Lab 10: HP Networks Node Manager

NET311 - Computer Network Management

Instructor: Dr. Mostafa Dahshan

Objectives

1. Deploy Network Management System Software.
2. Install and configure HP NNMi.
3. Troubleshoot network problems.

References

1. HP NNMi.
2. Configuring Communication Protocol.

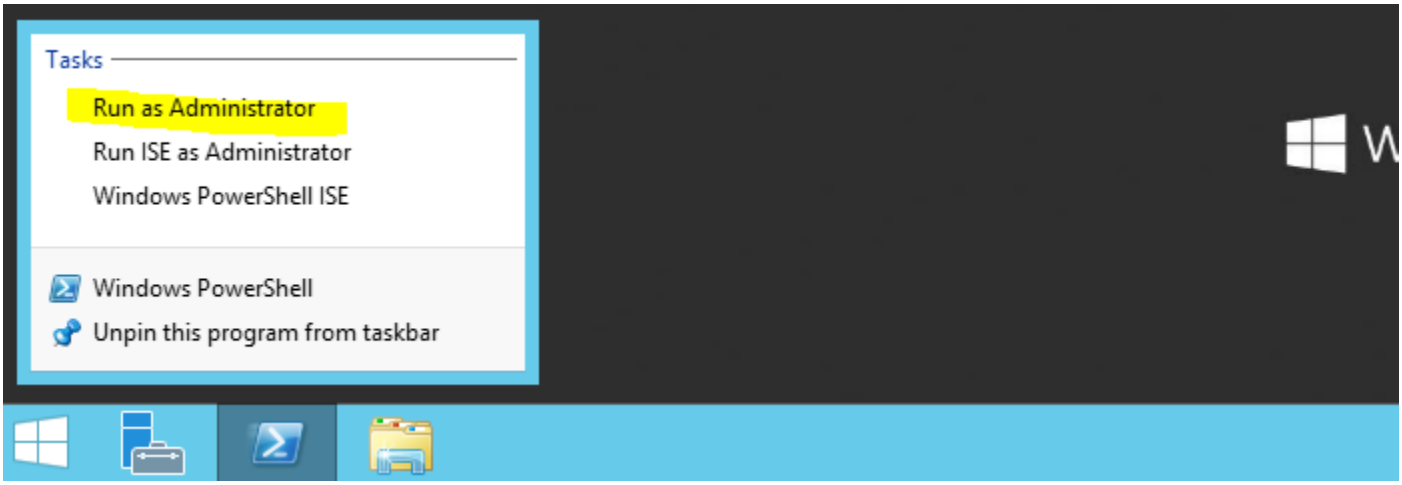
Instructions

1. Read the lab instructions.
2. Provide question answers and screenshots in the supplied answer sheet.
3. After finishing the lab, upload your saved answer sheet to LMS.

Part 1: Lab Setup

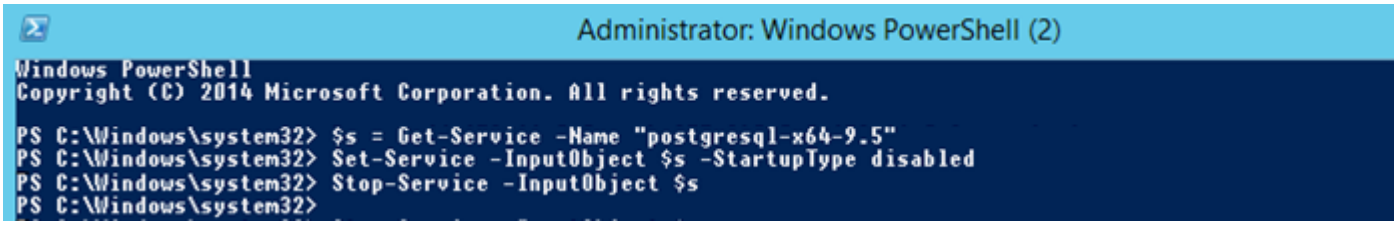
The lab setup required is the same as the lab setup for Lab 5. If you have not performed Lab 5, you must perform Part 1 in Lab 5 before completing this lab.

1. Run **PowerShell** as **Administrator**.



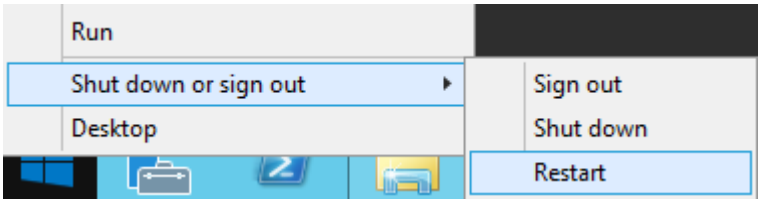
2. Type the following commands to stop the PostgreSQL service. This is important because this service conflicts with the PostgreSQL database used in HP NNMi.

```
$s = Get-Service -Name "postgresql-x64-9.5"

Set-Service -InputObject $s -StartupType disabled

Stop-Service -InputObject $s
```

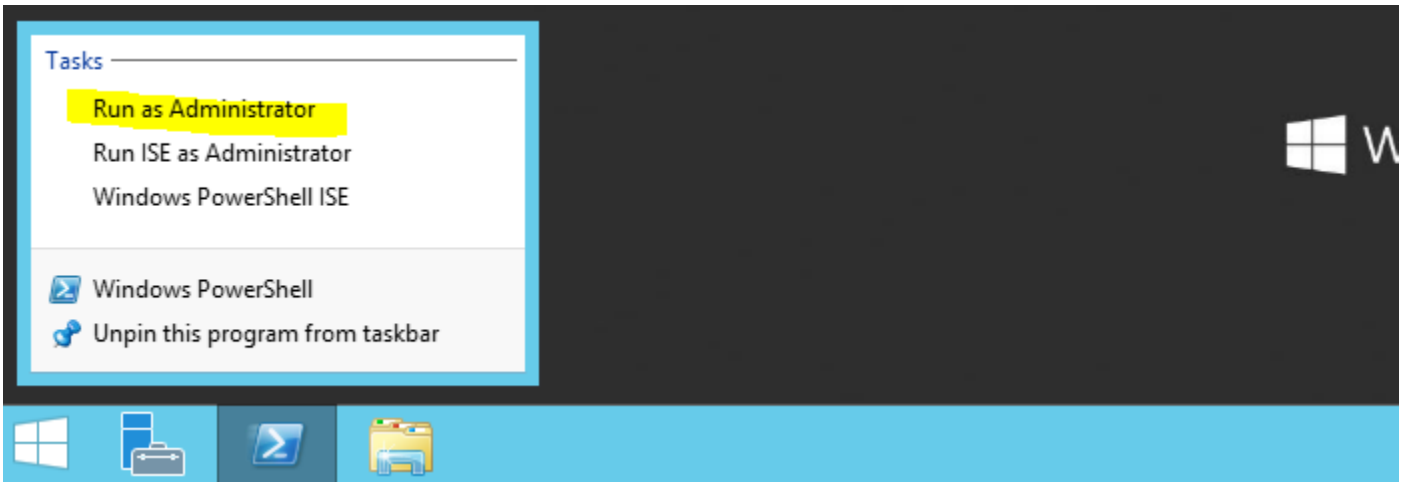


Lab sheet 1.1: provide a screenshot of the PowerShell screen.

3. Save your lab sheet, then restart the computer.

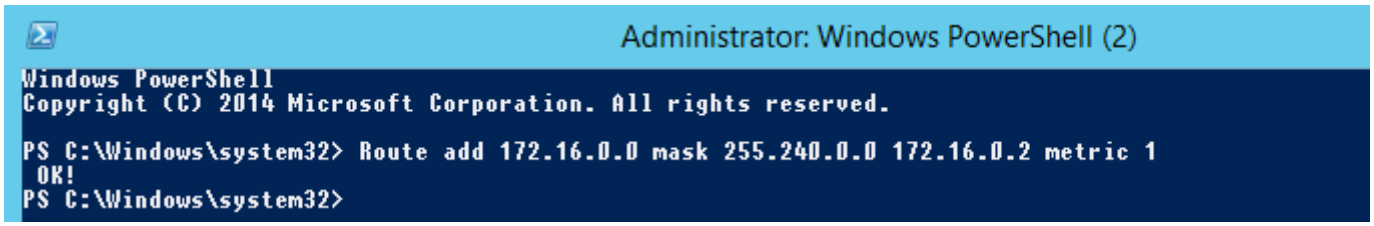


4. Run **PowerShell** as **Administrator**.



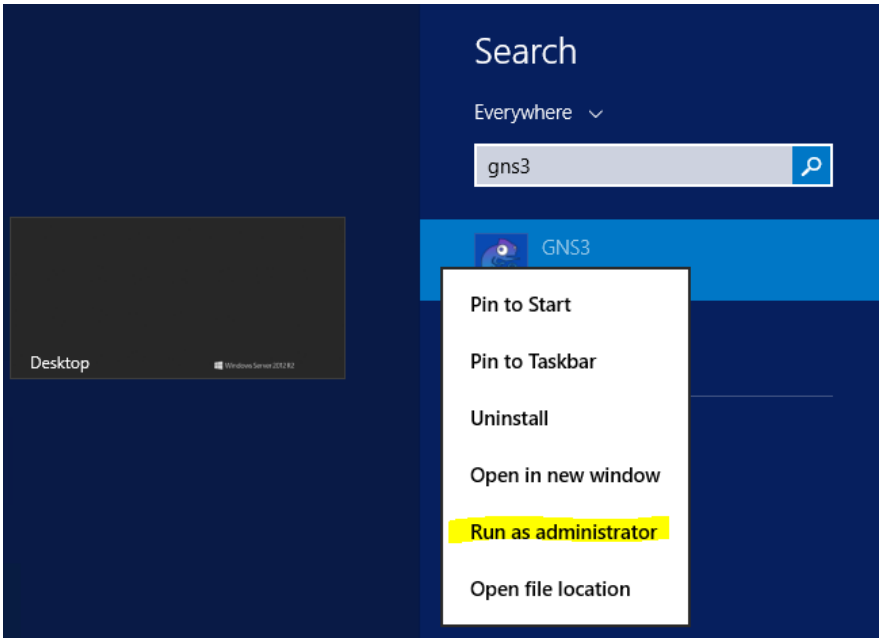
5. Type the following command to configure the route to the lab network:

```
Route add 172.16.0.0 mask 255.240.0.0 172.16.0.2 metric 1
```

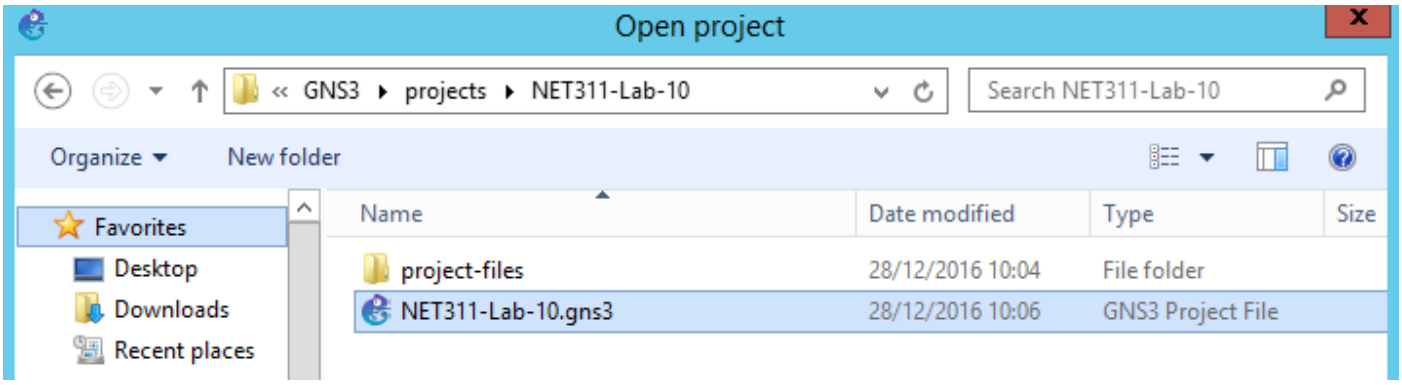


Part 2: Starting the Network

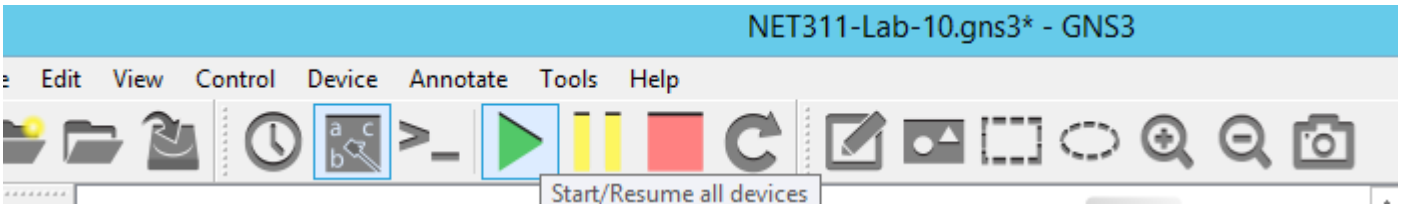
1. Run **GNS3** as an **administrator**.

