

Configuring Firewall Interfaces with pfSense (3e)

Network Security, Firewalls, and VPNs, Third Edition - Lab 05

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Time on Task:

7 hours, 37 minutes

Progress:

100%

Report Generated: Sunday, November 9, 2025 at 8:03 PM

Section 1: Hands-On Demonstration

Part 1: Plan the Physical Configuration of the Firewall

10. Make a screen capture showing the completed General tab of the Planner.

The screenshot shows a Microsoft Windows desktop with a taskbar at the bottom. The taskbar icons include Start, Search, Internet Explorer, Firefox, and others. A Microsoft Word document titled 'PFSENSE-FW-PHYSICAL-PLANNER.doc' is open in the foreground. The window title bar says 'PFSENSE-FW-PHYSICAL-PLANNER.doc - OpenOffice Calc'. The Calc spreadsheet has a single sheet named 'General / WAN / LAN / DMZ /'. The first few rows of data are as follows:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Physical Configuration	Settings	Comments															
2	Hostname	pfSense		11/07/23														
3	Domain	localadmin																
4	Primary DNS Server	8.8.8.8	Do not override DNS															
5	Secondary DNS Server	4.4.4.4	Do not override DNS															
6	Time Server Hostname	0.pfsense.pool.ntp.org																
7	Time Zone	EST/GMT-7																
8	Admin Password	P@ssw9998																
9																		
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25. Make a screen capture showing the completed WAN tab of the Physical Configuration worksheet.

The screenshot shows a Microsoft Windows desktop with a taskbar at the bottom. An OpenOffice Calc spreadsheet is open, titled "PFSENSE-PW-PHYSICAL-PLANNER.ods - OpenOffice Calc". The title bar also displays "Configuring Firewall Interfaces with pfSense (3e)" and "vWorkstation". The spreadsheet has three tabs: "General", "WAN (LAN / DMZ)", and "Sheet 2". The "WAN (LAN / DMZ)" tab is active, showing a table with 34 rows. Rows 1 through 24 contain configuration settings for a WAN interface, such as "Description: WAN", "Interface Type: Static", "MAC Address: Not Required", "MTU: Default", "IP Address: 202.20.1.1", "Subnet Mask: 24", "Upstream Gateway: 202.20.1.2", and various PPTP-related fields. Rows 25 through 34 are blank. The status bar at the bottom right shows "3:27 PM 11/7/2025".

A	B	C
1	Physical Configuration	Settings
2	Description	WAN
3	Interface Type	Static
4	MAC Address	Not Required
5	MTU	Default
6	IP Address	Default
7	IP Address	202.20.1.1
8	Subnet Mask	24
9	Upstream Gateway	202.20.1.2
10	CHADDR Hostname	
11	CHADDR Lease time	
12	PPTP: Password	
13	PPTP: Service name	
14	PPTP: Idle timeout	
15	PPTP: Idle timeout	
16	PPTP: Username	
17	PPTP: Password	
18	PPTP: Remote IP address	
19	ipnfo:asusmodem	
20	PPTP: Remote IP Address	
21	PPTP: Dial on demand	
22	Block RFC1918 networks	Block
23	Block bogon networks	Do Not Block
24		
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27. Make a screen capture showing the completed LAN tab of the Physical Configuration worksheet.

The screenshot shows a Microsoft Windows desktop with a taskbar at the bottom. An OpenOffice Calc spreadsheet is open, titled "PFSENSE-PW-PHYSICAL-PLANNER.ods - OpenOffice Calc". The title bar also displays "Configuring Firewall Interfaces with pfSense (3e)" and "vWorkstation". The spreadsheet has three tabs: "General", "WAN (LAN / DMZ)", and "Sheet 3". The "WAN (LAN / DMZ)" tab is active, showing a table with 52 rows. Rows 1 through 24 contain configuration settings for a LAN interface, such as "Description: LAN", "Interface Type: static", "MAC Address: not required", "MTU: Default", "IP Address: 172.30.0.1", "Subnet Mask: 24", and "Upstream Gateway: not required". Rows 25 through 52 are blank. The status bar at the bottom right shows "3:43 PM 11/7/2025".

