

# Configure Static Routing

## Scenario

Being able to use command-line tools to implement router configuration quickly and accurately is an essential competency. To complete this activity, use the Apporto Modular Cyberlab (AMC) network simulator to configure an inter-network based on static routing.

## Objectives

This activity is designed to test your understanding of and ability to apply content examples in the following CompTIA Network+ objectives:

- 2.2 Compare and contrast routing technologies and bandwidth management concepts.
- 5.3 Given a scenario, use the appropriate network software tools and commands.

## Lab

- DC1 VM
- WS1 VM
- PC3 VM
- RouterA VM
- RouterB VM
- RouterC VM

## Task 1

### Investigate existing configuration

The current network is only partially configured. Use WS1 and PC1 to discover how much of the network is reachable.

1. Examine the Apporto Modular Cyberlab (AMC) Workspace topology.

The existing topology contains four routers. RouterA is connected via an unmanaged Ethernet switch (ContosoSwitch) to a host device WS1. RouterB is connected to RouterC. RouterC is connected to OpenWRT and to a network containing a host named PC3.

2. Select the **OpenWRT** Router and right-click **Delete**. Confirm the popup message clicking **Yes**.
3. Select **WS1** VM, send **CTRL+ALT+DEL**, and sign in with the username **CONTOSO\Administrator** and the password **Pa\$\$w0rd**.
4. Click **Start** button and type **Command Prompt**. Click **Open** to open the Command Prompt application.

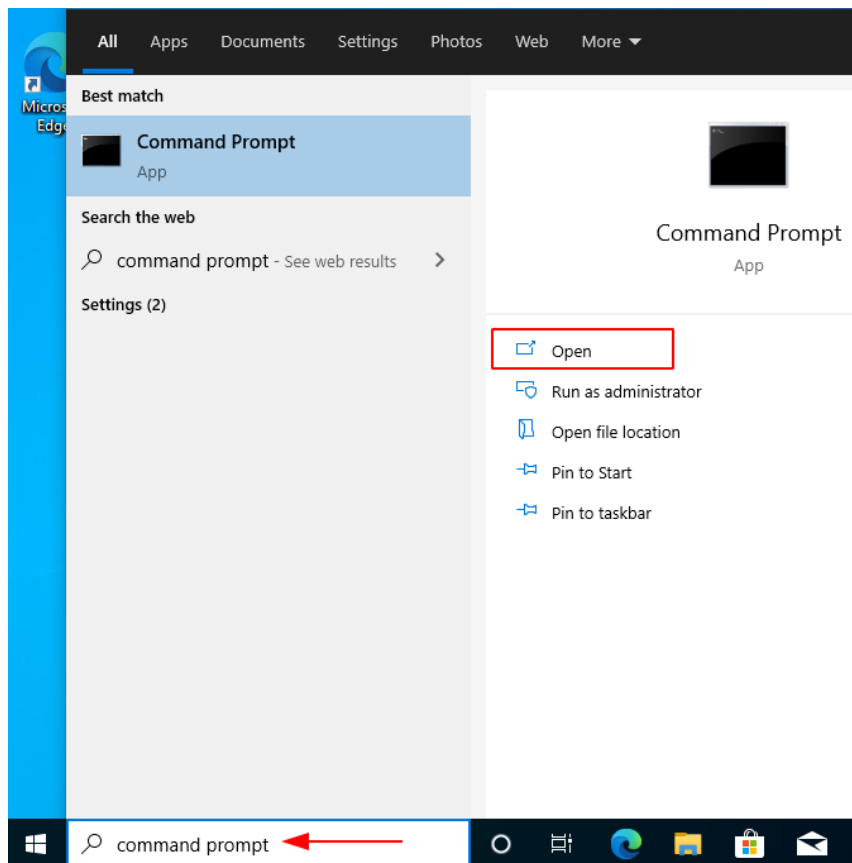


Figure 1.1 – Displaying typing Command Prompt and selecting Open.

**TIP:** To complete this lab, you will use multiple Console windows to operate each device and node. Check the title bar to ensure you are working at the correct terminal. You can switch between console windows using the icons in the Dock.

5. Run the following command to report **WS1** adapter configuration:

ipconfig

```
C:\> Administrator: Command Prompt
Microsoft Windows [Version 10.0.19044.1288]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : contoso.local
    Link-local IPv6 Address . . . . . : fe80::5887:c5f5:6e69:bffd%13
    IPv4 Address. . . . . : 172.16.1.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 172.16.1.254

C:\Users\Administrator>
```

Figure 1.2 – Displaying IP Configuration of WS1.

Note the **IP Address** of **WS1** VM, Subnet Mask, and **Default Gateway**.

**NOTE:** If you ping the Default Gateway (IP Address of RouterA) you will not receive echo replies. RouterA has not been configured yet.

6. Leave the **Command Prompt** window open.

## Task 2

### Configure router interfaces

Adjust the configuration of RouterA so that WS1 can connect.

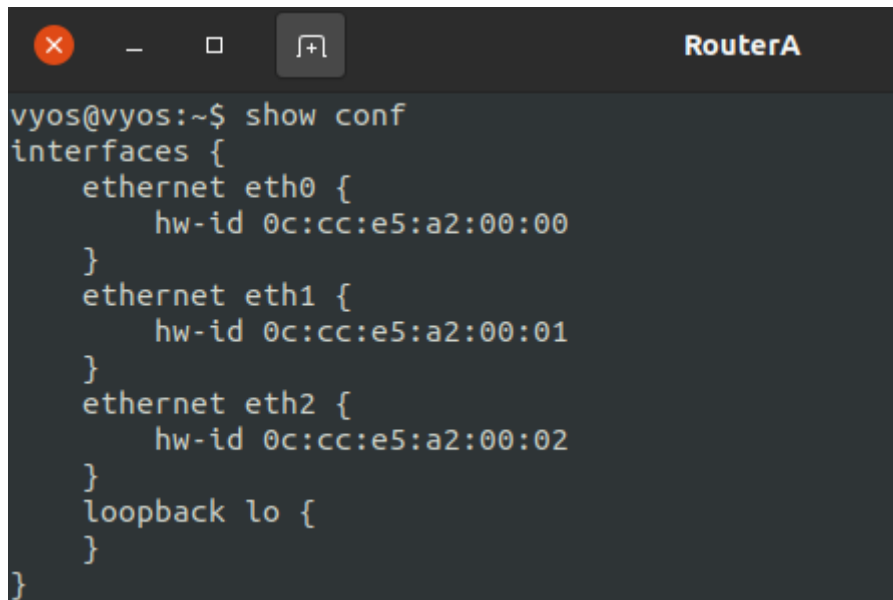
1. In the **AMC** main window, right-click **RouterA** and select **Start**, right-click and select **Console**.
2. Login with the username **vyos** and password **Pa\$\$w0rd**.

