Hands-on Lab: Scanning Network Environment with NMap

Estimated time needed: 20 minutes

About This Lab

In this lab, you will learn how to scan a network with the domain name and/or IP Address using the ZenMap tool.

Objectives

After completing this lab, you will be able to:

1. Use ZenMap, the GUI utility, provided by NMap
2. Perform a network scan based on the IP Address or domain name
3. Review different scan options in the ZenMap utility

Important Notices about This Lab

About Lab Sessions

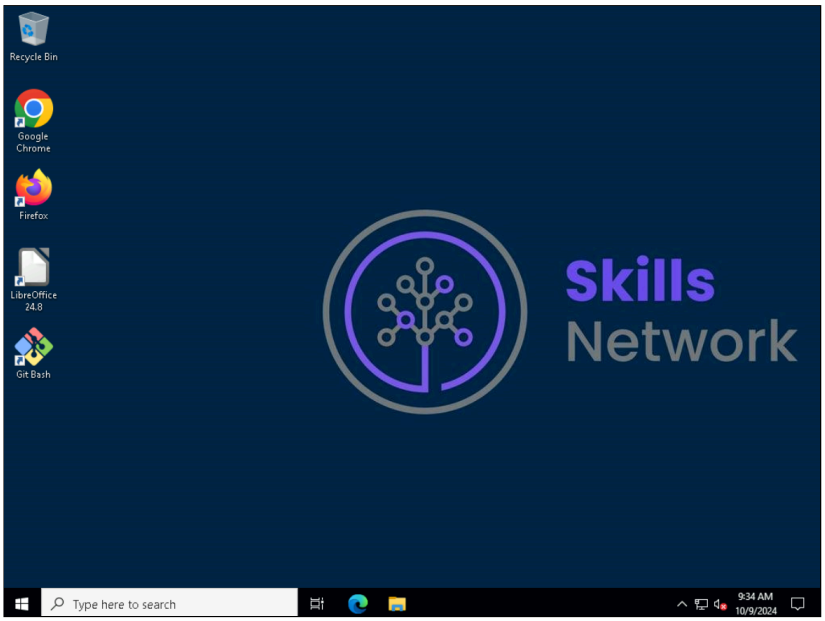
Lab sessions are not persisted. This means that every time you connect to this lab, a new environment is created for you. Any data or files you saved in a previous session are no longer available. To avoid losing your data, plan to complete these tasks in a single session.

About the Lab Instructions and Solutions

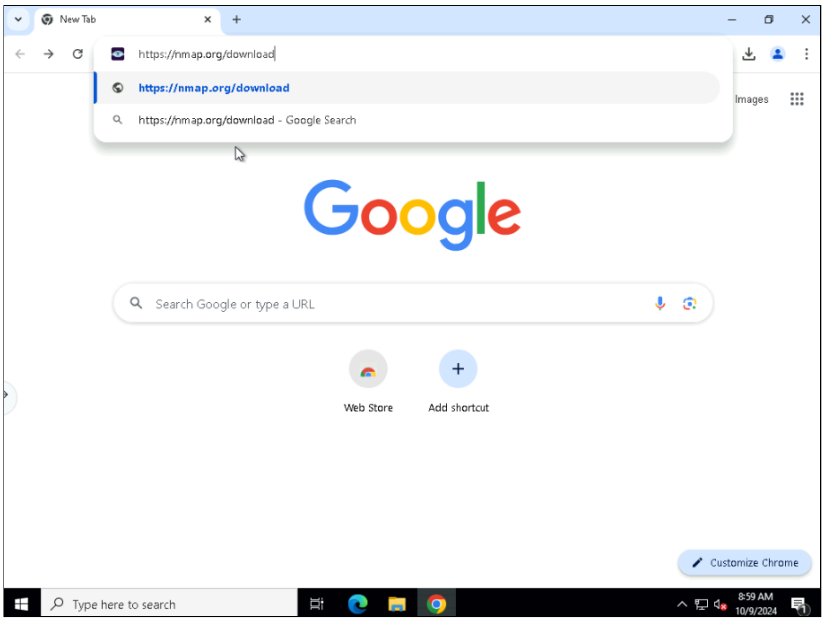
In case you try to use your physical keyboard in the lab environment, it might not produce any visible results. To avoid this issue, please use the On-Screen Keyboard (you can find it by searching for "On-Screen Keyboard" in the search bar at the bottom of your screen). If search functionality doesn't work, you can also click on the Windows icon, scroll down to find Windows Ease of Access, click on it, and then select On-Screen Keyboard.
Microsoft Windows operating system features can vary based on the Windows edition. If completing these exercises on your machine, your navigation and solutions may differ from what's presented in this lab.