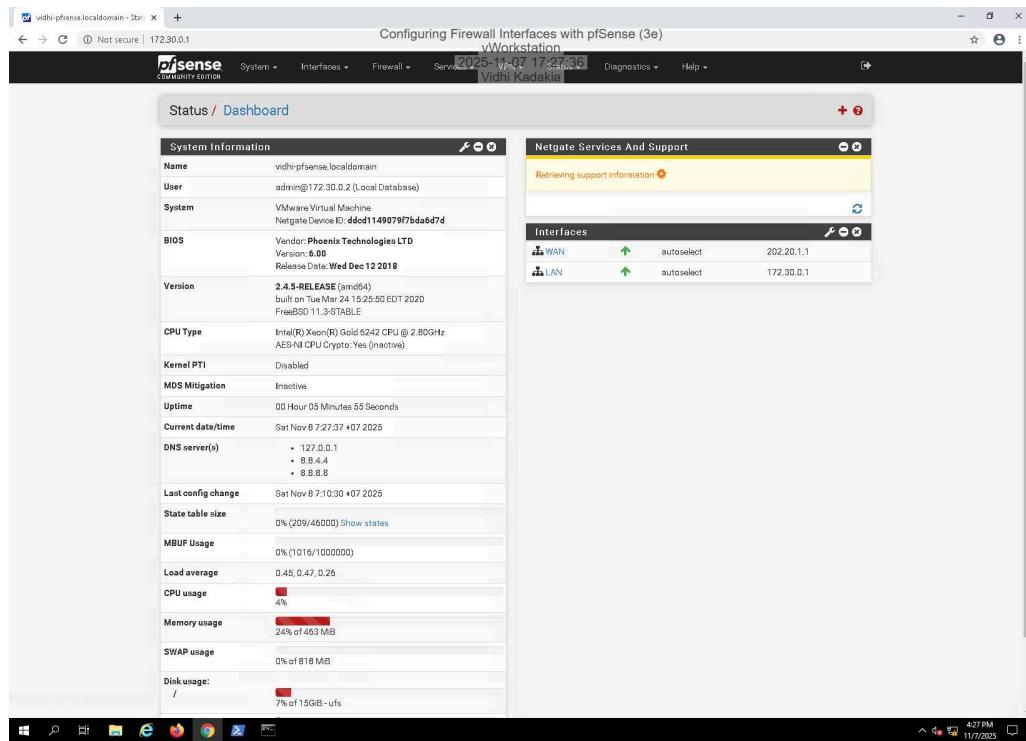
A	B	C
1	Physical Configuration	Settings
2	Description	LAN
3	Interface Type	static
4	MAC Address	not required
5	MTU	Default
6	IP Address	Default
7	IP Address	172.30.0.1
8	Subnet Mask	24
9	Upstream Gateway	not required
10	Block RFC1918 networks	Do not block
11	Block bogon networks	Do not block
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Part 2: Configure the LAN and WAN Firewall Interfaces