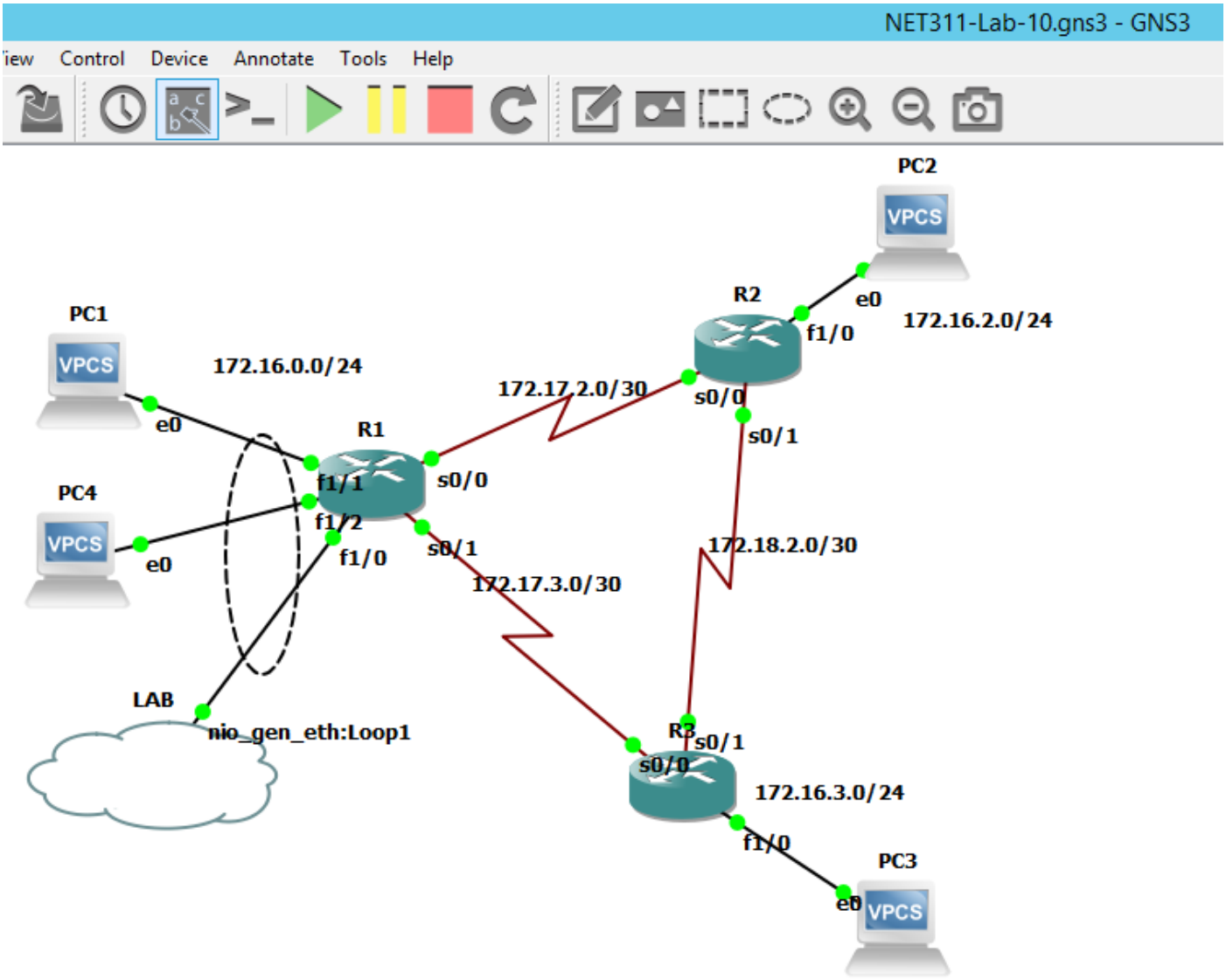


2. Open the GNS3 project **NET311-Lab-10-.gns3**.



3. Start all devices

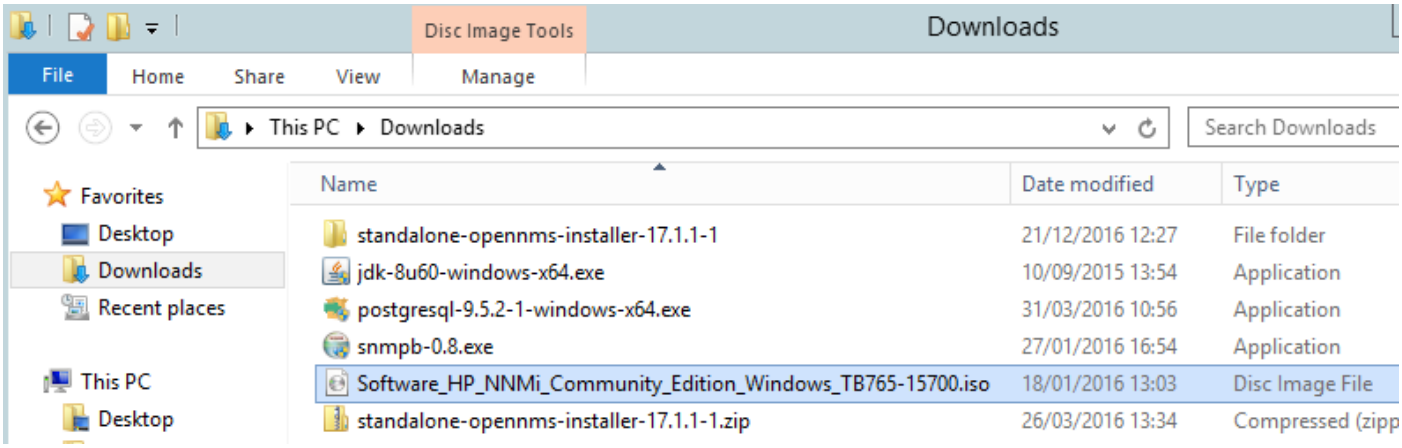




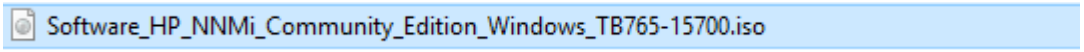
Lab sheet 2.1: provide a screenshot of the running network.

Part 3: Install HP Network Node Manager

1. Locate the Disc image **Software_HP_NNMi_Community_Edition_Windows_TB765-15700.iso** under **Downloads**.

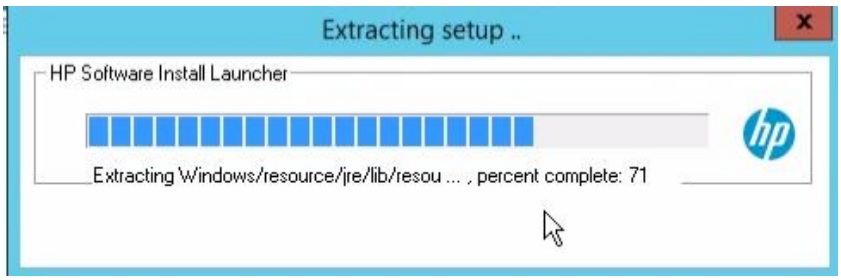


2. Double click on the image to mount it.



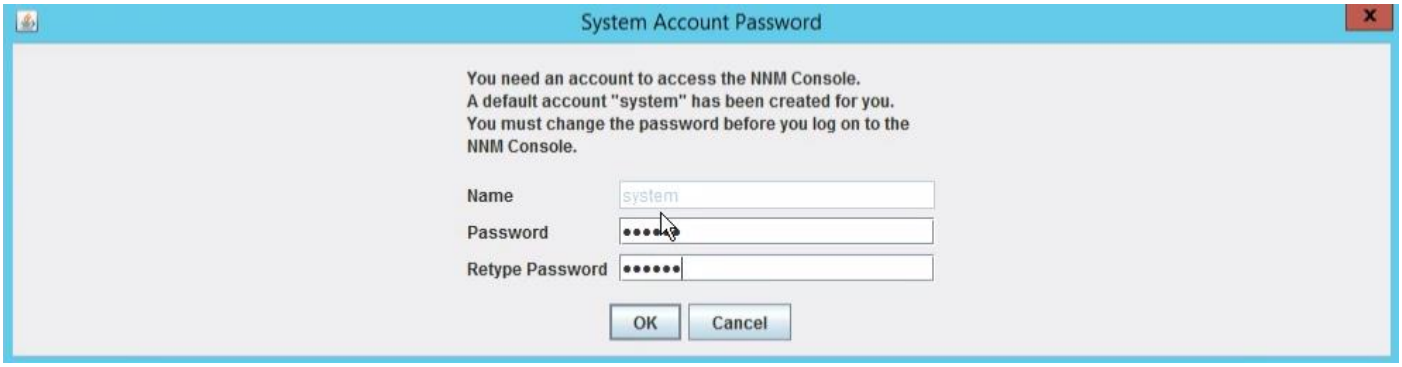
3. Locate and open the mounted DVD drive on your computer.

4. Start the **setup** program.

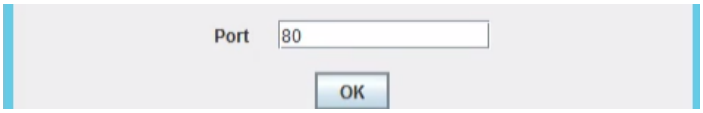


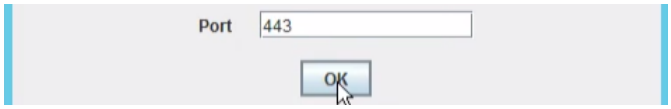
5. Follow the steps of the setup program. **Keep the default settings** unless otherwise specified.

6. In the System Account Password field, type **net311**.

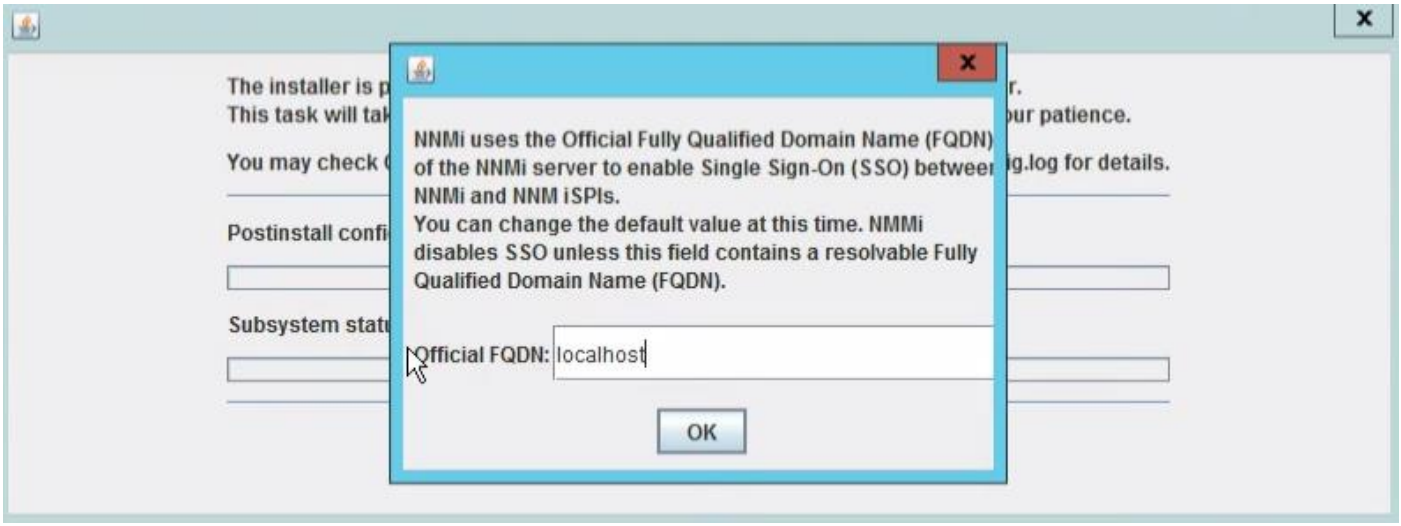


7. Keep the default ports 80 and 443.



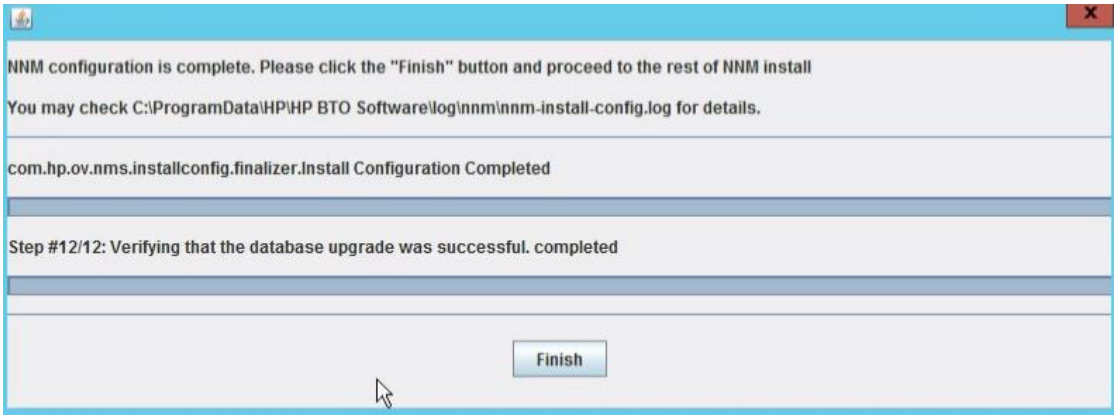


8. In the Offical FQDN field, type **localhost**.



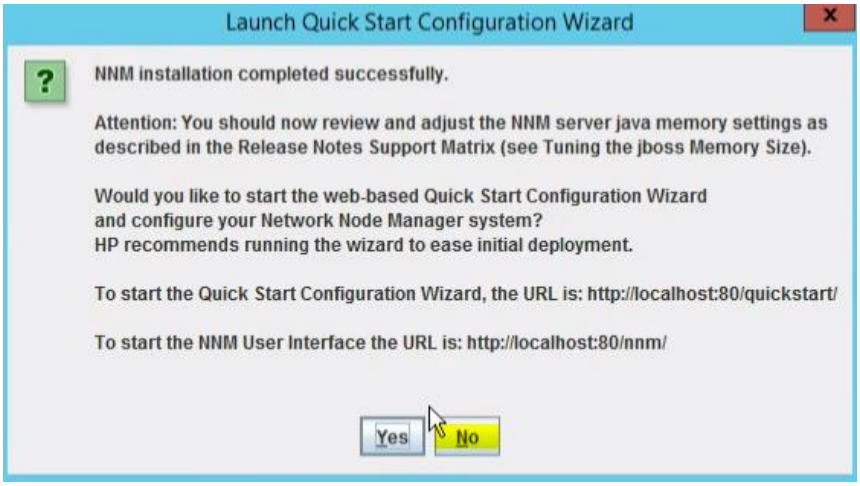
9. Click on **Skip Patching**.

