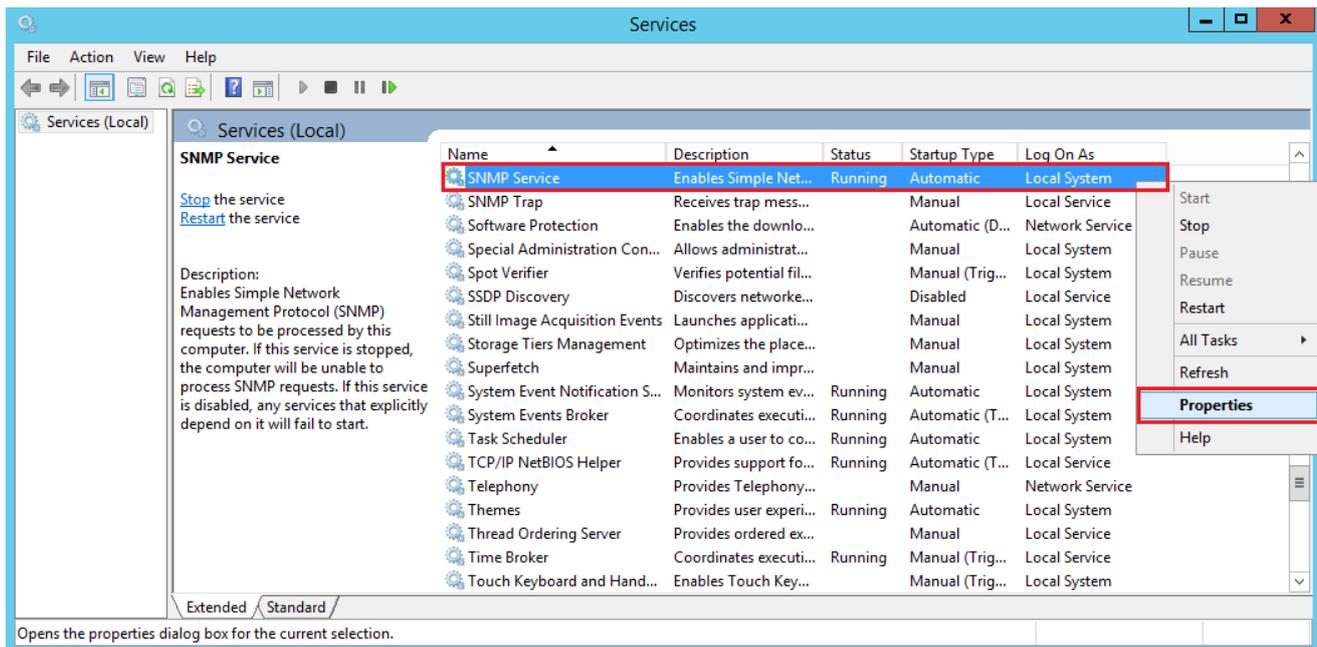
Display Name	Name	Install State
[X] SNMP Tools	RSAT-SNMP	Installed
[X] SNMP Service	SNMP-Service	Installed
[X] SNMP WMI Provider	SNMP-WMI-Provider	Installed

## 1.3.2 Configure the SNMP Service

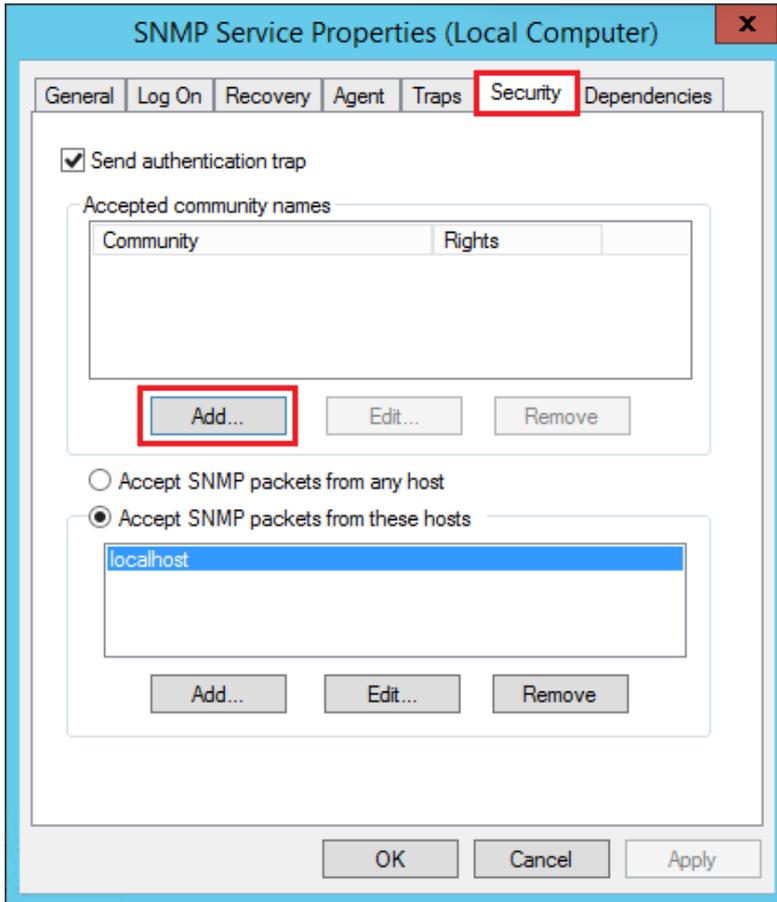
(1) Open “Service.”



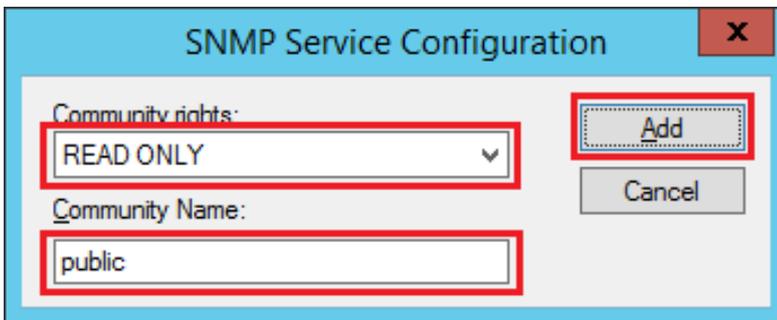
(2) Locate SNMP Service, verify that the Startup type is set to “Automatic,” then right-click and select “Properties.”



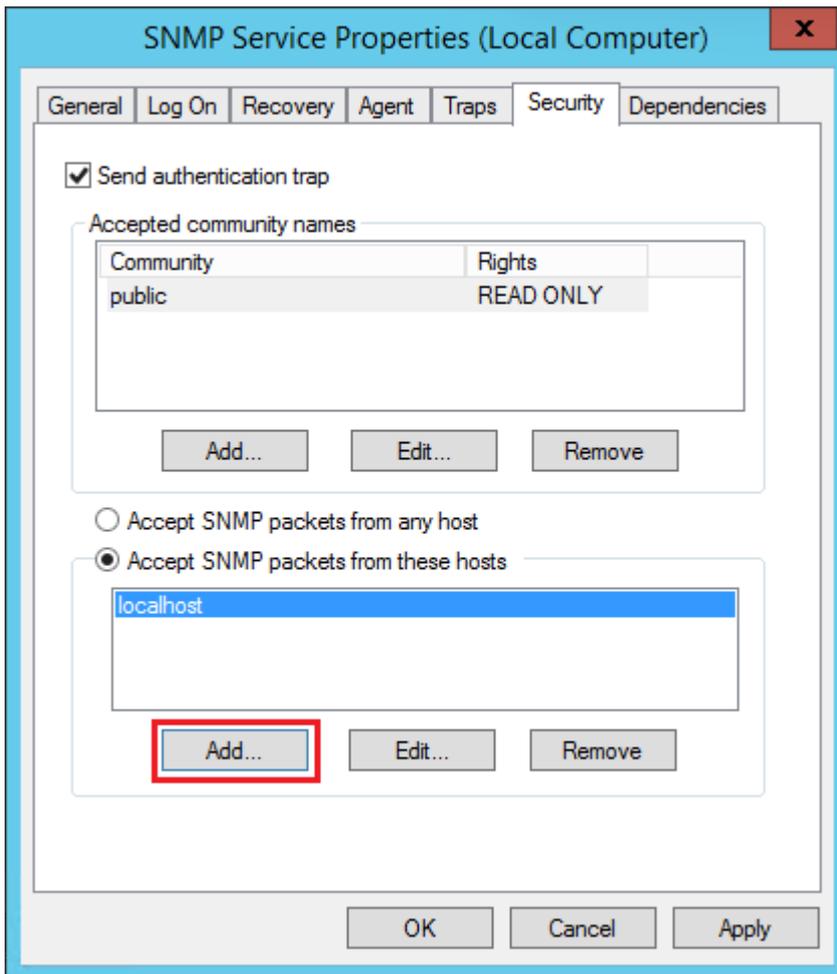
(3) Go to the “Security” tab and click “Add.”



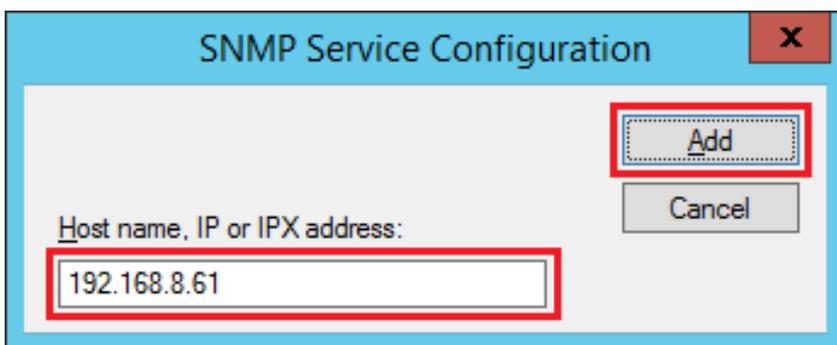
(4) Set “Community rights” to “Read Only,” enter a community name (example: public), then click “Add.”



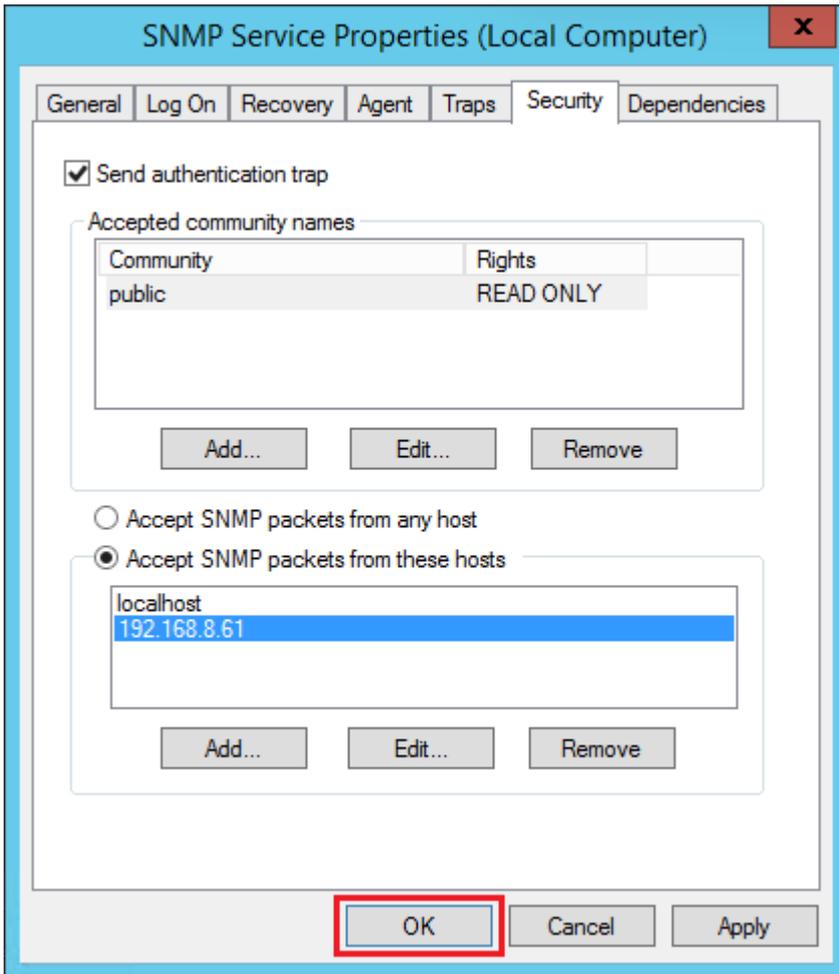
(5) Under “Accept SNMP packets from these hosts,” click “Add.”



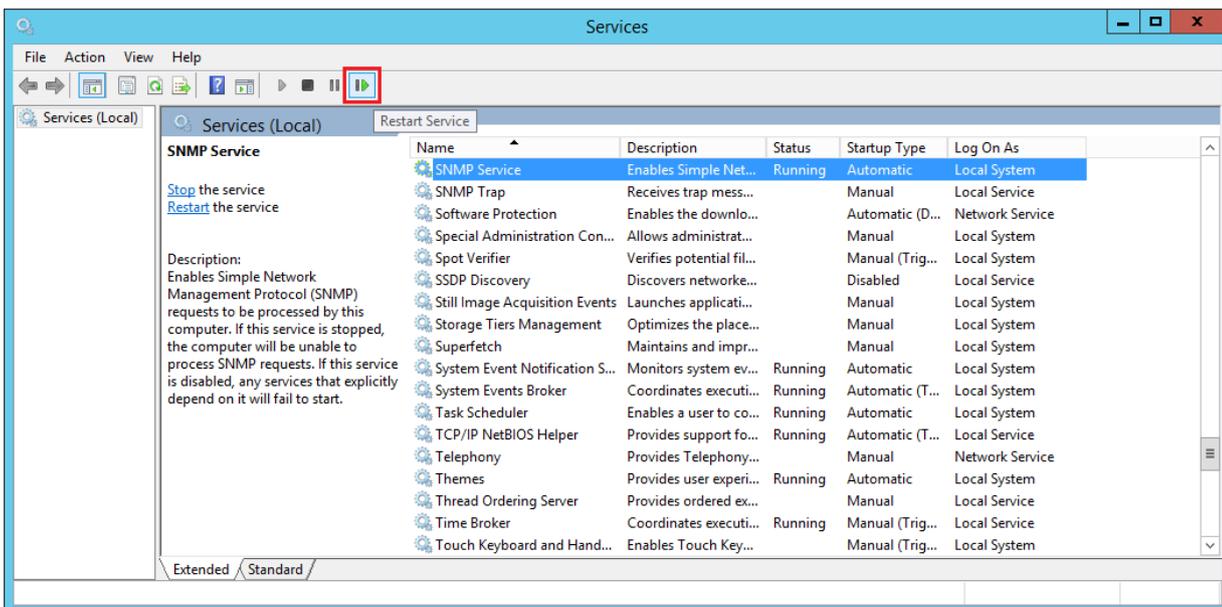
(6) Enter the host name or IP address of N-Reporter (example: 192.168.8.61), then click “Add.”



(7) Click “OK” to save the settings.



(8) Click  to restart the SNMP Service to apply the changes.



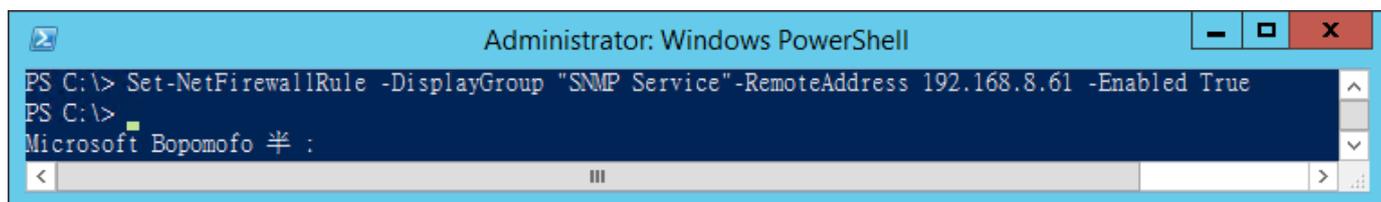
### 1.3.3 Configure the Firewall

(1) Open "Windows PowerShell."



(2) Enter the command below to allow the N-Reporter IP address to access the SNMP service through the firewall:

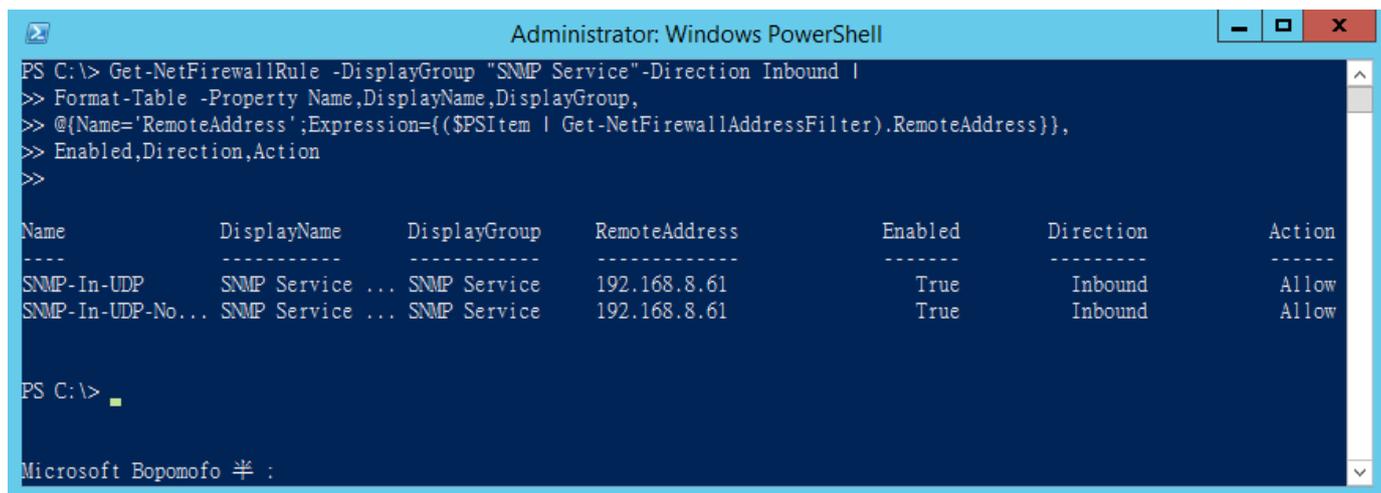
```
C:\> Set-NetFirewallRule -DisplayGroup "SNMP Service" -RemoteAddress 192.168.8.61 -Enabled True
```



Enter the **N-Reporter system IP** address in the **red text**.