36. Make a screen capture showing the LAN and WAN interfaces on the pfSense WebGUI dashboard.

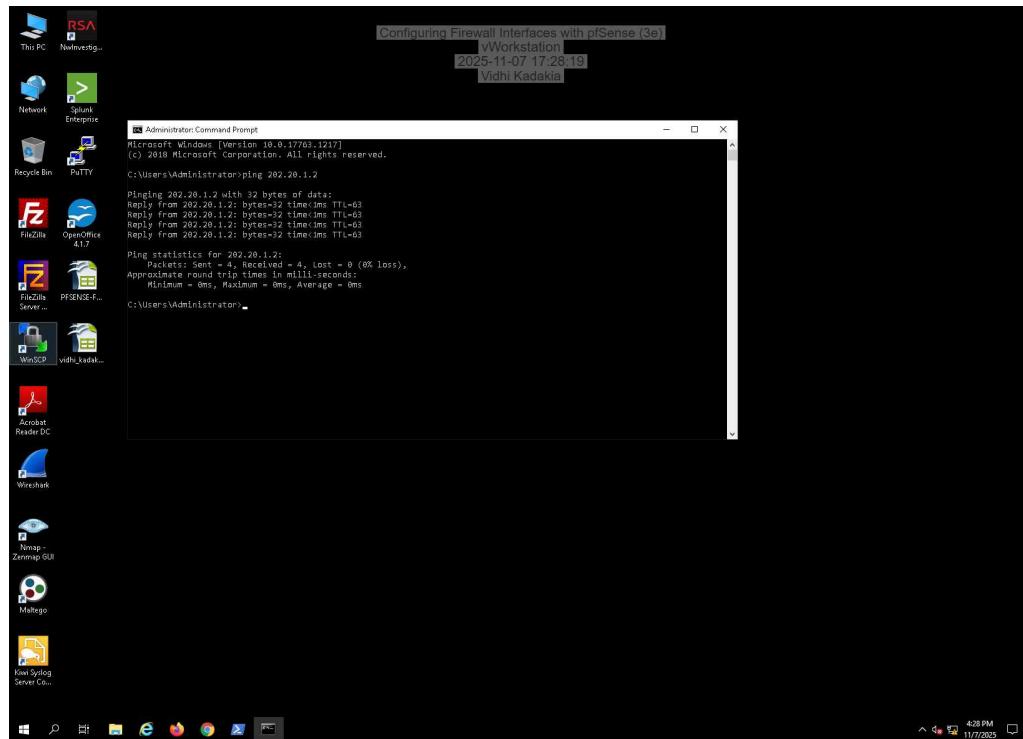


Part 3: Verify the Firewall Implementation

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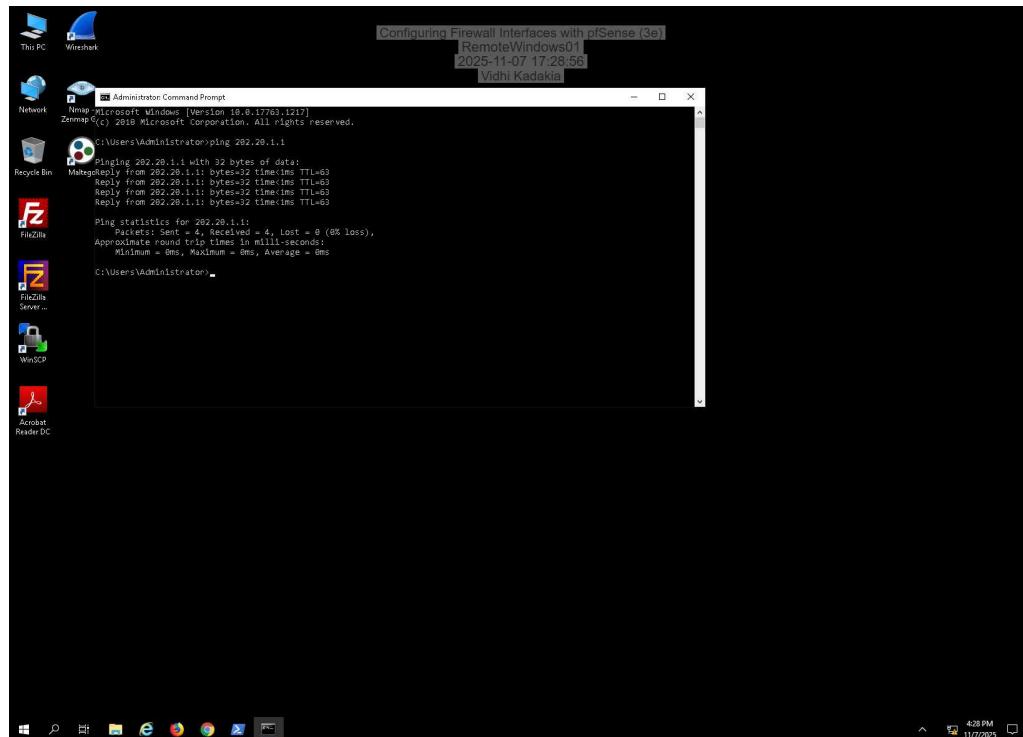
3. Make a screen capture showing the **successful ICMP request** to pfSense's upstream gateway.



