

# Designing a Secure Network Topology (3e)

Network Security, Firewalls, and VPNs, Third Edition - Lab 03

Student:

Brayden Mitchell

Email:

brayden.m.mitchell@gmail.com

Time on Task:

2 hours, 24 minutes

Progress:

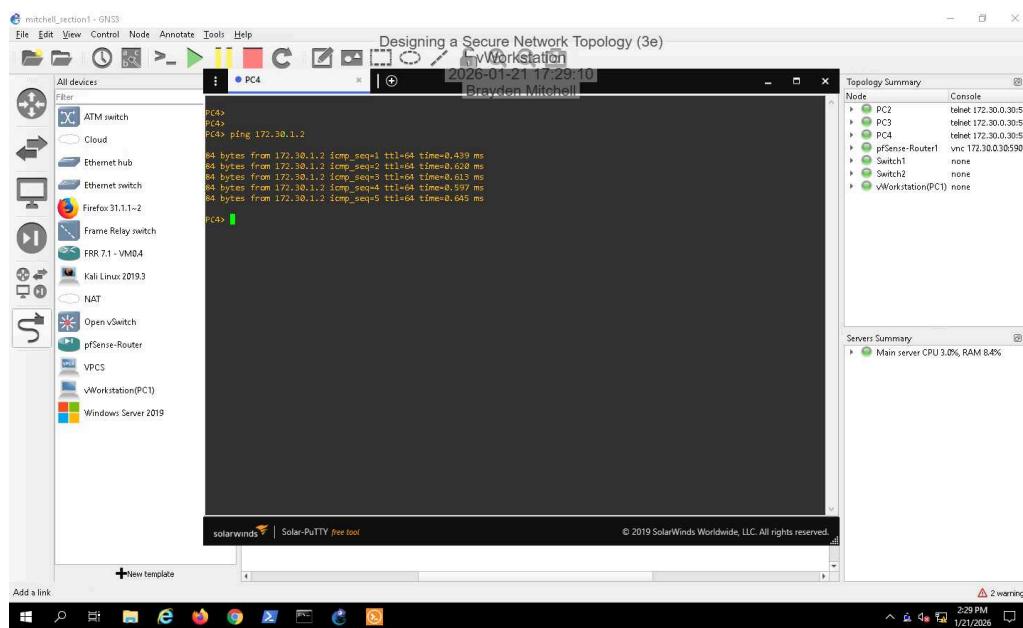
100%

Report Generated: Wednesday, January 21, 2026 at 8:09 PM

## Section 1: Hands-On Demonstration

### Part 1: Design a Simple Network Topology

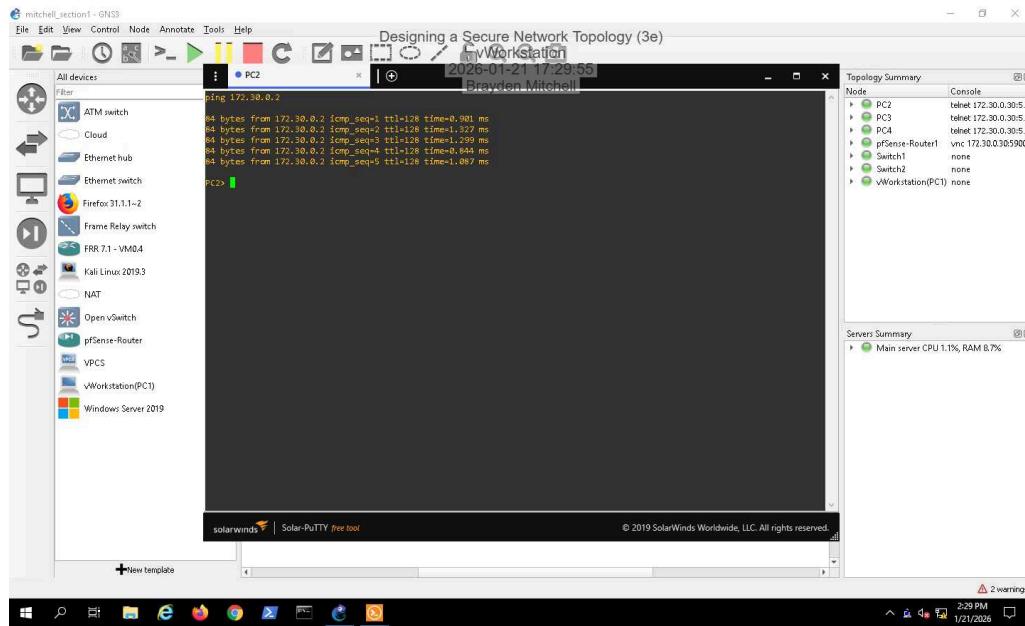
34. Make a screen capture showing the results of the ping attempt from PC4 to PC3.