**TIP:** No input will be shown as you type the password. Make sure you type it correctly and then press **ENTER**.

3. Run the following command to show the current configuration:

```
show conf
```

**NOTE:** The interface **eth0** and **eth2** has been configured previously to provide internet access to the LAN network. The following image might differ from the actual configuration. You can skip to step 8 to continue or review the steps to configure the interface eth0.



```
vyos@vyos:~$ show conf
interfaces {
    ethernet eth0 {
        hw-id 0c:cc:e5:a2:00:00
    }
    ethernet eth1 {
        hw-id 0c:cc:e5:a2:00:01
    }
    ethernet eth2 {
        hw-id 0c:cc:e5:a2:00:02
    }
    loopback lo {
    }
}
```

*Figure 2.1 – Displaying RouterA interfaces with show conf with unconfigured interfaces.*

**TIP:** You can scroll down the configuration file pressing the **SPACEBAR** on your keyboard. Press **q** to quit the pager if you have not reached the end of the configuration file.

4. In the **AMC Workspace** window, check which adapter on **RouterA** is connected to the **ContosoSwitch**.

In our topology is connected to RouterA **eth0** network adapter.

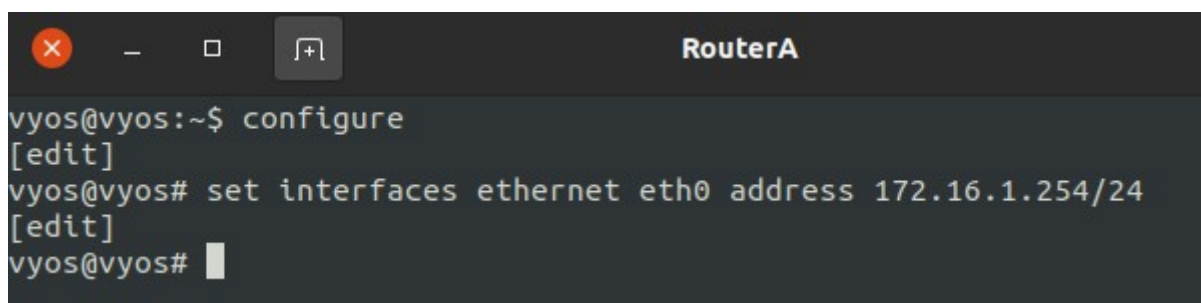
**TIP:** You can display/hide the interface labels on the Modular Cyberlab topology by clicking in AMC app **View > Show/Hide interface labels**.

5. In the console of **RouterA**, type **configure** and press **ENTER** to enter configuration mode.

**TIP:** You can type the first letters of the command like **conf** and press **TAB** to auto-complete the command. You can press TAB after auto-completing the command to get help on command options.

6. With the Ethernet adapter correctly identified, run the following command to configure the interface to WS1's subnet.

```
set interfaces ethernet eth0 address 172.16.1.254/24
```

A screenshot of a terminal window titled "RouterA". The terminal shows the following commands and prompts: "vyos@vyos:~\$ configure" followed by "[edit]" on the next line. Then "vyos@vyos# set interfaces ethernet eth0 address 172.16.1.254/24" followed by "[edit]" on the next line. Finally, "vyos@vyos#" is shown with a cursor. The window has standard Linux window controls (close, minimize, maximize) in the top left corner.

*Figure 2.2 – Displaying configuring the eth0 interface.*

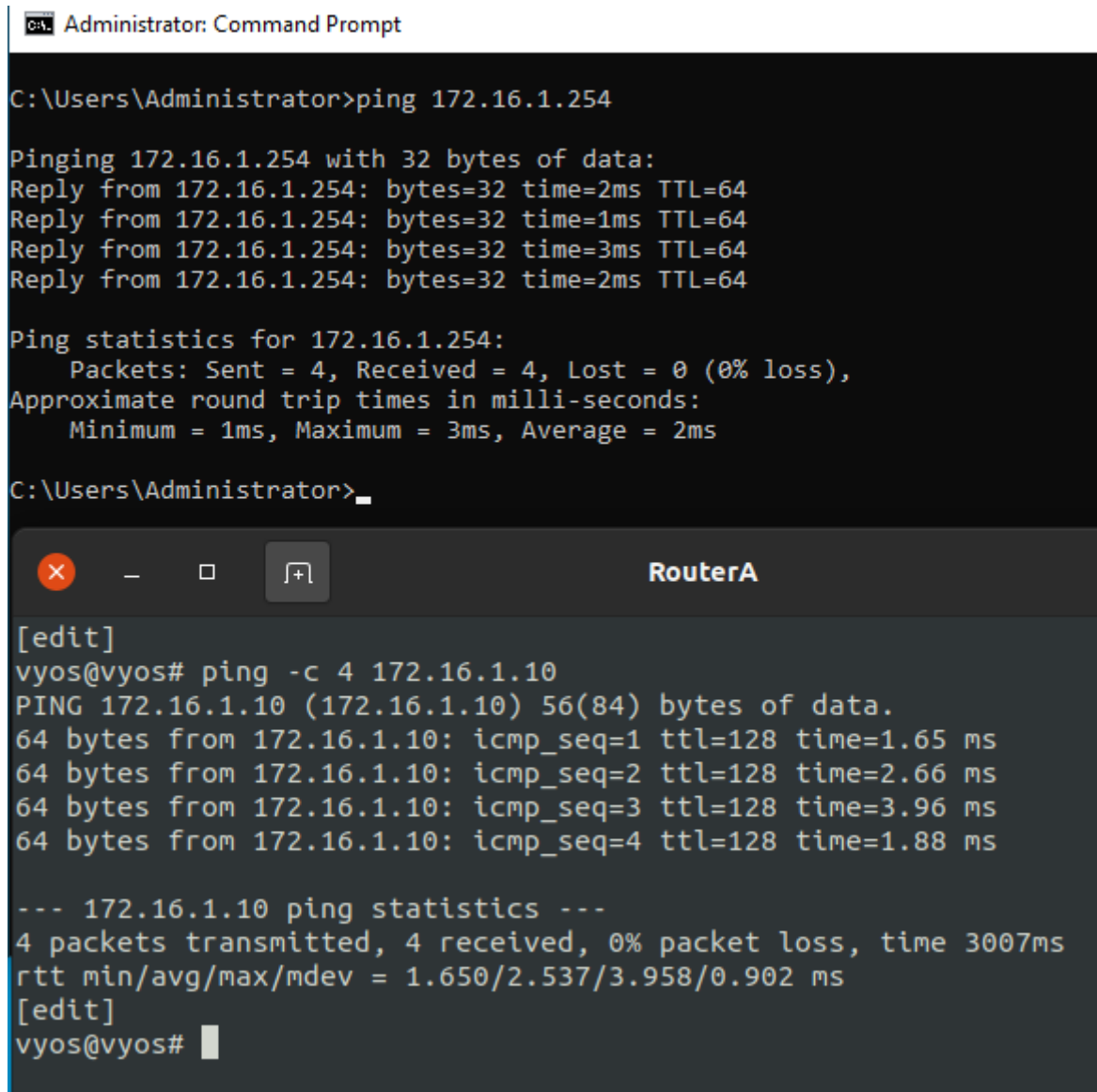
**TIP:** This command uses the network adapter connected from RouterA to ContosoSwitch, eth0.