Task 1 - Install NMap

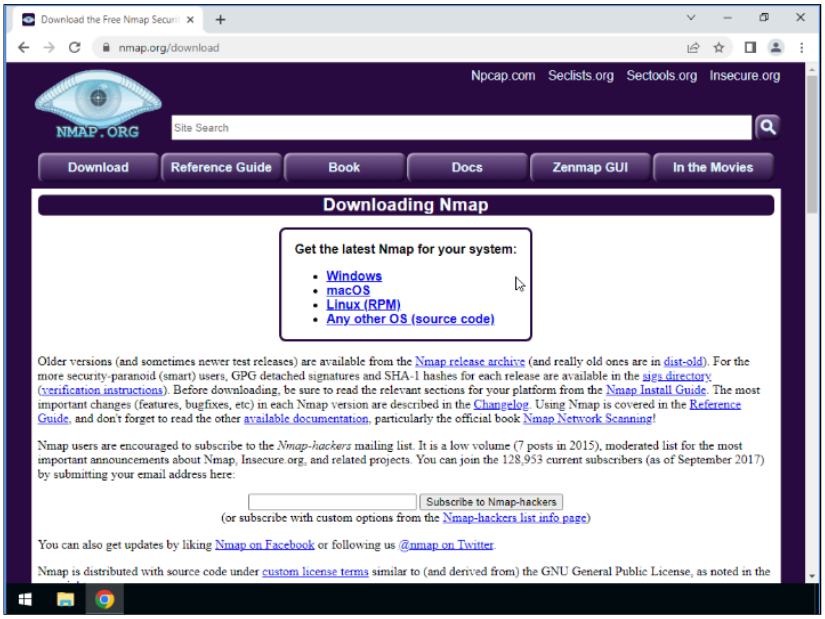
1. Open any browser of your choice in your virtual environment.



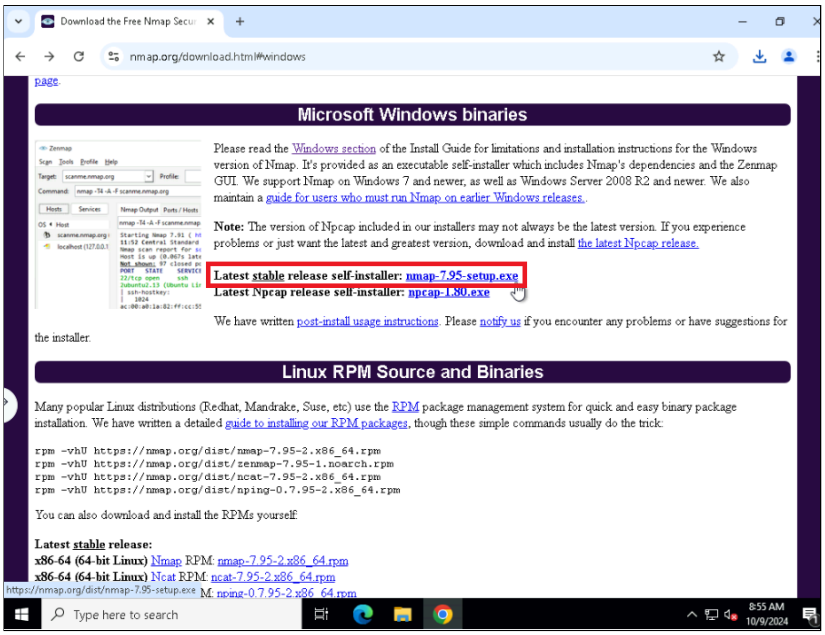
2. Type https://nmap.org/download in the search bar and press enter.



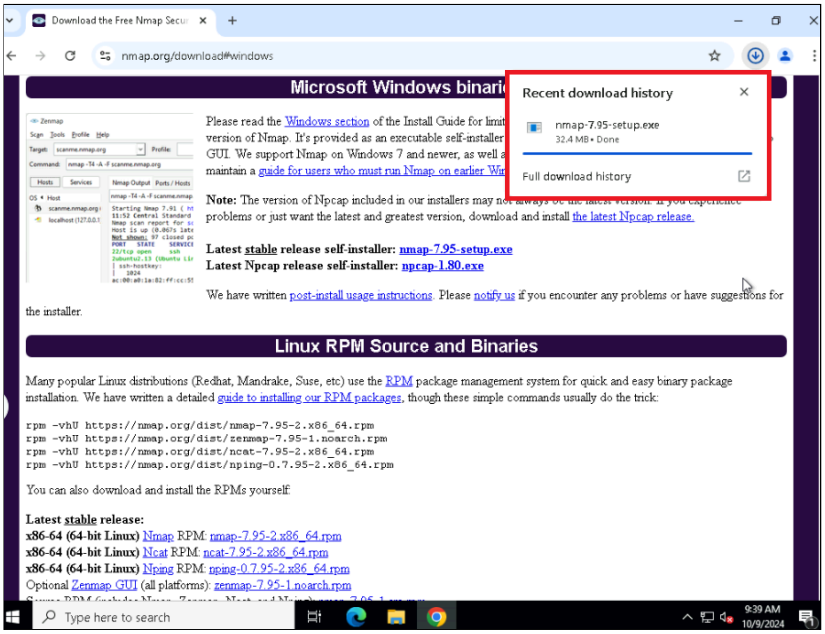
3. Click the OS that you need the software for. This lab's instructions are based on Windows OS. The steps might slightly vary for other operating systems.



