

**Connor Schuler**  
**SYS-255-01**  
**STR2026**

# Setup Screenshots

## FW01 Interfaces:

The screenshot shows two windows from the pfSense web interface. The top window is titled 'Add: Network Device' and lists network interfaces for bridge 'SYS01014'. The bottom window is titled 'Edit: Network Device' for the same bridge, showing the configuration of the selected interface.

**Add: Network Device**

Bridge:	SYS01014	Model:	VirtIO (paravirtualized)
VLAN Tag:	Bridge ↑	Active	Comment
Firewall:	SEC01000	Yes	SEC-250-02-WAN
	SEC02001	Yes	SEC-260-02-WAN
	SYS01000	Yes	SYS-255-01-WAN
	SYS01014	Yes	SYS-255-01-LAN-connor.schuler

**Edit: Network Device**

Bridge:	SYS01014	Model:	VirtIO (paravirtualized)
VLAN Tag:	Bridge ↑	Active	Comment
Firewall:	SEC01000	Yes	SEC-250-02 WAN
	SEC02001	Yes	SEC-260-02 WAN
	SYS01000	Yes	SYS-255-01 WAN
	SYS01014	Yes	SYS-255-01-LAN-connor.schuler

Virtual Machine 12550104 (fw01-connor.schuler) on node1/vme16

Summary	Add	Remove	Edit	Disk Action	Rewire
Console					
Hardware	Memory	1.00 GiB			
	Processors	1 (1 Sockets, 1 cores) [x86-64-v2 AES]			
	BIOS	Default (SeaBIOS)			
	Display	Default			
	Machine	Default (i40v6)			
	SCSI Controller	VirtIO SCSI single			
	Hard Disk (scsi0)	NFS-STUDENT-2-SNET426@base-4269-disk 0 qcow2/125501054/vm-125501054/disk 0.qcow2,iothread=1,size=8G			
	Network Device (net0)	virtio:BC:24:11:55:A0:78,bridge=SYS01000,firewall=1			
	Network Device (net1)	virtio:BC:24:11:77:DB:0D,bridge=SYS01014,firewall=1			

## FW01 IP Address Assignments:

The screenshot shows the pfSense CLI welcome screen and a menu of system management options.

```
*** Welcome to pfSense 2.7.2-RELEASE (amd64) on pfSense ***
```

IP assignments:

WAN (wan)	-> vtnet0	-> v4: 10.0.17.111/24
LAN (lan)	-> vtnet1	-> v4: 192.168.1.1/24

System Management Options:

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

Enter an option: █

## Wks01 Interface:

The screenshot shows the Proxmox VE interface for managing a virtual machine named 'wks01-connor.schuler'. The 'Hardware' tab is selected, displaying configuration details like memory (8.10 GiB), processors (2 cores), and disk drives (NFS-mounted ISO files). A modal window titled 'Add: Network Device' is open, showing a list of available bridges. The 'Bridge' dropdown is set to 'SYS01014'. The 'Model' dropdown is set to 'Intel E1000'. The table lists existing bridges: SEC01000 (SEC-250-02-WAN), SEC02001 (SEC-260-02-WAN), and SYS01000 (SYS-255-01-WAN). A new entry 'SYS01014' is being added, with 'Active' set to 'Yes' and 'Comment' set to 'SYS-255-01-LAN-connor.schuler'. The 'Add' button is visible at the bottom right of the modal.

## Wks01 system name:

The screenshot shows a Windows command prompt window. The user has run the 'whoami' command, which outputs 'wks01-connor\champuser'. Below that, the 'hostname' command was run, outputting 'wks01-connor'. The command prompt prompt is 'C:\Users\champuser>'.

```
Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\champuser>whoami
wks01-connor\champuser

C:\Users\champuser>hostname
wks01-connor

C:\Users\champuser>
```

## FW01 WebGUI Setup:

The screenshot shows the pfSense setup wizard interface. The URL in the address bar is [https://10.0.5.2/wizard.php?xml=setup\\_wizard.xml](https://10.0.5.2/wizard.php?xml=setup_wizard.xml). The page displays the following configuration fields:

- Hostname:** fw1-connor (highlighted with a red box)
- Domain:** connor.local (highlighted with a red box)
- Primary DNS Server:** 8.8.8.8 (highlighted with a red box)
- Secondary DNS Server:** (empty field)
- Override DNS:**  Allow DNS servers to be overridden by DHCP/PPP on WAN

At the bottom right of the main window is a blue "Next" button.

The screenshot shows the "RFC1918 Networks" configuration page. A red box highlights the "Block RFC1918 Private Networks" section, which contains the following text:

**Block RFC1918 Private Networks**  Block private networks from entering via WAN

When set, this option blocks traffic from IP addresses that are reserved (172.16/12, 192.168/16) as well as loopback addresses (127/8). This option is useful if your WAN network lies in such a private address space, too.

## Wks01 IP Assignment:

The screenshot shows the "Internet Protocol Version 4 (TCP/IPv4) Properties" dialog box. The "General" tab is selected. The configuration is set to "Use the following IP address" with the following values:

- IP address: 10 . 0 . 5 . 100
- Subnet mask: 255 . 255 . 255 . 0
- Default gateway: 10 . 0 . 5 . 2

Below these fields, the "Use the following DNS server addresses:" option is selected with the following values:

- Preferred DNS server: 10 . 0 . 5 . 2
- Alternate DNS server: . . .