(3) Enter the command below to verify the SNMP firewall rule status:

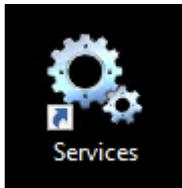
```
C:\> Get-NetFirewallRule -DisplayGroup "SNMP Service" -Direction Inbound |  
>> Format-Table -Property Name, DisplayName, DisplayGroup,  
>> @{Name='RemoteAddress';Expression={{($PSItem | Get-NetFirewallAddressFilter).RemoteAddress}},  
>> Enabled,Direction,Action
```



## 1.4 Windows Server 2016

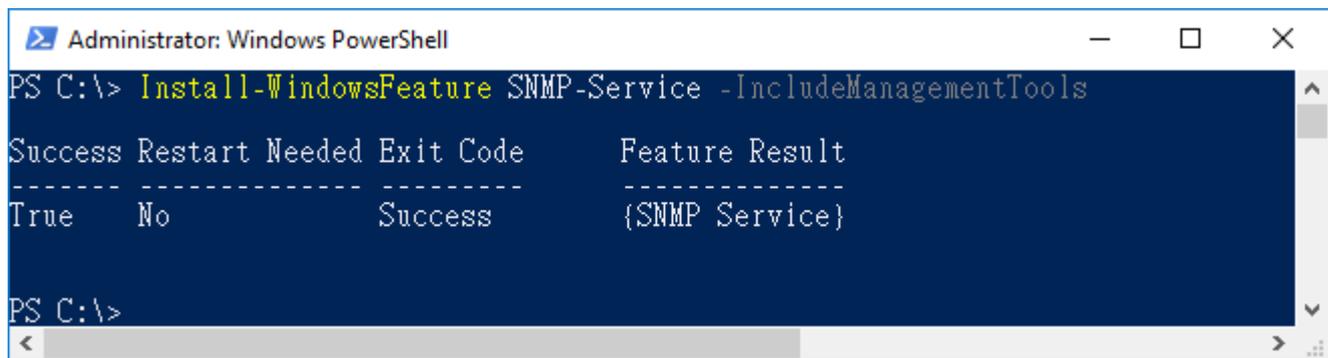
### 1.4.1 Install the SNMP Service

(1) Open “Windows PowerShell.”



(2) Enter the command below to install the SNMP Service and management tools

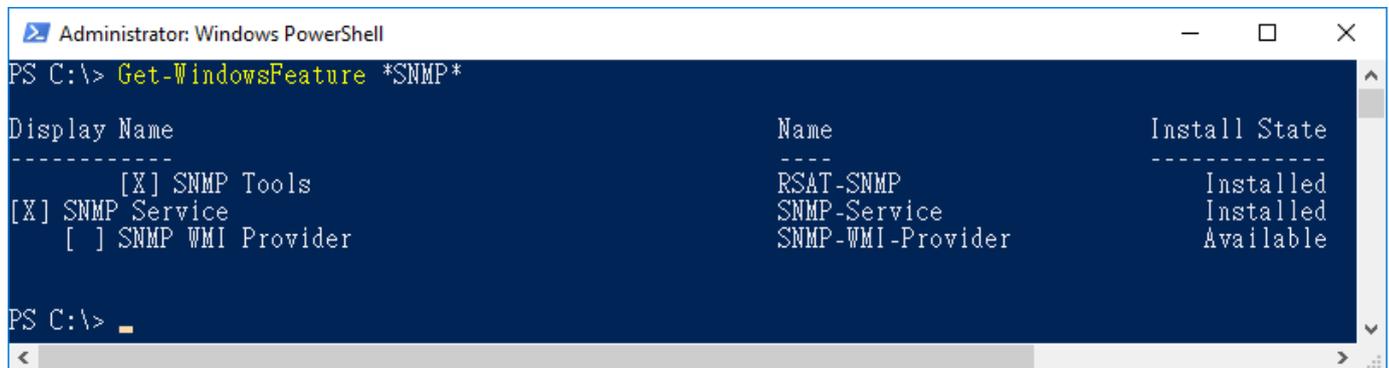
```
C:\> Install-WindowsFeature SNMP-Service -IncludeManagementTools
```

A screenshot of an Administrator Windows PowerShell window. The command 'Install-WindowsFeature SNMP-Service -IncludeManagementTools' has been executed. The output is a table with four columns: 'Success', 'Restart Needed', 'Exit Code', and 'Feature Result'.

Success	Restart Needed	Exit Code	Feature Result
True	No	Success	{SNMP Service}

(3) Verify the SNMP Service installation

```
C:\> Get-WindowsFeature *SNMP*
```

A screenshot of an Administrator Windows PowerShell window. The command 'Get-WindowsFeature \*SNMP\*' has been executed. The output is a table with three columns: 'Display Name', 'Name', and 'Install State'.

Display Name	Name	Install State
<input checked="" type="checkbox"/> SNMP Tools	RSAT-SNMP	Installed
<input checked="" type="checkbox"/> SNMP Service	SNMP-Service	Installed
<input type="checkbox"/> SNMP WMI Provider	SNMP-WMI-Provider	Available

## 1.4.2 Configure the SNMP Service

(1) Open “Service.”



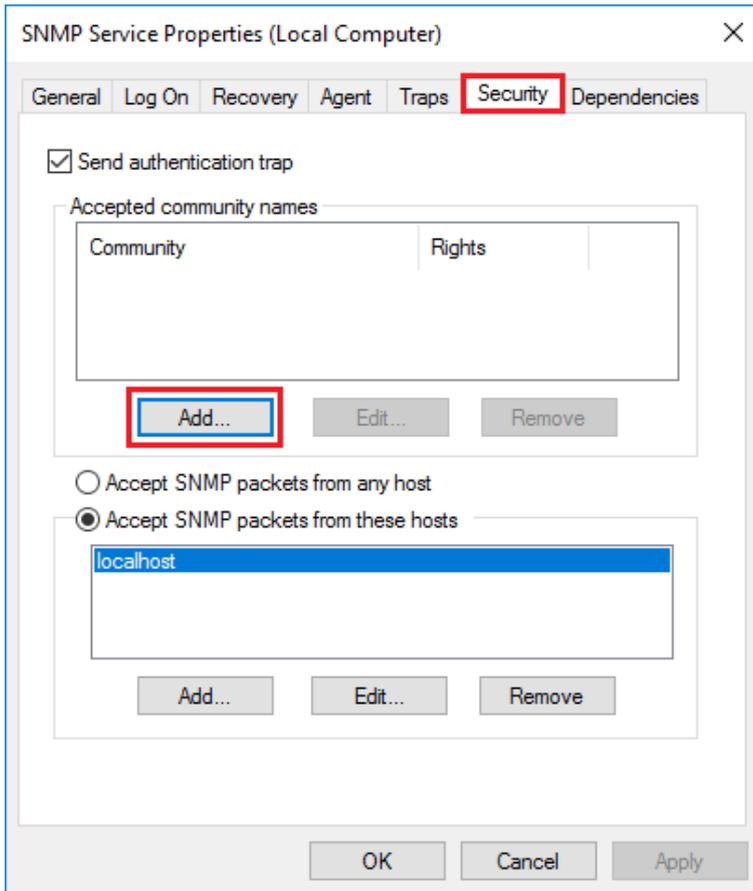
(2) Locate SNMP Service, verify that the Startup type is set to “Automatic,” then right-click and select “Properties.”

The screenshot shows the Windows Services console window. The "SNMP Service" is selected in the list, and its context menu is open, with the "Properties" option highlighted. The table below shows the details of the selected service.

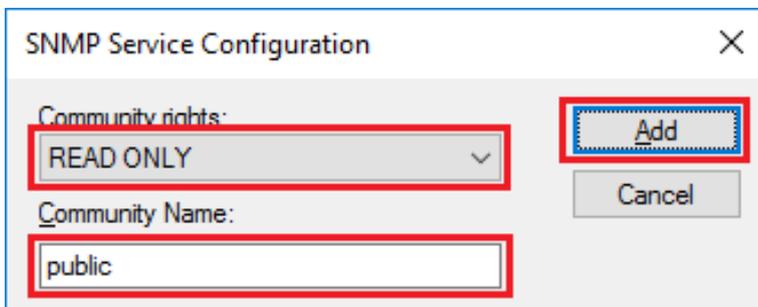
Name	Description	Status	Startup Type	Log On As
SNMP Service	Enables Simple Net...	Running	Automatic	Local System
SNMP Trap	Receives trap mess...		Manual	Local Service
Software Protection	Enables the downlo...	Running	Automatic (D...	Network Serv...
Special Administration Console Helper	Allows administrat...		Manual	Local System
Spot Verifier	Verifies potential fil...		Manual (Trig...	Local System
SSDP Discovery	Discovers networke...		Disabled	Local Service
State Repository Service	Provides required i...	Running	Manual	Local System
Still Image Acquisition Events	Launches applicati...		Manual	Local System
Storage Service	Provides enabling s...		Manual (Trig...	Local System
Storage Tiers Management	Optimizes the place...		Manual	Local System
Superfetch	Maintains and impr...		Manual	Local System
Sync Host_c598a	This service synchr...	Running	Automatic (D...	Local System
System Event Notification Service	Monitors system ev...	Running	Automatic	Local System
System Events Broker	Coordinates executi...	Running	Automatic (T...	Local System
Task Scheduler	Enables a user to co...	Running	Automatic	Local System
TCP/IP NetBIOS Helper	Provides support fo...	Running	Manual (Trig...	Local Service

Opens the properties dialog box for the current selection.

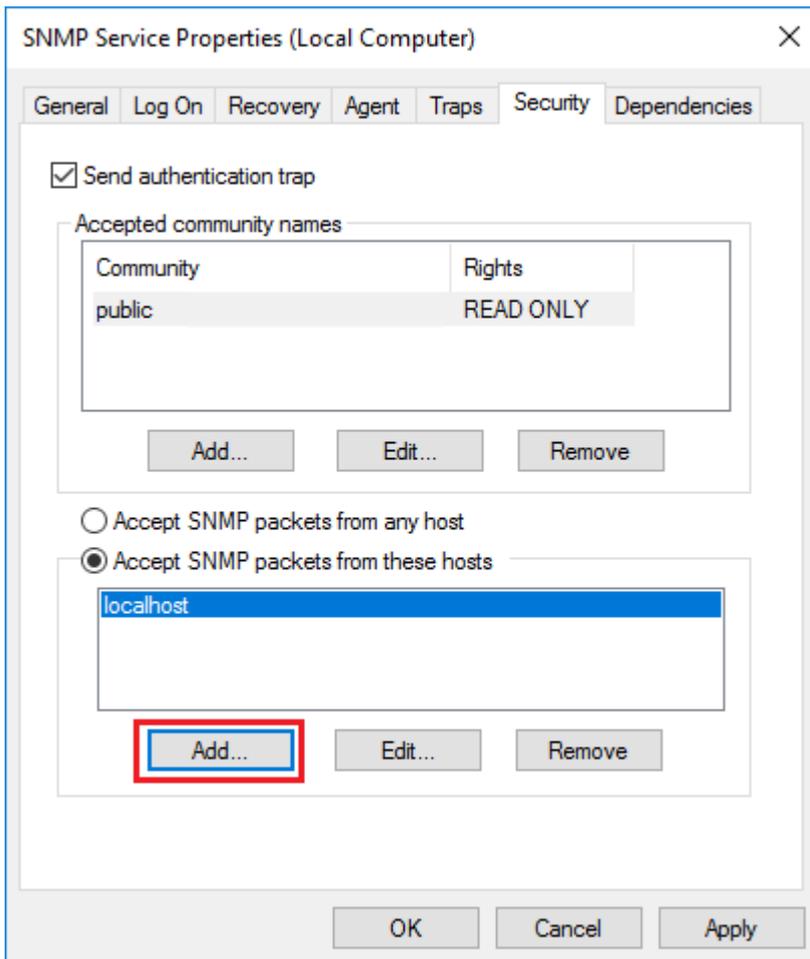
(3) Go to the “Security” tab and click “Add.”



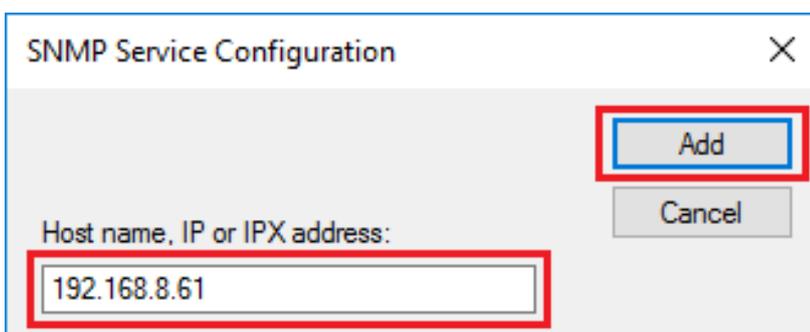
(4) Set “Community rights” to “Read Only,” enter a community name (example: public), then click “Add.”



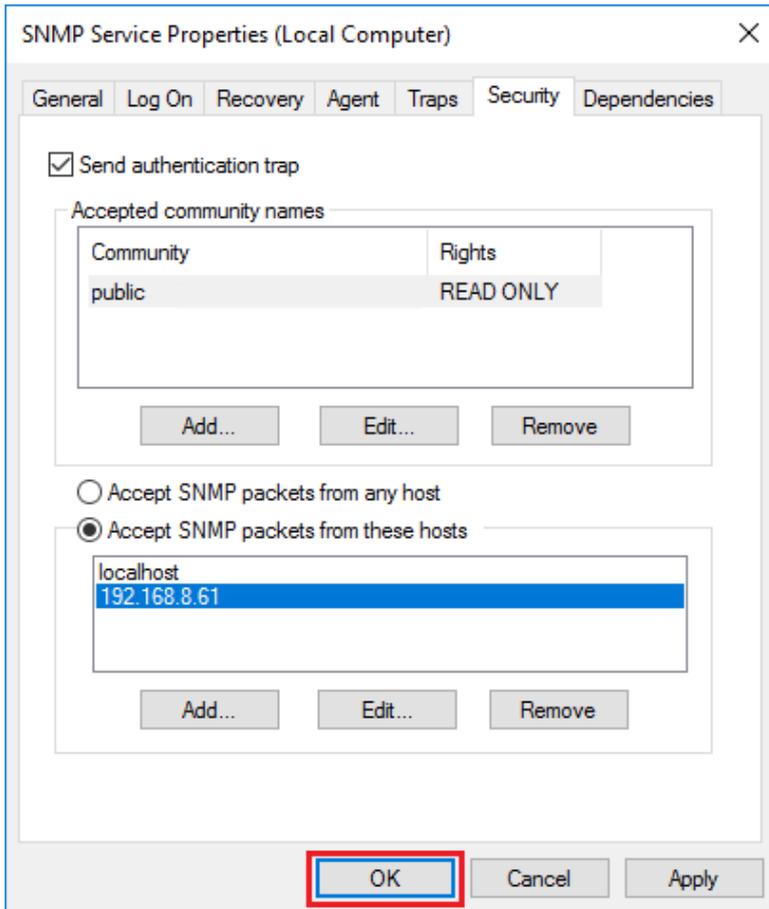
(5) Under “Accept SNMP packets from these hosts,” click “Add.”



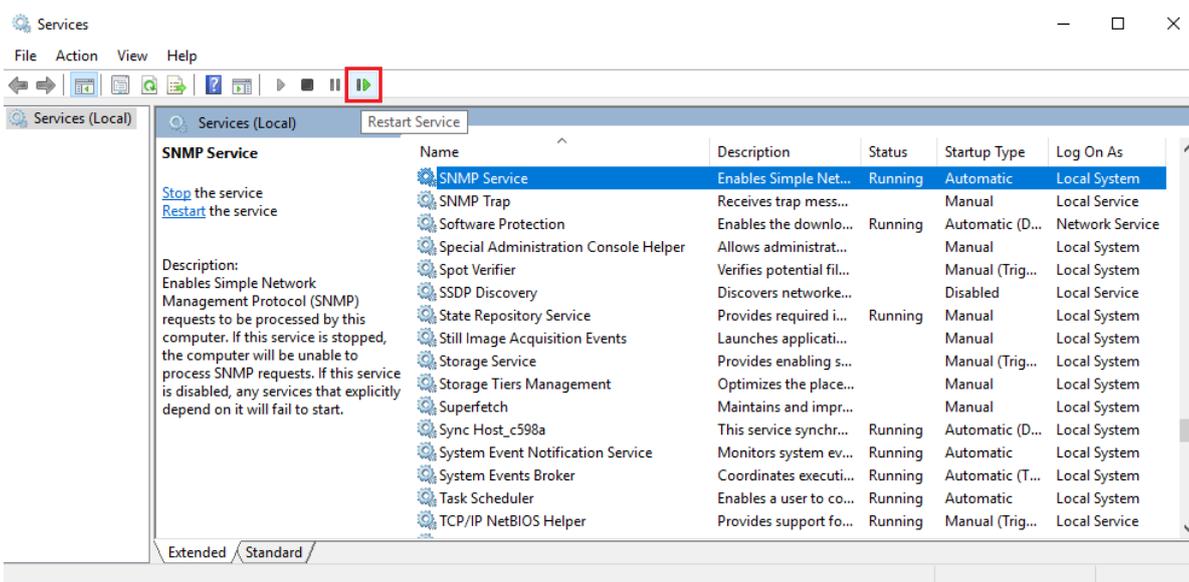
(6) Enter the host name or IP address of N-Reporter (example: [192.168.8.61](#)), then click “Add.”