4. Click the installation executable for windows.

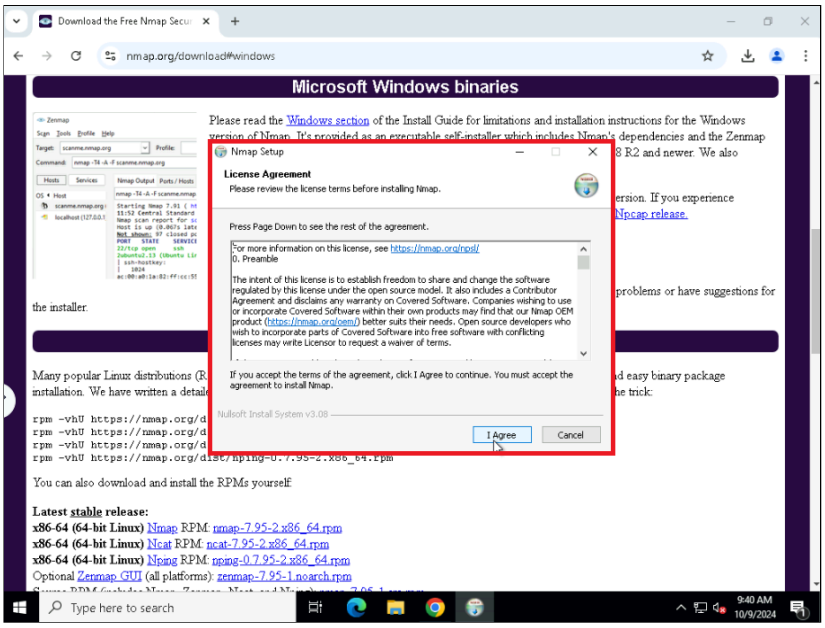


5. Once the download completes, click the .exe file to begin the installation.



This will download NMap and Zenmap a GUI utility for NMap which is a great tool to use when you begin learning NMap.

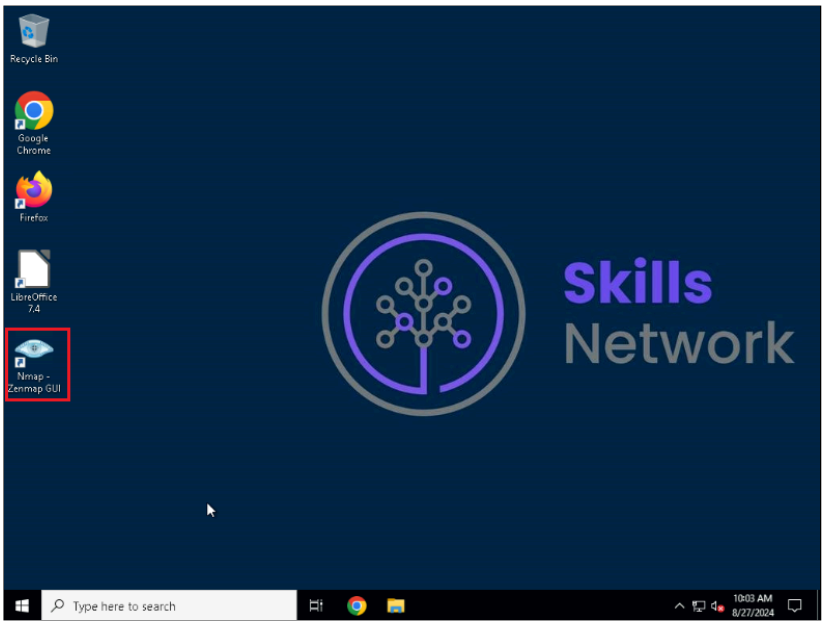
6. Complete the process of installation by following the instructions.