10. Click on **Finish**.



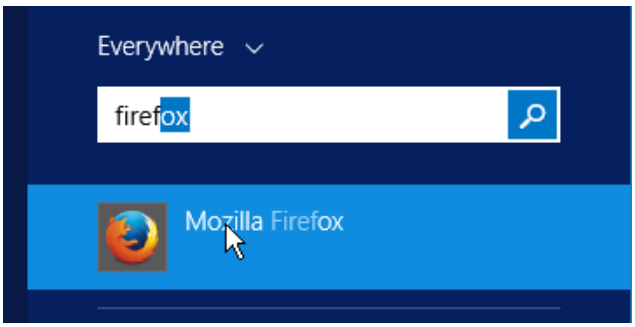
Lab sheet 3.1: provide a screenshot showing the Finish screen of NNM setup.

11. Click **No** to skip the Quick Start Configuration Wizard.

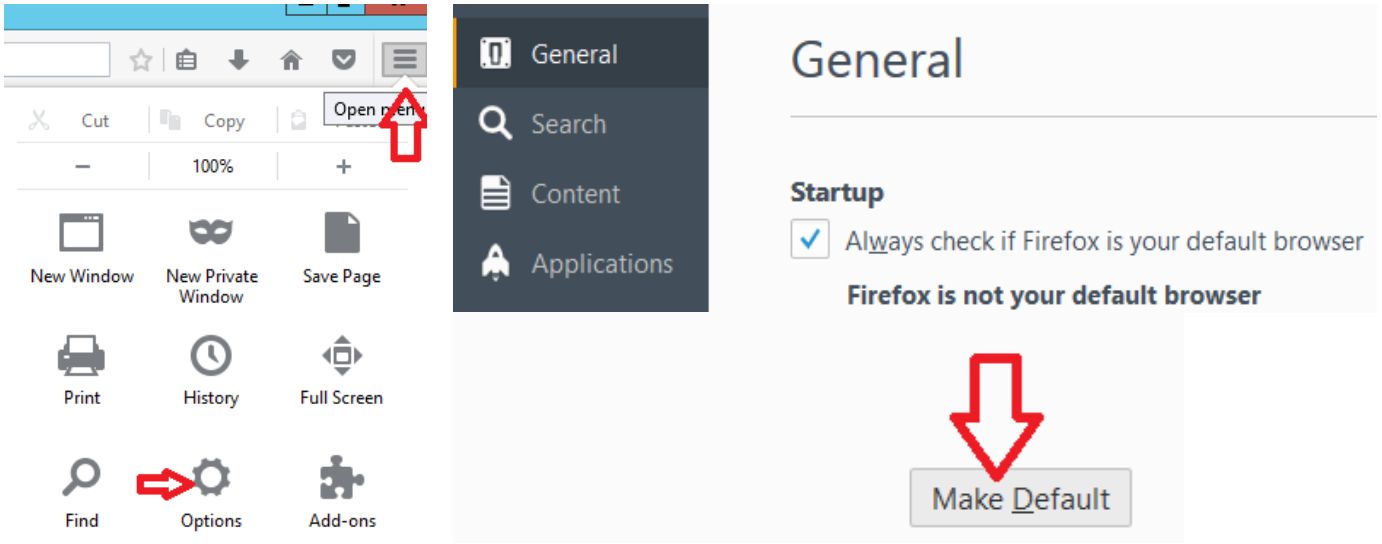


Part 4: Configure HP NNM Communication and Discovery

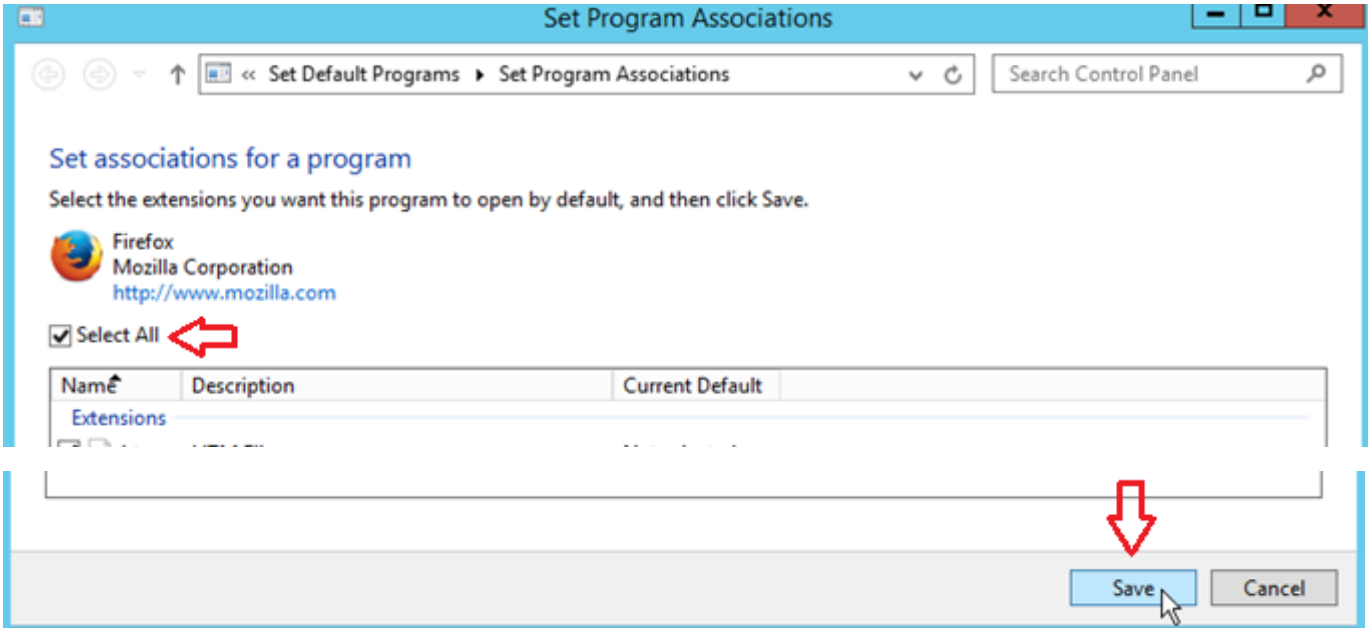
1. Run the Firefox web browser.



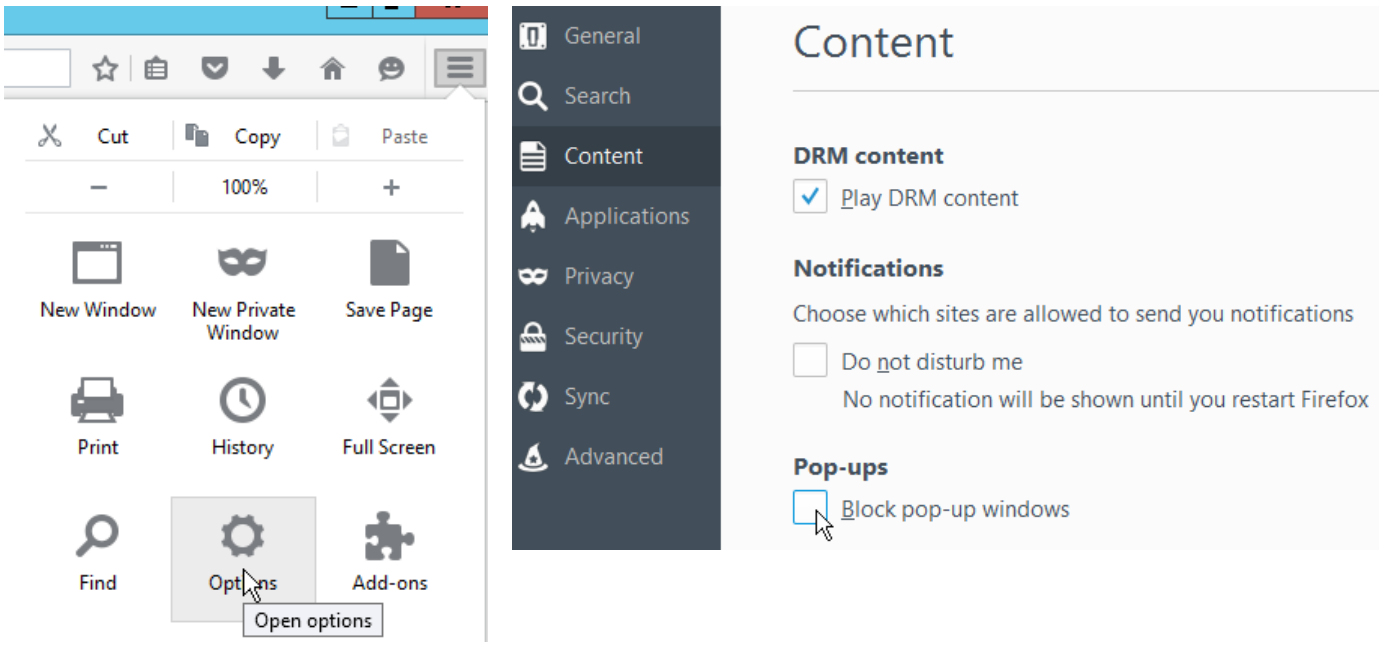
2. From the top right corner, open **Options**. In the **General** tab click on **Make Default**.



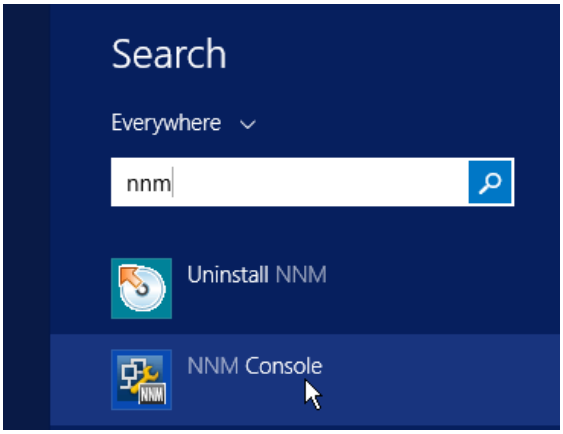
3. Check the **Select All**, then click **Save**.



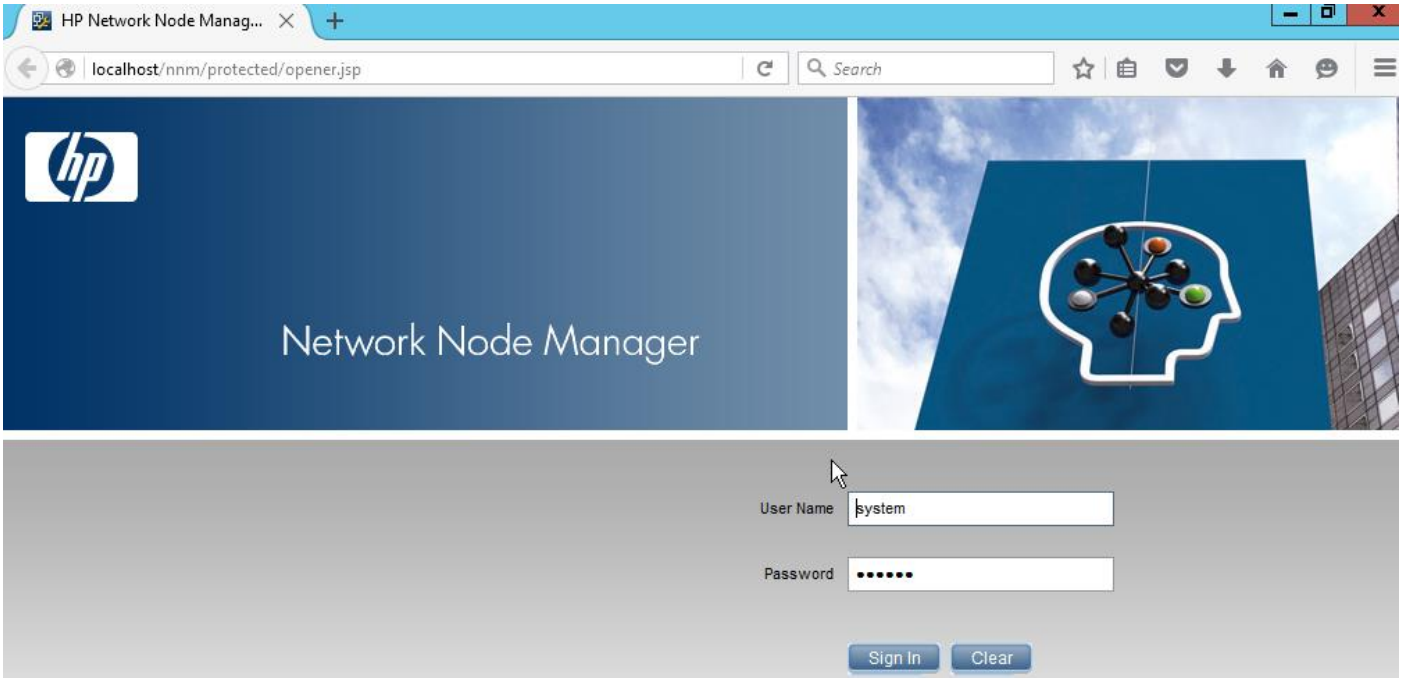
4. In the **Content** tab, uncheck the "**Block pop-pup windows**" option.