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8. Make a screen capture showing the successful ICMP request to the pfSense WAN interface.



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Section 2: Applied Learning

Part 1: Plan the Physical Configuration of the Firewall

4. Make a screen capture showing the completed DMZ tab of the Physical Configuration worksheet.

The screenshot shows a Microsoft Windows desktop environment with an OpenOffice Calc spreadsheet open. The title bar reads "vidhi.kadakia.PFSENSE-FW-PHYSICAL-PLANNER.ods - OpenOffice Calc". The window title is "Configuring Firewall Interfaces with pfSense (3e)". The spreadsheet has a single sheet named "WAN/LAN_DMZ". The data is organized in columns A through P:

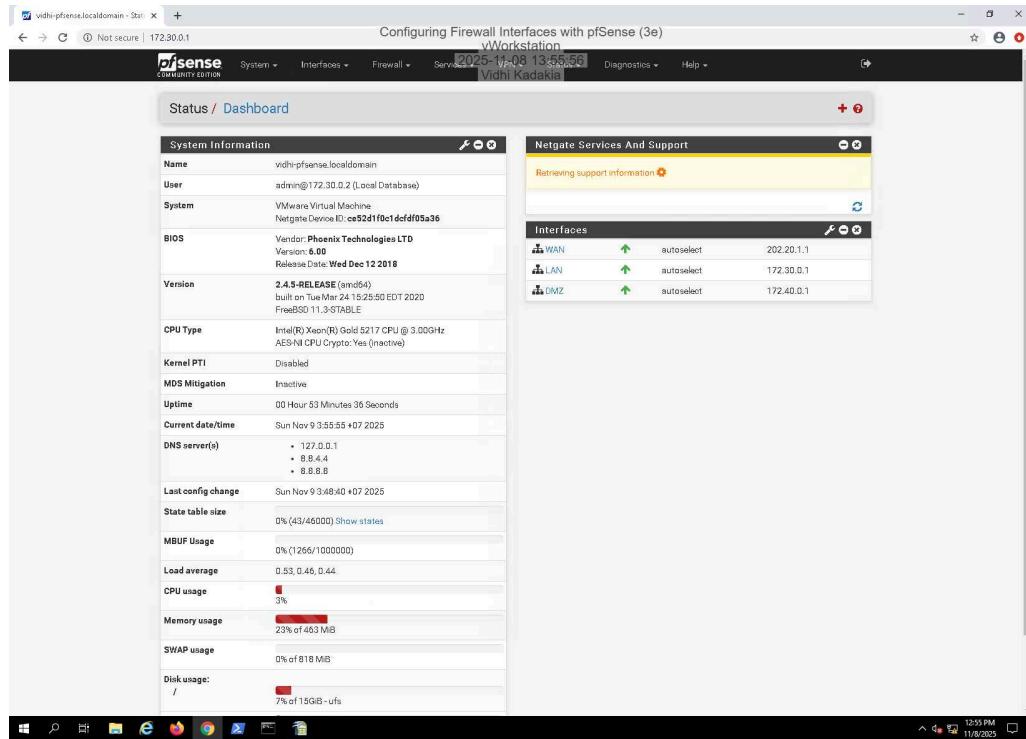
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Physical Configuration	Settings	Comment												
2	Description		DMZ												
3	Interface Type		Static (IPv4)												
4	IPv4 Address		n/a												
5	MTU		n/a												
6	MSS		n/a												
7	IP Address		172.40.0.1												
8	Subnet Mask		255.255.255.0												
9	Upstream Gateway		n/a												
10	Block RFC1918 networks		yes												
11	Block bogon networks		no												
12															
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Part 2: Configure the DMZ Firewall Interface

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9. Make a screen capture showing the DMZ interface on the pfSense WebGUI dashboard.