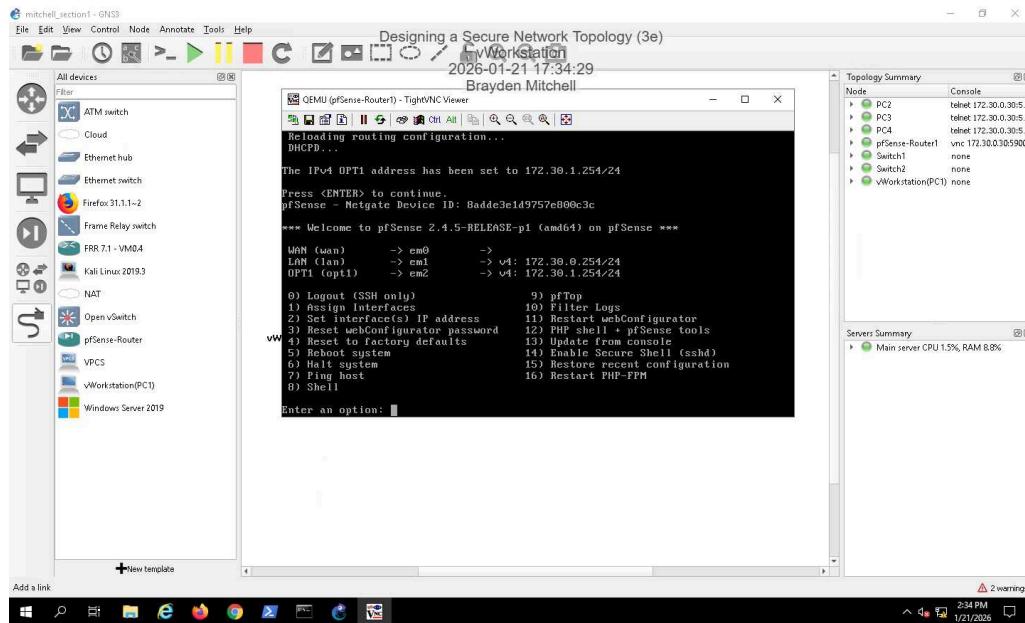
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37. Make a screen capture showing the results of the ping attempt from PC2 to the vWorkstation (172.30.0.2).



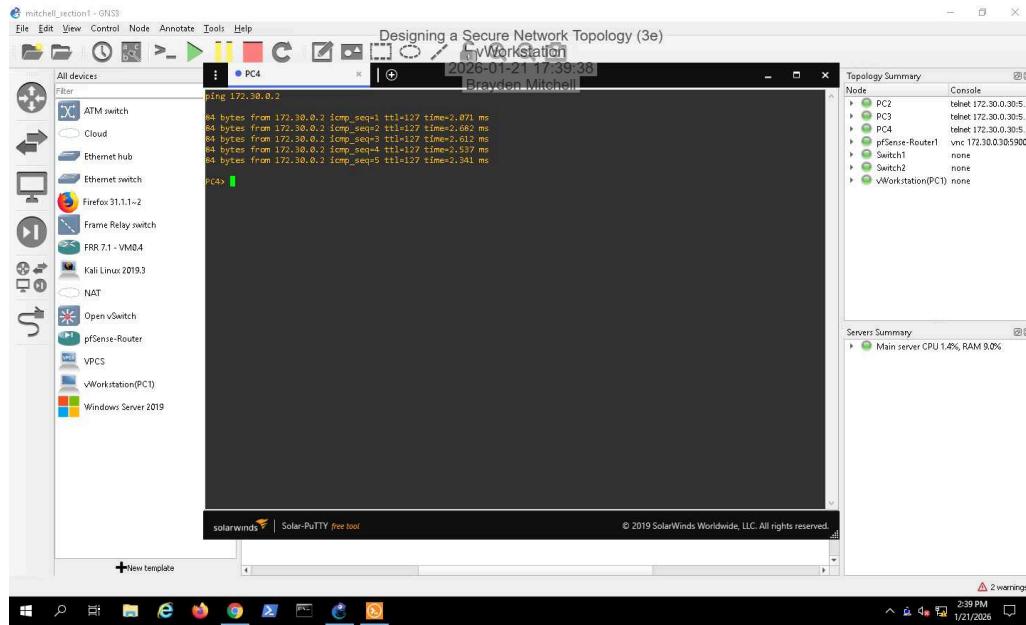
49. Make a screen capture showing the IP address assignments in the pfSense console.