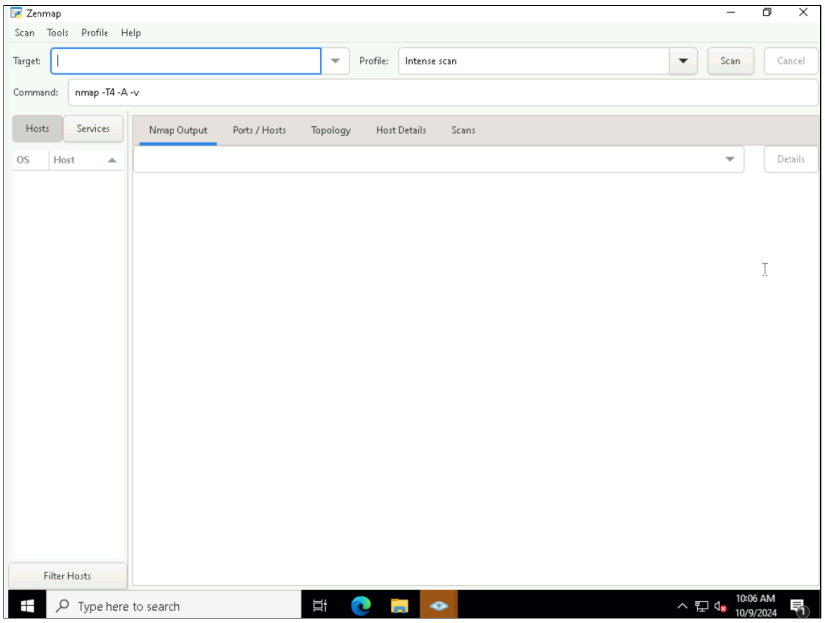
Note: Click "I agree" to proceed with the installation. Make sure to install all required dependencies and then click "Finish" to complete the setup.

Task 2 NMap with Zenmap

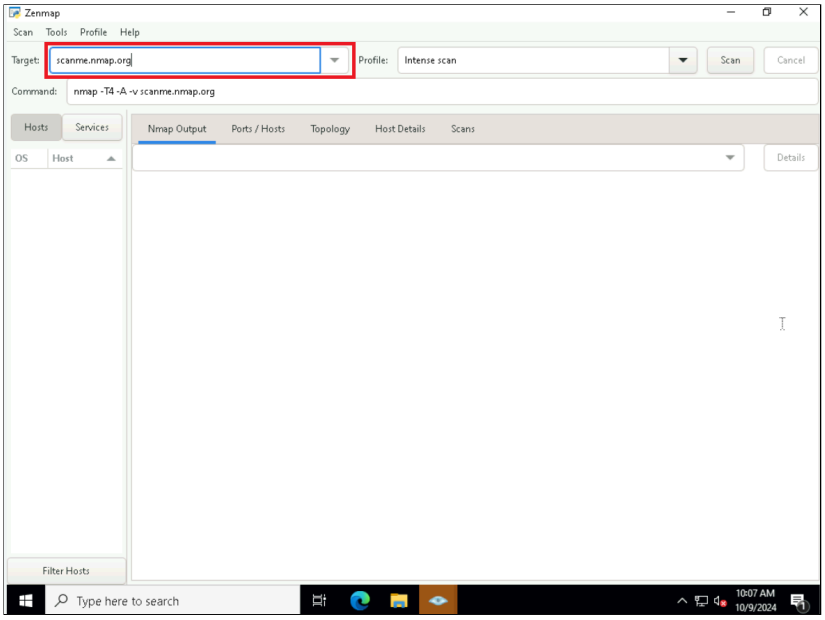
1. Click to open the Zenmap app on your desktop.



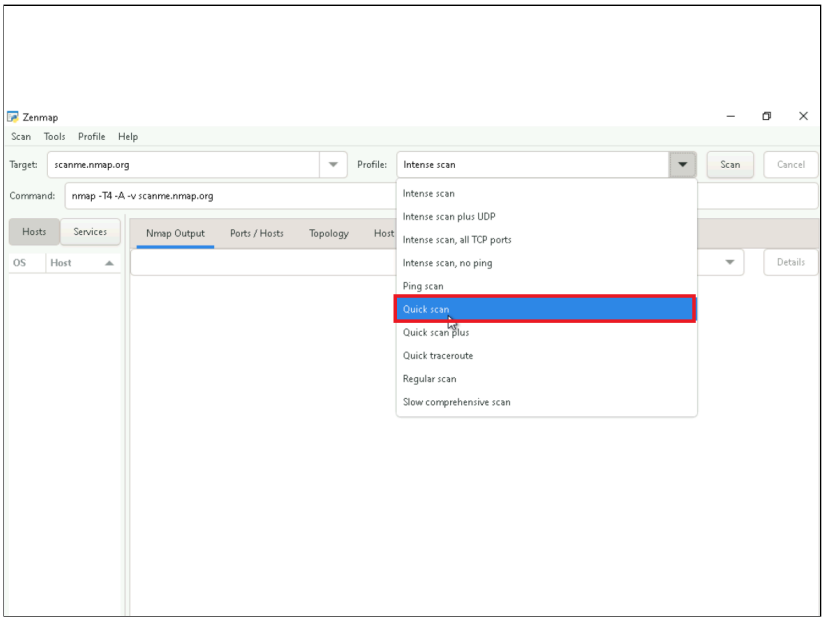
2. This opens the Zenmap application.