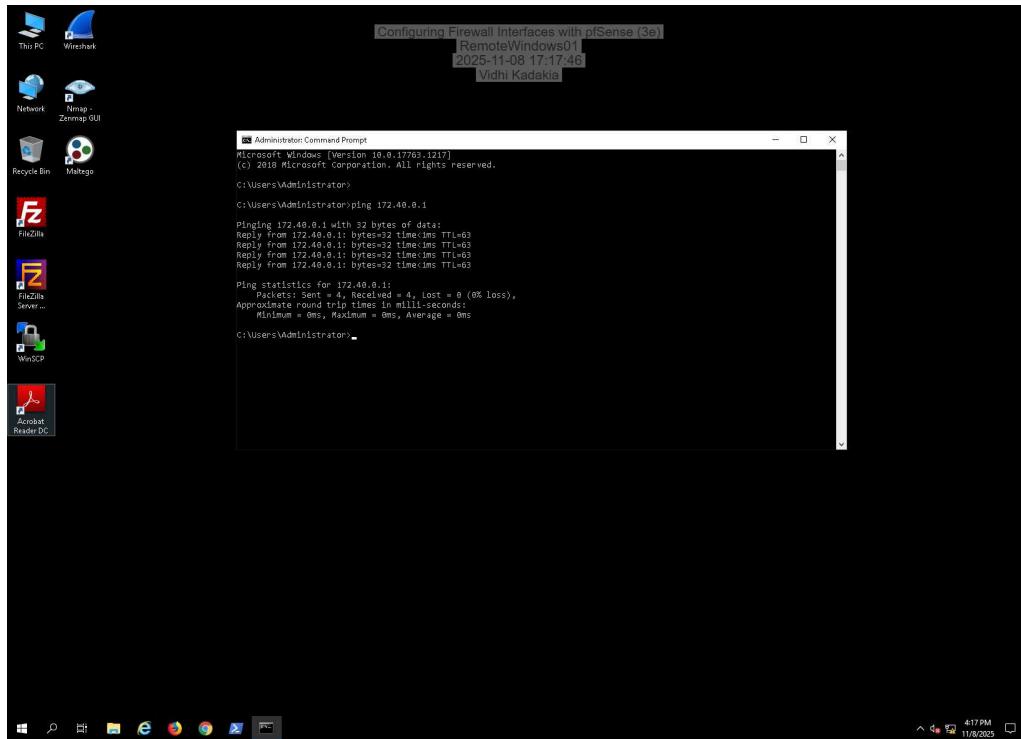


Part 3: Verify the Firewall Implementation

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4. Make a screen capture showing the successful ICMP request to the DMZ interface.



8. Make a screen capture showing the corporationtechs.com web page on the RemoteWindows01 machine.

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Section 3: Challenge and Analysis

Part 1: Configure and Test Split DNS on pfSense

Make a screen capture showing your Host Override entries in the DNS Resolver.

The screenshot shows the pfSense web interface with the title "Configuring Firewall Interfaces with pfSense (3e)". The main content area displays the "DNS Resolver" configuration. It includes sections for "Static DHCP" and "OpenVPN Clients", both with checkboxes for registering mappings in the DNS Resolver. Below these are "Display Custom Options" buttons. A "Save" button is located at the bottom left of the configuration section. The "Host Overrides" table lists two entries:

Host	Parent domain of host	IP to return for host	Description	Actions
pfsense	localdomain	172.30.0.1	pfsense firewall	
targetlinux01	localdomain	172.40.0.20	DMZ web server	

Below the table, a note explains that individual hosts can be overridden with specific IPv4 or IPv6 addresses. The "Domain Overrides" section is also visible, with a note about overriding standard DNS lookup for specific domains with different servers. The bottom of the interface shows the pfSense footer and a Windows taskbar.

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Make a screen capture showing a successful nslookup test for both DNS entries.