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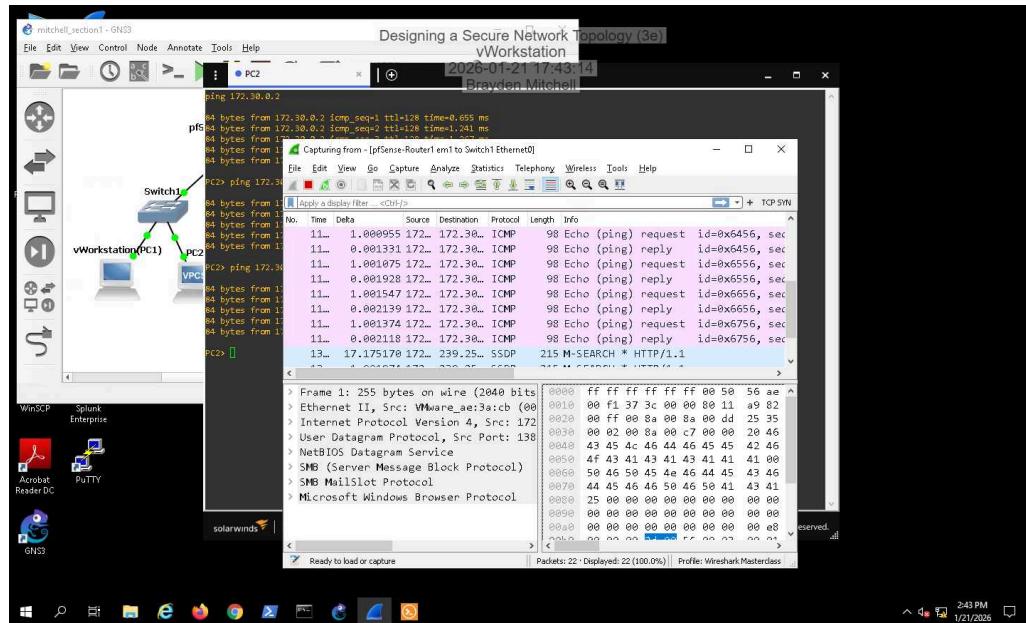
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72. Make a screen capture showing the successful ping from PC4 to the vWorkstation.



## Part 2: Capture Network Traffic to Validate Connectivity

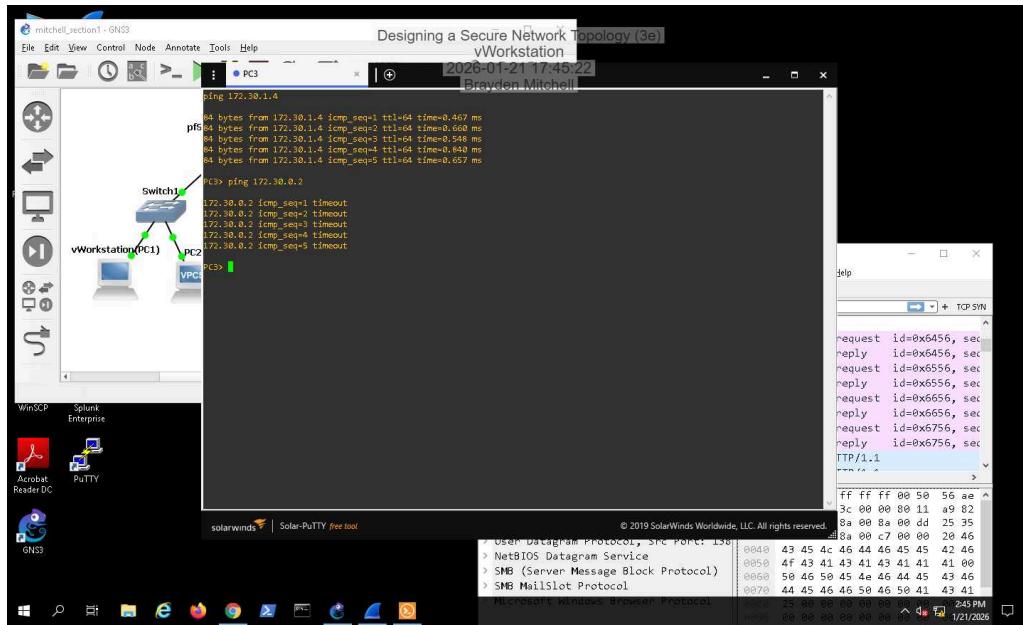
7. Make a screen capture showing the Wireshark capture for the PC2 to PC3 ping request.