(7) Click "OK" to save the settings.



(8) Click  to restart the SNMP Service to apply the changes.



## 1.4.3 Configure the Firewall

(1) Open “Windows PowerShell.”



(2) Allow the N-Reporter IP address to access the SNMP service through the firewall:

```
C:\> Set-NetFirewallRule -DisplayGroup "SNMP Service" -RemoteAddress 192.168.8.61 -Enabled True
```

A screenshot of a Windows PowerShell terminal window titled "Administrator: Windows PowerShell". The terminal shows the command `Set-NetFirewallRule -DisplayGroup "SNMP Service" -RemoteAddress 192.168.8.61 -Enabled True` being entered and executed. The prompt `PS C:\>` is visible before and after the command.

```
Administrator: Windows PowerShell
PS C:\> Set-NetFirewallRule -DisplayGroup "SNMP Service" -RemoteAddress 192.168.8.61 -Enabled True
PS C:\>
```

Enter the N-Reporter system IP address in the red text.

(3) Verify the SNMP firewall rule status:

```
C:\> Get-NetFirewallRule -DisplayGroup "SNMP Service" -Direction Inbound |
>> Format-Table -Property Name, DisplayName, DisplayGroup,
>> @{Name='RemoteAddress';Expression={({PSItem | Get-NetFirewallAddressFilter).RemoteAddress}},
>> Enabled, Direction, Action
```

A screenshot of a Windows PowerShell terminal window titled "Administrator: Windows PowerShell". The terminal shows the command `Get-NetFirewallRule -DisplayGroup "SNMP Service" -Direction Inbound | Format-Table -Property Name, DisplayName, DisplayGroup, @{Name='RemoteAddress';Expression={({PSItem | Get-NetFirewallAddressFilter).RemoteAddress}}, Enabled, Direction, Action` being entered and executed. The output is a table with 7 columns: Name, DisplayName, DisplayGroup, RemoteAddress, Enabled, Direction, and Action. Two rows of data are shown.

```
Administrator: Windows PowerShell
PS C:\> Get-NetFirewallRule -DisplayGroup "SNMP Service" -Direction Inbound |
>> Format-Table -Property Name, DisplayName, DisplayGroup,
>> @{Name='RemoteAddress';Expression={({PSItem | Get-NetFirewallAddressFilter).RemoteAddress}},
>> Enabled, Direction, Action

Name                DisplayName                DisplayGroup RemoteAddress Enabled Direction Action
-----
SNMP-In-UDP         SNMP Service (UDP In)    SNMP Service 192.168.8.61    True   Inbound  Allow
SNMP-In-UDP-NoScope SNMP Service (UDP In)    SNMP Service 192.168.8.61    True   Inbound  Allow

PS C:\>
PS C:\>
```

## 1.5 Windows Server 2019

### 1.5.1 Install the SNMP Service

(1) Open “Windows PowerShell.”



(2) Install the SNMP Service and management tools:

```
C:\> Install-WindowsFeature SNMP-Service -IncludeManagementTools
```

```
Administrator: Windows PowerShell
PS C:\> Install-WindowsFeature SNMP-Service -IncludeManagementTools
Success Restart Needed Exit Code      Feature Result
-----
True      No              Success          {SNMP Service}
PS C:\>
```

(3) Verify the SNMP Service installation

```
C:\> Get-WindowsFeature *SNMP*
```

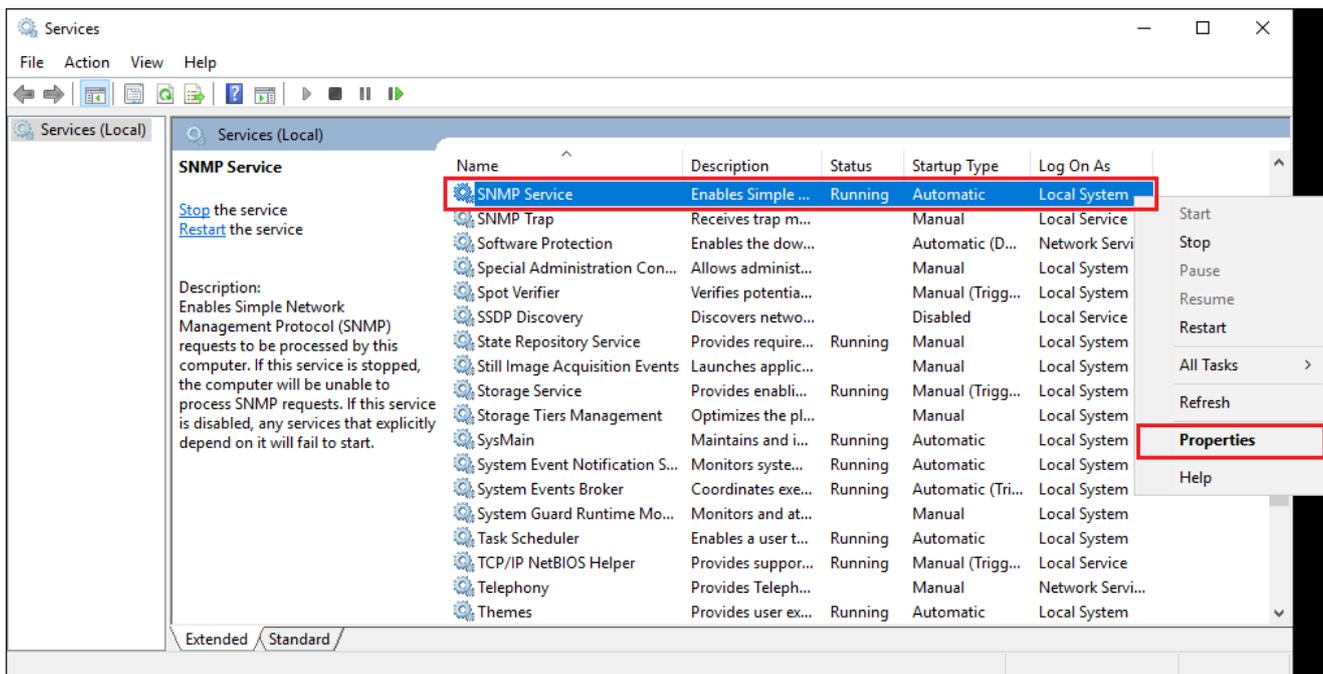
```
Administrator: Windows PowerShell
PS C:\> Get-WindowsFeature *SNMP*
Display Name              Name                      Install State
-----
[X] SNMP Tools            RSAT-SNMP                 Installed
[X] SNMP Service          SNMP-Service              Installed
[ ] SNMP WMI Provider     SNMP-WMI-Provider         Available
PS C:\>
```

## 1.5.2 Configure the SNMP Service

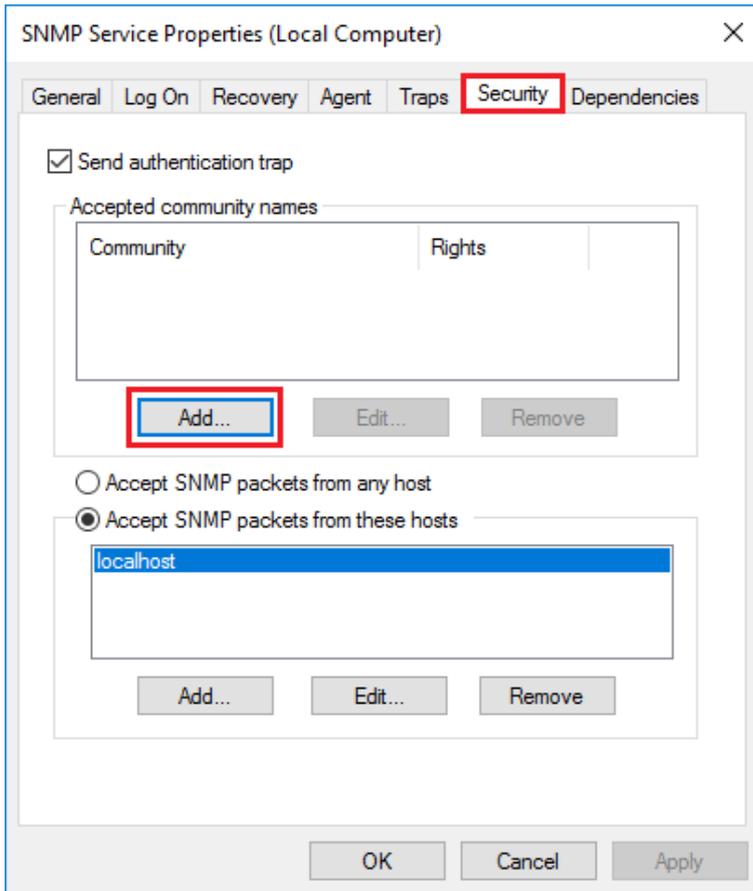
(1) Open “Service.”



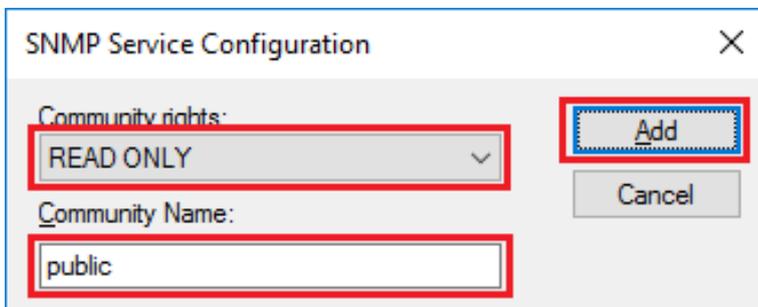
(2) Locate SNMP Service, verify that the Startup type is set to “Automatic,” then right-click and select “Properties.”



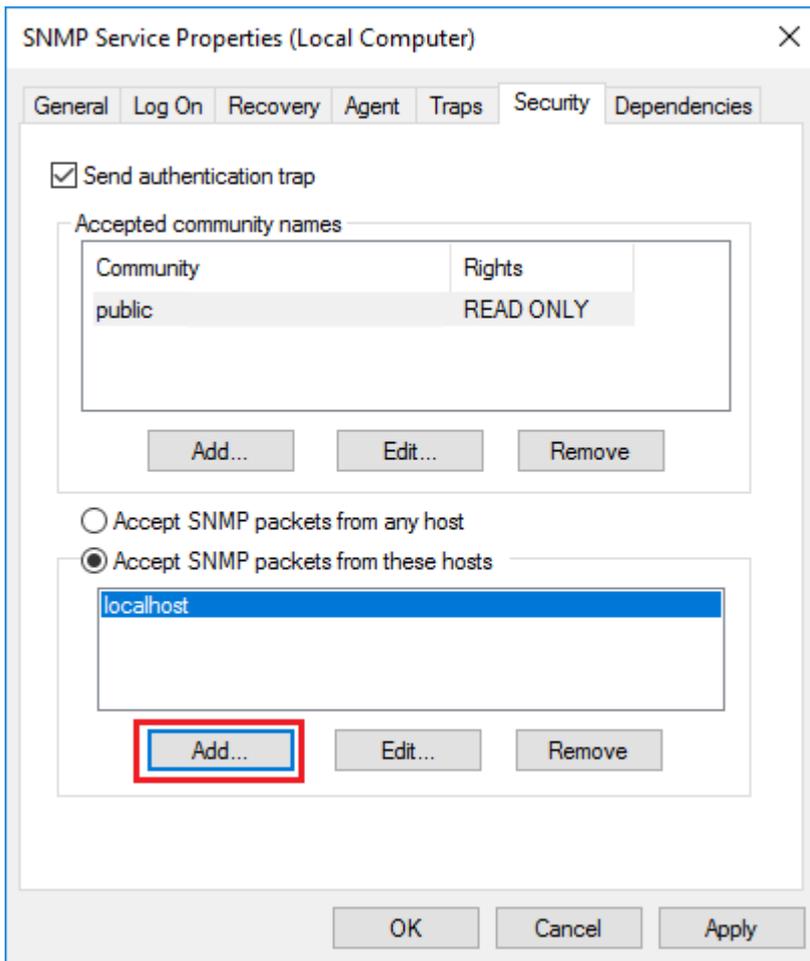
(3) Go to the “Security” tab and click “Add.”



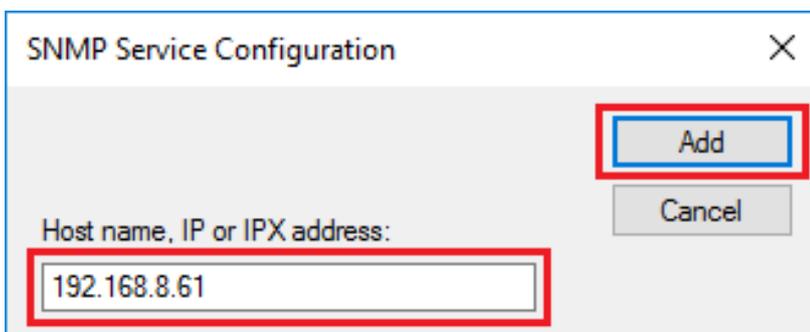
(4) Set “Community rights” to “Read Only,” enter a community name (example: public), then click “Add.”



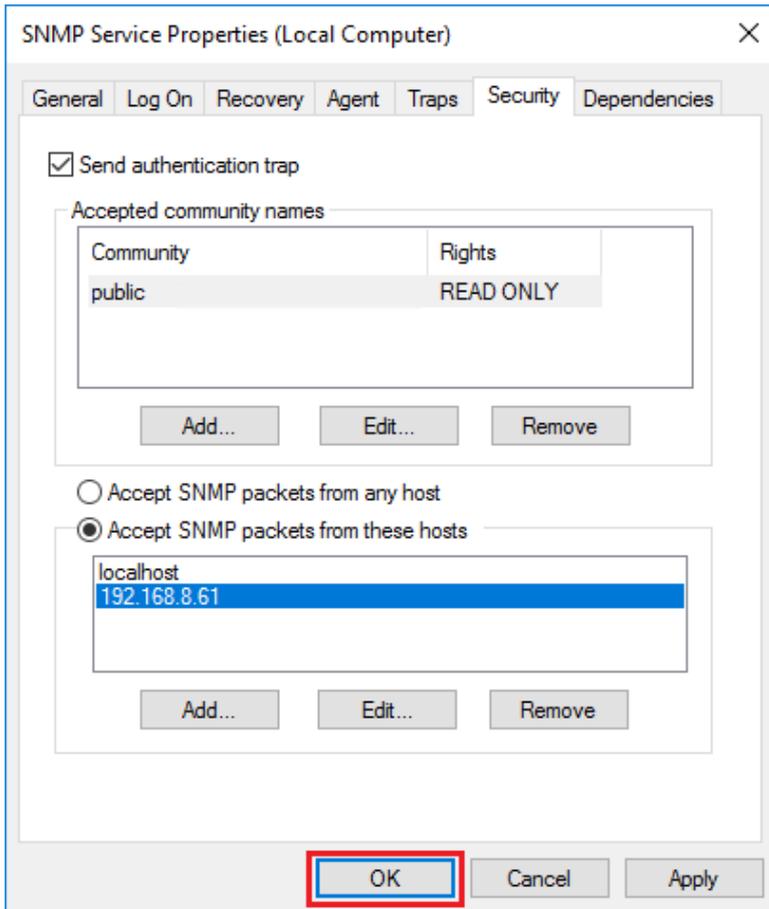
(5) Under “Accept SNMP packets from these hosts,” click “Add.”



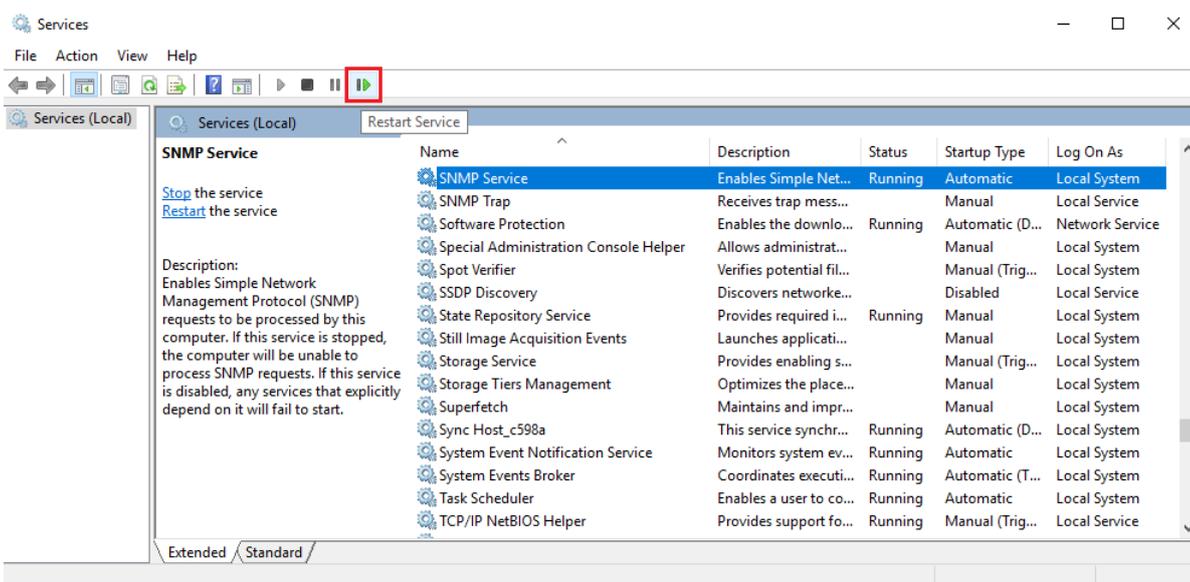
(6) Enter the host name or IP address of N-Reporter (example: [192.168.8.61](#)), then click “Add.”



(7) Click "OK" to save the settings.



(8) Click  to restart the SNMP Service to apply the changes.



### 1.5.3 Configure the Firewall

(1) Open “Windows PowerShell.”