At the bottom left is a checkbox for "Validate settings upon exit". At the bottom right are "OK" and "Cancel" buttons.

# Deliverables

**Deliverable 1:** Screenshot shows 7 transmitted and received ICMP pings to the domain [champlain.edu](http://champlain.edu). Each line shows 64 bytes sent and received, with zero packet loss. This indicated a successful ping.

```
[2.7.2-RELEASE][root@fw1-connor.connor.local]# ping champlain.edu
PING champlain.edu (23.185.0.3): 56 data bytes
64 bytes from 23.185.0.3: icmp_seq=0 ttl=54 time=14.025 ms
64 bytes from 23.185.0.3: icmp_seq=1 ttl=54 time=13.903 ms
64 bytes from 23.185.0.3: icmp_seq=2 ttl=54 time=14.211 ms
64 bytes from 23.185.0.3: icmp_seq=3 ttl=54 time=13.852 ms
64 bytes from 23.185.0.3: icmp_seq=4 ttl=54 time=14.206 ms
64 bytes from 23.185.0.3: icmp_seq=5 ttl=54 time=15.903 ms
64 bytes from 23.185.0.3: icmp_seq=6 ttl=54 time=13.965 ms
^C
--- champlain.edu ping statistics ---
7 packets transmitted, 7 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 13.852/14.295/15.903/0.669 ms
[2.7.2-RELEASE][root@fw1-connor.connor.local]#
```

## Deliverable 2:

Image shows wks01 config, including hostname, IP address, gateway, and DNS server. These are highlighted by the rectangles.

```
PS C:\WINDOWS\system32> ipconfig /all
Windows IP Configuration

Host Name . . . . . : wks01-connor
Primary Dns Suffix  . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . . . . . : Intel(R) PRO/1000 MT Network Connection
Description . . . . . : BC-24-11-12-C3-84
Physical Address . . . . . : No
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::40eb:a746:8a49:9999%9(Preferred)
IPv4 Address. . . . . : 10.0.5.100(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.0.5.2
DHCPv6 IAID . . . . . : 112993297
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-FA-F8-56-BC-24-11-12-C3-84
DNS Servers . . . . . : 10.0.5.2
NetBIOS over Tcpip. . . . . : Enabled
PS C:\WINDOWS\system32>
```

Image shows logged in user and computer hostname, both highlighted by red rectangle.

```
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\champuser>whoami
wks01-connor\champuser

C:\Users\champuser>hostname
wks01-connor

C:\Users\champuser>
```

Image shows 1 successful 32 byte ICMP ping to [google.com](http://google.com).

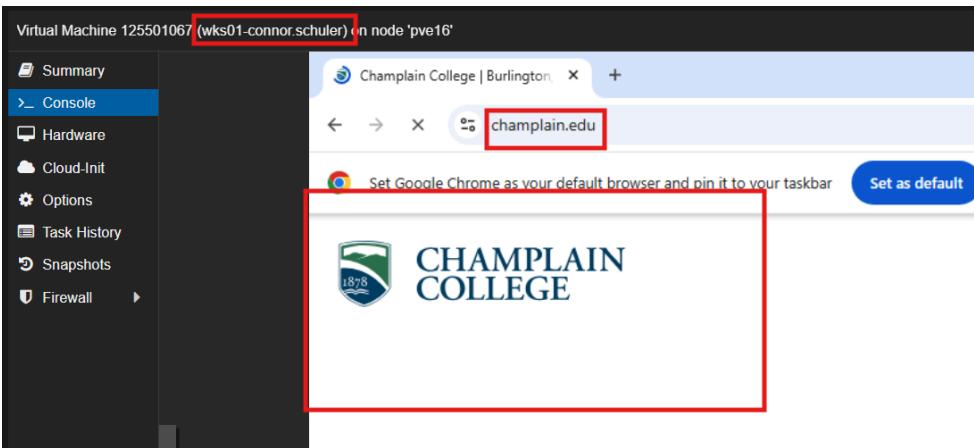
```
PS C:\WINDOWS\system32> ping -n 1 google.com

Pinging google.com [142.250.191.14] with 32 bytes of data:
Reply from 142.250.191.14: bytes=32 time=15ms TTL=113

Ping statistics for 142.250.191.14:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 15ms, Maximum = 15ms, Average = 15ms
PS C:\WINDOWS\system32> |
```

### Deliverable 3:

Image shows successful web connection to [champlain.edu](http://champlain.edu) from wks01.



### Deliverable 4:

Image shows first 3 hops from wks01 to [champlain.edu](http://champlain.edu). Fw01 to the SYS-255 gateway, to the cyber.local external address domain.

```
C:\Users\connor.schuler>tracert -h 3 champlain.edu

Tracing route to champlain.edu [23.185.0.3]
over a maximum of 3 hops:
1 <1 ms <1 ms <1 ms fw1-connor.connor.local [10.0.5.2]
2 1 ms 1 ms 1 ms 10.0.17.2
3 3 ms 1 ms 1 ms 192.168.4.251

Trace complete.
```

**Deliverable 5:**

- Certain configurations did not apply until a reboot, is there a guide/list to what does and does not instantly apply?
- Most of the windows commands in the lab use powershell, but cmd also should work. Is there a reason powershell is used specifically?
- What do each of the 17 options in the pfSense CMD do/configure?

**Deliverable 6: Document formatting**

**Deliverable 7:** <https://journal.connorthenetworkjester.net/>