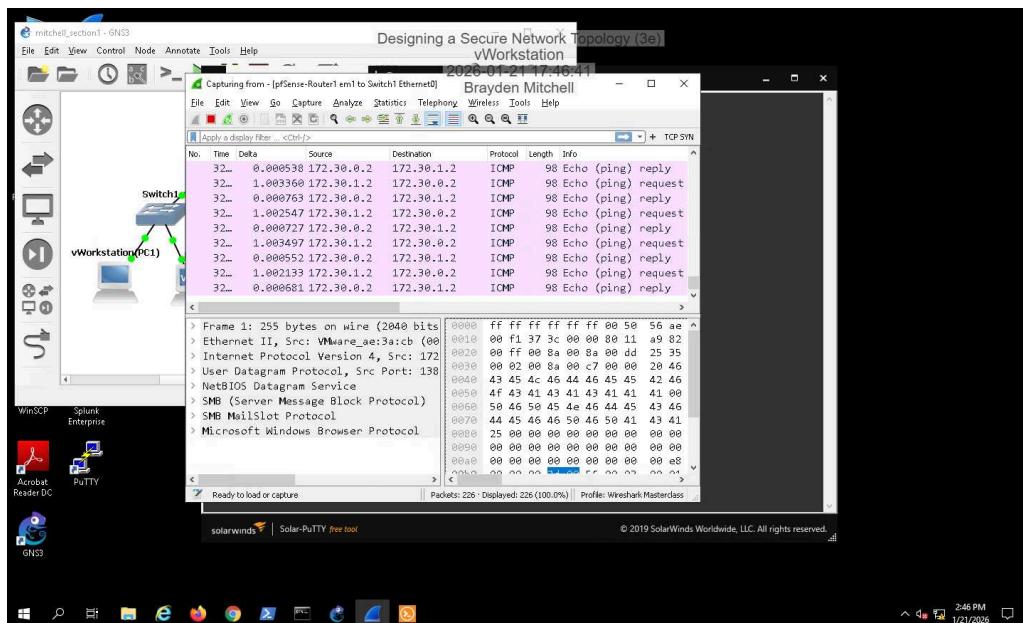
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## 17. Make a screen capture showing the timed out ping request.



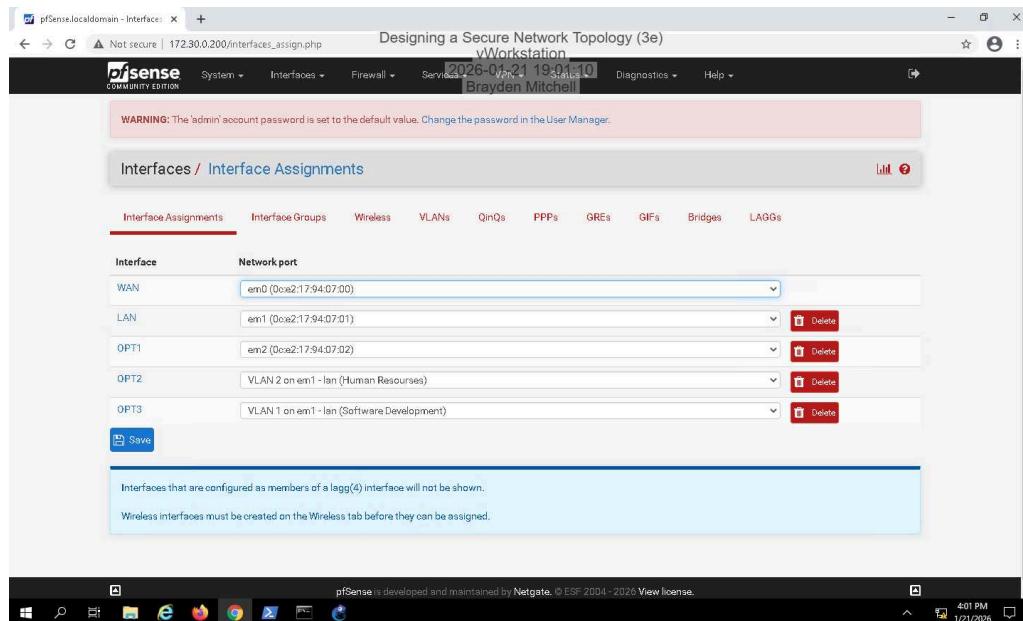
## 20. Make a screen capture showing the Wireshark capture for the PC3 to vWorkstation ping request.