(2) Enter the command below to allow the N-Reporter IP address to access the SNMP service through the firewall:

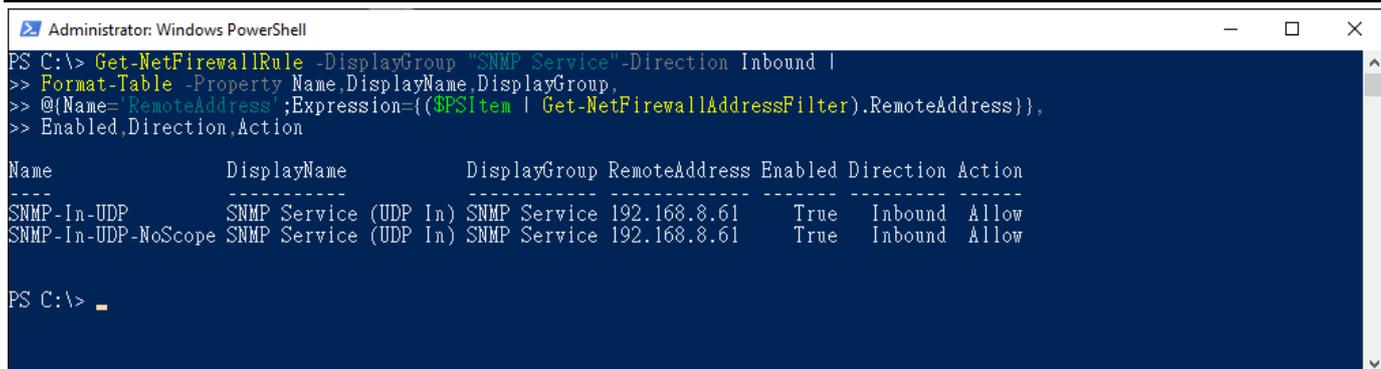
```
C:\> Set-NetFirewallRule -DisplayGroup "SNMP Service" -RemoteAddress 192.168.8.61 -Enabled True
```



Enter the N-Reporter system IP address in the red text.

(3) Verify the SNMP firewall rule status:

```
C:\> Get-NetFirewallRule -DisplayGroup "SNMP Service" -Direction Inbound |  
>> Format-Table -Property Name, DisplayName, DisplayGroup,  
>> @{Name='RemoteAddress';Expression={(($PSItem | Get-NetFirewallAddressFilter).RemoteAddress}},  
>> Enabled, Direction, Action
```



## 2. Linux

### 2.1 Redhat

#### 2.1.1 Redhat 6

This section covers online and offline installation methods.

##### 2.1.1.1 Online Installation

(1) Online Installation of the SNMP Service:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
  net-snmp.x86_64 1:5.5-60.el6                                net-snmp-utils.x86_64 1:5.5-60.el6

Dependency Installed:
  lm_sensors-libs.x86_64 0:3.1.1-17.el6                    net-snmp-libs.x86_64 1:5.5-60.el6                    perl.x86_64 4:5.10.1-144.el6                    perl-Module-Pluggable.x86_64 1:3.98-144.el6
  perl-Pod-Escapes.x86_64 1:1.04-144.el6                    perl-Pod-Simple.x86_64 1:3.13-144.el6                    perl-libs.x86_64 4:5.10.1-144.el6                    perl-version.x86_64 3:0.77-144.el6

Complete!
[root@RedHat6 ~]#
```

## 2.1.1.2 Offline Installation

(1) Create the rhel-cdrom repository configuration file:

```
# vi /etc/yum.repos.d/rhel-cdrom.repo
```

```
[root@RedHat6 ~]# vi /etc/yum.repos.d/rhel-cdrom.repo
```

(2) Configure rhel-cdrom.repo:

```
[rhel6-media]
name=RedHat-$releasever - Media
baseurl=file:///media/cdrom/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

```
[rhel6-media]
name=RedHat-$releasever - Media
baseurl=file:///media/cdrom/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

(3) Create the mount directory:

```
# mkdir -p /media/cdrom
```

```
[root@RedHat6 ~]# mkdir -p /media/cdrom
```

(4) Mount the Red Hat 6 ISO file or CD-ROM:

```
# mount /dev/cdrom /media/cdrom
```

```
[root@RedHat6 ~]# mount /dev/cdrom /media/cdrom
mount: block device /dev/sr0 is write-protected, mounting read-only
[root@RedHat6 ~]#
```

(5) Install the SNMP service offline:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
  net-snmp.x86_64 1:5.5-60.el6                                net-snmp-utils.x86_64 1:5.5-60.el6

Dependency Installed:
  lm_sensors-libs.x86_64 0:3.1.1-17.el6                    perl.x86_64 4:5.10.1-144.el6
  perl-Pod-Escapes.x86_64 1:1.04-144.el6                   perl-Module-Pluggable.x86_64 1:3.90-144.el6
  perl-Pod-Simple.x86_64 1:3.13-144.el6                   perl-libs.x86_64 4:5.10.1-144.el6
  perl-version.x86_64 3:0.77-144.el6

Complete!
[root@RedHat6 ~]#
```

### 2.1.1.3 Configure the SNMP Server

(1) Back up the SNMP configuration file:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
[root@RedHat6 ~]# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak  
[root@RedHat6 ~]#
```

(2) Create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf  
> #####  
> # SNMP configuration #  
> #####  
> # Agent address  
> agentaddress udp:161  
> agentaddress udp6:161  
> ## Access control  
> #          sec.name    source      community  
> com2sec   AllowAll    192.168.8.4  public  
>  
> # group <group_name> <security_mode> <security_name>  
> group    AllGroup      v2c         AllowAll  
>  
> # Define 'AllView', which includes everything under .1  
> # view.name  incl/excl  subtree.mask (Optional)  
> view      AllView    included .1  
>  
> #          group.name  context    model    level  prefix  read  write  notify  
> access   AllGroup      ""         any     noauth exact AllView none none  
>  
> ## System contact information  
> # syslocation <location>  
> # syscontact  <contact info>  
> syslocation  Taiwan  
> syscontact   N-Partner  
> ##<<<<<<<<<< End of config >>>>>>>>>#  
> EOF
```

```

[root@RedHat6 ~]# cat <<'EOF' /etc/snmp/snmpd.conf
> #####
> #          SNMP configuration          #
> #####
> # Agent address
> agentaddress    udp:161
> agentaddress    udp6:161
>
> ## Access control
> #          sec.name          source          community
> com2sec        AllowAll      192.168.8.4    public
>
> #group         <group_name    <security_mode  <security_name>
> group          AllGroup       v2c            AllowAll
>
> # Define 'AllView', which includes everything under .1
> #          view.name          incl/excl          subtree.mask(Optional)
> view          AllView         included         .1
>
> #          group.name        context model    level  prefix  read    write  notify
> access       AllGroup         ""           any    noauth exact  AllView none   none
>
> ## System contact information
> #syslocation  <location set>
> #syscontact   <contact_info>
> syslocation   Taiwan
> syscontact    N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
[root@RedHat6 ~]#

```

Note: Enter the **N-Reporter system IP address** and **SNMP community string** in the **red text**.

(3) Start the SNMP service and check its status:

```
# service snmpd start && service snmpd status
```

```

[root@RedHat6 ~]# service snmpd start && service snmpd status
Starting snmpd:                                     [ OK ]
snmpd (pid 2411) is running...
[root@RedHat6 ~]#

```

(4) Enable the SNMP service to start on boot:

```
# chkconfig snmpd on
```

```
# chkconfig snmpd --list
```

```

[root@RedHat6 ~]# chkconfig snmpd on
[root@RedHat6 ~]# chkconfig snmpd --list
snmpd          0:off  1:off  2:on   3:on   4:on   5:on   6:off
[root@RedHat6 ~]#

```

(5) View current iptables rules:

```
# iptables -nL
```

```
[root@RedHat6 ~]# iptables -nL
Chain INPUT (policy ACCEPT)
target     prot opt source                               destination

Chain FORWARD (policy ACCEPT)
target     prot opt source                               destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source                               destination
[root@RedHat6 ~]#
```

(6) Add the first iptables rule to allow the N-Reporter IP to access the SNMP service:

```
# iptables --insert INPUT 1 --source 192.168.8.4 --protocol udp --match state --state NEW,ESTABLISHED --
destination-port 161 --jump ACCEPT
```

```
[root@RedHat6 ~]# iptables --insert INPUT 1 --source 192.168.8.4 --protocol udp --match state --state NEW,ESTABLISHED --destination-port 161 --jump ACCEPT
[root@RedHat6 ~]#
```

Enter the **N-Reporter system IP address** in the **red text**.

(7) Enter the command below to view iptables rules:

```
# iptables -nL --line-numbers
```

```
[root@RedHat6 ~]# iptables -nL --line-numbers
Chain INPUT (policy ACCEPT)
num target     prot opt source                               destination
1 ACCEPT     udp  --  192.168.8.4                          0.0.0.0/0          state NEW,ESTABLISHED udp dpt:161

Chain FORWARD (policy ACCEPT)
num target     prot opt source                               destination

Chain OUTPUT (policy ACCEPT)
num target     prot opt source                               destination
[root@RedHat6 ~]#
```

(8) Enter the command below to save the iptables rules:

```
# service iptables save
```

```
[root@RedHat6 ~]# service iptables save
iptables: Saving firewall rules to /etc/sysconfig/iptables:[ OK ]
[root@RedHat6 ~]#
```

(9) Enter the command below to verify the saved iptables configuration:

```
# iptables-save
```

```
[root@RedHat6 ~]# iptables-save
# Generated by iptables-save v1.4.7 on Wed Aug  4 08:16:46 2021
*filter
:INPUT ACCEPT [29:2120]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [22:2448]
-A INPUT -s 192.168.8.4/32 -p udp -m state --state NEW,ESTABLISHED -m udp --dport 161 -j ACCEPT
COMMIT
# Completed on Wed Aug  4 08:16:46 2021
[root@RedHat6 ~]#
```

## 2.1.2 Red Hat 7

This section covers **online** and **offline** installation methods.

### 2.1.2.1 Online Installation

(1) Install the SNMP service online:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
net-snmp.x86_64 1:5.7.2-37.el7                                net-snmp-utils.x86_64 1:5.7.2-37.el7

Dependency Installed:
lm_sensors-libs.x86_64 0:3.4.0-6.20160601gitf9185e5.el7    net-snmp-agent-libs.x86_64 1:5.7.2-37.el7    net-snmp-libs.x86_64 1:5.7.2-37.el7    perl.x86_64 4:5.16.3-293.el7
perl-Carp.noarch 0:1.26-244.el7                            perl-Date-Dumper.x86_64 0:2.145-3.el7        perl-Encode.x86_64 0:2.51-7.el7        perl-Exporter.noarch 0:5.68-3.el7
perl-File-Path.noarch 0:2.89-2.el7                        perl-File-Temp.noarch 0:0.23.01-3.el7        perl-Filter.x86_64 0:1.49-3.el7        perl-Getopt-Long.noarch 0:2.40-3.el7
perl-HTTP-Tiny.noarch 0:0.833-3.el7                       perl-PathTools.x86_64 0:3.40-5.el7          perl-Pod-Escapes.noarch 1:1.04-293.el7   perl-Getopt-Long.noarch 0:2.40-3.el7
perl-Pod-Simple.noarch 1:3.28-4.el7                       perl-Pod-Usage.noarch 0:1.63-3.el7          perl-Scalar-List-Utils.x86_64 0:1.27-248.el7  perl-Pod-PerlDoc.noarch 0:3.20-4.el7
perl-Storable.x86_64 0:2.45-3.el7                         perl-Text-ParseWords.noarch 0:3.29-4.el7    perl-Time-HiRes.x86_64 4:1.9725-3.el7   perl-PerlDoc.noarch 0:3.20-4.el7
perl-constant.noarch 0:1.27-2.el7                         perl-libs.x86_64 4:5.16.3-293.el7          perl-macros.x86_64 4:5.16.3-293.el7    perl-Time-Local.noarch 0:1.2300-2.el7
perl-podlators.noarch 0:2.5.1-3.el7                       perl-threads.x86_64 0:1.87-4.el7           perl-threads-shared.x86_64 0:1.43-6.el7  perl-Time-Local.noarch 0:1.2300-2.el7
perl-parent.noarch 1:0.225-244.el7                       perl-threads-shared.x86_64 0:1.43-6.el7    perl-parent.noarch 1:0.225-244.el7

Complete!
[root@RedHat7 ~]#
```

## 2.1.2.2 Offline Installation

(1) Enter the command below to create the rhel-cdrom repository configuration file

```
# vi /etc/yum.repos.d/rhel-cdrom.repo
```

```
[root@RedHat7 ~]# vi /etc/yum.repos.d/rhel-cdrom.repo
```

(2) Configure rhel-cdrom.repo:

```
[rhel7-media]
name=RedHat-$releasever - Media
baseurl=file:///media/cdrom/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

```
[rhel7-media]
name=RedHat-$releasever - Media
baseurl=file:///media/cdrom/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

(3) Create the mount directory:

```
# mkdir -p /media/cdrom
```

```
[root@RedHat7 ~]# mkdir -p /media/cdrom
[root@RedHat7 ~]#
```

(4) Mount the Red Hat 7 ISO file or CD-ROM:

```
# mount /dev/cdrom /media/cdrom
```

```
[root@RedHat7 ~]# mount /dev/cdrom /media/cdrom
mount: /dev/sr0 is write-protected, mounting read-only
[root@RedHat7 ~]#
```

(5) Install the SNMP service offline:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
  net-snmp.x86_64 1:5.7.2-37.el7                                net-snmp-utils.x86_64 1:5.7.2-37.el7

Dependency Installed:
  lm_sensors-libs.x86_64 0:3.4.0-6.20160601gitf9185e5.el7    net-snmp-agent-libs.x86_64 1:5.7.2-37.el7    net-snmp-libs.x86_64 1:5.7.2-37.el7    perl.x86_64 4:5.16.3-293.el7
  perl-Carp.noarch 0:1.26-244.el7                            perl-Data-Dumper.x86_64 0:2.145-3.el7        perl-Encode.x86_64 0:2.51-7.el7        perl-Exporter.noarch 0:5.68-3.el7
  perl-File-Path.noarch 0:2.89-2.el7                        perl-File-Temp.noarch 0:0.23.01-3.el7        perl-Filter.x86_64 0:1.49-3.el7        perl-Getopt-Long.noarch 0:2.48-3.el7
  perl-HTTP-Tiny.noarch 0:0.033-3.el7                       perl-PathTools.x86_64 0:3.40-5.el7          perl-Pod-Escapes.noarch 1:1.04-293.el7    perl-Getopt-Long.noarch 0:2.48-3.el7
  perl-Pod-Simple.noarch 1:3.28-4.el7                       perl-Pod-Usage.noarch 0:1.63-3.el7          perl-Scalar-List-Utils.x86_64 0:1.27-248.el7  perl-Pod-Perldoc.noarch 0:3.20-4.el7
  perl-Storeable.x86_64 0:2.45-3.el7                       perl-Text-ParseWords.noarch 0:3.29-4.el7     perl-Socket.x86_64 0:2.010-4.el7       perl-Pod-Perldoc.noarch 0:3.20-4.el7
  perl-constant.noarch 0:1.27-2.el7                        perl-libs.x86_64 4:5.16.3-293.el7          perl-Time-HiRes.x86_64 4:1.9725-3.el7    perl-Socket.x86_64 0:2.010-4.el7
  perl-podlators.noarch 0:2.5.1-3.el7                      perl-threads.x86_64 0:1.07-4.el7            perl-macros.x86_64 4:5.16.3-293.el7    perl-Time-Local.noarch 0:1.2380-2.el7
  perl-threads-shared.x86_64 0:1.43-6.el7                  perl-threads-shared.x86_64 0:1.43-6.el7    perl-parent.noarch 1:0.225-244.el7

Complete!
[root@RedHat7 ~]#
```

### 2.1.2.3 Configure the SNMP Server

(1) Back up the SNMP configuration file:

```
# mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
[root@RedHat7 ~]# mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak  
[root@RedHat7 ~]#
```

(2) Create the snmpd.conf file:

```
# touch /etc/snmp/snmpd.conf
```

```
[root@RedHat7 ~]# touch /etc/snmp/snmpd.conf  
[root@RedHat7 ~]#
```

(3) Create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
#####
# SNMP configuration
#####

# Agent address
agentaddress udp:161
agentaddress udp6:161

## Access control
#      sec.name   source      community
com2sec AllowAll  192.168.8.4  public

# group <group_name> <security_mode> <security_name>
group   AllGroup      v2c         AllowAll

# Define 'AllView', which includes everything under .1
#   view.name   incl/excl   subtree.mask (Optional)
view  AllView    included    .1

#   group.name  context    model   level  prefix  read  write  notify
access AllGroup  ""         any     noauth exact AllView none  none

## System contact information
# syslocation <location>
# syscontact <contact info>
syslocation Taiwan
syscontact N-Partner

## <<<<<<<<<< End of config >>>>>>>>>#
EOF
```

```

[root@RedHat7 ~]# cat <<'EOF' /etc/snmp/snmpd.conf
> #####
> #           SNMP configuration           #
> #####
> # Agent address
> agentaddress    udp:161
> agentaddress    udp6:161
>
> ## Access control
> #           sec.name           source           community
> com2sec        AllowAll        192.168.8.4      public
>
> #group         <group_name      <security_mode   <security_name>
> group          AllGroup         v2c              AllowAll
>
> # Define 'AllView', which includes everything under .1
> #           view.name           incl/excl        subtree.mask(Optional)
> view          AllView           included         .1
>
> #           group.name          context model    level  prefix  read      write  notify
> access        AllGroup          ""             any    noauth  exact    AllView none   none
>
> ## System contact information
> #syslocation   <location set>
> #syscontact    <contact_info>
> syslocation    Taiwan
> syscontact     N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>#
> EOF
[root@RedHat7 ~]#

```

Enter the N-Reporter system IP address and SNMP community string in the red text.

(4) Start the SNMP service and check its status:

```
# systemctl start snmpd.service && systemctl status snmpd.service
```

```

[root@RedHat7 snmp]# systemctl start snmpd.service && systemctl status snmpd.service
● snmpd.service - Simple Network Management Protocol (SNMP) Daemon.
   Loaded: loaded (/usr/lib/systemd/system/snmpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2021-08-04 16:52:54 CST; 6ms ago
     Main PID: 16096 (snmpd)
    CGroup: /system.slice/snmpd.service
            └─16096 /usr/sbin/snmpd -LS0-6d -f