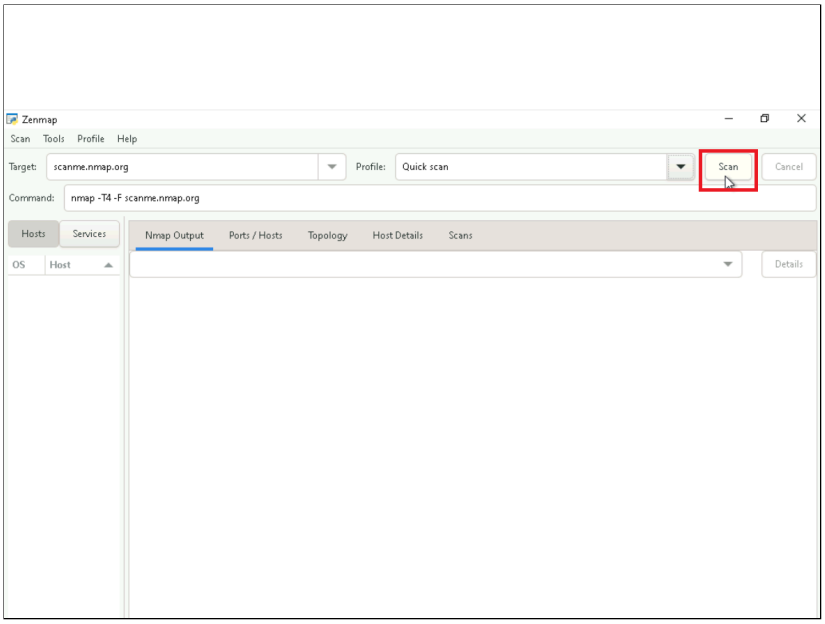
3. In the **Target** field, enter **scanme.nmap.org**. This routes to your local system.



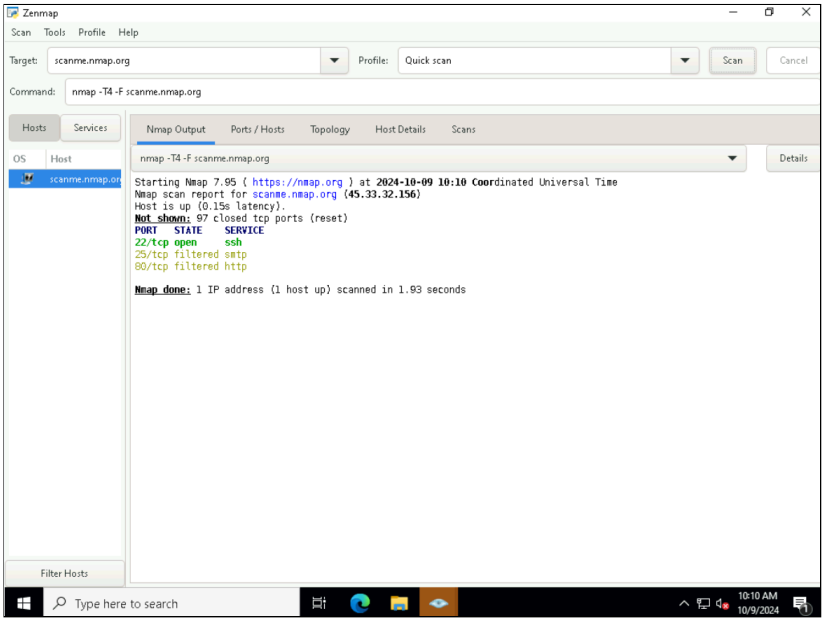
4. Choose **Quick Scan** from the scan options.



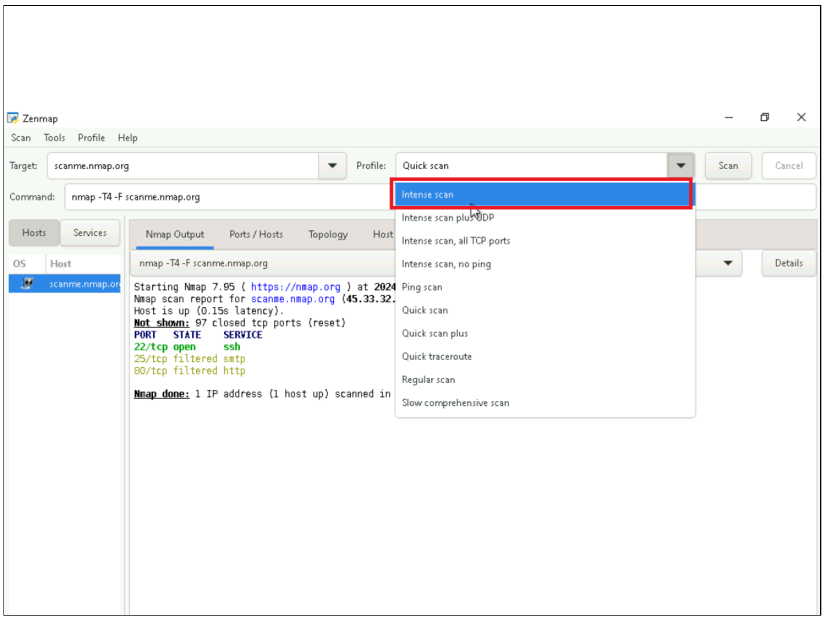
5. Click **Scan** to begin the scan process.