## Section 2: Applied Learning

### Part 1: Design a More Complex Network Topology

14. Make a screen capture showing the **Interface Assignments** page.

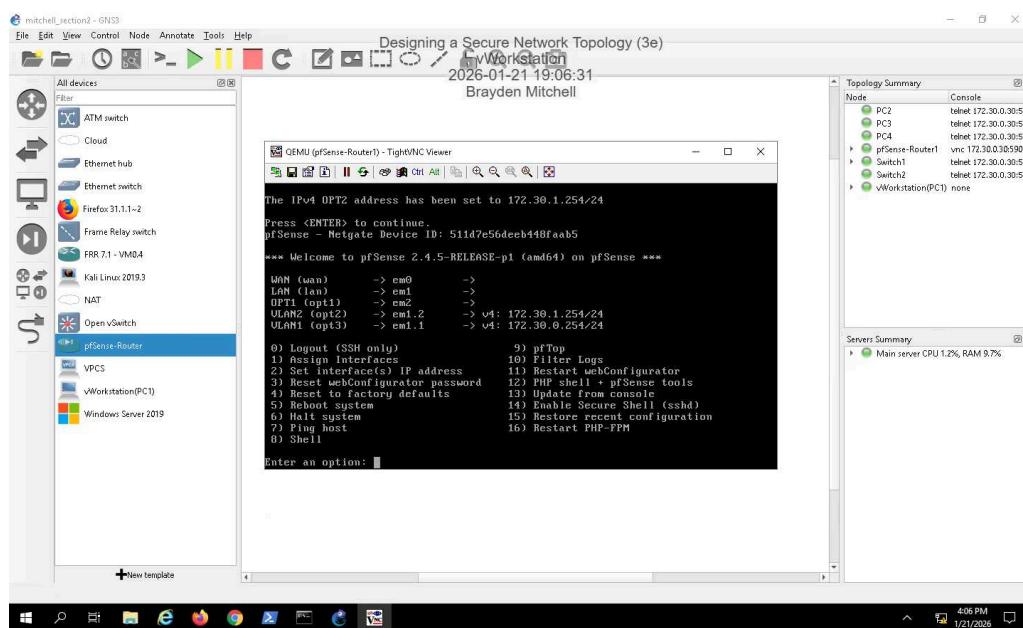


The screenshot shows the pfSense web interface with the title "Designing a Secure Network Topology (3e) vWorkstation". The "Interfaces / Interface Assignments" page is displayed. A warning message at the top states: "WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager." Below this, the "Interface Assignments" tab is selected. The table lists the following assignments:

Interface	Network port
WAN	em0 (0ce2:17:94:07:00)
LAN	em1 (0ce2:17:94:07:01)
OPT1	em2 (0ce2:17:94:07:02)
OPT2	VLAN 2 on em1 - lan (Human Resources)
OPT3	VLAN 1 on em1 - lan (Software Development)

Buttons for "Save" and "Delete" are present for each row. A note at the bottom states: "Interfaces that are configured as members of a lagg(4) interface will not be shown. Wireless interfaces must be created on the Wireless tab before they can be assigned."

28. Make a screen capture showing the updated pfSense router settings with the VLAN IP address assignments.



The screenshot shows the pfSense web interface with the title "Designing a Secure Network Topology (3e) vWorkstation". A terminal window is open, showing the configuration of a pfSense Router. The output of the command "ifconfig" is displayed, showing the following interface assignments:

```
Press <ENTER> to continue.
pfSense - Netgate Device ID: 511d7e56deeb448faab5
*** Welcome to pfSense 2.4.5-RELEASE-p1 (amd64) on pfSense ***
WAN (wan)      -> em0      ->
LAN (lan)       -> em1      ->
OPT1 (opt1)     -> em2      ->
ULAN2 (opt2)    -> em1.2    -> v4: 172.30.1.254/24
ULAN1 (opt3)    -> em1.1    -> v4: 172.30.0.254/24
```

The terminal then lists a menu of 16 options for managing the system. The "Servers Summary" panel on the right shows the following information:

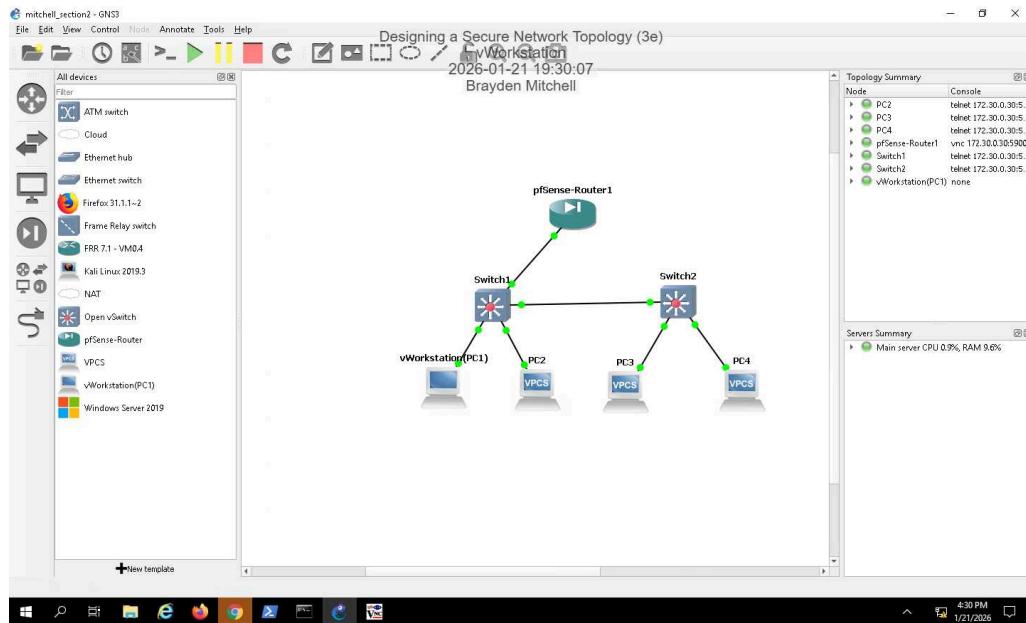
Node	Console
PC2	telnet 172.30.0.30:5...
PC3	telnet 172.30.0.30:5...
PC4	telnet 172.30.0.30:5...
pfSense-Router1	vnc 172.30.0.30:5900
Switch1	telnet 172.30.0.30:5...
Switch2	telnet 172.30.0.30:5...
vWorkstation(PCT)	none