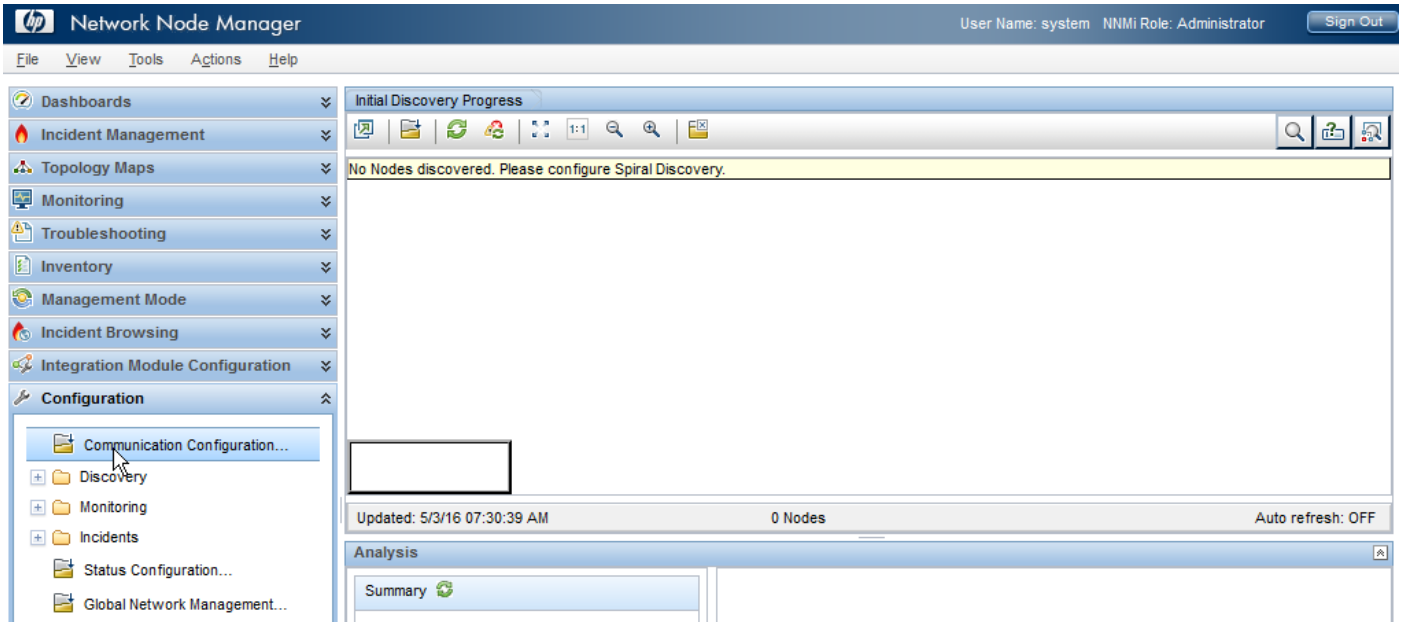
5. Locate and run the **NNM Console**.



6. Sign in with user name **system** and password **net311**.

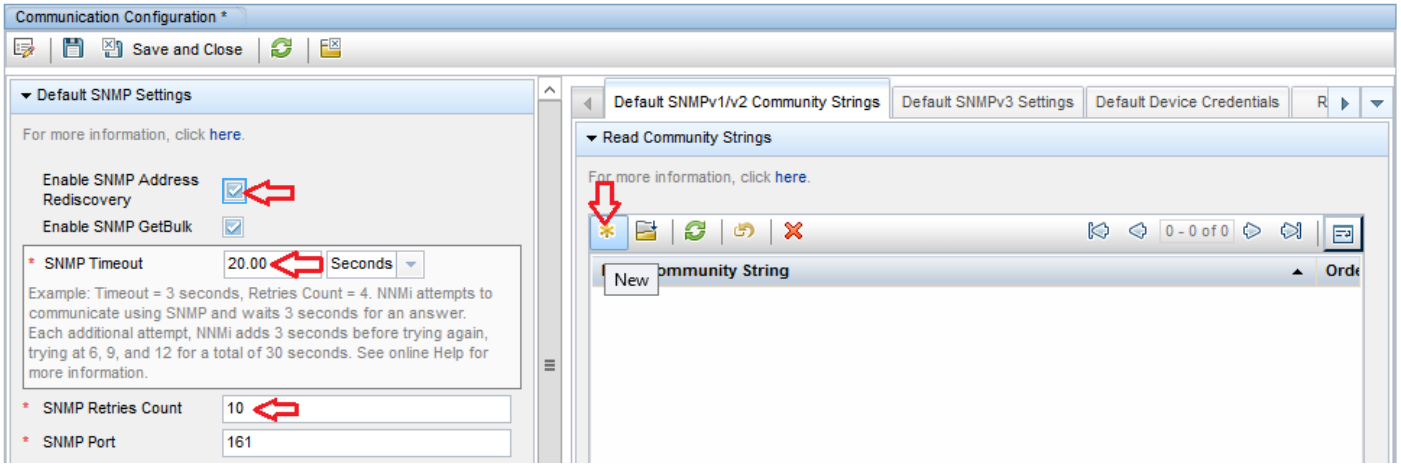


7. In the Network Node Manager window click on **Configuration** tab, then click on **Communication Configuration**.

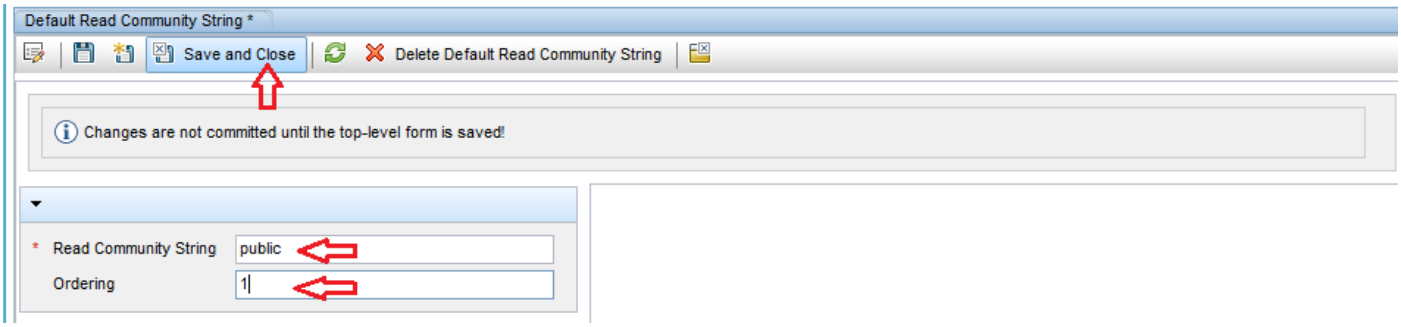


8. Check Enable **SNMP Address Rediscovery**. Set the **SNMP Timeout** to **20** and **SNMP Retries count** to **10**.

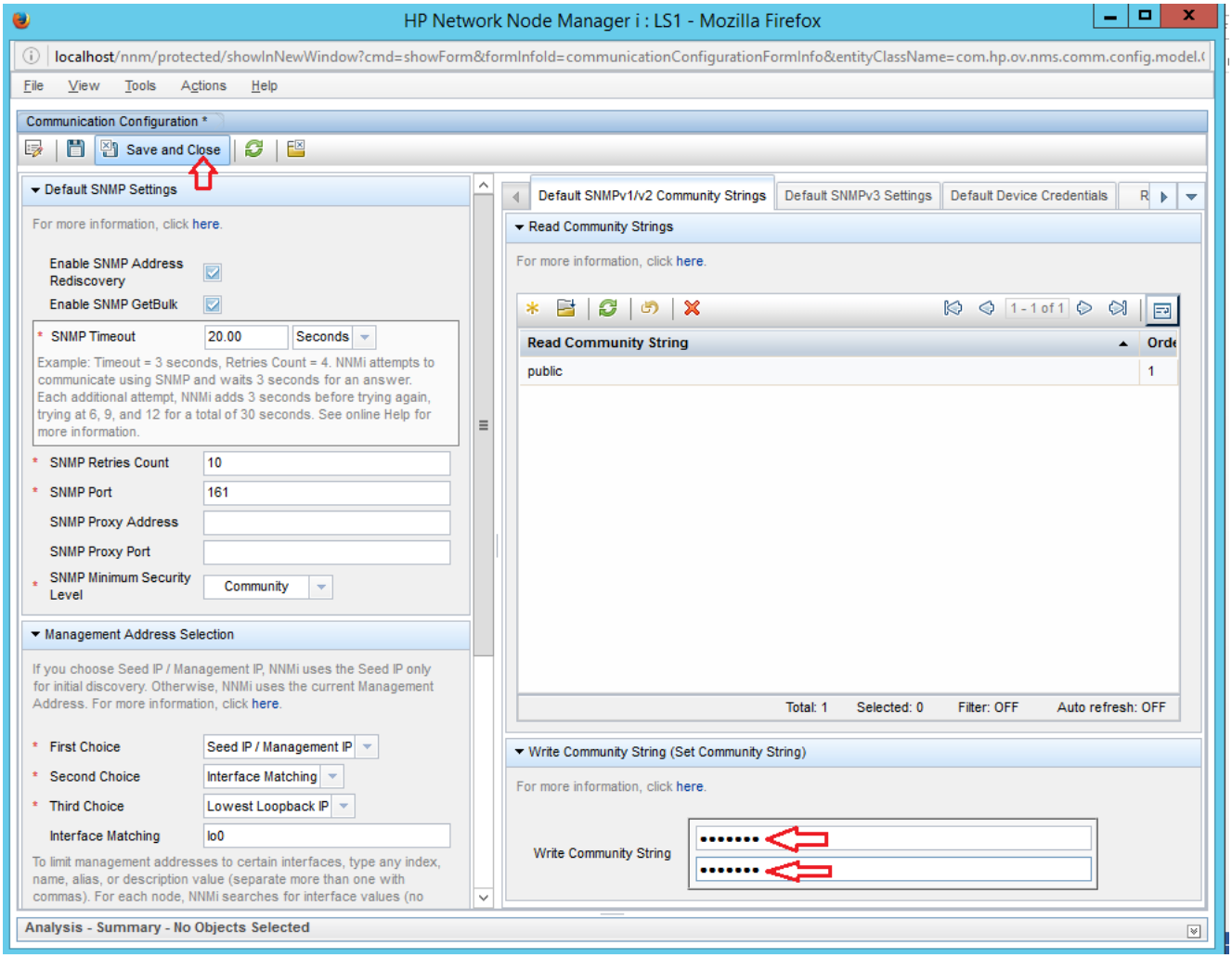
9. Click the **New** button under Default SNMPv1/v2 Community Strings.



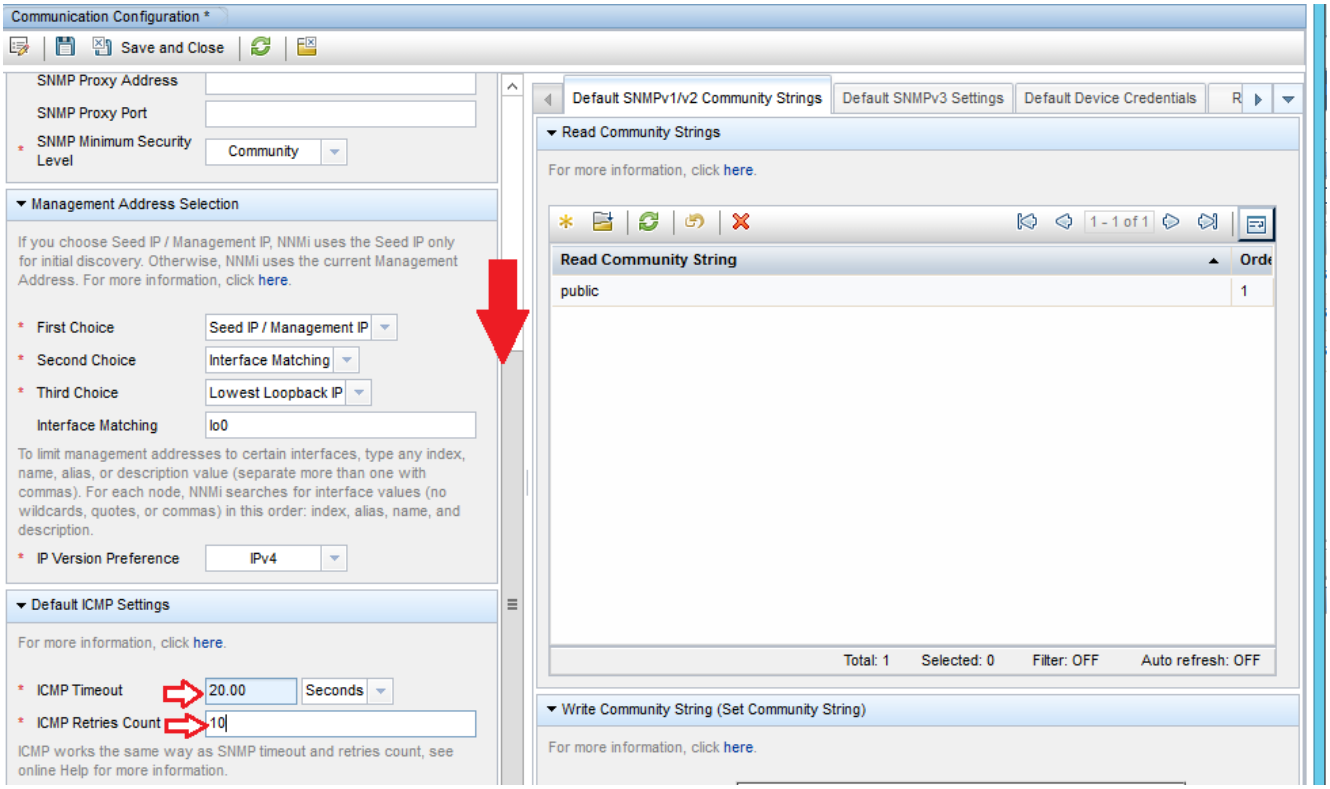
10. Add the Read Community String **public** and Ordering **1**. Click on **Save and Close**.