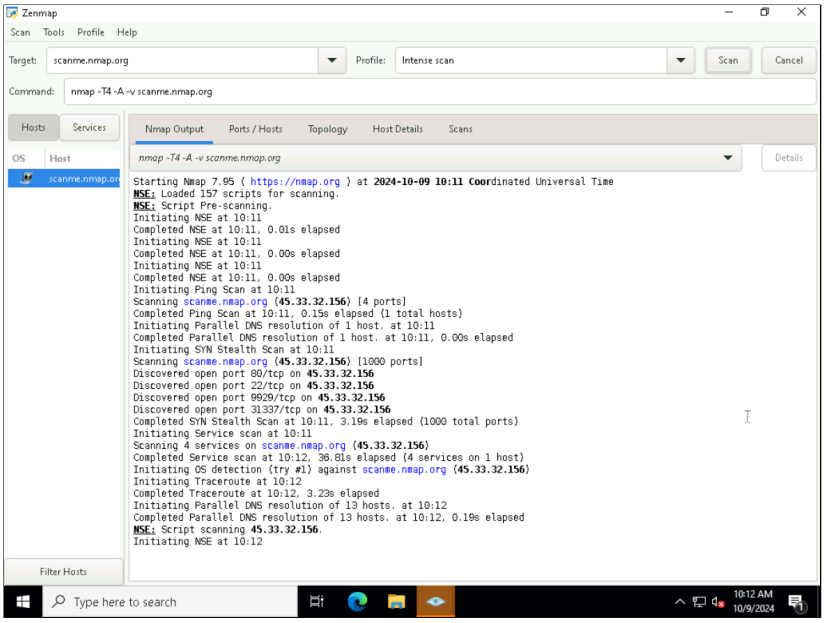
6. You can see the output of the scan in the first **Nmap Output** scan results tab.



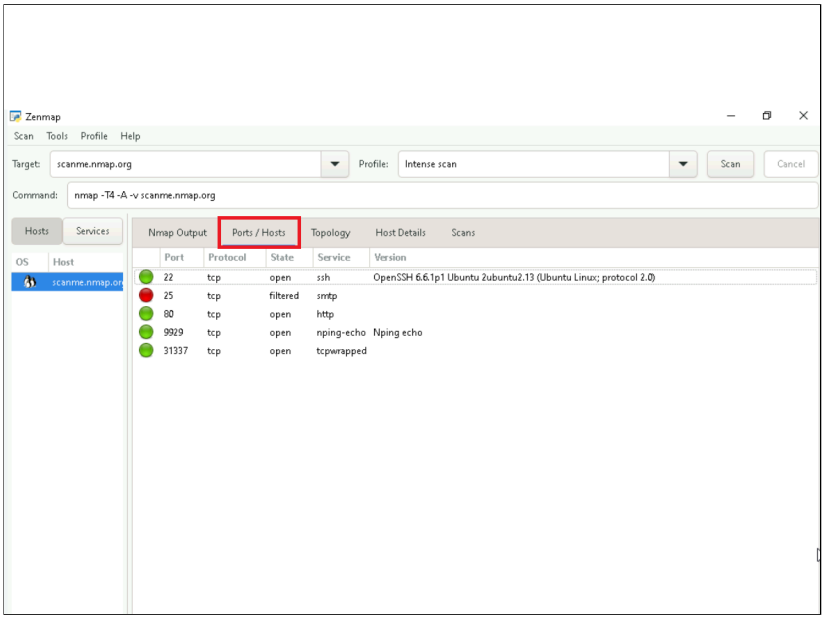
7. Now from the list of scan options choose **Intense scan**. This is a more intense scan and gives detailed results. In realtime this will take a few minutes. Click **Scan** to begin intense scanning.