Aug 04 16:52:54 RedHat7.localdomain systemd[1]: Starting Simple Network Management Protocol (SNMP) Daemon...
Aug 04 16:52:54 RedHat7.localdomain snmpd[16096]: NET-SNMP version 5.7.2
Aug 04 16:52:54 RedHat7.localdomain systemd[1]: Started Simple Network Management Protocol (SNMP) Daemon..
[root@RedHat7 snmp]#

```

(5) Enable the SNMP service to start on boot:

```
# systemctl enable snmpd.service
```

```

[root@RedHat7 ~]# systemctl enable snmpd.service
Created symlink from /etc/systemd/system/multi-user.target.wants/snmpd.service to /usr/lib/systemd/system/snmpd.service.
[root@RedHat7 ~]#

```

(6) View current firewall rules:

```
# firewall-cmd --list-all
```

```
[root@RedHat7 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: ssh dhcpv6-client
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:

[root@RedHat7 ~]#
```

(7) Add a firewall rule to allow the N-Reporter IP to access the SNMP service:

```
# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.4" service
name="snmp" accept'
```

```
[root@RedHat7 ~]# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.4" service name="snmp" accept'
success
[root@RedHat7 ~]#
```

Enter the **N-Reporter system IP address** in the red text.

(8) Reload the firewall configuration:

```
# firewall-cmd --reload
```

```
[root@RedHat7 ~]# firewall-cmd --reload
success
[root@RedHat7 ~]#
```

(9) Verify the firewall rules:

```
# firewall-cmd --list-all
```

```
[root@RedHat7 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: ssh dhcpv6-client
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
    rule family="ipv4" source address="192.168.8.4" service name="snmp" accept
[root@RedHat7 ~]# █
```

## 2.2 CentOS

### 2.2.1 CentOS 6

This section provides both online and offline installation methods.

#### 2.2.1.1 Online Installation

(1) Install the SNMP service online:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
  net-snmp.x86_64 1:5.5-60.el6_10.2                net-snmp-utils.x86_64 1:5.5-60.el6_10.2

Dependency Installed:
  lm_sensors-libs.x86_64 0:3.1.1-17.el6            perl.x86_64 4:5.10.1-144.el6                    perl-Module-Pluggable.x86_64 1:3.90-144.el6
  perl-Pod-Escapes.x86_64 1:1.04-144.el6          perl-Pod-Simple.x86_64 1:3.13-144.el6            perl-libs.x86_64 4:5.10.1-144.el6              perl-version.x86_64 3:0.77-144.el6

Complete!
[root@CentOS6 ~]#
```

## 2.2.1.2 Offline Installation

(1) Download the required net-snmp and net-snmp-utils dependency packages

(A total of 10 packages are required.)

```
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/6.8/cr/x86_64/Packages/net-snmp-5.5-60.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/6.8/cr/x86_64/Packages/net-snmp-utils-5.5-60.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/6.8/cr/x86_64/Packages/net-snmp-libs-5.5-60.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/lm_sensors-libs-3.1.1-17.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-5.10.1-144.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-Module-Pluggable-3.90-144.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-Pod-Escapes-1.04-144.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-Pod-Simple-3.13-144.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-libs-5.10.1-144.el6.x86_64.rpm
# curl -O https://ftp.iij.ad.jp/pub/linux/centos-vault/centos/6/os/x86_64/Packages/perl-version-0.77-144.el6.x86_64.rpm
```

```
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/net-snmp-5.5-60.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 308k 100 308k 0 0 1722k 0 --:--:-- --:--:-- --:--:-- 2756k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/net-snmp-utils-5.5-60.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 177k 100 177k 0 0 1490k 0 --:--:-- --:--:-- --:--:-- 1624k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/net-snmp-libs-5.5-60.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 1586k 100 1586k 0 0 920k 0 0:00:01 0:00:01 --:--:-- 925k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/lm_sensors-libs-3.1.1-17.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 38768 100 38768 0 0 627k 0 --:--:-- --:--:-- --:--:-- 728k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-5.10.1-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 10.1M 100 10.1M 0 0 707k 0 0:00:14 0:00:14 --:--:-- 750k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-Module-Pluggable-3.90-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 41680 100 41680 0 0 1172k 0 --:--:-- --:--:-- --:--:-- 1403k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-Pod-Escapes-1.04-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 34028 100 34028 0 0 479k 0 --:--:-- --:--:-- --:--:-- 1186k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-Pod-Simple-3.13-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 212k 100 212k 0 0 1541k 0 --:--:~ --:~:~ --:~:~ 1612k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-libs-5.10.1-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 578k 100 578k 0 0 2878k 0 --:~:~ --:~:~ --:~:~ 2999k
[root@CentOS6 ~]# curl -O http://ftp.tku.edu.tw/Linux/CentOS/6.10/os/x86_64/Packages/perl-version-0.77-144.el6.x86_64.rpm
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 53400 100 53400 0 0 1361k 0 --:~:~ --:~:~ --:~:~ 1629k
[root@CentOS6 ~]#
```

## (2) Install Net-SNMP and Dependencies

```
# rpm -ivh *.rpm
```

```
[root@CentOS6 ~]# rpm -ivh *.rpm
warning: lm_sensors-libs-3.1.1-17.el6.x86_64.rpm: Header V3 RSA/SHA1 Signature, key ID c105b9de: NOKEY
Preparing... ##### [100%]
 1:perl-Pod-Escapes ##### [ 10%]
 2:perl-libs ##### [ 20%]
 3:perl-Module-Pluggable ##### [ 30%]
 4:perl-Pod-Simple ##### [ 40%]
 5:perl-version ##### [ 50%]
 6:perl ##### [ 60%]
 7:lm_sensors-libs ##### [ 70%]
 8:net-snmp-libs ##### [ 80%]
 9:net-snmp ##### [ 90%]
10:net-snmp-utils ##### [100%]
[root@CentOS6 ~]#
```

### 2.2.1.3 Configure SNMP Server

(1) Backup the SNMP configuration file:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
[root@CentOS6 ~]# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(2) Use the following command to create the SNMP configuration file `snmpd.conf`:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
>#      sec.name      source      community
>com2sec  AllowAll  192.168.8.184  public
>
># group  <group_name>  <security_mode>  <security_name>
> group  AllGroup      v2c              AllowAll
>
># Define 'AllView', which includes everything under .1
>#  view.name  incl/excl  subtree.mask(Optional)
>view  AllView  included    .1
>
>#      group.name  context  model  level  prefix  read  write  notify
>access  AllGroup  ""      any   noauth exact  AllView  none  none
>
>## System contact information
># syslocation <location set>
># syscontact <contact info>
>syslocation Taiwan
>syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```

```
[root@CentOS6 ~]# cat <<'EOF' /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> # sec.name source community
> com2sec AllowAll 192.168.8.184 public
>
> #group <group_name <security_mode <security_name>
> group AllGroup v2c AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
> view AllView included .1
>
> # access group.name context model level prefix read write notify
> access AllGroup "" any noauth exact AllView none none
>
> ## System contact information
> #syslocation <location set>
> #syscontact <contact_info>
> syslocation Taiwan
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
[root@CentOS6 ~]#
```

Replace the red text with the N-Reporter system IP address and community.

(3) Start the SNMP Service and check its status:

```
# service snmpd restart && service snmpd status

[root@CentOS6 ~]# service snmpd restart && service snmpd status
Stopping snmpd: [ OK ]
Starting snmpd: [ OK ]
snmpd (pid 1557) is running...
[root@CentOS6 ~]#
```

(4) Enable the SNMP Service to Start Automatically at Boot:

```
# chkconfig snmpd on
# chkconfig snmpd --list

[root@CentOS6 ~]# chkconfig snmpd on
[root@CentOS6 ~]# chkconfig snmpd --list
snmpd 0:off 1:off 2:on 3:on 4:on 5:on 6:off
[root@CentOS6 ~]#
```

(5) View the current iptables rules:

```
# iptables -nL

[root@CentOS6 ~]# iptables -nL
Chain INPUT (policy DROP)
target prot opt source destination
ACCEPT tcp -- 0.0.0.0/0 0.0.0.0/0 tcp dpt:22

Chain FORWARD (policy DROP)
target prot opt source destination

Chain OUTPUT (policy ACCEPT)
target prot opt source destination
ACCEPT all -- 0.0.0.0/0 0.0.0.0/0
```

(6) Add the First iptables Rule to Allow the N-Reporter IP to Access the SNMP Service:

```
# iptables --insert INPUT 1 --source 192.168.8.184 --protocol udp --match state --state NEW,ESTABLISHED --destination-port 161 --jump ACCEPT
```

```
[root@CentOS6 ~]# iptables --insert INPUT 1 --source 192.168.8.184 --protocol udp --match state --state NEW,ESTABLISHED --destination-port 161 --jump ACCEPT
```

Note: Please replace the red-highlighted value with the N-Reporter system IP address.

(7) View the iptables Rules with Line Numbers:

```
# iptables -nL --line-numbers
```

```
[root@CentOS6 ~]# iptables -nL --line-numbers
Chain INPUT (policy DROP)
num target      prot opt source                destination           state NEW,ESTABLISHED udp dpt:161
1  ACCEPT      udp  --  192.168.8.184         0.0.0.0/0
2  ACCEPT      tcp  --  0.0.0.0/0            0.0.0.0/0            tcp dpt:22

Chain FORWARD (policy DROP)
num target      prot opt source                destination

Chain OUTPUT (policy ACCEPT)
num target      prot opt source                destination
1  ACCEPT      all  --  0.0.0.0/0            0.0.0.0/0
```

(8) Save the iptables Rules:

```
# service iptables save
```

```
[root@CentOS6 ~]# service iptables save
iptables: Saving firewall rules to /etc/sysconfig/iptables:[ OK ]
```

(9) Verify the Saved iptables Configuration:

```
# iptables-save
```

```
[root@CentOS6 ~]# iptables-save
# Generated by iptables-save v1.4.7 on Thu Dec 24 03:17:09 2020
*filter
:INPUT DROP [2:144]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [23:3668]
-A INPUT -s 192.168.8.184/32 -p udp -m state --state NEW,ESTABLISHED -m udp --dport 161 -j ACCEPT
-A INPUT -p tcp -m tcp --dport 22 -j ACCEPT
-A OUTPUT -o lo -j ACCEPT
COMMIT
# Completed on Thu Dec 24 03:17:09 2020
```

## 2.2.2 CentOS 7

This section provides both online and offline installation methods.

### 2.2.2.1 Online Installation

(1) Install the SNMP service online:

```
# yum -y install net-snmp net-snmp-utils
```

```
Installed:
net-snmp.x86_64 1:5.7.2-49.el7_9.1                net-snmp-utils.x86_64 1:5.7.2-49.el7_9.1

Dependency Installed:
lm_sensors-libs.x86_64 0:3.4.0-8.20160601gitf9185e5.el7  net-snmp-agent-libs.x86_64 1:5.7.2-49.el7_9.1  net-snmp-libs.x86_64 1:5.7.2-49.el7_9.1  perl.x86_64 4:5.16.3-299.el7_9
perl-Carp.noarch 0:1.26-244.el7  perl-Data-Dumper.x86_64 0:2.145-3.el7  perl-Encode.x86_64 0:2.51-7.el7  perl-Exporter.noarch 0:5.68-3.el7
perl-File-Path.noarch 0:2.09-2.el7  perl-File-Temp.noarch 0:0.23.01-3.el7  perl-Filter.x86_64 0:1.49-3.el7  perl-Getopt-Long.noarch 0:2.40-3.el7
perl-HTTP-Tiny.noarch 0:0.033-3.el7  perl-PathTools.x86_64 0:3.40-5.el7  perl-Pod-Escapes.noarch 1:1.04-299.el7_9  perl-Pod-Perldoc.noarch 0:3.20-4.el7
perl-Pod-Simple.noarch 1:3.28-4.el7  perl-PathTools.x86_64 0:3.40-5.el7  perl-Pod-Usage.noarch 0:1.63-3.el7  perl-Scalar-List-Utils.x86_64 0:1.27-248.el7  perl-Socket.x86_64 0:2.010-5.el7
perl-Storable.x86_64 0:2.45-3.el7  perl-Text-ParseWords.noarch 0:3.29-4.el7  perl-Time-HiRes.x86_64 4:1.9725-3.el7  perl-Time-Local.noarch 0:1.2300-2.el7
perl-constant.noarch 0:1.27-2.el7  perl-libs.x86_64 4:5.16.3-299.el7_9  perl-macros.x86_64 4:5.16.3-299.el7_9  perl-parent.noarch 1:0.225-244.el7
perl-podlators.noarch 0:2.5.1-3.el7  perl-threads.x86_64 0:1.87-4.el7  perl-threads-shared.x86_64 0:1.43-6.el7

Complete!
[root@CentOS7 ~]#
```

## 2.2.2.2 Offline Installation

(1) Download the required net-snmp and net-snmp-utils dependency packages:

(A total of 33 packages are required.)

No	Package Name	Version	Arch	Download URL
1	net-snmp	5.7.2-49.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-5.7.2-49.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-5.7.2-49.el7.x86_64.rpm</a>
2	net-snmp-utils	5.7.2-49.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-utils-5.7.2-49.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-utils-5.7.2-49.el7.x86_64.rpm</a>
3	net-snmp-libs	5.7.2-49.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-libs-5.7.2-49.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-libs-5.7.2-49.el7.x86_64.rpm</a>
4	net-snmp-agent-libs	5.7.2-49.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-agent-libs-5.7.2-49.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/net-snmp-agent-libs-5.7.2-49.el7.x86_64.rpm</a>
5	lm_sensors-libs	3.4.0-8.20160601gitf9185e5.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/lm_sensors-libs-3.4.0-8.20160601gitf9185e5.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/lm_sensors-libs-3.4.0-8.20160601gitf9185e5.el7.x86_64.rpm</a>
6	perl	5.16.3-297.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-5.16.3-297.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-5.16.3-297.el7.x86_64.rpm</a>
7	perl-Carp	1.26-244.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Carp-1.26-244.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Carp-1.26-244.el7.noarch.rpm</a>
8	perl-Data-Dumper	2.145-3.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Data-Dumper-2.145-3.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Data-Dumper-2.145-3.el7.x86_64.rpm</a>
9	perl-	2.51-7.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-">https://ftp.iiij.ad.jp/pub/linux/centos-</a>

	Encode		4	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Encode-2.51-7.el7.x86_64.rpm">vault/centos/7/os/x86_64/Packages/perl-Encode-2.51-7.el7.x86_64.rpm</a>
10	perl-Exporter	5.68-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Exporter-5.68-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Exporter-5.68-3.el7.noarch.rpm</a>
11	perl-File-Path	2.09-2.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-File-Path-2.09-2.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-File-Path-2.09-2.el7.noarch.rpm</a>
12	perl-File-Temp	0.23.01-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-File-Temp-0.23.01-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-File-Temp-0.23.01-3.el7.noarch.rpm</a>
13	perl-Filter	1.49-3.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Filter-1.49-3.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Filter-1.49-3.el7.x86_64.rpm</a>
14	perl-Getopt-Long	2.40-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Getopt-Long-2.40-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Getopt-Long-2.40-3.el7.noarch.rpm</a>
15	perl-HTTP-Tiny	0.033-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-HTTP-Tiny-0.033-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-HTTP-Tiny-0.033-3.el7.noarch.rpm</a>
16	perl-PathTools	3.40-5.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-PathTools-3.40-5.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-PathTools-3.40-5.el7.x86_64.rpm</a>
17	perl-Pod-Escapes	1.04-297.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Escapes-1.04-297.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Escapes-1.04-297.el7.noarch.rpm</a>
18	perl-Pod-Perldoc	3.20-4.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Perldoc-3.20-4.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Perldoc-3.20-4.el7.noarch.rpm</a>
19	perl-Pod-Simple	3.28-4.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-</a>

				<a href="#">Simple-3.28-4.el7.noarch.rpm</a>
20	perl-Pod-Usage	1.63-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Usage-1.63-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Pod-Usage-1.63-3.el7.noarch.rpm</a>
21	perl-Scalar-List-Utills	1.27-248.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Scalar-List-Utills-1.27-248.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Scalar-List-Utills-1.27-248.el7.x86_64.rpm</a>
22	perl-Socket	2.010-5.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Socket-2.010-5.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Socket-2.010-5.el7.x86_64.rpm</a>
23	perl-Storable	2.45-3.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Storable-2.45-3.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Storable-2.45-3.el7.x86_64.rpm</a>
24	perl-Text-ParseWords	3.29-4.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Text-ParseWords-3.29-4.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Text-ParseWords-3.29-4.el7.noarch.rpm</a>
25	perl-Time-HiRes	1.9725-3.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Time-HiRes-1.9725-3.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Time-HiRes-1.9725-3.el7.x86_64.rpm</a>
26	perl-Time-Local	1.2300-2.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Time-Local-1.2300-2.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-Time-Local-1.2300-2.el7.noarch.rpm</a>
27	perl-constant	1.27-2.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-constant-1.27-2.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-constant-1.27-2.el7.noarch.rpm</a>
28	perl-libs	5.16.3-297.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-libs-5.16.3-297.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-libs-5.16.3-297.el7.x86_64.rpm</a>
29	perl-macros	5.16.3-297.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-macros-5.16.3-297.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-macros-5.16.3-297.el7.x86_64.rpm</a>

30	perl-parent	0.225-244.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-parent-0.225-244.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-parent-0.225-244.el7.noarch.rpm</a>
31	perl-podlators	2.5.1-3.el7	noarch	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-podlators-2.5.1-3.el7.noarch.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-podlators-2.5.1-3.el7.noarch.rpm</a>
32	perl-threads	1.87-4.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-threads-1.87-4.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-threads-1.87-4.el7.x86_64.rpm</a>
33	perl-threads-shared	1.43-6.el7	x86_64	<a href="https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-threads-shared-1.43-6.el7.x86_64.rpm">https://ftp.iiij.ad.jp/pub/linux/centos-vault/centos/7/os/x86_64/Packages/perl-threads-shared-1.43-6.el7.x86_64.rpm</a>