7. Type the following commands, pressing **ENTER** after each one to **commit** and **save** the configuration:

```
commit
```

```
save
```

8. Switch to **WS1**, from the Command Prompt type **ping 172.16.1.254**. WS1 should be able to communicate with RouterA (and vice versa).



The image shows two overlapping command prompt windows. The top window, titled 'Administrator: Command Prompt', shows a successful ping from a Windows machine to 172.16.1.254. The bottom window, titled 'RouterA', shows a successful ping from the router to 172.16.1.10.

```
C:\Users\Administrator>ping 172.16.1.254

Pinging 172.16.1.254 with 32 bytes of data:
Reply from 172.16.1.254: bytes=32 time=2ms TTL=64
Reply from 172.16.1.254: bytes=32 time=1ms TTL=64
Reply from 172.16.1.254: bytes=32 time=3ms TTL=64
Reply from 172.16.1.254: bytes=32 time=2ms TTL=64

Ping statistics for 172.16.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 2ms

C:\Users\Administrator>_

RouterA

[edit]
vyos@vyos# ping -c 4 172.16.1.10
PING 172.16.1.10 (172.16.1.10) 56(84) bytes of data.
64 bytes from 172.16.1.10: icmp_seq=1 ttl=128 time=1.65 ms
64 bytes from 172.16.1.10: icmp_seq=2 ttl=128 time=2.66 ms
64 bytes from 172.16.1.10: icmp_seq=3 ttl=128 time=3.96 ms
64 bytes from 172.16.1.10: icmp_seq=4 ttl=128 time=1.88 ms

--- 172.16.1.10 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3007ms
rtt min/avg/max/mdev = 1.650/2.537/3.958/0.902 ms
[edit]
vyos@vyos#
```

Figure 2.3 – Testing network connectivity doing a ping from WS1 to RouterA and vice versa.

**NOTE:** If ping is not successful from RouterA to WS1 disable Windows Defender Firewall. Also, make sure you are configuring the right interface on RouterA.

9. What IP address and Mask must be configured on the other interface of RouterA (eth1) to connect with RouterB?

RouterA is connected to RouterB via the subnet 10.0.1.0/24. Use the host part 254 for eth1, making its IP address 10.0.1.254.

Run the following command to configure the interface that will link to RouterB from RouterA console:

```
set interfaces ethernet eth1 address 10.0.1.254/24
```

A router can be identified using any of the IP addresses configured on the physical interfaces, but it is common practice to configure a loopback address for management processes and protocols. A router will respond to its loopback address on any available interface. In this topology, we will use the 10.0.0.0/24 subnet for loopback addresses.

10. Run the following command to configure the loopback interface:

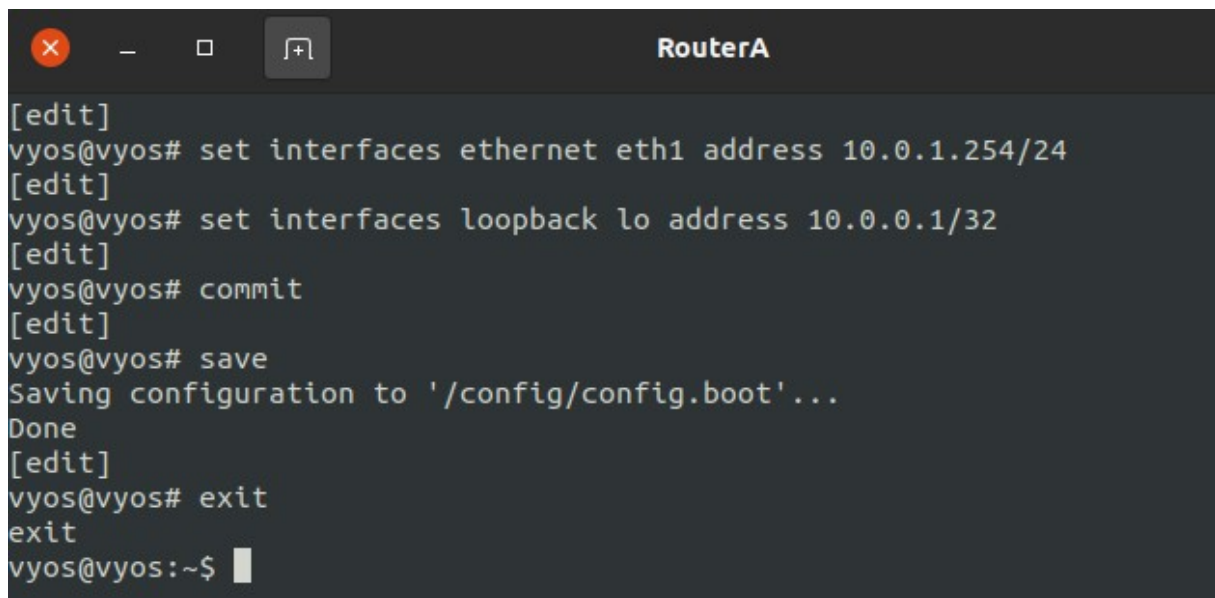
```
set interfaces loopback lo address 10.0.0.1/32
```

11. Run the following sequence of commands to apply the updated configuration:

```
commit
```

```
save
```

```
exit
```