The screenshot shows a Microsoft Windows Command Prompt window titled "Administrator: Command Prompt". The window displays the output of two nslookup commands. The first command, "nslookup pfsense.localdomain 172.30.0.1", returns the IP address 172.30.0.1 for the name pfsense.localdomain. The second command, "nslookup targetlinux01.localdomain 172.30.0.1", returns the IP address 172.40.0.20 for the name targetlinux01.localdomain. The Command Prompt window has a dark background and white text. The taskbar at the bottom shows various icons for Windows applications like File Explorer, Internet Explorer, and Google Chrome. The system tray in the bottom right corner shows the date (11/9/2025), time (10:43 AM), and battery status.

```
C:\Users\Administrator>nslookup pfsense.localdomain 172.30.0.1
Server:  vidhi-pfsense.localdomain
Address: 172.30.0.1

Name:  pfsense.localdomain
Address: 172.30.0.1

C:\Users\Administrator>nslookup targetlinux01.localdomain 172.30.0.1
Server:  vidhi-pfsense.localdomain
Address: 172.30.0.1

Name:  targetlinux01.localdomain
Address: 172.40.0.20

C:\Users\Administrator>
```

Part 2: Enable and Test Secure Shell Access on pfSense

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Make a screen capture showing the enabled option for SSH access.

The screenshot shows the pfSense web interface with the title "Configuring Firewall Interfaces with pfSense (3e)" at the top. The main content area is titled "Secure Shell". Under "Secure Shell Server", the "Enable Secure Shell" checkbox is checked. In the "SSHD Key Only" section, the dropdown menu is set to "Password or Public Key". The "Allow Agent Forwarding" checkbox is unchecked. The "SSH port" is set to 22. Below the port number, a note says "Note: Leave this blank for the default of 22." In the "Login Protection" section, the "Threshold" is set to 30, "Blocktime" is set to 120, "Detection time" is set to 1800, and the "Whitelist" dropdown shows "Address / 12". A note below the whitelist says "Addresses added to the whitelist will bypass login protection." In the "Serial Communications" section, the "Serial Terminal" checkbox is unchecked. A note below it says "Note: This will redirect the console output and messages to the serial port. The console menu can be accessed from the internal video card/keyboard. A null modem serial cable or". At the bottom of the window, there is a taskbar with icons for File Explorer, Internet Explorer, Firefox, Google Chrome, and others. The system tray shows the date and time as "2025-11-09 17:58:26".

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Make a screen capture showing your successful SSH connection.

The screenshot shows a Microsoft Windows terminal window titled "OpenSSH SSH client". The window displays a command-line session with the following text:

```
Microsoft Windows [Version 10.0.17763.1217]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>cmd
Microsoft Windows [Version 10.0.17763.1217]
(c) 2018 Microsoft Corporation. All rights reserved. [adakia]

C:\Users\Administrator>ssh admin@172.30.0.1
Password for admin@vidhi-pfsense.localdomain:
VMware Virtual Machine - Netgate Device ID: ed34a9430f3057df9823

*** Welcome to pfSense 2.4.5-RELEASE (amd64) on vidhi-pfsense ***

WAN (wan)      -> vmx1      -> v4: 202.20.1.1/24
LAN (lan)      -> vmx0      -> v4: 172.30.0.1/24
DMZ (opt1)     -> vmx2      -> v4: 172.40.0.1/24

0) Logout (SSH only)          9) pfTop
1) Assign Interfaces          10) Filter Logs
2) Set interface(s) IP address 11) Restart webConfigurator
3) Reset webConfigurator password 12) PHP shell + pfSense tools
4) Reset to factory defaults   13) Update from console
5) Reboot system               14) Disable Secure Shell (sshd)
6) Halt system                 15) Restore recent configuration
7) Ping host                   16) Restart PHP-FPM
8) Shell

Enter an option: -
```

The taskbar at the bottom of the window shows several icons, including File Explorer, Edge, and Task View. The system tray indicates the date and time as 11/9/2025 and 5:00 PM.