(2) Install Net-SNMP and net-snmp-utils Dependencies Locally:

Use the following command to install Net-SNMP, net-snmp-utils, and all required dependency packages from the local directory:

```
# yum -y localinstall *.rpm
```

```

Installed:
lm_sensors-libs.x86_64 0:3.4.0-8.20160601gitf9185e5.el7
net-snmp-utils.x86_64 1:5.7.2-43.el7
perl-Encode.x86_64 0:2.51-7.el7
perl-Filter.x86_64 0:1.49-3.el7
perl-Pod-Escapes.noarch 1:1.04-294.el7_6
perl-Scalar-List-Utils.x86_64 0:1.27-248.el7
perl-Time-HiRes.x86_64 4:1.9725-3.el7
perl-macros.x86_64 4:5.16.3-294.el7_6
perl-threads-shared.x86_64 0:1.43-6.el7
net-snmp.x86_64 1:5.7.2-43.el7
perl.x86_64 4:5.16.3-294.el7_6
perl-Exporter.noarch 0:5.68-3.el7
perl-Getopt-Long.noarch 0:2.48-3.el7
perl-Pod-Perldoc.noarch 0:3.28-4.el7
perl-Socket.x86_64 0:2.010-4.el7
perl-Time-Local.noarch 0:1.2380-2.el7
perl-parent.noarch 1:0.225-244.el7
net-snmp-agent-libs.x86_64 1:5.7.2-43.el7
perl-Carp.noarch 0:1.26-244.el7
perl-File-Path.noarch 0:2.09-2.el7
perl-HTTP-Tiny.noarch 0:0.033-3.el7
perl-Pod-Simple.noarch 1:3.28-4.el7
perl-Storable.x86_64 0:2.45-3.el7
perl-constant.noarch 0:1.27-2.el7
perl-podlators.noarch 0:2.5.1-3.el7
net-snmp-libs.x86_64 1:5.7.2-43.el7
perl-Data-Dumper.x86_64 0:2.145-3.el7
perl-File-Temp.noarch 0:0.23.01-3.el7
perl-PathTools.x86_64 0:3.48-5.el7
perl-Pod-Usage.noarch 0:1.63-3.el7
perl-Text-ParseWords.noarch 0:3.29-4.el7
perl-libs.x86_64 4:5.16.3-294.el7_6
perl-threads.x86_64 0:1.87-4.el7

Complete!
[root@CentOS7 ~]#

```

### 2.2.2.3 Configure the SNMP Server

(1) Enter the command below to back up the SNMP configuration file:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
[root@CentOS7 ~]# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

## (2) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group <group_name> <security_mode> <security_name>
group     AllGroup      v2c          AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name  incl/excl  subtree.mask(Optional)
view  AllView  included      .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup  ""      any  noauth  exact  AllView  none  none
>
> ## System contact information
> # syslocation <location set>
> # syscontact <contact info>
> syslocation  Taiwan
> syscontact   N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```



(5) View the Current Firewall Rules:

```
# firewall-cmd --list-all
```

```
[root@centos7 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: dhcpv6-client ssh
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
```

(6) Add a Firewall Rule to Allow Access from the N-Reporter System:

```
# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.184" service name="snmp" accept'
```

```
[root@centos7 ~]# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.184" service name="snmp" accept'
success
```

Note: Please replace the red-highlighted value with the N-Reporter system IP address.

(7) Reload the Firewall Configuration:

```
# firewall-cmd --reload
```

```
[root@centos7 ~]# firewall-cmd --reload
success
```

(8) Verify the Firewall Rules:

```
# firewall-cmd --list-all
```

```
[root@centos7 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: dhcpv6-client ftp ssh
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
    rule family="ipv4" source address="192.168.8.184" service name="snmp" accept
```

## 2.2.3 CentOS 8

(1) Install the SNMP Service:

```
# dnf -y install net-snmp net-snmp-utils
```

```
[root@centos8 ~]# dnf -y install net-snmp net-snmp-utils
```

(2) Back Up the SNMP Configuration File:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
[root@centos8 ~]# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(3) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec AllowAll 192.168.8.184 public
# group <group_name> <security_mode> <security_name>
group AllGroup v2c AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
view AllView included .1
>
> #      group.name context model level prefix read write notify
> access AllGroup "" any noauth exact AllView none none
>
> ## System contact information
> # syslocation <location set>
> # syscontact <contact info>
> syslocation Taiwan
> syscontact N-Partner
```

```

>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
[root@centos8 ~]# cat <<'EOF' /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> # sec.name source community
> com2sec AllowAll 192.168.8.184 public
>
> #group <group_name <security_mode <security_name>
> group AllGroup v2c AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
> view AllView included .1
>
> # group.name context model level prefix read write notify
> access AllGroup "" any noauth exact AllView none none
>
> ## System contact information
> #syslocation <location set>
> #syscontact <contact_info>
> syslocation Taiwan
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
[root@centos8 ~]#

```

Note: Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(4) Start the SNMP Service and check its status:

```

# systemctl restart snmpd.service && systemctl status snmpd.service
[root@centos8 ~]# systemctl restart snmpd.service && systemctl status snmpd.service
● snmpd.service - Simple Network Management Protocol (SNMP) Daemon.
   Loaded: loaded (/usr/lib/systemd/system/snmpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Sat 2020-02-15 10:37:46 CST; 8ms ago
     Main PID: 3016 (snmpd)
       Tasks: 1 (limit: 26213)
        Memory: 7.1M
         CGroup: /system.slice/snmpd.service
                └─3016 /usr/sbin/snmpd -LS0-6d -f
Feb 15 10:37:46 centos8 systemd[1]: Starting Simple Network Management Protocol (SNMP) Daemon...
Feb 15 10:37:46 centos8 snmpd[3016]: NET-SNMP version 5.8
Feb 15 10:37:46 centos8 systemd[1]: Started Simple Network Management Protocol (SNMP) Daemon..
[root@centos8 ~]#

```

(5) Enable the SNMP Service to Start Automatically at Boot:

```

# systemctl enable snmpd.service
[root@centos8 ~]# systemctl enable snmpd.service
Created symlink /etc/systemd/system/multi-user.target.wants/snmpd.service → /usr/lib/systemd/system/snmpd.service.
[root@centos8 ~]#

```

(6) View the Current Firewall Rules:

```
# firewall-cmd --list-all
```

```
[root@centos8 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
```

(7) Add a Firewall Rule to Allow Access from the N-Reporter System:

```
# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.184" service name="snmp" accept'
```

```
[root@centos8 ~]# firewall-cmd --permanent --add-rich-rule='rule family="ipv4" source address="192.168.8.184" service name="snmp" accept'
success
```

Note: Please replace the red-highlighted value with the N-Reporter system IP address.

(8) Reload the Firewall Configuration:

```
# firewall-cmd --reload
```

```
[root@centos8 ~]# firewall-cmd --reload
success
```

(9) Verify the Firewall Rules:

```
# firewall-cmd --list-all
```

```
[root@centos8 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens192
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
    rule family="ipv4" source address="192.168.8.184" service name="snmp" accept
```

## 2.3 Debian

### 2.3.1 Debian 8

(1) Install the SNMP Service:

```
# apt-get -y install snmpd snmp
```

```
root@debian8:~# apt-get -y install snmpd snmp
```

(2) Back Up the SNMP Configuration File:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
root@debian8:~# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(3) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group  <group_name>  <security_mode>  <security_name>
group    AllGroup      v2c              AllowAll
>
> # Define 'AllView', which includes everything under .1
> #  view.name  incl/excl  subtree.mask(Optional)
view  AllView  included    .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup    ""       any   noauth exact  AllView  none  none
>
> ## System contact information
> # syslocation  <location set>
> # syscontact   <contact info>
> syslocation   Taiwan
```

```
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```

```
root@debian8:~# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> # sec.name source community
> com2sec AllowAll 192.168.1.184 public
>
> #group <group_name> <security_mode> <security_name>
> group AllGroup v2c AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
> view AllView included .1
>
> # group.name context model level prefix read write notify
> access AllGroup "" any noauth exact AllView none none
>
> ## System contact information
> #syslocation <location_set>
> #syscontact <contact_info>
> syslocation Taiwan
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
root@debian8:~#
```

Note: Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(4) Start the SNMP Service and check its status:

```
# systemctl restart snmpd.service && systemctl status snmpd.service
```

```
root@debian8:~# systemctl restart snmpd.service && systemctl status snmpd.service
● snmpd.service - LSB: SNMP agents
   Loaded: loaded (/etc/init.d/snmpd)
   Active: active (running) since Wed 2019-12-18 20:31:26 EST; 4ms ago
     Process: 1638 ExecStop=/etc/init.d/snmpd stop (code=exited, status=0/SUCCESS)
     Process: 1643 ExecStart=/etc/init.d/snmpd start (code=exited, status=0/SUCCESS)
    CGroup: /system.slice/snmpd.service
            └─1648 /usr/sbin/snmpd -Lsd -Lf /dev/null -u snmp -g snmp -I -smux mteTrigger mteTriggerConf -p /run/snmpd.pid

Dec 18 20:31:26 debian8 systemd[1]: Started LSB: SNMP agents.
root@debian8:~#
```

(5) Enable the SNMP Service to Start Automatically at Boot:

```
# systemctl enable snmpd.service
```

```
root@debian8:~# systemctl enable snmpd.service
Synchronizing state for snmpd.service with SysVinit using update-rc.d...
Executing /usr/sbin/update-rc.d snmpd defaults
Executing /usr/sbin/update-rc.d snmpd enable
root@debian8:~#
```

## 2.3.2 Debian 9

(1) Install the SNMP Service:

```
# apt-get -y install snmpd snmp
```

```
root@debian9:~# apt-get -y install snmpd snmp
```

(2) Back Up the SNMP Configuration File:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
root@debian9:~# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(3) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group <group_name> <security_mode> <security_name>
group      AllGroup      v2c          AllowAll
>
> # Define 'AllView', which includes everything under .1
> #  view.name  incl/excl  subtree.mask(Optional)
view  AllView  included   .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup    ""       any   noauth exact  AllView  none  none
>
> ## System contact information
> # syslocation <location set>
> # syscontact <contact info>
> syslocation  Taiwan
> syscontact   N-Partner
```

```
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```

```
root@debian9:~# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress      udp:161
> agentaddress      udp6:161
>
> ## Access control
> #
> com2sec           sec.name          source          community
> com2sec           AllowAll          192.168.1.184   public
>
> #group            <group_name>      <security_mode> <security_name>
> group            AllGroup          v2c             AllowAll
>
> # Define 'Allview', which includes everything under .1
> #
> view              view.name          incl/excl       subtree.mask(Optional)
> view              AllView           included         .1
>
> #
> access            group.name         context model    level  prefix  read    write  notify
> access            AllGroup          ""             any     noauth exact  AllView none   none
>
> ## System contact information
> #syslocation      <location_set>
> #syscontact       <contact_info>
> syslocation       Taiwan
> syscontact        N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
root@debian9:~#
```

Note: Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(4) Start the SNMP Service and check its status:

```
# systemctl restart snmpd.service && systemctl status snmpd.service
```

```
root@debian9:~# systemctl restart snmpd.service && systemctl status snmpd.service
● snmpd.service - Simple Network Management Protocol (SNMP) Daemon.
   Loaded: loaded (/lib/systemd/system/snmpd.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2019-12-18 22:22:53 EST; 9ms ago
     Process: 1826 ExecStartPre=/bin/mkdir -p /var/run/agentx (code=exited, status=0/SUCCESS)
    Main PID: 1828 (snmpd)
      Tasks: 1 (limit: 4915)
   CGroup: /system.slice/snmpd.service
           └─1828 /usr/sbin/snmpd -Lsd -Lf /dev/null -u Debian-snmp -g Debian-snmp -I -smux mteTrigger mteTriggerConf -f

Dec 18 22:22:53 debian9 systemd[1]: Stopped Simple Network Management Protocol (SNMP) Daemon..
Dec 18 22:22:53 debian9 systemd[1]: Starting Simple Network Management Protocol (SNMP) Daemon....
root@debian9:~#
```

(5) Enable the SNMP Service to Start Automatically at Boot:

```
# systemctl enable snmpd.service
```

```
root@debian9:~# systemctl enable snmpd.service
Synchronizing state of snmpd.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable snmpd
root@debian9:~#
```

## 2.4 Ubuntu

### 2.4.1 Ubuntu 16

(1) Install the SNMP Service:

```
# apt-get -y install snmpd snmp
```

```
root@ubuntu16:~# apt-get -y install snmpd snmp
```

(2) Back Up the SNMP Configuration File:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
root@ubuntu16:~# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(3) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group  <group_name>  <security_mode>  <security_name>
group    AllGroup      v2c              AllowAll
>
> # Define 'AllView', which includes everything under .1
> #  view.name  incl/excl  subtree.mask(Optional)
view  AllView  included    .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup    ""       any   noauth exact  AllView  none  none
>
> ## System contact information
> # syslocation  <location set>
> # syscontact   <contact info>
> syslocation   Taiwan
```

```
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```

```
root@ubuntu16:~# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> # sec.name source community
> com2sec AllowAll 192.168.1.184 public
>
> #group <group_name> <security_mode> <security_name>
> group AllGroup v2c AllowAll
>
> # Define 'Allview', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
> view Allview included .1
>
> # group.name context model level prefix read write notify
> access AllGroup "" any noauth exact Allview none none
>
> ## System contact information
> #syslocation <location_set>
> #syscontact <contact_info>
> syslocation Taiwan
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
root@ubuntu16:~#
```

Note: Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(4) Start the SNMP Service and check its status:

```
# systemctl restart snmpd.service && systemctl status snmpd.service
```

```
root@ubuntu16:~# systemctl restart snmpd.service && systemctl status snmpd.service
● snmpd.service - LSB: SNMP agents
   Loaded: loaded (/etc/init.d/snmpd; bad; vendor preset: enabled)
   Active: active (running) since Thu 2019-12-19 11:55:49 CST; 4ms ago
     Docs: man:systemd-sysv-generator(8)
  Process: 2251 ExecStop=/etc/init.d/snmpd stop (code=exited, status=0/SUCCESS)
  Process: 2261 ExecStart=/etc/init.d/snmpd start (code=exited, status=0/SUCCESS)
    Tasks: 3
   Memory: 4.2M
      CPU: 16ms
   CGroup: /system.slice/snmpd.service
           └─2268 /usr/sbin/snmpd -Lsd -Lf /dev/null -u snmp -g snmp -I -smux mteTrigger mteTriggerConf -p /run/snmpd.pid

Dec 19 11:55:49 ubuntu16 systemd[1]: Stopped LSB: SNMP agents.
Dec 19 11:55:49 ubuntu16 systemd[1]: Starting LSB: SNMP agents...
Dec 19 11:55:49 ubuntu16 snmpd[2261]: * Starting SNMP services:
root@ubuntu16:~#
```

(5) Enable the SNMP Service to Start Automatically at Boot:

```
# systemctl enable snmpd.service
```

```
root@ubuntu16:~# systemctl enable snmpd.service
snmpd.service is not a native service, redirecting to systemd-sysv-install
Executing /lib/systemd/systemd-sysv-install enable snmpd
root@ubuntu16:~#
```

## 2.4.2 Ubuntu 18

(1) Install the SNMP Service:

```
# apt-get -y install snmpd snmp
```

```
root@ubuntu18:~# apt-get -y install snmpd snmp
```

(2) Back Up the SNMP Configuration File:

```
# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

```
root@ubuntu18:~# cp /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.bak
```

(3) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group  <group_name>  <security_mode>  <security_name>
group    AllGroup      v2c              AllowAll
>
> # Define 'AllView', which includes everything under .1
> #  view.name  incl/excl  subtree.mask(Optional)
view  AllView  included    .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup  ""      any  noauth  exact  AllView  none  none
>
> ## System contact information
> # syslocation  <location set>
> # syscontact  <contact info>
> syslocation  Taiwan
> syscontact   N-Partner
```

```

>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
root@ubuntu18:~# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> # sec.name source community
> com2sec AllowAll 192.168.1.184 public
>
> #group <group_name> <security_mode> <security_name>
> group AllGroup v2c AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name incl/excl subtree.mask(Optional)
> view AllView included .1
>
> # group.name context model level prefix read write notify
> access AllGroup "" any noauth exact AllView none none
>
> ## System contact information
> #syslocation <location set>
> #syscontact <contact_info>
> syslocation Taiwan
> syscontact N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
root@ubuntu18:~#

```

Note: Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(4) Start the SNMP Service and check its status:

```

# systemctl restart snmpd.service && systemctl status snmpd.service
root@ubuntu18:~# systemctl restart snmpd.service && systemctl status snmpd.service
● snmpd.service - Simple Network Management Protocol (SNMP) Daemon.
   Loaded: loaded (/lib/systemd/system/snmpd.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2019-12-19 07:02:21 UTC; 8ms ago
     Process: 2634 ExecStartPre=/bin/mkdir -p /var/run/agentx (code=exited, status=0/SUCCESS)
    Main PID: 2635 (snmpd)
       Tasks: 1 (limit: 2319)
      CGroup: /system.slice/snmpd.service
              └─2635 /usr/sbin/snmpd -Lsd -Lf /dev/null -u Debian-snmp -g Debian-snmp -I -smux,mteTrigger,mteTriggerConf -f

Dec 19 07:02:21 ubuntu18.npartner.local systemd[1]: Stopped Simple Network Management Protocol (SNMP) Daemon.
Dec 19 07:02:21 ubuntu18.npartner.local systemd[1]: Starting Simple Network Management Protocol (SNMP) Daemon...
Dec 19 07:02:21 ubuntu18.npartner.local systemd[1]: Started Simple Network Management Protocol (SNMP) Daemon.
root@ubuntu18:~#

```

(5) Enable the SNMP Service to Start Automatically at Boot:

```

# systemctl enable snmpd.service
root@ubuntu18:~# systemctl enable snmpd.service
Synchronizing state of snmpd.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable snmpd
root@ubuntu18:~#

```

### 3. AIX 7

Reference: IBM AIX: *How To Configure Community-based SNMP And SNMP Traps*

<https://www.ibm.com/support/pages/ibm-aix-how-configure-community-based-snmp-and-snmp-traps>

(1) Check the Operating System Version:

```
# oslevel
```

(2) Check the SNMP Daemon Binary:

```
# ls -l /usr/sbin/snmp*
```

Example output:

```
lrwxrwxrwx 1 root system 19 Jul 13 2017 /usr/sbin/snmpd -> /usr/sbin/snmpdv3ne
```

(3) Edit the snmpdv3 Configuration File

```
# vi /etc/snmpdv3.conf
```

Notes:

/etc/snmpdv3.conf is the configuration file for the SNMP v3 agent

/etc/snmpd.conf is the configuration file for the SNMP v1 agent

**The SNMP v3 agent can process SNMP v1 and SNMP v2c requests.**

(4) Configure the snmpdv3 Settings:

```
VACM_GROUP group1 SNMPv1 public -  
VACM_GROUP group1 SNMPv2c public -  
VACM_VIEW defaultView internet - included -  
COMMUNITY public public noAuthNoPriv 192.168.1.184 255.255.255.255 -
```

Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(5) Add the Community Name to ODM and Enable Automatic Community Assignment for DPI2

Subagents:

```
# chssys -s aixmibd -a "-c public"  
# chssys -s hostmibd -a "-c public"  
# chssys -s snmpmibd -a "-c public"
```

(6) Stop the DPI2 Subagents and SNMP Service:

```
# stopsrc -s aixmibd; stopsrc -s hostmibd; stopsrc -s snmpmibd  
# stopsrc -s snmpd
```

(7) Start the SNMP Service and DPI2 Subagents:

```
#startsrc -s snmpd  
# startsrc -s aixmibd; startsrc -s hostmibd; startsrc -s snmpmibd
```

(8) Verify the DPI2 Subagent Processes:

```
# ps -ef | grep mibd
```

(9) Verify the Community Name Assignment in ODM Using odmget:

```
# odmget -q subsystem=aixmibd SRCsubsys
```

(10) Query the Subagent ODM Using lssrc:

```
# lssrc -Ss aixmibd
```

(11) Verify SNMP Status Using snmpinfo or clsnmp:

```
# snmpinfo -md -v -c public system
```

Example output:

```
sysDescr.0 = "IBM PowerPC CHRP Computer  
Machine Type: 0x0800004c Processor id: 00F8A0A14C00  
Base Operating System Runtime AIX version: 06.01.0009.0100
```

```
# snmpinfo -md -v -c public aixpagingspace
```

```
aixPageThreshold.0 = 95  
aixPageName.1 = "hd6"  
aixPageNameVG.1 = "rootvg"
```

```
# snmpinfo -md -c public aixpagingspace
```

```
1.3.6.1.4.1.2.6.191.2.4.1.0 = 95  
1.3.6.1.4.1.2.6.191.2.4.2.1.1.1 = "hd6"  
1.3.6.1.4.1.2.6.191.2.4.2.1.2.1 = "rootvg"
```

```
# clsnmp -v -c public walk aixpagingspace
```

```
aixPageThreshold.0 = 95  
aixPageName.1 = hd6  
aixPageNameVG.1 = rootvg
```

```
# clsnmp -c public walk aixpagingspace
```

```
1.3.6.1.4.1.2.6.191.2.4.1.0 = 95  
1.3.6.1.4.1.2.6.191.2.4.2.1.1.1 = hd6  
1.3.6.1.4.1.2.6.191.2.4.2.1.2.1 = rootvg
```

## 4. FreeBSD 11

(1) Check the Operating System Version:

```
# freebsd-version
```

```
root@freebsd11:~ # freebsd-version  
11.4-RELEASE
```

(2) Install the SNMP Service:

```
# pkg install -y net-snmp
```

```
root@freebsd11:~ # pkg install -y net-snmp
```

(3) Enable the SNMP Service to Start Automatically at Boot (FreeBSD-specific):

```
# sysrc bsnmpd_enable=YES
```

```
root@freebsd11:~ # sysrc bsnmpd_enable=YES  
bsnmpd_enable: NO -> YES
```

#### (4) Create the SNMP Configuration File

Use the following command to create the SNMP configuration file:

```
# cat <<'EOF' > /etc/snmp/snmpd.conf
> #####
> # SNMP configuration #
> #####
> # Agent address
> agentaddress udp:161
> agentaddress udp6:161
>
> ## Access control
> #      sec.name      source      community
> com2sec  AllowAll  192.168.8.184  public
# group <group_name> <security_mode> <security_name>
group      AllGroup      v2c          AllowAll
>
> # Define 'AllView', which includes everything under .1
> # view.name  incl/excl  subtree.mask(Optional)
view  AllView  included      .1
>
> #      group.name  context  model  level  prefix  read  write  notify
> access  AllGroup  ""      any  noauth  exact  AllView  none  none
>
> ## System contact information
> # syslocation <location set>
> # syscontact <contact info>
> syslocation  Taiwan
> syscontact   N-Partner
>
> ## <<<<<<<<<< End of config >>>>>>>>>#
> EOF
```

```

root@freebsd11:~ # cat >> /usr/local/share/snmp/snmpd.conf << EOF
? #####
? #          SNMP configuration          #
? #####
? # Agent address
? agentaddress  udp:161
? agentaddress  udp6:161
?
? ## Access control
? #          sec.name          source          community
? com2sec      AllowAll      192.168.1.184  public
?
? #group      <group_name      <security_mode  <security_name>
? group       AllGroup          v2c            AllowAll
?
? # Define 'AllView', which includes everything under .1
? #          view.name      incl/excl      subtree.mask(Optional)
? view       AllView          included       .1
?
? #          group.name      context model  level  prefix  read  write  notify
? access    AllGroup          ""          any    noauth exact  AllView  none  none
?
? ## System contact information
? #syslocation <location set>
? #syscontact  <contact_info>
? syslocation  Taiwan
? syscontact   N-Partner
?
? ## <<<<<<<<<< End of config >>>>>>>>>#
? EOF
root@freebsd11:~ #

```

Please replace the red-highlighted values with the N-Reporter system IP address and SNMP community.

(5) Start the SNMP Service and Check Its Status (FreeBSD-specific):

```
# service bsnmpd restart && service bsnmpd status
```

```

root@freebsd11:~ # service bsnmpd restart && service bsnmpd status
Stopping bsnmpd.
Waiting for PIDS: 807.
Starting bsnmpd.
bsnmpd is running as pid 842.

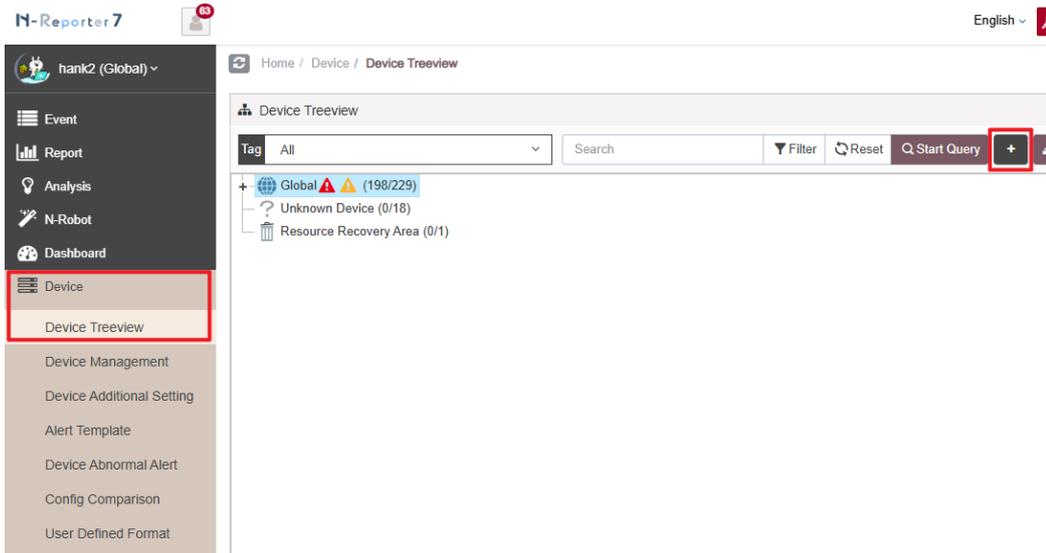
```

## 5. N-Reporter

### 5.1 Add a Single Device

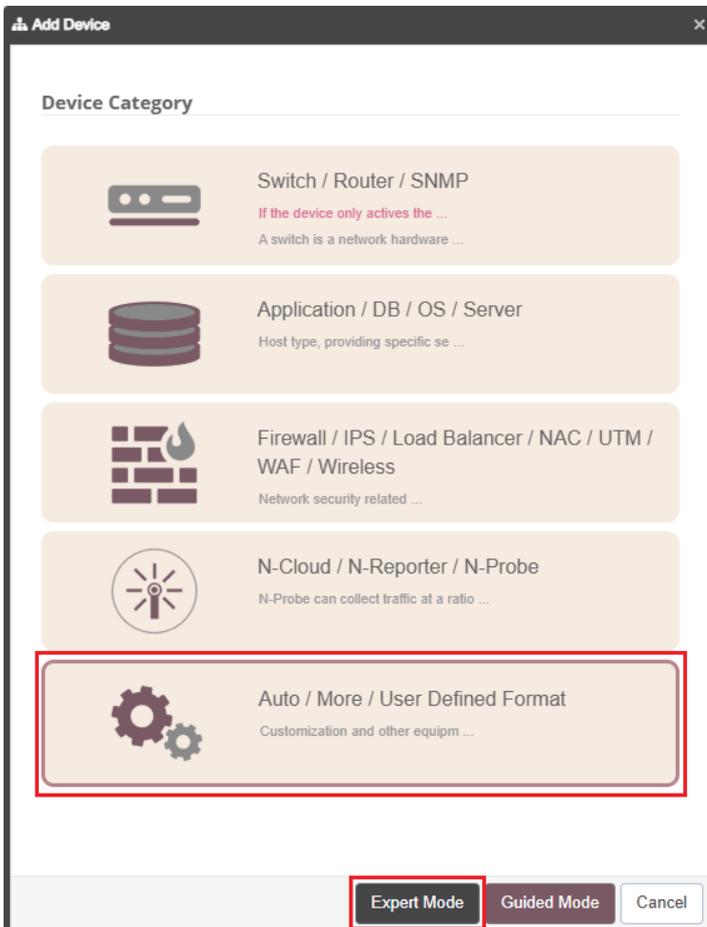
(1) Add an Host MIB device:

Go to “Device Management” → “Device Treeview” → click “Add.”



(2) Select the device type:

Choose “Auto/ More/ User Defined Format” → click “Expert Mode.”



(3) Basic Device Settings:

Enter the device name and IP address → For SNMP Model, select “Host Mib” → click “Next.”

The screenshot shows the 'Edit Device Setting' window with the 'Essentials' tab selected. The 'Basic Setting' section is expanded, showing the following fields:

- Machine Name \***: Host\_SNMP
- IP \***: 192.168.14.83
- Domain \***: Global
- Syslog Format**: Not Activated (with an 'i' icon and a checkbox for 'Activate Full-text Search (FTS)')
- User Defined Syslog Format**: Not Activated (with an 'i' icon and a '+' icon)
- SNMP Model**: Host Mib (with an 'i' icon)

A license limitation message is displayed below the SNMP Model field: "i License limitation: The ICMP alert template can only be activated if the device (Category One: Switch/Router/SNMP) has activated Syslog format or SNMP Model."

The 'Performance Monitoring Setting' section is collapsed. At the bottom of the window, there are three buttons: 'Previous', 'Submit', and 'Cancel'.

#### (4) SNMP Settings

Select “V2C” for the Version field and enter the “Read Community” value to match the configuration defined in the previous section. Then click “Monitor & Alert.”

**Edit Device Setting**

Essentials **SNMP** Syslog Flow Action & Backup Monitor & Alert Other

**SNMP Setting**

**SNMP IP**  
192.168.14.83

**Version**  
V2C

**Read Community**  
public

**Write Community**

**SNMP Timeout(sec)**  
5

**Encoding**  
UTF-8

**Device (Interface and Partition) Searched Timeout (Sec)**  
120

**SNMP V3**

Previous Submit Cancel

(5) Configure the monitoring and alert settings. In “Monitor & Connection Test,” click “SNMP Test” to verify that the SNMP test is successful, then click “Other.”

**Edit Device Setting**

Essentials SNMP Syslog Flow Action & Backup **Monitor & Alert** Other

**Alert Template** ▾

**Monitor and Connection Test** ▴

**Testing Device** ⓘ

N-Reporter ▾

**Monitor and Connection Test** ⓘ

Start Test

Function Item	Test Result
Ping Test	
<b>SNMP Test</b>	<b>Device Description: Hardware: Intel64 Family 15 Model 6 Stepping 1 AT/AT COMPATIBLE - Software: Windows Version 6.3 (Build 17763 Multiprocessor Free ... Test successful: CPU: 100.00%, Mem: 49.93%</b>
IP/MAC SNMP Test	
IP/MAC Connection Test	
Device Connection Test	
API Connection Test	

**Notification** ▾

**Alert Detail Configuration** ▾

Previous Submit Cancel

(6) Other

Set "Device Icon" to "Host" → Set "Receiving Status" to "Activated" → click "Next" → Confirm.

The screenshot shows a web form titled "Add Device - Other". The form is divided into several sections:

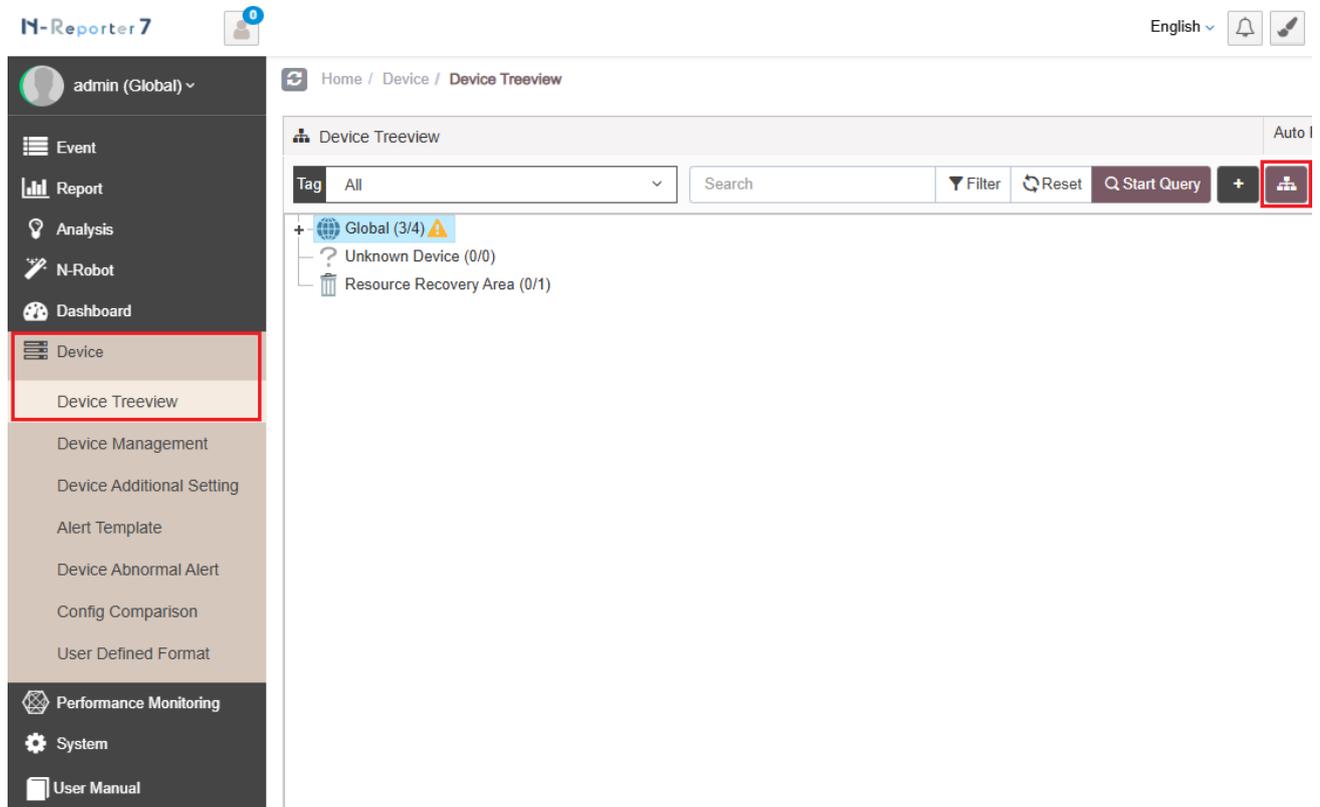
- Other**: A section header with an expand/collapse arrow.
- Device Icon**: A dropdown menu with "Host" selected. This field is highlighted with a red box.
- Latitude and Longitude**: A text input field containing "atitude, longitude".
- Remark**: A text input field containing "Special format: [key]="value", which can be exported into a custom field."
- Tag**: An empty text input field.
- Receive Status**: A section with two radio buttons: "Activated" (selected) and "Disabled". This section is highlighted with a red box.

At the bottom of the form, there are three buttons: "Previous", "Next", and "Cancel". The "Next" button is highlighted with a red box.

## 5.2 Add Multiple Devices

(1) Add Host MIB Devices:

Go to “Device Management” → “Device Treeview,” then click “Add.”



The screenshot displays the N-Reporter 7 web interface. The top navigation bar includes the logo, user profile, and language settings. The left sidebar menu is expanded, with 'Device' and 'Device Treeview' highlighted. The main content area shows the 'Device Treeview' page with a search bar, filter, and 'Add' button. The tree view shows a hierarchy of devices, including 'Global (3/4)', 'Unknown Device (0/0)', and 'Resource Recovery Area (0/1)'. The 'Add' button is highlighted with a red box.

(2) Enter the Scan Network Range

Enter a single IP address, subnet, or IP range.

In this example: 192.168.14.75–192.168.14.83

✓ Enter Read Community: public

✓ Select Version: [V2C]

→ Click “Start Scan.”

The screenshot shows a dialog box titled "IP-Range Add-Device" with a close button (X) in the top right corner. The dialog is divided into several sections:

- SNMP Setting** (collapsible section, expanded):
  - Range of IP Specified By**: Two radio buttons are present. "IP or Subnet" is unselected, and "IP Range" is selected.
  - IP Range**: Two text input fields are shown. The first field contains "192.168.14.75" and the second field contains "192.168.14.83".
  - Read Community**: A text input field containing "public".
  - Encoding**: A dropdown menu with "UTF-8" selected.
  - Version**: A dropdown menu with "V2C" selected.
  - SNMP V3**: A dropdown menu with a downward arrow.
  - Add Devices to Topology**: A dropdown menu with a downward arrow.

At the bottom of the dialog, there are two buttons: "Search" and "Cancel".

(3) Batch Add Devices:

Select the devices to be added, then click “Next.”

The screenshot shows a dialog box titled "IP-Range Add-Device" with a close button (X) in the top right corner. It contains a table with the following columns: Machine Name, IP, Device Description, and Management Status. The table lists four items, with the first two selected (checked) and the last one marked as "Managed".

<input type="checkbox"/>	Machine Name ▲	IP ⇅	Device Description ⇅	Management Status
<input checked="" type="checkbox"/>	192.168.14.75	192.168.14.75	DESC=Hardware: EM64T Family 15 Model 6 Stepping 1 AT/AT COMPATIBLE - Software: Windows Version 5.2 (Build 3790 Multiprocessor Free), NAME=WIN2003-AD-ENG	
<input checked="" type="checkbox"/>	192.168.14.77	192.168.14.77	DESC=Hardware: Intel64 Family 15 Model 6 Stepping 1 AT/AT COMPATIBLE - Software: Windows Version 6.1 (Build 7601 Multiprocessor Free), NAME=WIN2008-AD-ENG.npartner.local	
<input type="checkbox"/>	192.168.14.79	192.168.14.79	DESC=Hardware: Intel64 Family 15 Model 6 Stepping 1 AT/AT COMPATIBLE - Software: Windows Version 6.3 (Build 9600 Multiprocessor Free), NAME=WIN2012-AD-ENG.npartner.local	
	Host_SNMP	192.168.14.83	DESC=Hardware: Intel64 Family 15 Model 6 Stepping 1 AT/AT COMPATIBLE - Software: Windows Version 6.3 (Build 17763 Multiprocessor Free), NAME=WIN2019-AD-ENG.npartner.local	Managed

At the bottom of the dialog, there is a pagination control showing "Page 1 of 1" and "Displaying 1 to 4 of 4 items". Below this are three buttons: "Previous", "Next", and "Cancel". The "Next" button is highlighted with a red box.

(4) Edit Device Information:

- ✓ Set SNMP Model to [Host MIB]
- ✓ Click the [Others] tab
- ✓ Set Device Icon to [Host]
- ✓ Set Receive Status to [Enabled]
- ✓ Click [OK] to confirm

**Edit Device Setting**

Essentials | **SNMP** | Syslog | Flow | Action & Backup | Monitor & Alert | Other

**Basic Setting**

**Machine Name \***  
192.168.14.75,192.168.14.77

**IP \***  
192.168.14.75,192.168.14.77

**Domain \***  
Global

**Device Category \***  
Switch/ Router

**Syslog Format**   Activate Full-text Search (FTS)  
Nonparsing

**User Defined Syslog Format**    
Not Activated

**SNMP Model**  
Host Mib

**License limitation:** The ICMP alert template can only be activated if the device (Category One: Switch/Router/SNMP) has activated Syslog format or SNMP Model.

Previous Submit Cancel

### (5) View Device SNMP Status:

After the devices are added, verify that the SNMP status of each device is displayed correctly.

	Operation	View	IP	Machine Name	Enable Function	Data Type	Model	Alert Template	Monitor Status	Perform Status	Tag	Last Modified Time (Uptime)	License
			192.168.14.75	192.168.14.75	Sylog, SNMP	Nonparsing	Host Mib		<input checked="" type="radio"/>	<input checked="" type="radio"/>		2025/12/24 17:20	SNMP
			192.168.14.77	192.168.14.77	Sylog, SNMP	Nonparsing	Host Mib		<input checked="" type="radio"/>	<input checked="" type="radio"/>		2025/12/24 17:20	SNMP

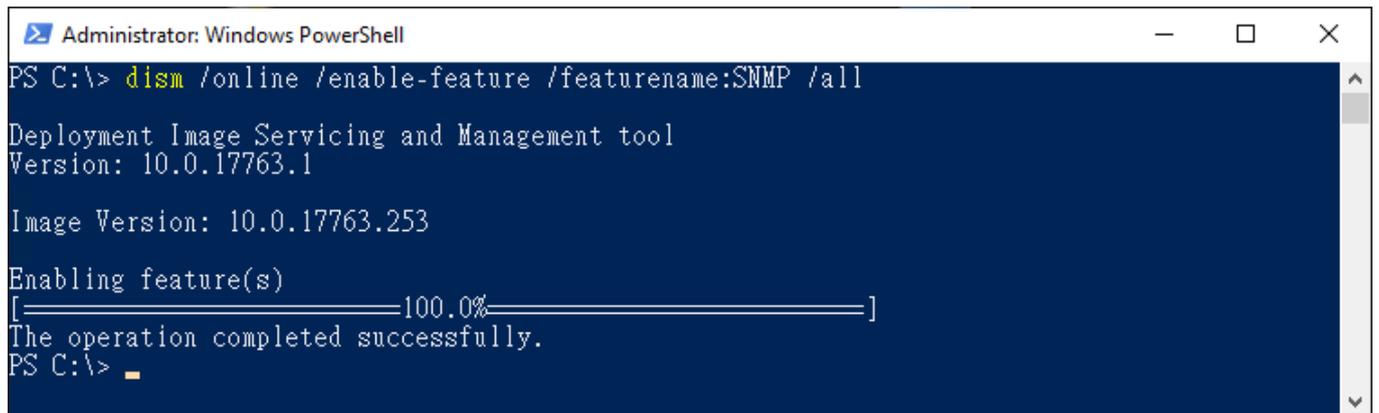
## 6. Troubleshooting

### 6.1 Installing SNMP on Windows Server Core

If the Windows operating system is running Server Core, you can install the SNMP-related features using the following commands.

(1) Install the SNMP Service:

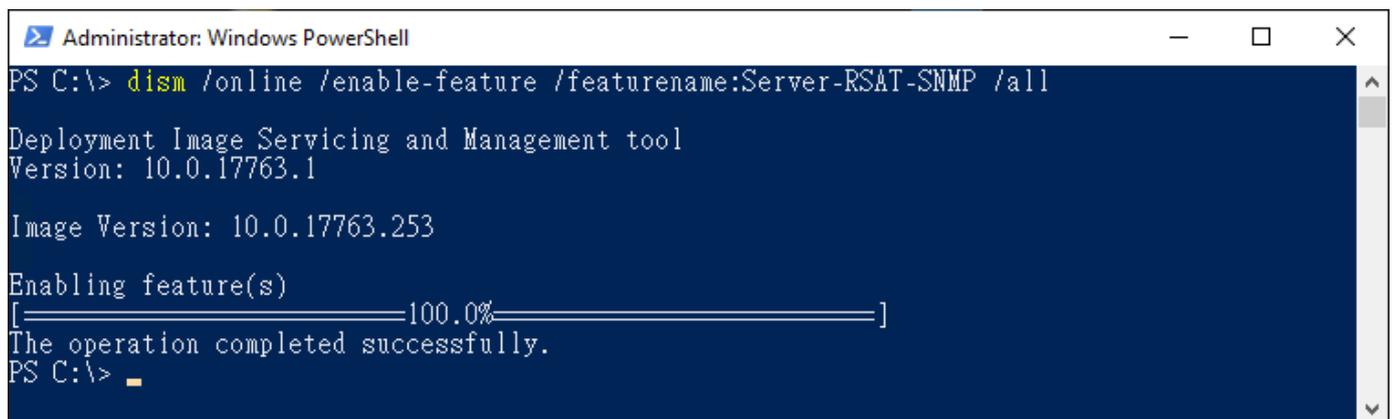
```
PS C:\> dism /online /enable-feature /featurename:SNMP /all
```