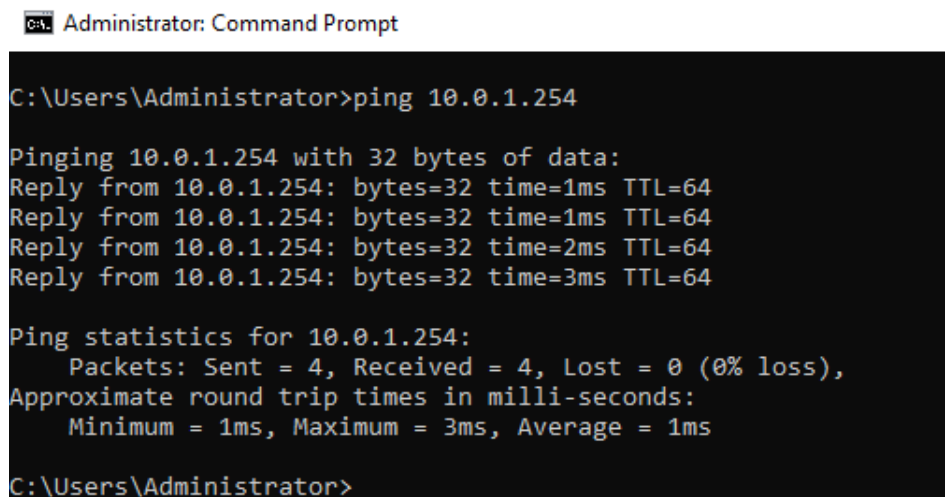
A screenshot of a terminal window titled "RouterA". The terminal shows a sequence of commands and their outputs. The prompt is [edit] and the user is vyos@vyos#. The commands entered are: set interfaces ethernet eth1 address 10.0.1.254/24, set interfaces loopback lo address 10.0.0.1/32, commit, save, and exit. The output for save is "Saving configuration to '/config/config.boot'... Done". The final prompt is vyos@vyos:~\$.

```
[edit]
vyos@vyos# set interfaces ethernet eth1 address 10.0.1.254/24
[edit]
vyos@vyos# set interfaces loopback lo address 10.0.0.1/32
[edit]
vyos@vyos# commit
[edit]
vyos@vyos# save
Saving configuration to '/config/config.boot'...
Done
[edit]
vyos@vyos# exit
exit
vyos@vyos:~$
```

Figure 2.4 – Applying configuration to RouterA and commit, save, and exit the configuration.

12. **Close** the **RouterA** console window.

13. Switch to **WS1** Command Prompt and run **ping 10.0.1.254** to test the connection. The output should show replies in response.

A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt". The prompt is C:\Users\Administrator>. The command entered is ping 10.0.1.254. The output shows four successful replies with 32 bytes of data, times of 1ms, 1ms, 2ms, and 3ms, and a TTL of 64. The ping statistics show 4 packets sent, 4 received, and 0 lost (0% loss). The approximate round trip times are: Minimum = 1ms, Maximum = 3ms, Average = 1ms.

```
C:\Users\Administrator>ping 10.0.1.254

Pinging 10.0.1.254 with 32 bytes of data:
Reply from 10.0.1.254: bytes=32 time=1ms TTL=64
Reply from 10.0.1.254: bytes=32 time=1ms TTL=64
Reply from 10.0.1.254: bytes=32 time=2ms TTL=64
Reply from 10.0.1.254: bytes=32 time=3ms TTL=64

Ping statistics for 10.0.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 1ms

C:\Users\Administrator>
```

Figure 2.5 – Performing a ping from WS1 to RouterA eth1 interface.

14. Run **ping 10.0.0.1** to test the router's loopback interface. Again, this should generate some replies.

```
Administrator: Command Prompt

C:\Users\Administrator>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=1ms TTL=64
Reply from 10.0.0.1: bytes=32 time=1ms TTL=64
Reply from 10.0.0.1: bytes=32 time=2ms TTL=64
Reply from 10.0.0.1: bytes=32 time=2ms TTL=64

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\Users\Administrator>
```

Figure 2.6 – Performing a ping from WS1 to RouterA loopback interface.

15. Leave the **WS1** command prompt window open.

**TIP:** If you have made a mistake, you can either use the **delete** command to remove the incorrect value and then run the **set** command again. Alternatively, you can re-set the environment using the **load /config/initial-install** to restore the initial configuration from the saved configuration.

## Task 3

### Link networks

Add a path to the rest of the network and validate the interface configuration.

1. From the **Devices** toolbar in AMC app, select the **Add a link** icon.



Figure 3.1 – Selecting Add a link icon from the Devices toolbar.

2. Select **RouterC** and then select **eth1**. Select **Switch1** and then select **Ethernet0**.

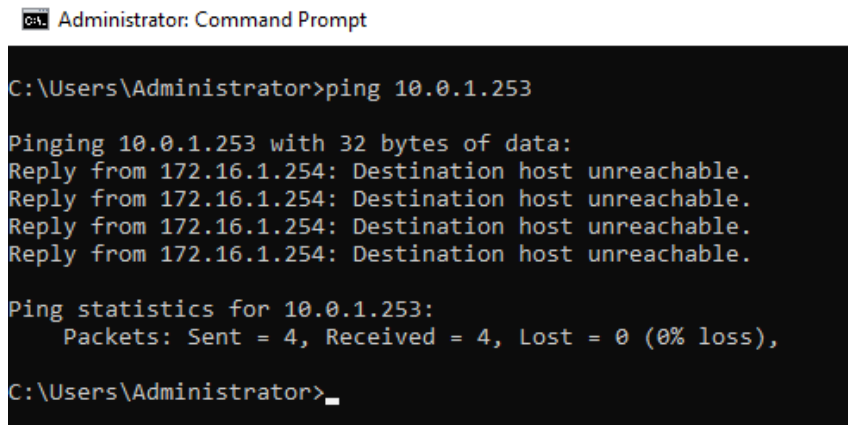
3. Select the **Add a link** icon again to **disable** it.

4. What IP address should be configured on RouterB eth1 interface?

Router B is connected to Router A via the subnet 10.0.1.0/24. Use the host part 253 for eth1, making its IP address 10.0.1.253.