11. In **Write Community String**, type **private** and **private**.



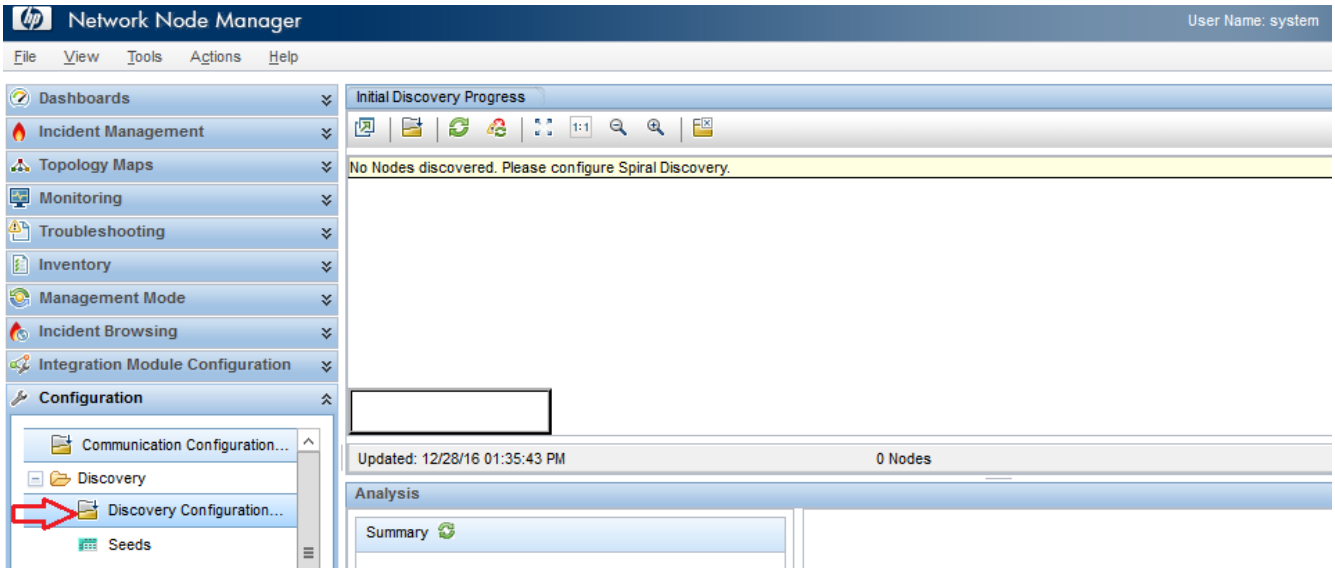
12. Scroll down then change the **ICMP Timeout** to **20** and **ICMP Retries Count** to **10**.



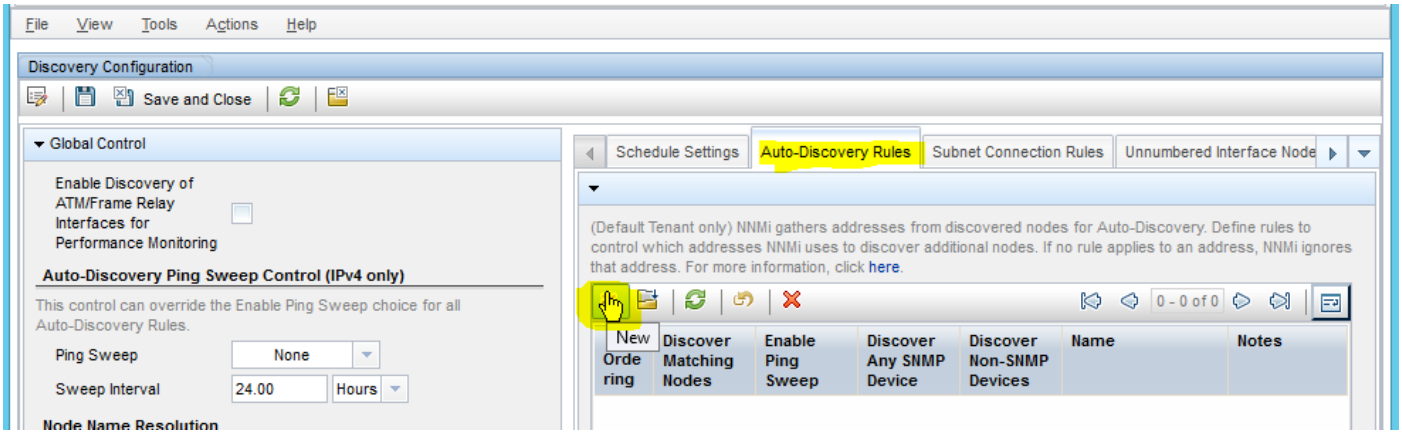
Lab sheet 4.1: provide a screenshot showing the Communication Configuration screen.

13. Click on **Save and Close**.

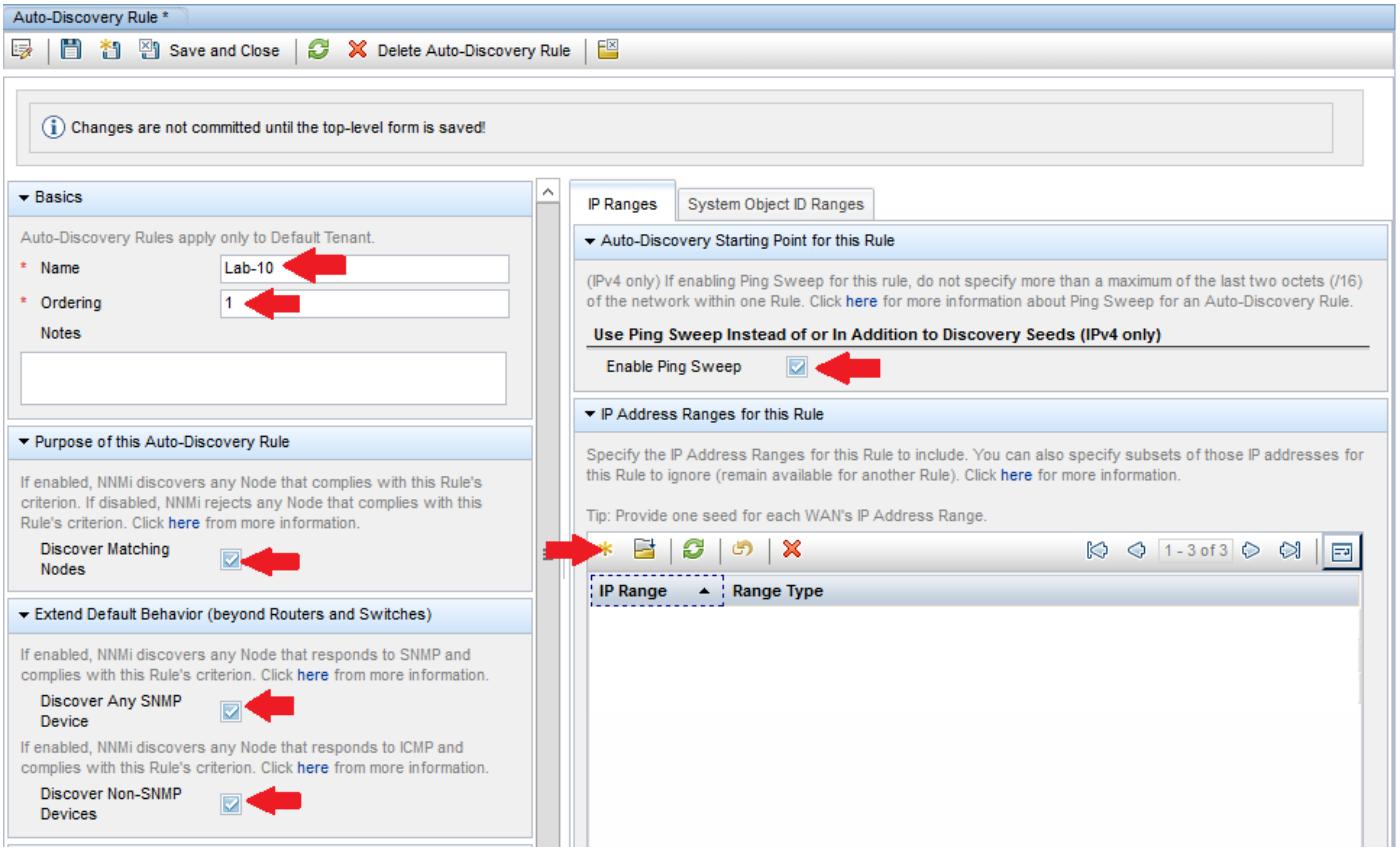
14. Click on **Discovery** then click on **Discovery Configuration**.



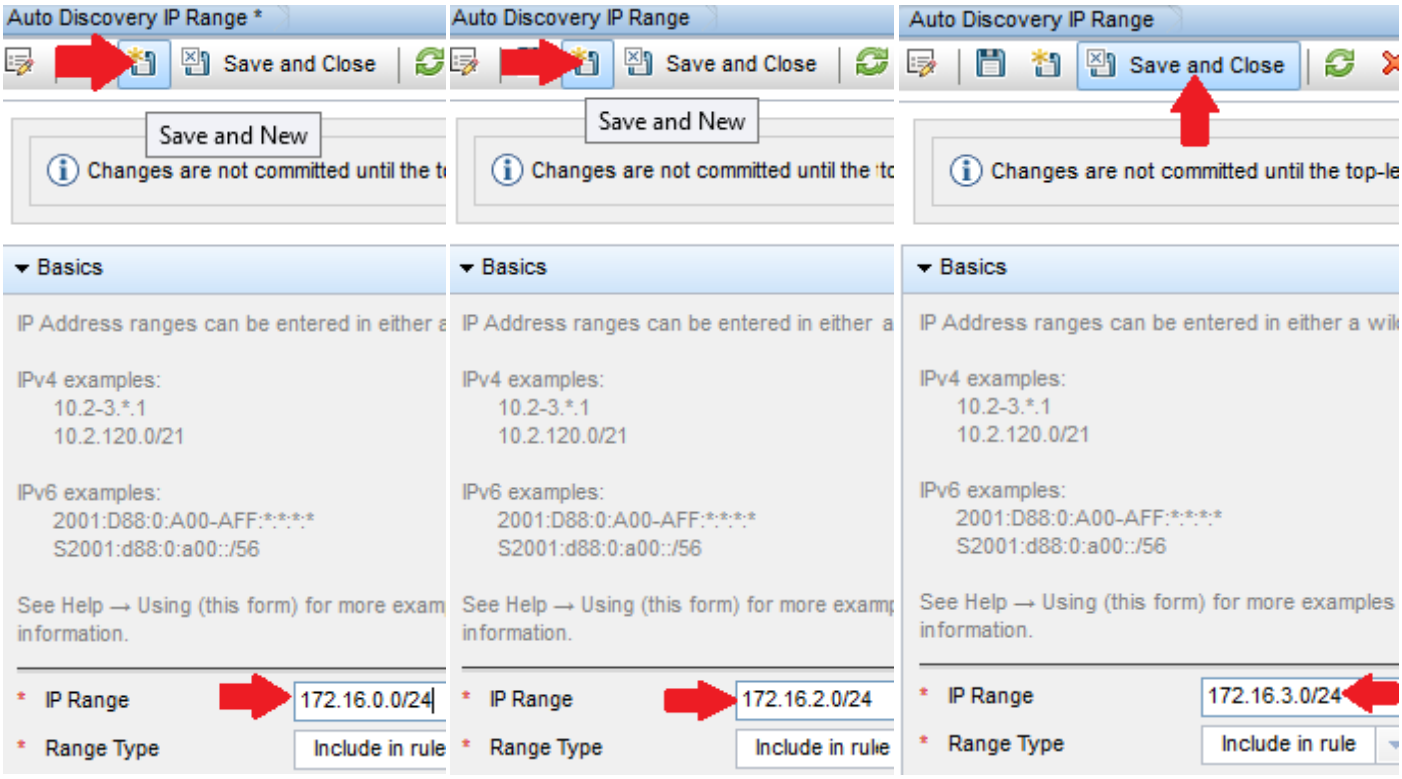
15. Open the **Auto-Discovery Rules** tab, then click on **New**.