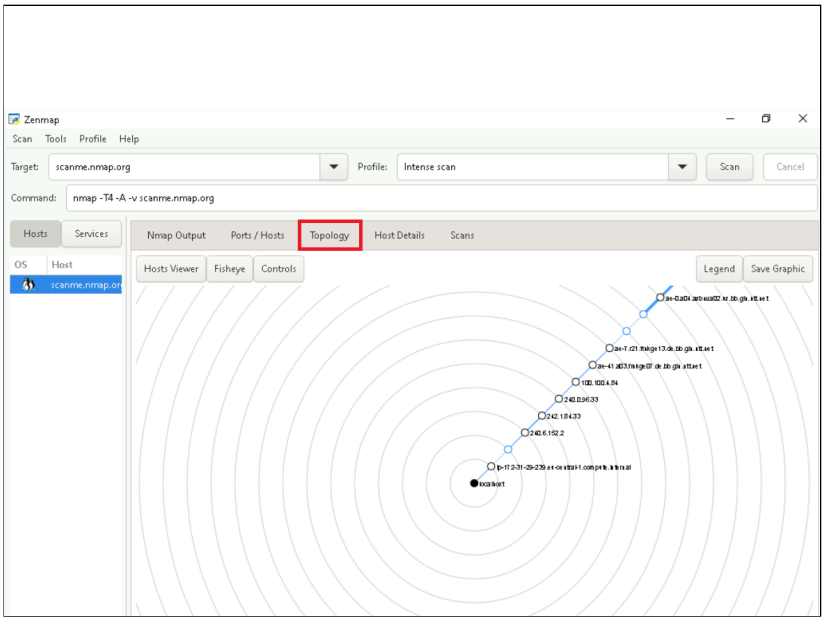
8. Once the scan finishes, you will see the detailed output along with how long the scanning took in the NMap output tab.



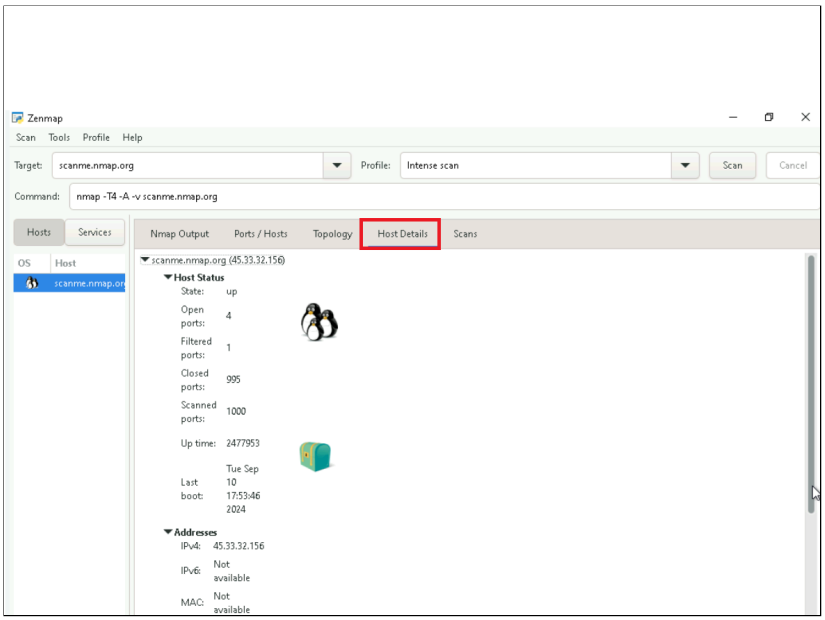
9. Click the **Ports/Hosts** tab to see state the ports in the target system. The **green** indicates open ports and **red** indicates closed ports.



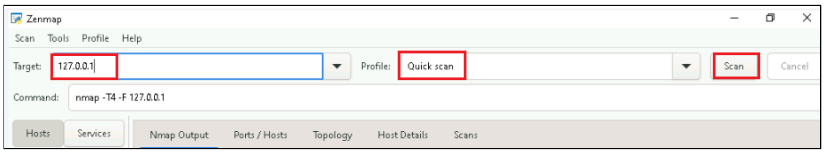
10. Click the **Topology** tab to view the visualization of the hosts on this network. If a host has less than 3 ports, it will be green. If it has 3 to 5 ports it will be yellow. If it has more 6, it will be red. This will be evident when you test on real networks.