5. In the **Modular Cyberlab** main window, right-click **RouterB** and select **Start**.

6. Switch back to **WS1** command prompt window, and run **ping 10.0.1.253** to test the connection. The output should show **Destination host unreachable** response.



```
Administrator: Command Prompt

C:\Users\Administrator>ping 10.0.1.253

Pinging 10.0.1.253 with 32 bytes of data:
Reply from 172.16.1.254: Destination host unreachable.
Reply from 172.16.1.254: Destination host unreachable.
Reply from 172.16.1.254: Destination host unreachable.
Reply from 172.16.1.254: Destination host unreachable.

Ping statistics for 10.0.1.253:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

C:\Users\Administrator>
```

*Figure 3.2 – Performing a ping to RouterB eth1 interface ip address.*

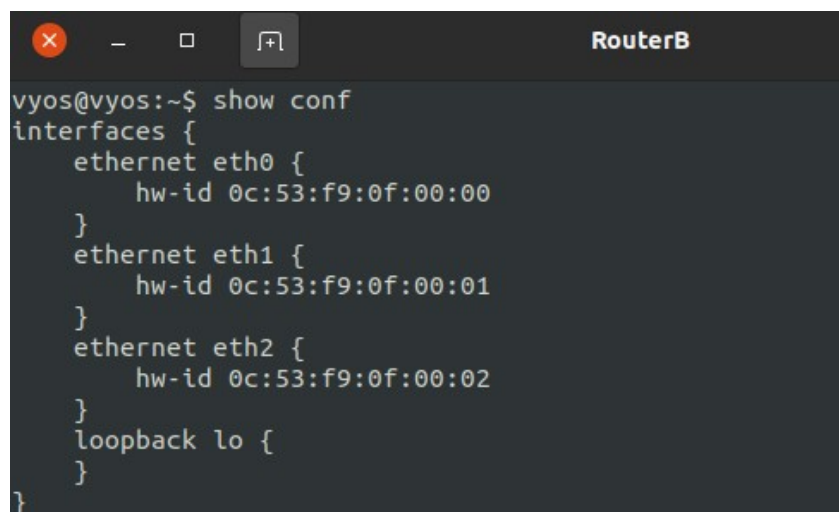
A **Destination host unreachable** indicates that the sending host or its gateway can't find a path to reach the destination. While there is now a physical link between the networks, there must be something missing in the configuration.

7. In the **AMC** main window, right-click **RouterB** and select **Console**.

8. Log in with the username **vyos** and password **Pa\$\$w0rd**.

9. Run the following command to show the configuration:

**show conf**



```
RouterB

vyos@vyos:~$ show conf
interfaces {
    ethernet eth0 {
        hw-id 0c:53:f9:0f:00:00
    }
    ethernet eth1 {
        hw-id 0c:53:f9:0f:00:01
    }
    ethernet eth2 {
        hw-id 0c:53:f9:0f:00:02
    }
    loopback lo {
    }
}
```

*Figure 3.3 – Displaying the configuration of RouterB.*

10. Type the following command to enter configuration mode and press **ENTER**:



configure

11. Run the following command to configure the interfaces of **RouterB**:

```
set interfaces ethernet eth1 address 10.0.1.253/24
```

```
set interfaces ethernet eth0 address 10.0.2.254/24
```

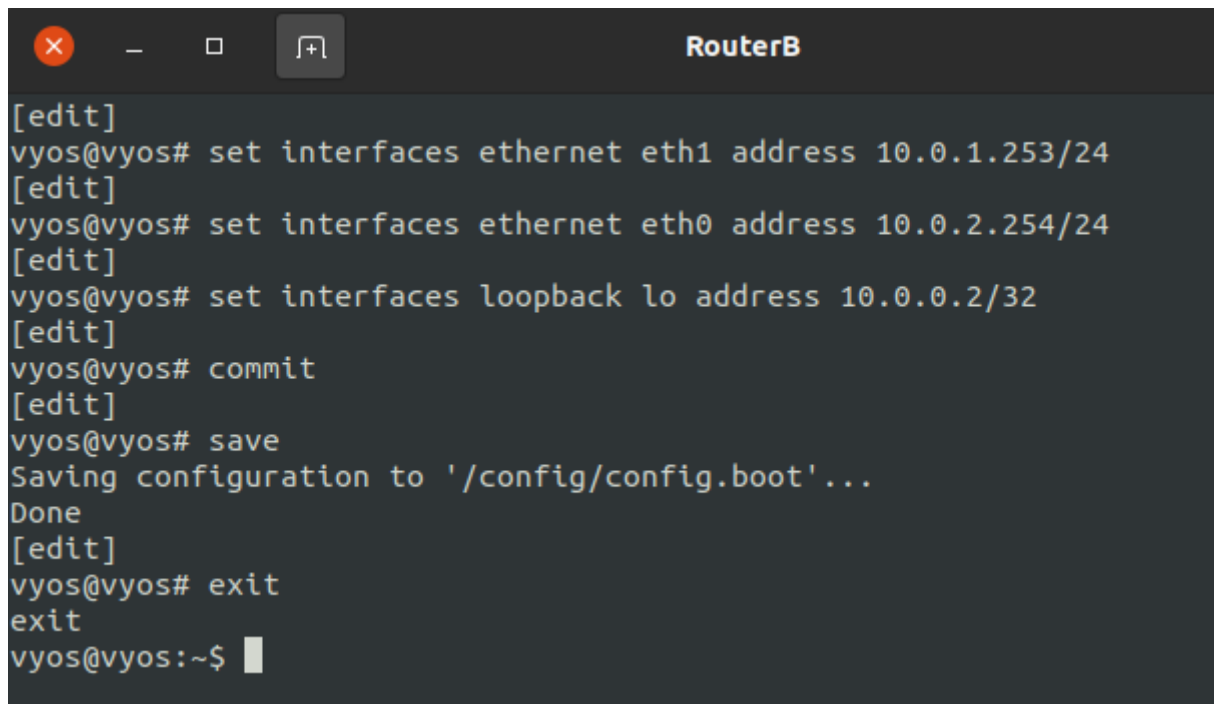
```
set interfaces loopback lo address 10.0.0.2/32
```