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36. Make a screen capture showing the eth1 and eth2 interfaces with their assigned VLAN tags on Switch2.

39. **Make a screen capture** showing the **completed topology**.

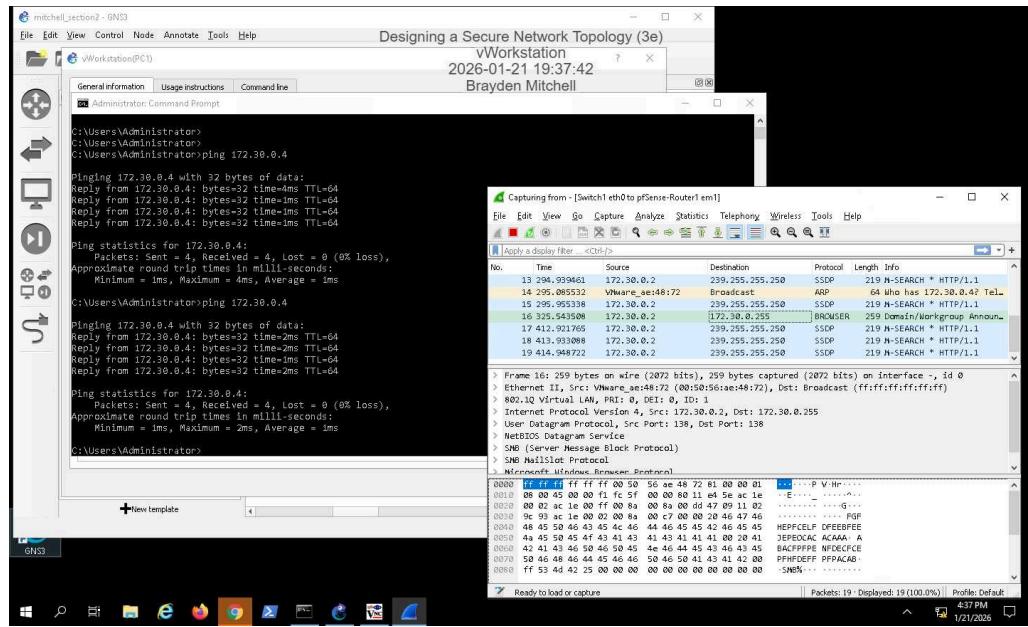


## Part 2: Capture Network Traffic to Validate Connectivity

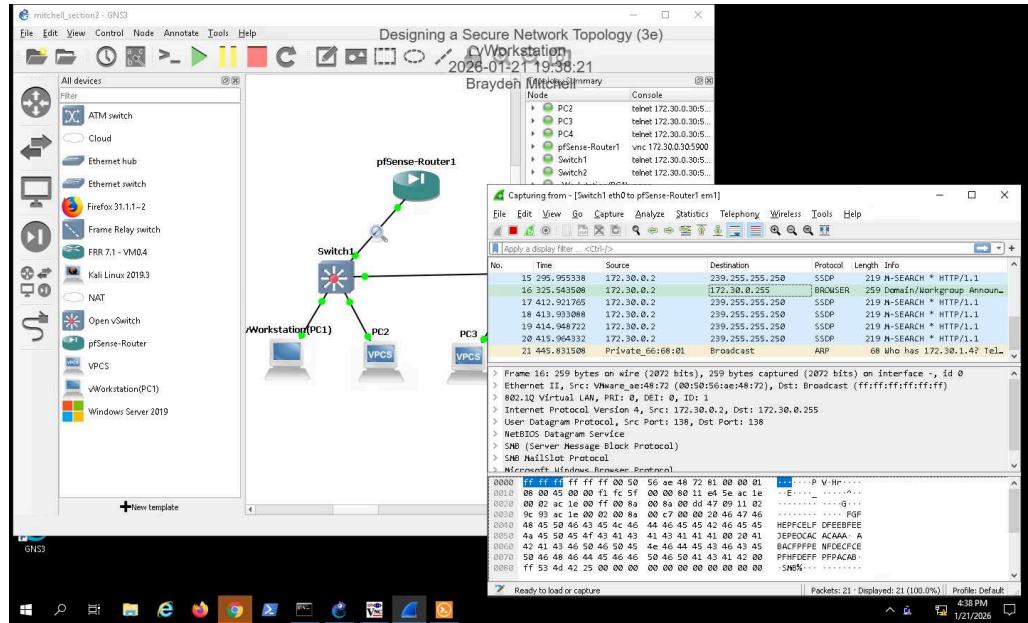
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### 3. Make a screen capture showing the Wireshark capture for the vWorkstation to PC3 ping request.