```
Administrator: Windows PowerShell
PS C:\> dism /online /enable-feature /featurename:SNMP /all
Deployment Image Servicing and Management tool
Version: 10.0.17763.1
Image Version: 10.0.17763.253
Enabling feature(s)
[=====100.0%=====]
The operation completed successfully.
PS C:\> _
```

(2) Install the Server-RSAT-SNMP Feature:

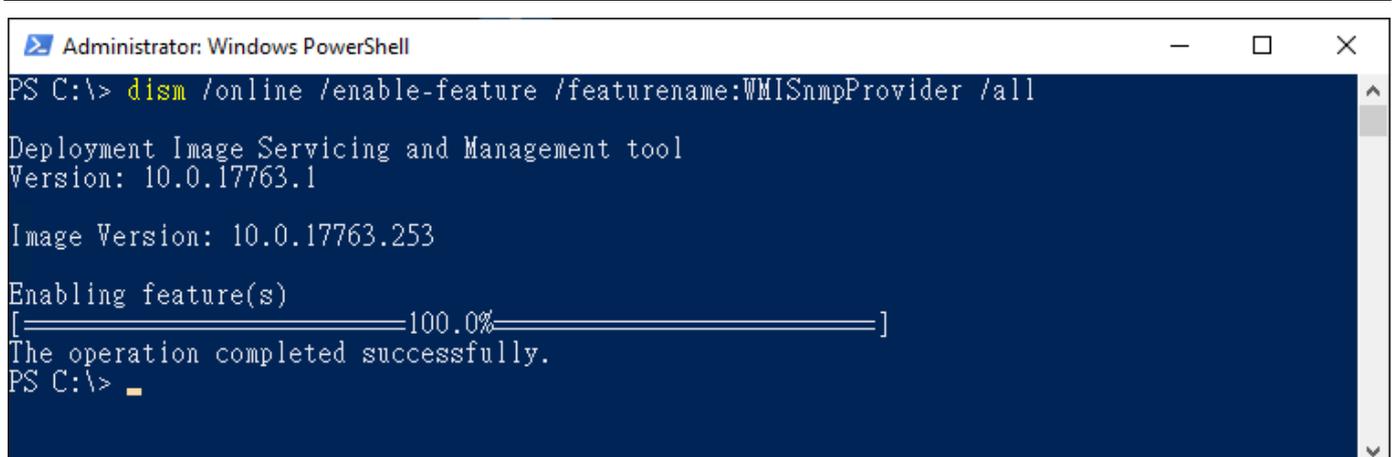
```
PS C:\> dism /online /enable-feature /featurename:Server-RSAT-SNMP /all
```



```
Administrator: Windows PowerShell
PS C:\> dism /online /enable-feature /featurename:Server-RSAT-SNMP /all
Deployment Image Servicing and Management tool
Version: 10.0.17763.1
Image Version: 10.0.17763.253
Enabling feature(s)
[=====100.0%=====]
The operation completed successfully.
PS C:\> _
```

(3) Install the WMI SNMP Provider:

```
PS C:\> dism /online /enable-feature /featurename:WMISnmpProvider /all
```



```
Administrator: Windows PowerShell
PS C:\> dism /online /enable-feature /featurename:WMISnmpProvider /all
Deployment Image Servicing and Management tool
Version: 10.0.17763.1
Image Version: 10.0.17763.253
Enabling feature(s)
[=====100.0%=====]
The operation completed successfully.
PS C:\> _
```

(4) Verify the Installation Status of SNMP Features:

```
PS C:\> dism /online /get-features | findstr /I "SNMP"
```

## 6.2 Issues Installing SNMP on CentOS 8

Problem Description:

When installing SNMP on **CentOS 8** using the following command:

```
# dnf -y install net-snmp net-snmp-utils
```

```
[root@CentOS8 ~]# dnf -y install net-snmp net-snmp-utils
CentOS Linux 8 - PowerTools                               0.0 B/s | 0 B  00:00
Errors during downloading metadata for repository 'powertools':
- Curl error (6): Couldn't resolve host name for http://mirrorlist.centos.org/?release=8&arch=x86_64&repo=PowerTools&infra=stock [Could not resolve host: mirrorlist.centos.org]
錯誤：無法下載「powertools」軟體庫的中介資料：Cannot prepare internal mirrorlist: Curl error (6): Couldn't resolve host name for http://mirrorlist.centos.org/?release=8&arch=x86_64&rep
o=PowerTools&infra=stock [Could not resolve host: mirrorlist.centos.org]
```

The system may display an error message.

This issue occurs because the CentOS 8 system is still using the default repository URL

`mirrorlist.centos.org` to retrieve package repository information.

Since CentOS 8 has reached its end of life (EOL), all official packages have been moved to the CentOS Vault archive repository.

As a result, `mirrorlist.centos.org` is no longer available, and the following error may occur:

```
Curl error (6): Couldn't resolve host name
```

Solution

To resolve this issue, switch the system to use the CentOS Vault repositories.

You must manually modify the repository configuration to replace the default mirrorlist with the CentOS Vault repository.

The steps are described below.

(2) Remove Existing CentOS Repository Files:

```
# sudo rm -f /etc/yum.repos.d/CentOS-*
```

```
[root@CentOS8 ~]# sudo rm -f /etc/yum.repos.d/CentOS-*
```

### (3) Create the CentOS Vault Repository Configuration File

Create a new repository file for CentOS Vault using the following command:

```
# sudo tee /etc/yum.repos.d/CentOS-Vault.repo > /dev/null <<EOF
[base]
name=CentOS-8 - Base
baseurl=http://vault.centos.org/8.5.2111/BaseOS/\$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7

[appstream]
name=CentOS-8 - AppStream
baseurl=http://vault.centos.org/8.5.2111/AppStream/\$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7

[powertools]
name=CentOS-8 - PowerTools
baseurl=http://vault.centos.org/8.5.2111/PowerTools/\$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7

[extras]
name=CentOS-8 - Extras
baseurl=http://vault.centos.org/8.5.2111/extras/\$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
EOF
```

```

[root@CentOS8 ~]# sudo tee /etc/yum.repos.d/CentOS-Vault.repo > /dev/null <<EOF
> [base]
> name=CentOS-8 - Base
> baseurl=http://vault.centos.org/8.5.2111/BaseOS/\$basearch/os/
> gpgcheck=1
> enabled=1
> gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
>
> [appstream]
> name=CentOS-8 - AppStream
> baseurl=http://vault.centos.org/8.5.2111/AppStream/\$basearch/os/
> gpgcheck=1
> enabled=1
> gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
>
> [powertools]
> name=CentOS-8 - PowerTools
> baseurl=http://vault.centos.org/8.5.2111/PowerTools/\$basearch/os/
> gpgcheck=1
> enabled=1
> gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
>
> [extras]
> name=CentOS-8 - Extras
> baseurl=http://vault.centos.org/8.5.2111/extras/\$basearch/os/
> gpgcheck=1
> enabled=1
> gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
> EOF
[root@CentOS8 ~]#

```

Note:

All URLs above point to CentOS Vault archive repositories, which are applicable to CentOS 8.5, the last official release of CentOS 8.

(4) Clear Cached Data and Rebuild the Repository Cache:

```
# sudo dnf clean all
```

```
# sudo dnf makecache
```

```

[root@CentOS8 ~]# sudo dnf clean all
18 個檔案已經移除
[root@CentOS8 ~]# sudo dnf makecache
CentOS-8 - Base                                6.7 MB/s | 4.6 MB   00:00
CentOS-8 - AppStream                          10 MB/s | 8.4 MB   00:00
CentOS-8 - PowerTools                         4.0 MB/s | 2.3 MB   00:00
CentOS-8 - Extras                            153 kB/s | 10 kB   00:00
Extra Packages for Enterprise Linux 8 - x86_64 5.4 MB/s | 14 MB   00:02
LTB project packages                          39 kB/s | 135 kB   00:03
MySQL 8.0 Community Server                   7.9 MB/s | 4.6 MB   00:00
MySQL Connectors Community                   5.5 MB/s | 156 kB   00:00
MySQL Tools Community                        23 MB/s | 1.5 MB   00:00
NetworkRADIUS-8                              44 kB/s | 79 kB   00:01
Adiscon CentOS-8 - local packages for x86_64 368 kB/s | 1.0 MB   00:02
Adiscon CentOS-8 - Daily packages for x86_64 1.4 MB/s | 5.2 MB   00:03
已建立中央資料快取。

```

## (5) Reinstall the Required SNMP Packages:

```
# sudo dnf install net-snmp net-snmp-utils
```

```
[root@CentOS8 ~]# sudo dnf install net-snmp net-snmp-utils
上次中介資料過期檢查: 0:00:00 前, 時間點為西元2025年05月09日 (週五) 16時42分09秒。
已安裝 net-snmp-1:5.8-22.el8.x86_64 軟體包。
依賴關係解析完畢。
=====
軟體包          架構          版本          軟體庫          大小
=====
安裝:
net-snmp-utils  x86_64        1:5.8-22.el8  appstream       239 k
=====
處理事項摘要
=====
安裝 1 軟體包
=====
總下載大小: 239 k
安裝的大小: 514 k
這樣可以嗎 [y/N]: y
下載軟體包:
net-snmp-utils-5.8-22.el8.x86_64.rpm                2.9 MB/s | 239 kB  00:00
=====
總計
執行處理事項檢查
處理事項檢查成功。
執行處理事項測試
處理事項測試成功。
執行處理事項
準備          :
正在安裝     : net-snmp-utils-1:5.8-22.el8.x86_64 1/1
執行小令稿  : net-snmp-utils-1:5.8-22.el8.x86_64 1/1
核驗        : net-snmp-utils-1:5.8-22.el8.x86_64 1/1
=====
已安裝:
net-snmp-utils-1:5.8-22.el8.x86_64
=====
完成!
[root@CentOS8 ~]#
```



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