12. Run the following sequence of commands to **apply** the updated configuration:

```
commit
```

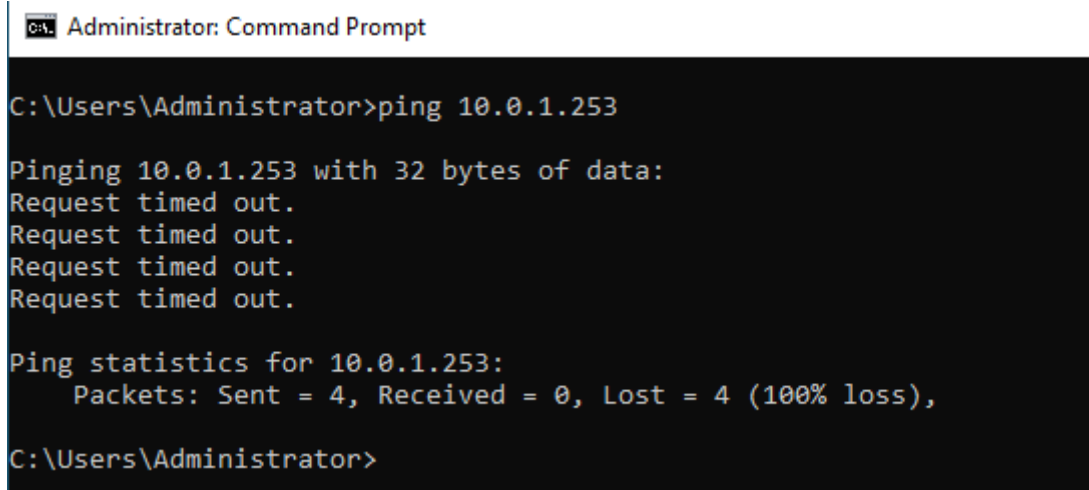
```
save
```

```
exit
```

A screenshot of a terminal window titled "RouterB". The window has standard Linux window controls (close, minimize, maximize) in the top left. The terminal shows a sequence of commands and their outputs. The prompt is [edit] at the top. The user enters 'vyos@vyos# set interfaces ethernet eth1 address 10.0.1.253/24', followed by 'set interfaces ethernet eth0 address 10.0.2.254/24', and 'set interfaces loopback lo address 10.0.0.2/32'. After each command, the prompt returns to [edit]. Then the user enters 'commit', and the prompt returns to [edit]. Next, the user enters 'save', and the output is 'Saving configuration to '/config/config.boot'...' followed by 'Done'. Finally, the user enters 'exit', and the prompt returns to [edit]. The user then enters 'exit' again, and the prompt returns to the shell 'vyos@vyos:~\$'.

*Figure 3.4 – Displaying the configuration commands on RouterB console.*

14. Switch back to **WS1** command prompt window, and run **ping 10.0.1.253** to test the connection. The output should show **Requested timed out** response.



```
C:\Users\Administrator>ping 10.0.1.253

Pinging 10.0.1.253 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.1.253:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Administrator>
```

*Figure 3.5 – Displaying timed out responses from the ping command to RouterB.*

The reason this time of the **Request timed out** error is because **RouterB** has no route to **WS1**.

Now let's quickly configure **RouterC**.

15. In the **AMC** main window, right-click **RouterC** and select **Start**. Right-click and select **Console**.

16. Log in with the username **vyos** and password **Pa\$\$w0rd**.

17. Run the following command to configure the interfaces of **RouterC**:

```
conf
```

```
set interfaces ethernet eth0 address 10.0.2.253/24
```

```
set interfaces ethernet eth1 address 10.0.3.254/24
```

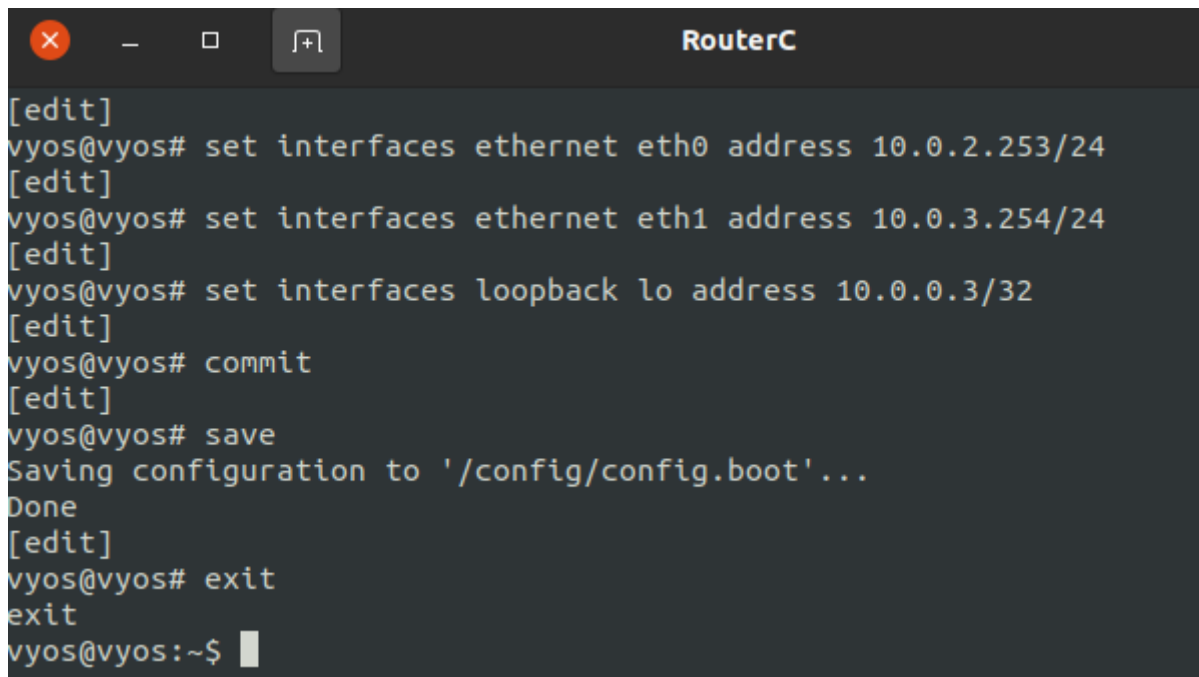
```
set interfaces loopback lo address 10.0.0.3/32
```

16. Run the following sequence of commands to apply the updated configuration:

```
commit
```

```
save
```

```
exit
```

A terminal window titled "RouterC" with a dark background. It shows a series of configuration commands being entered and executed. The commands are: [edit], vyos@vyos# set interfaces ethernet eth0 address 10.0.2.253/24, [edit], vyos@vyos# set interfaces ethernet eth1 address 10.0.3.254/24, [edit], vyos@vyos# set interfaces loopback lo address 10.0.0.3/32, [edit], vyos@vyos# commit, [edit], vyos@vyos# save, Saving configuration to '/config/config.boot'..., Done, [edit], vyos@vyos# exit, exit, and finally vyos@vyos:~\$ with a cursor.

```
[edit]
vyos@vyos# set interfaces ethernet eth0 address 10.0.2.253/24
[edit]
vyos@vyos# set interfaces ethernet eth1 address 10.0.3.254/24
[edit]
vyos@vyos# set interfaces loopback lo address 10.0.0.3/32
[edit]
vyos@vyos# commit
[edit]
vyos@vyos# save
Saving configuration to '/config/config.boot'...
Done
[edit]
vyos@vyos# exit
exit
vyos@vyos:~$
```

Figure 3.6 – Configuring RouterC interfaces and saving the configuration.