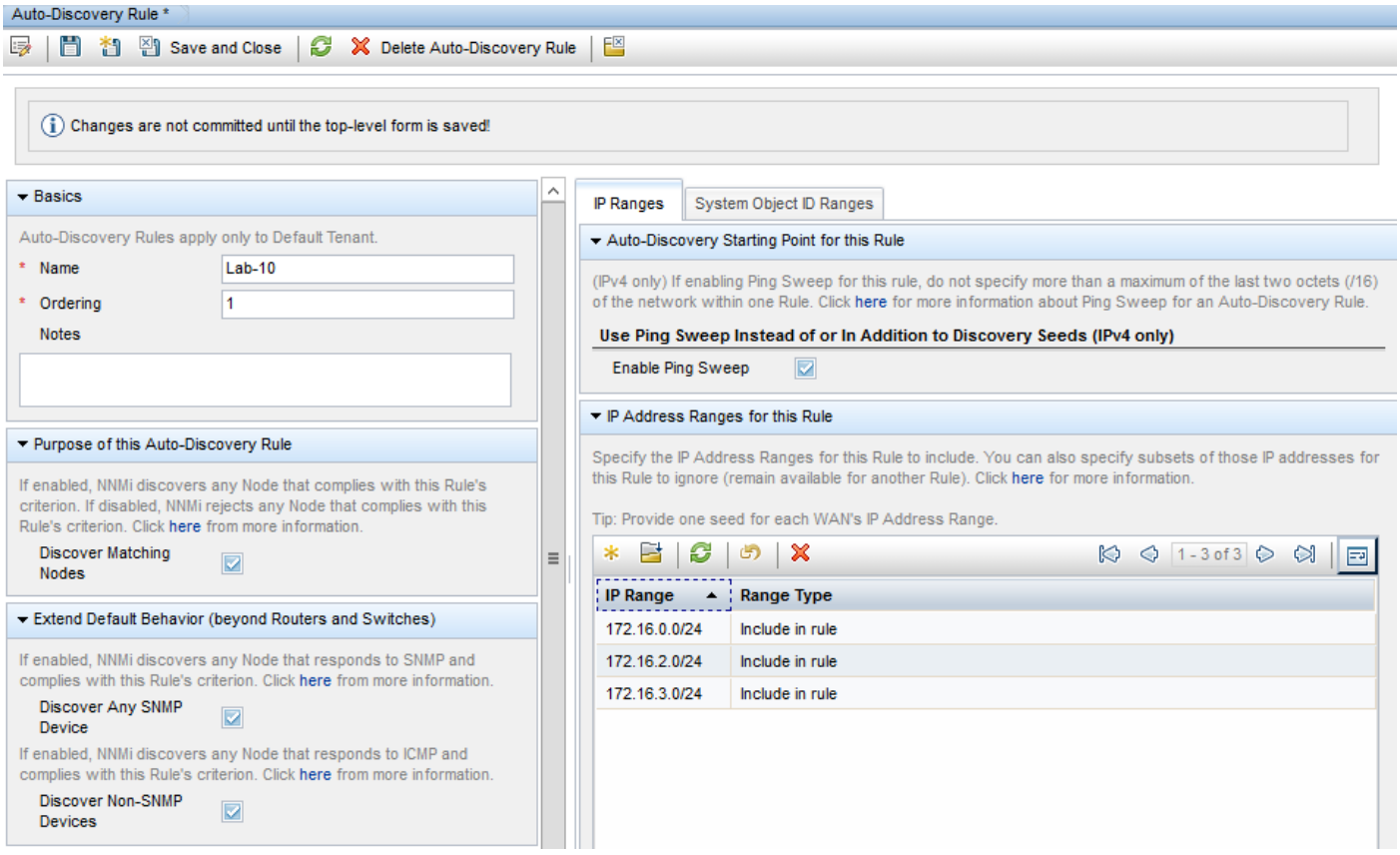


16. Add the Name **Lab-10**, Ordering **1**. Check the options **Discover Any SNMP Device**, **Discover Non-SNMP Devices** and **Enable Ping Sweep**. Then click **New**.



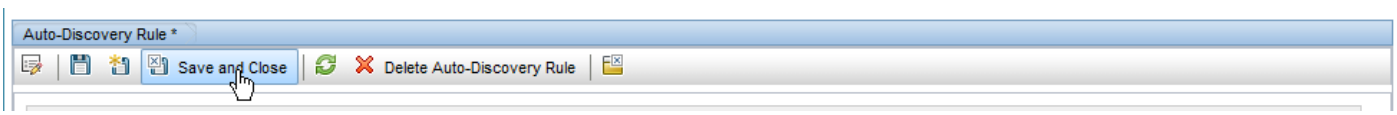
17. Add the IP Ranges **172.16.0.0/24**, **172.16.2.0/24**, **172.16.3.0/24**. Click **Save and Close**.



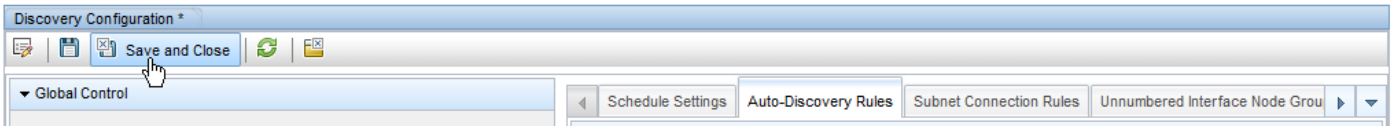


Lab sheet 4.2: provide a screenshot showing the Auto-Discovery Rule screen.

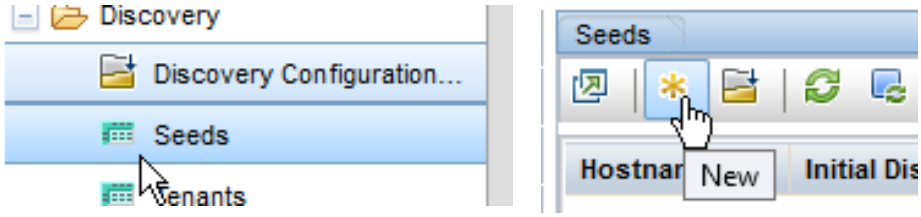
18. In the Auto-Discovery Rule window, click **Save and Close**.



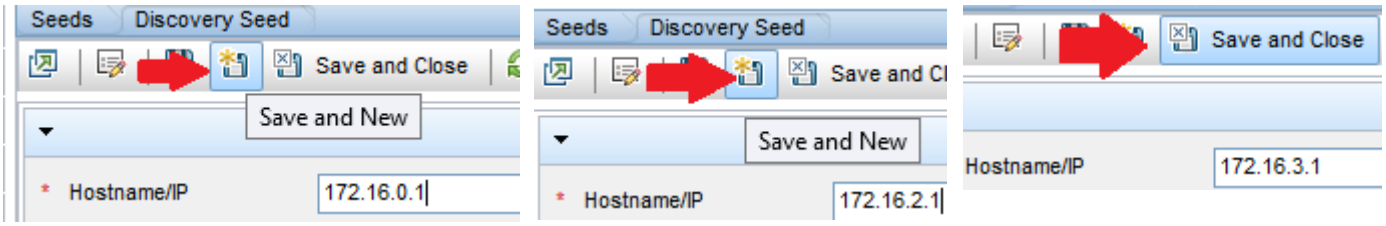
19. In the Discovery Configuration window, click **Save and Close**.

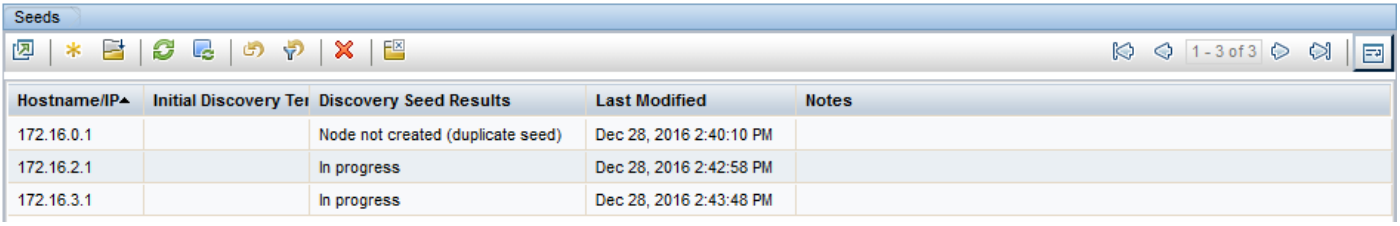


20. Click on **Discovery** then click on **Seeds**. Then click on **New**.



21. Enter Hostname/IP values: **172.16.0.1**, **172.16.2.1** and **172.16.3.1**. Click **Save and Close**.

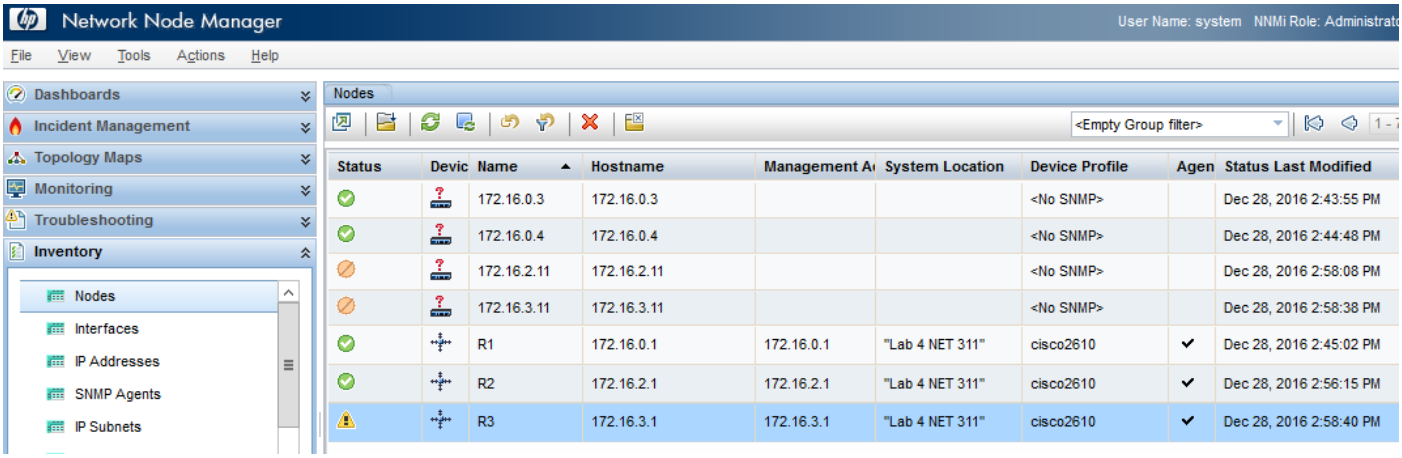




Lab sheet 4.3: provide a screenshot showing the Seeds screen.

Part 5: Inspect Network Devices using HP NNM

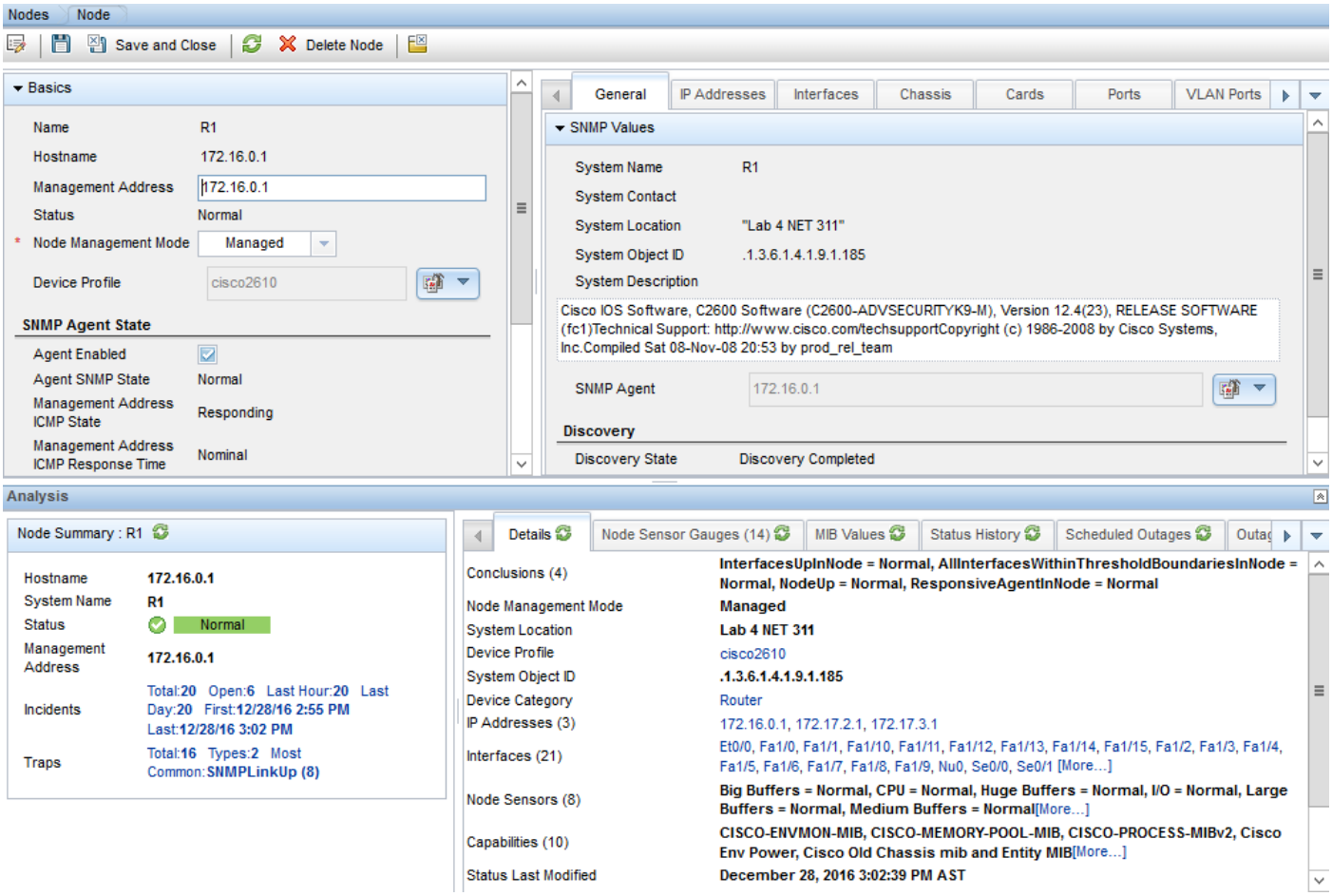
1. Click on **Inventory**, then click on **Nodes**.