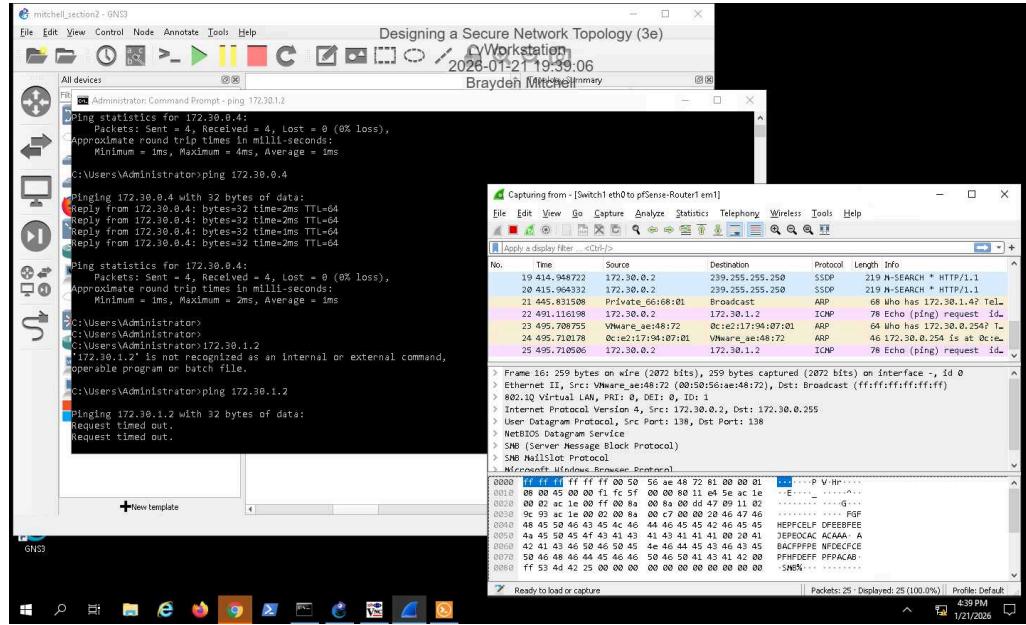
### 5. Make a screen capture showing the Wireshark capture for the PC2 to PC4 ping request.



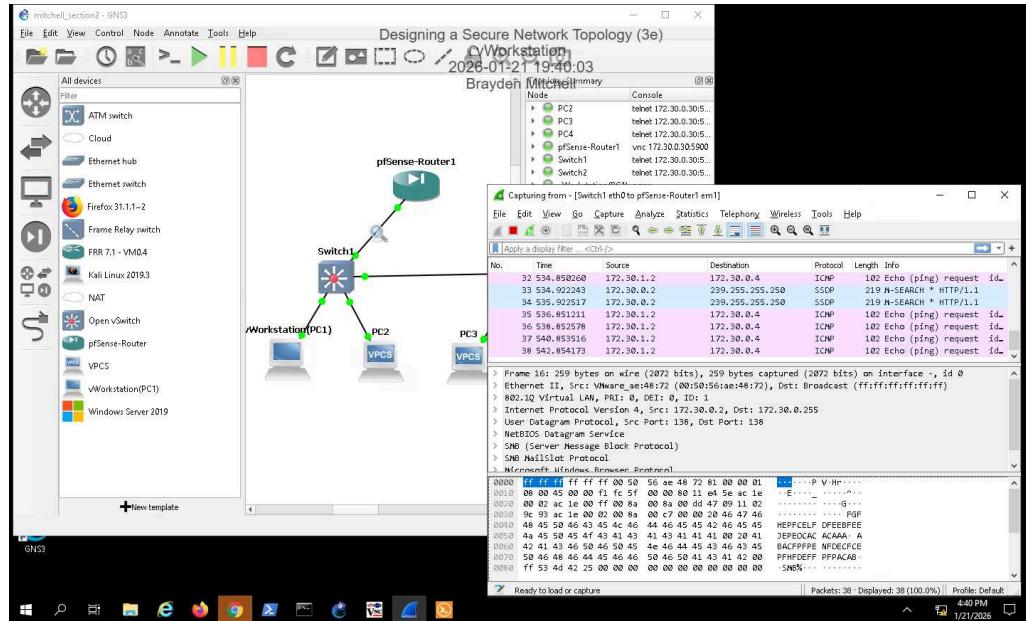
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## 7. Make a screen capture showing the Wireshark capture for the vWorkstation to PC2 ping request.