The interfaces of RouterA, RouterB, and RouterC are configured.

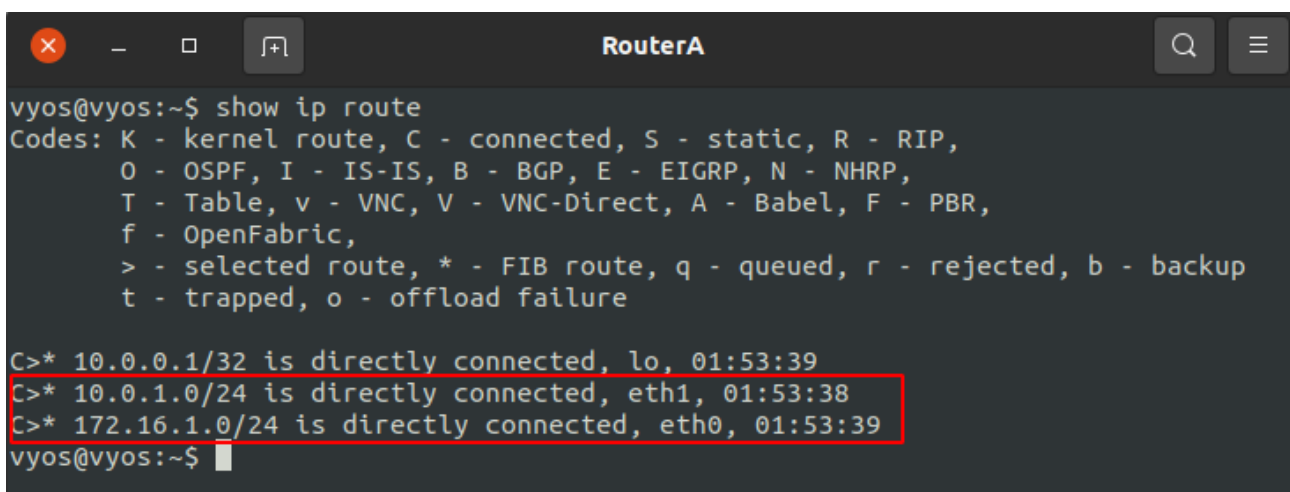
## Task 4

### Configure static route

Configuring static routes on the networking devices.

1. Select the **terminal** for **RouterA**. Type the following command:

show ip route

A terminal window titled "RouterA" with a dark background. It shows the output of the 'show ip route' command. The output includes a legend for route codes and three entries: 'C>\* 10.0.0.1/32 is directly connected, lo, 01:53:39', 'C>\* 10.0.1.0/24 is directly connected, eth1, 01:53:38', and 'C>\* 172.16.1.0/24 is directly connected, eth0, 01:53:39'. The last three lines are highlighted with a red box. The prompt 'vyos@vyos:~\$' is visible at the bottom.

```
vyos@vyos:~$ show ip route
Codes: K - kernel route, C - connected, S - static, R - RIP,
       O - OSPF, I - IS-IS, B - BGP, E - EIGRP, N - NHRP,
       T - Table, v - VNC, V - VNC-Direct, A - Babel, F - PBR,
       f - OpenFabric,
       > - selected route, * - FIB route, q - queued, r - rejected, b - backup
       t - trapped, o - offload failure

C>* 10.0.0.1/32 is directly connected, lo, 01:53:39
C>* 10.0.1.0/24 is directly connected, eth1, 01:53:38
C>* 172.16.1.0/24 is directly connected, eth0, 01:53:39
vyos@vyos:~$
```

Figure 4.1 – Displaying routes on RouterA.

Note that there is 10.0.1.0/24 and 172.16.1.0/24 are connected. There is no route configured, just connected interfaces. A router just knows the network in which it has an interface connected. This is why no response was received from the probe.

**TIP:** Repeat the same **show ip route** command on **RouterB** and **RouterC** to see the connected interface information.

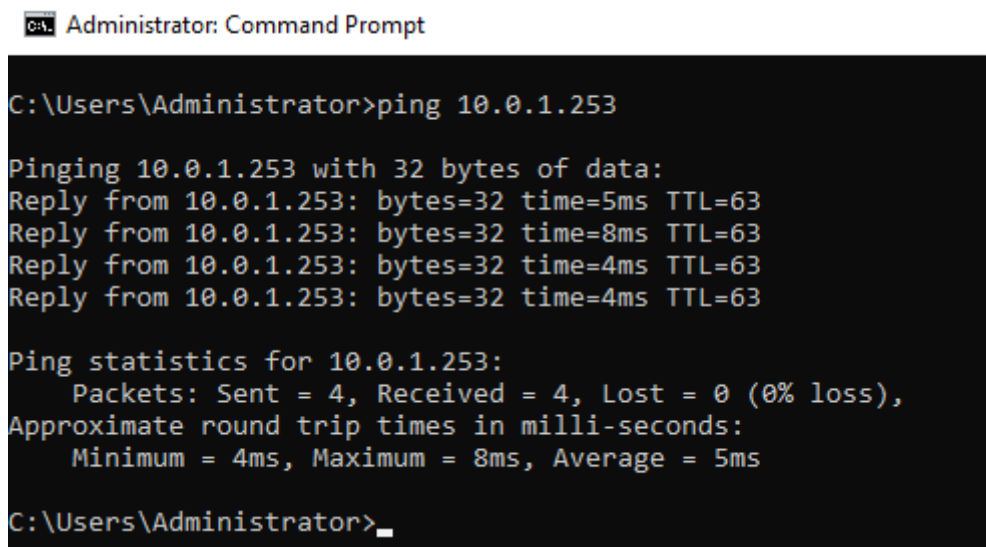
2. Select **RouterB** console. Run **conf** and press **ENTER**. Run the following commands to configure the static route:

```
set protocols static route 172.16.1.0/24 next-hop 10.0.1.254
```

```
set protocols static route 10.0.3.0/24 next-hop 10.0.2.253
```

```
commit && save && exit
```