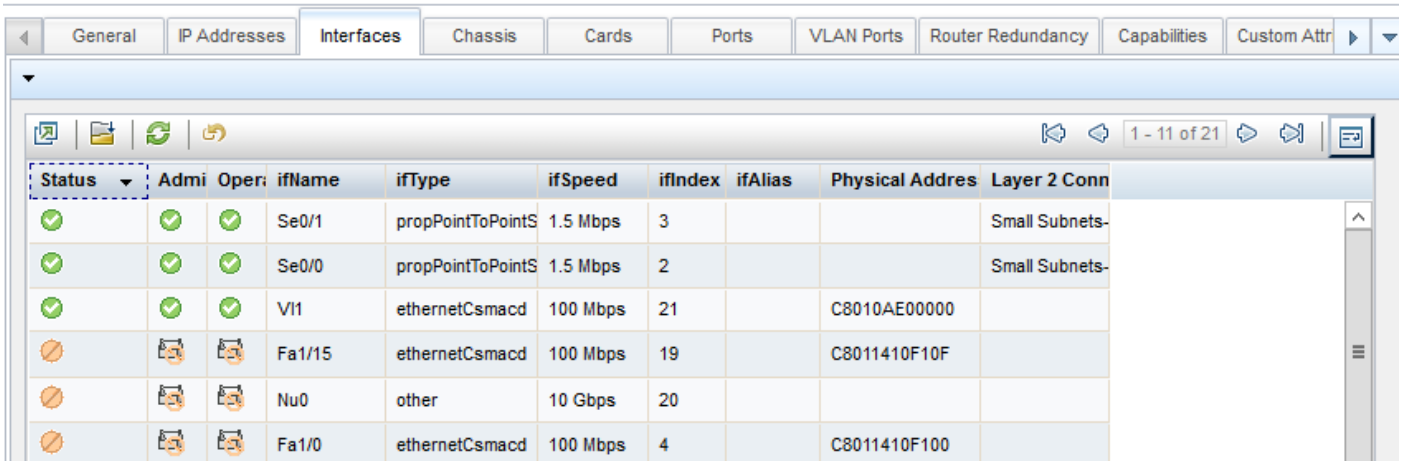
Lab sheet 5.1: provide a screenshot showing the Nodes screen.

2. Double click on **R1** and view its information. You can view in a separate window by clicking on  .

3. Browse the different tabs on R1.

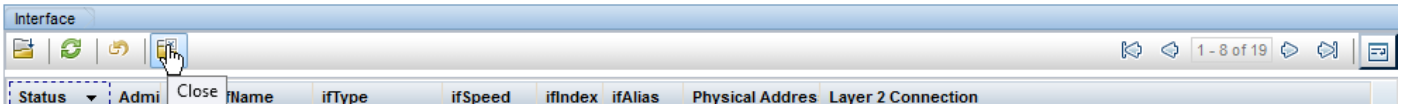


4. Click on the **Interfaces** tab of R1. You can view it in a separate window by clicking on  .

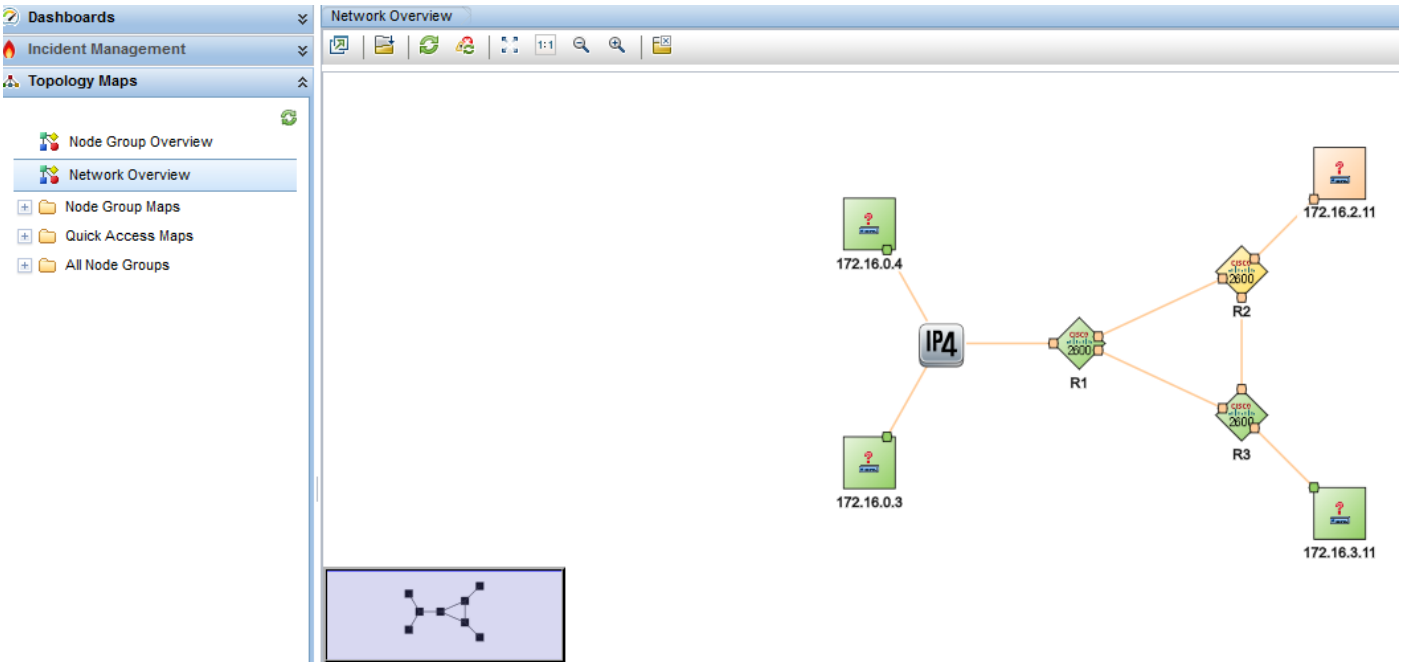


Lab sheet 5.2: provide a screenshot showing the Interfaces of ESW1.

5. Close the Interfaces window by clicking on  .



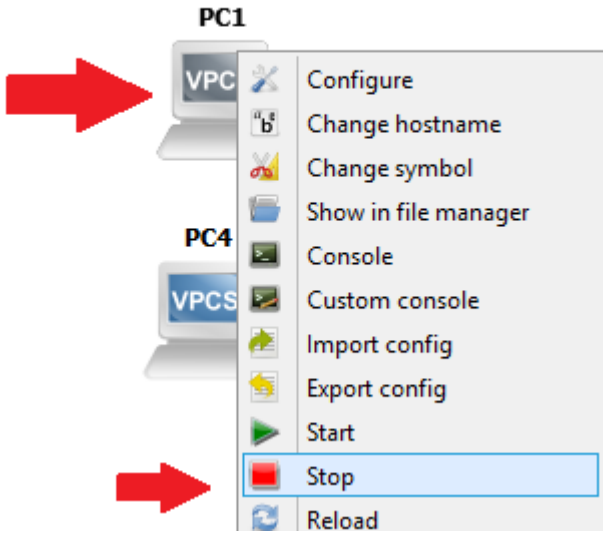
6. Under **Topology Maps,** click on **Network Overview**.



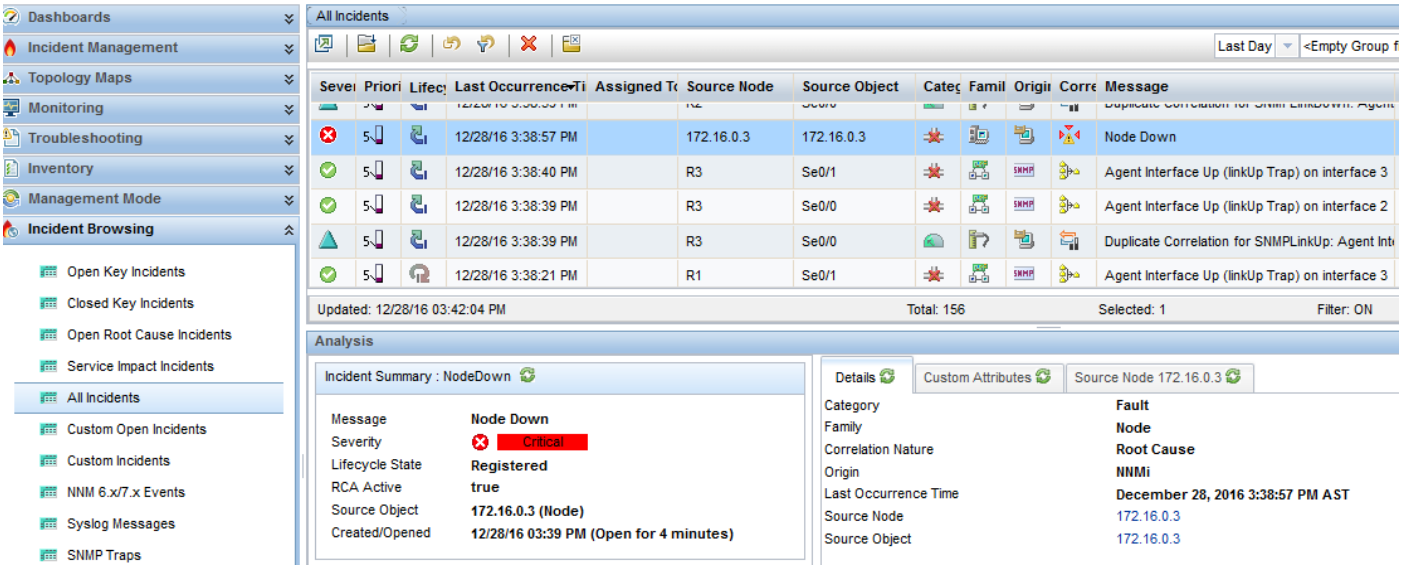
Lab sheet 5.3: provide a screenshot showing the Network Overview screen.

Part 6: Network Troubleshooting using HP NNM

1. **Stop** one of the nodes in the network, for example **PC1**.

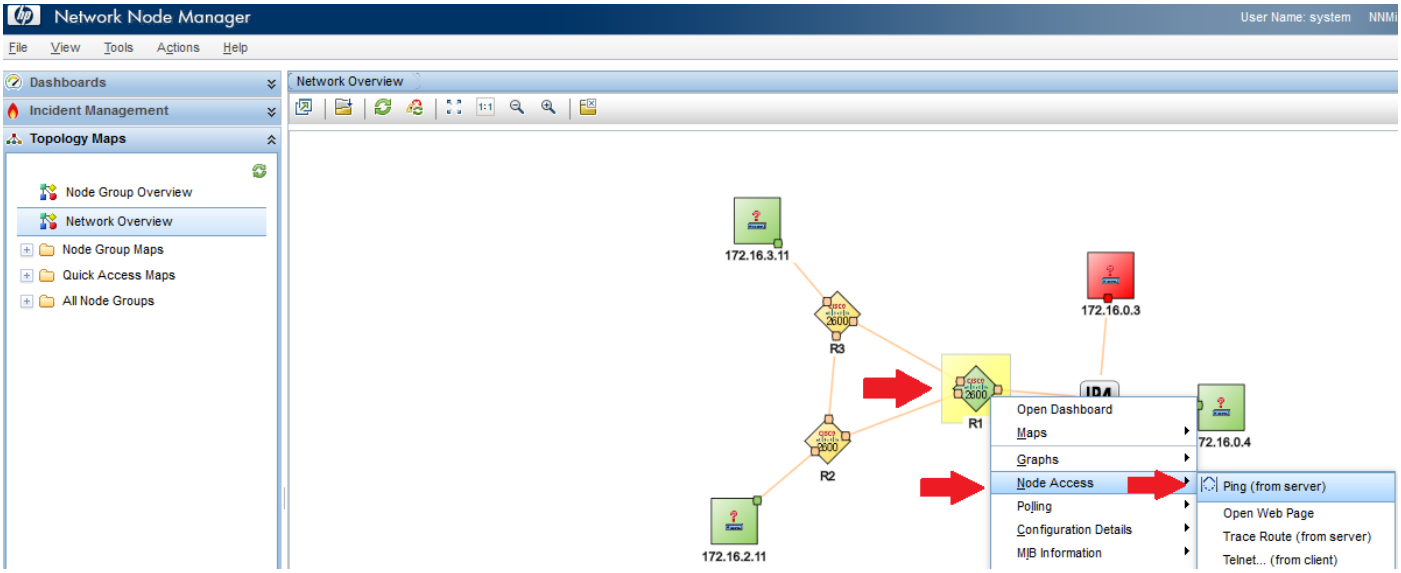


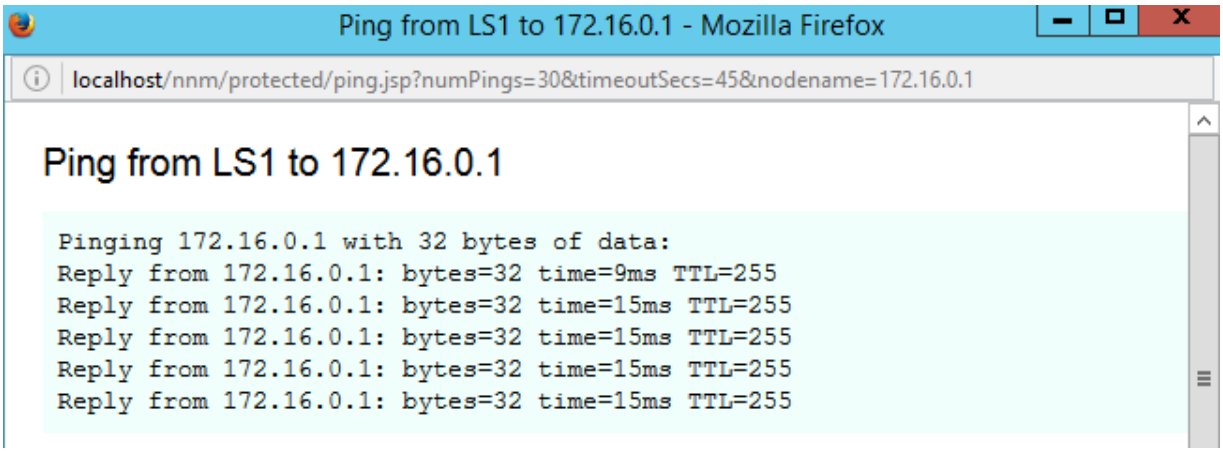
2. Under **Incidents,** click on **All incidents** and locate the **Node Down** incident for the IP of PC1.