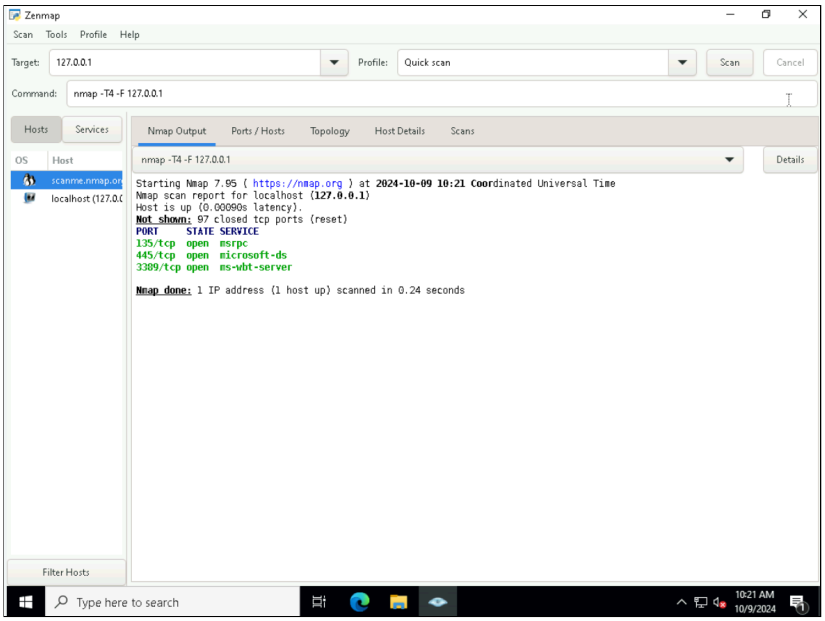
11. Click the **Host Details** tab to get the details about the host you are scanning. The details will include the Host status, Address, Hostname, Operating system, and so on.



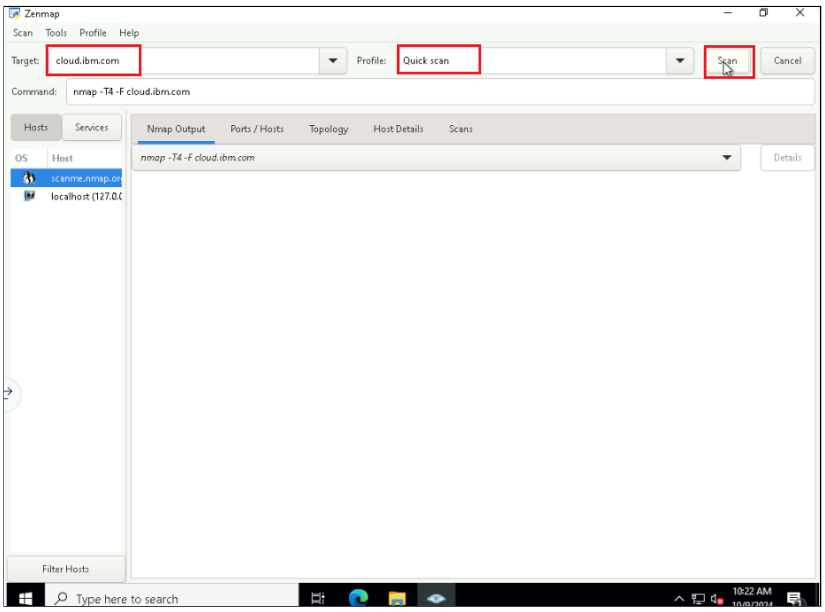
12. Change the target to 127.0.0.1 which is the IP address for your localhost and click **Scan**.



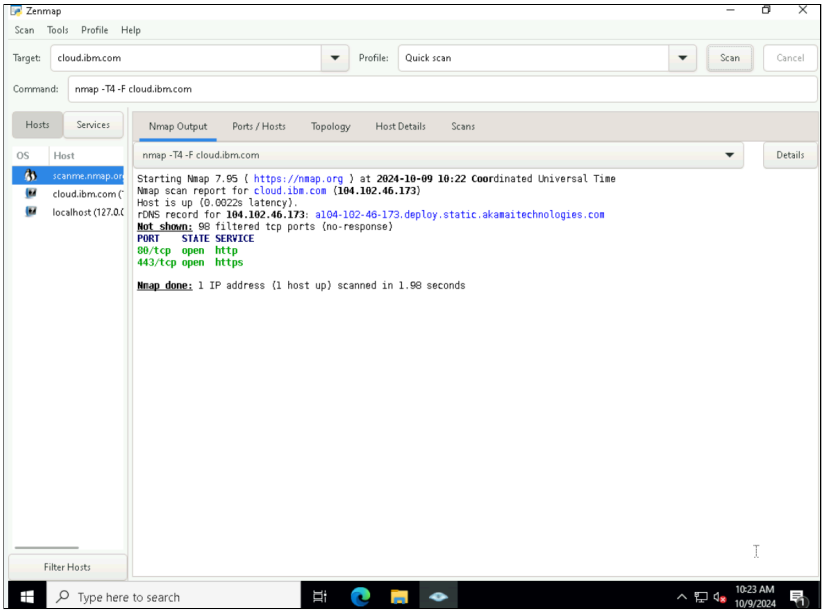
13. See the Nmap output of 127.0.0.1.



14. Change the target to cloud.ibm.com. and click **Scan**.



15. See the Nmap output of cloud.ibm.com.



Congratulations! Now you are familiar with using NMap to scan networks.

Author(s)

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