## 9. Make a screen capture showing the Wireshark capture for the PC2 to PC3 ping request.



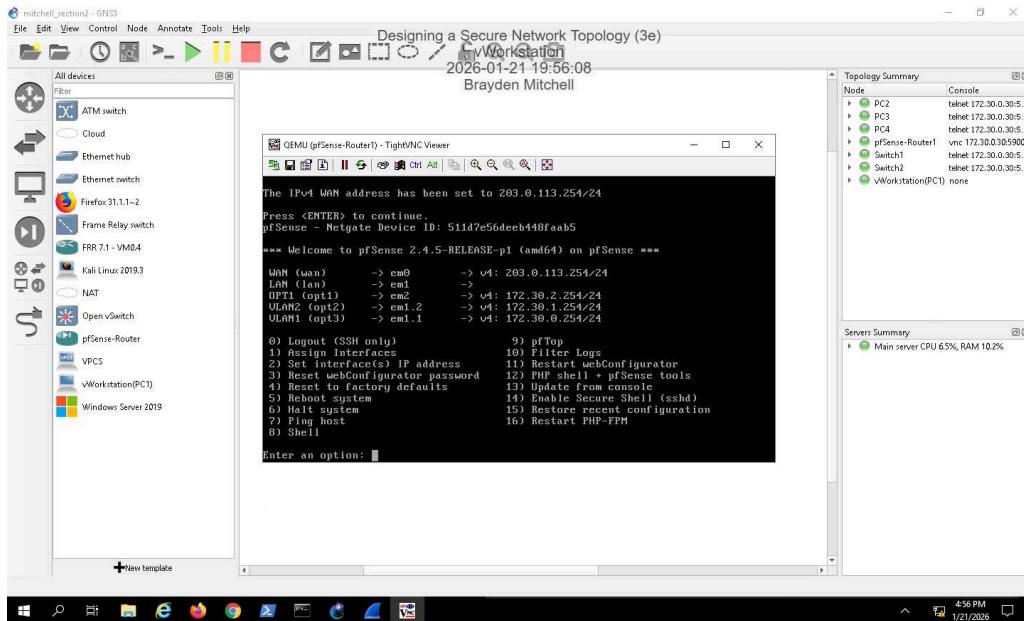
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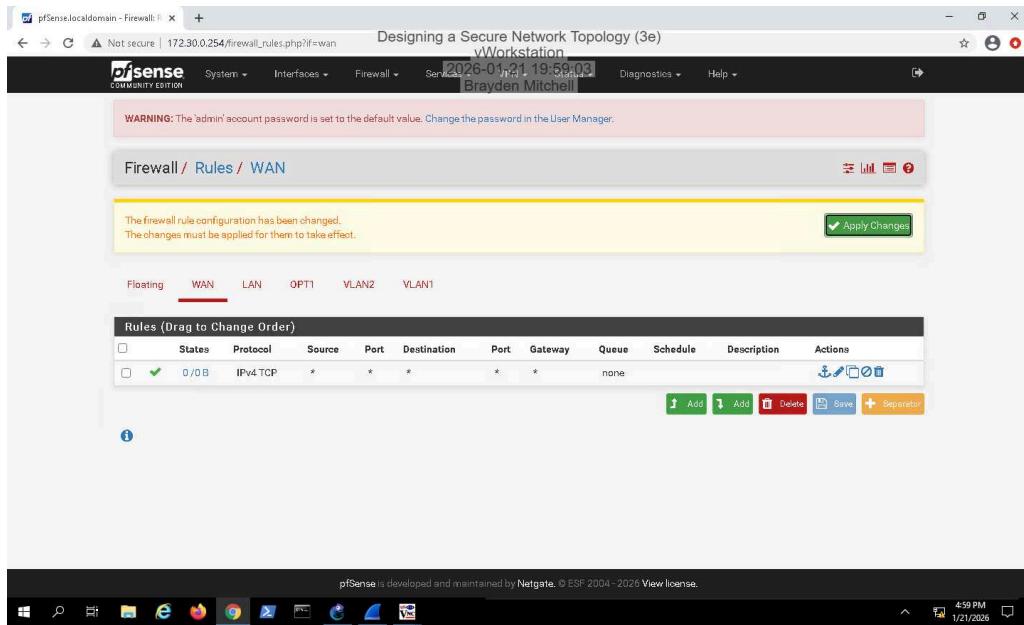
## Section 3: Challenge and Analysis

### Part 1: Enhance the Network Topology with a DMZ

Make a screen capture showing the interface configurations in the pfSense console.



Make a screen capture showing the firewall rule on the WAN interface in the pfSense webConfigurator.



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## Part 2: Validate DMZ Connectivity

Make a screen capture showing the results of both pings.