3. Select **WS1** command prompt terminal and run ping **10.0.1.253** to test the connection. The output should show replies in response.



```
C:\Users\Administrator>ping 10.0.1.253

Pinging 10.0.1.253 with 32 bytes of data:
Reply from 10.0.1.253: bytes=32 time=5ms TTL=63
Reply from 10.0.1.253: bytes=32 time=8ms TTL=63
Reply from 10.0.1.253: bytes=32 time=4ms TTL=63
Reply from 10.0.1.253: bytes=32 time=4ms TTL=63

Ping statistics for 10.0.1.253:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 8ms, Average = 5ms

C:\Users\Administrator>
```

*Figure 4.2 – Displaying ping replies from RouterB eth1 interface.*

**TIP:** The replies show us that we can reach **RouterB eth1** interface but not the **eth0** interface **10.0.2.254**.

4. Select **RouterA**. Open a console and then run the following commands to configure a static route:

```
conf
```

```
set protocols static route 10.0.2.0/24 next-hop 10.0.1.253
```

```
set protocols static route 10.0.3.0/24 next-hop 10.0.1.253
```

```
commit && save && exit
```

If you repeat the ping to 10.0.2.254 from **WS1** you should see ping replies.

5. Select **RouterC**. Open a console and then run the following commands to configure a static route:

```
conf
```

```
set protocols static route 172.16.1.0/24 next-hop 10.0.2.254
```

```
set protocols static route 10.0.1.0/24 next-hop 10.0.2.254
```

```
commit && save && exit
```

6. Switch to **WS1**'s command prompt terminal. Run ping 10.0.2.253 to test the connection to RouterC eth0 interface. The output should show ping replies in response. Same ping replies from RouterC eth1 interface on IP address 10.0.3.254.

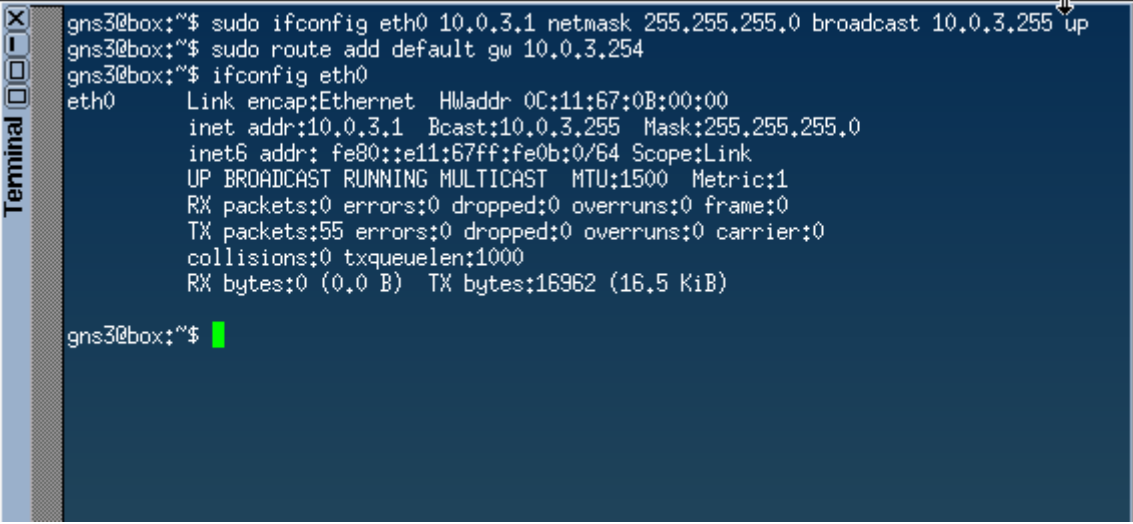
7. Right click **PC3** and select **Start**. Right-click and select **Console**.

8. Open a **Terminal** prompt by clicking on the **Terminal icon** from the **Dock** at the bottom.

9. Configure a static IP address in the range of 10.0.3.0/24 on PC3 with the following commands:

```
ifconfig eth0 10.0.3.1 netmask 255.255.255.0 broadcast 10.0.3.255  
up
```

```
route add default gw 10.0.3.254
```

A screenshot of a terminal window titled 'Terminal' with a blue background. The terminal shows the following commands and output:  
gns3@box:~\$ sudo ifconfig eth0 10.0.3.1 netmask 255.255.255.0 broadcast 10.0.3.255 up  
gns3@box:~\$ sudo route add default gw 10.0.3.254  
gns3@box:~\$ ifconfig eth0  
eth0 Link encap:Ethernet HWaddr 0C:11:67:0B:00:00  
 inet addr:10.0.3.1 Bcast:10.0.3.255 Mask:255.255.255.0  
 inet6 addr: fe80::e11:67ff:fe0b:0/64 Scope:Link  
 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1  
 RX packets:0 errors:0 dropped:0 overruns:0 frame:0  
 TX packets:55 errors:0 dropped:0 overruns:0 carrier:0  
 collisions:0 txqueuelen:1000  
 RX bytes:0 (0.0 B) TX bytes:16962 (16.5 KiB)  
  
gns3@box:~\$

*Figure 4.5 – Configuring static ip address on PC3.*

10. Switch to **WS1**'s command prompt terminal. Run **ping 10.0.3.1** to test the connection to **PC3 eth0** interface. You should see successful ping replies.

```
C:\Users\Administrator>ping 10.0.3.1

Pinging 10.0.3.1 with 32 bytes of data:
Reply from 10.0.3.1: bytes=32 time=7ms TTL=61
Reply from 10.0.3.1: bytes=32 time=6ms TTL=61
Reply from 10.0.3.1: bytes=32 time=7ms TTL=61
Reply from 10.0.3.1: bytes=32 time=7ms TTL=61

Ping statistics for 10.0.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 7ms, Average = 6ms

C:\Users\Administrator>
```

*Figure 4.6 – Displaying the ping replies from WS1 to PC3.*

11. Run **ping -c 4 172.16.1.10** from **PC3** to test the static routing is in place end to end:

```
gns3@box:~$ ping -c 4 172.16.1.10
PING 172.16.1.10 (172.16.1.10): 56 data bytes
64 bytes from 172.16.1.10: seq=0 ttl=125 time=8.589 ms
64 bytes from 172.16.1.10: seq=1 ttl=125 time=5.703 ms
64 bytes from 172.16.1.10: seq=2 ttl=125 time=6.444 ms
64 bytes from 172.16.1.10: seq=3 ttl=125 time=9.070 ms

--- 172.16.1.10 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 5.703/7.451/9.070 ms
gns3@box:~$
```

*Figure 4.7 – Displaying a ping to WS1 from PC3.*

The echo requests and replies should be successful.