Lab sheet 6.1: provide a screenshot showing the Incidents screen.

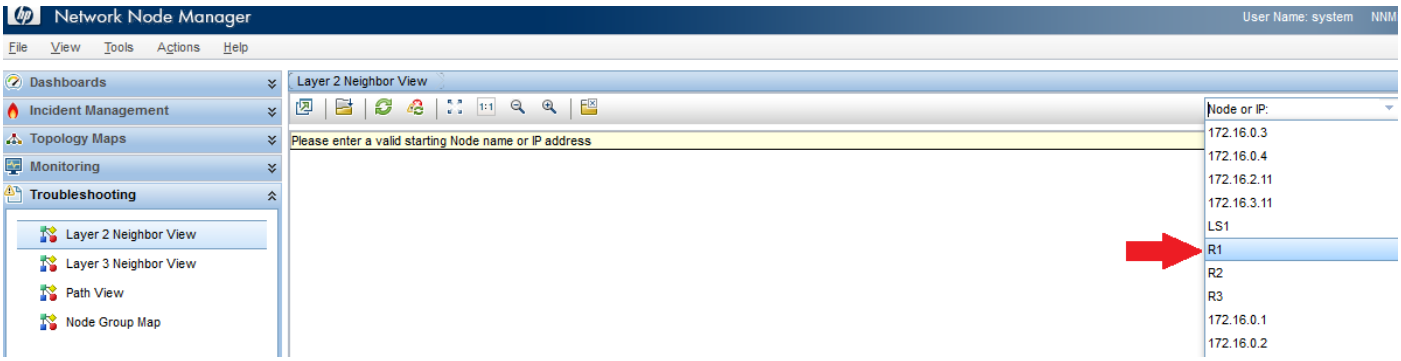
3. In the **Topology** > **Network Overview** screen, right-click on **R2** then click on **Node Access > Ping (from server)**.

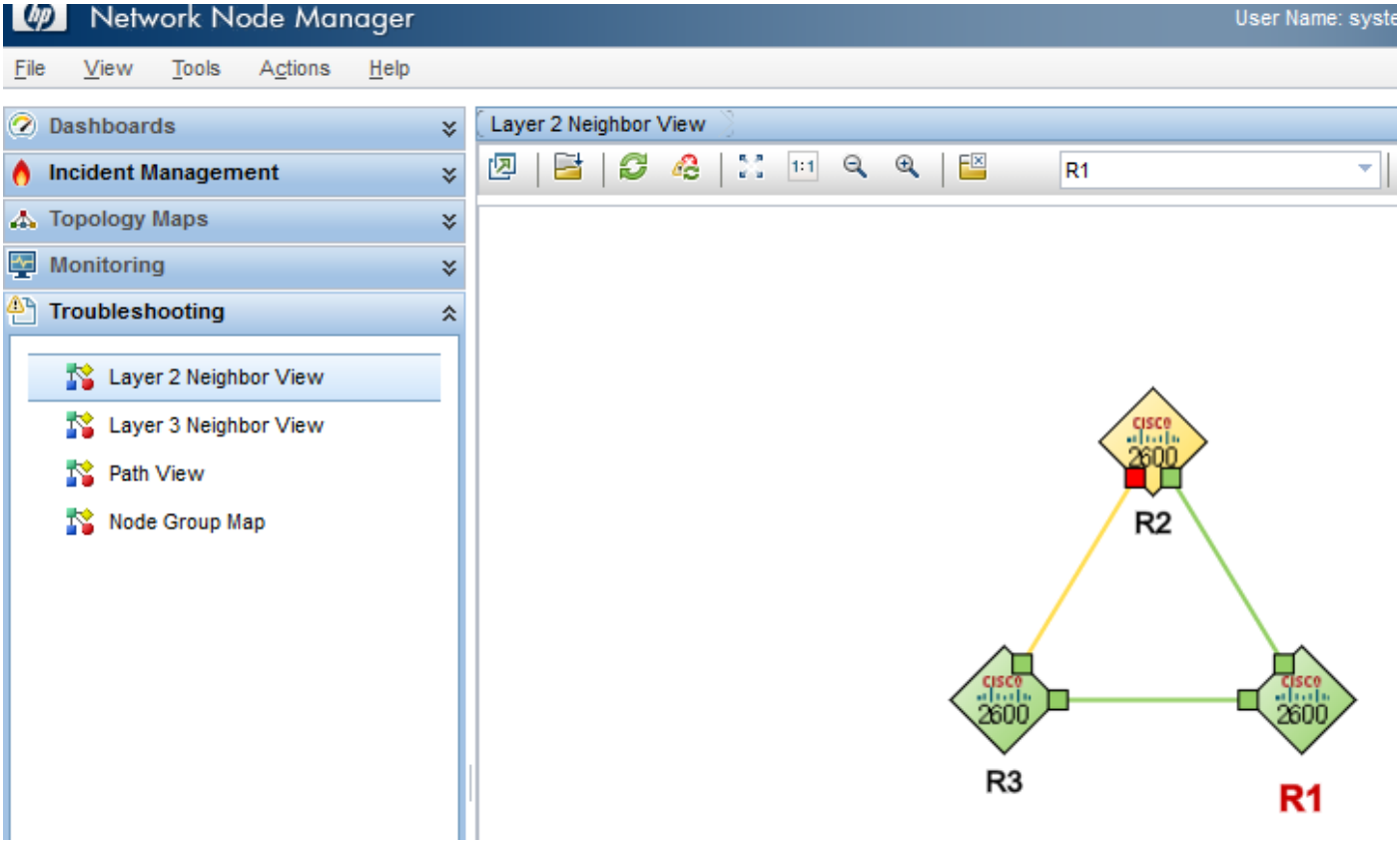




Lab sheet 6.2: provide a screenshot showing the output of the Ping screen.

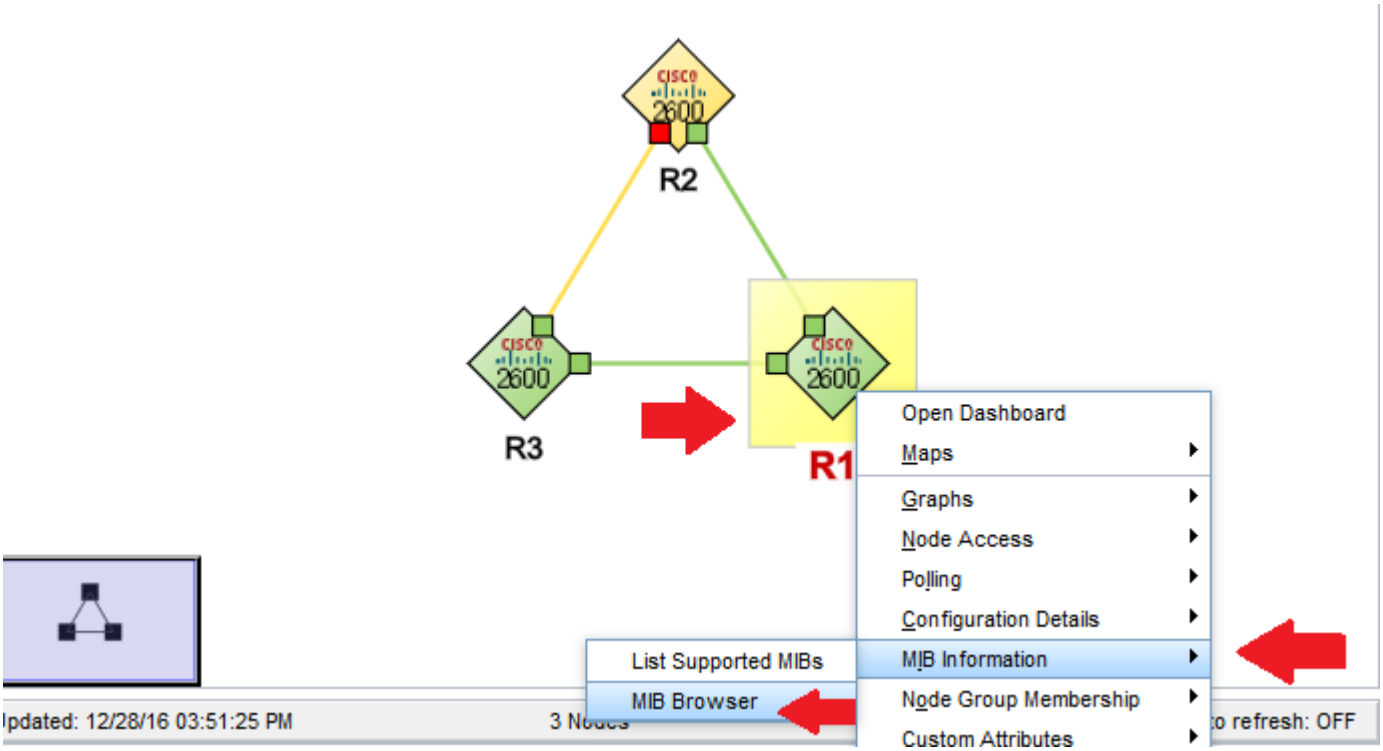
4. In the **Troubleshooting** click on **Layer 2 Neighbor View** screen, then select the IP of **R1**.



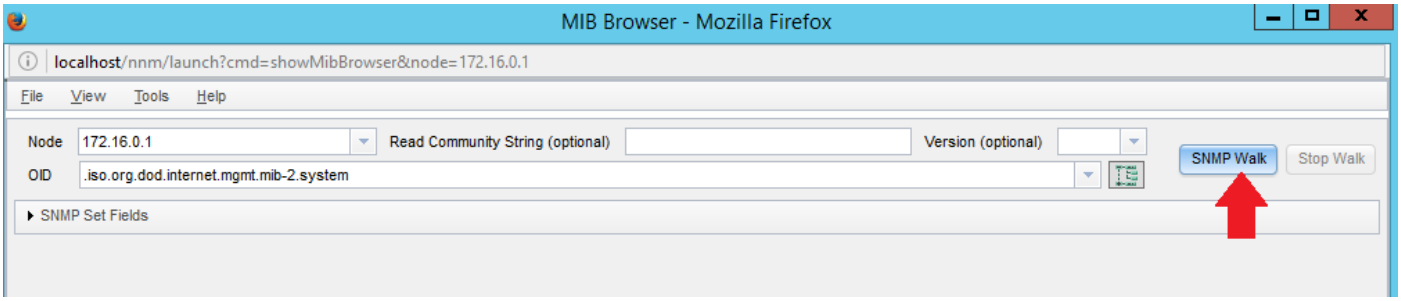


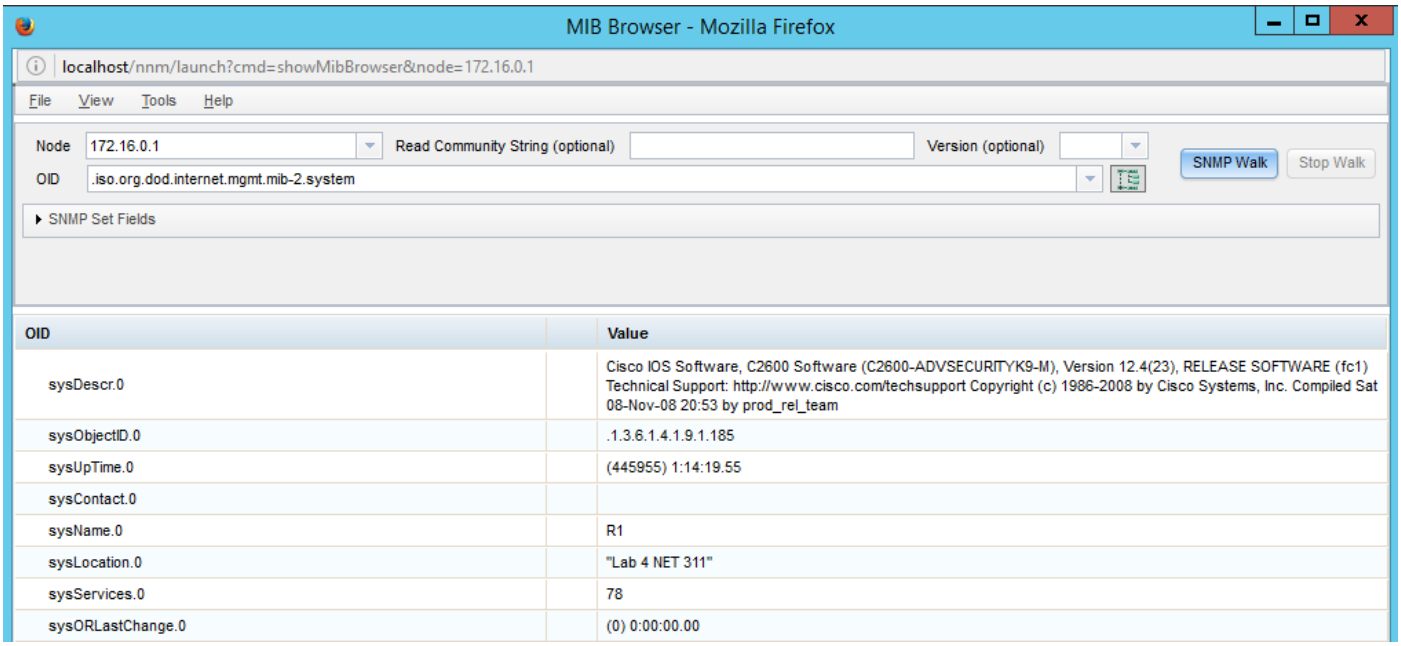
Lab sheet 6.3: provide a screenshot showing the output of the Layer 2 Neighbor View screen.

5. Right-click on **R1**, then click on **MIB Information** -> **MIB Browser**.



6. Click on SNMP Walk.





Lab sheet 6.4: provide a screenshot showing the output of SNMP Walk in the MIB Browser.