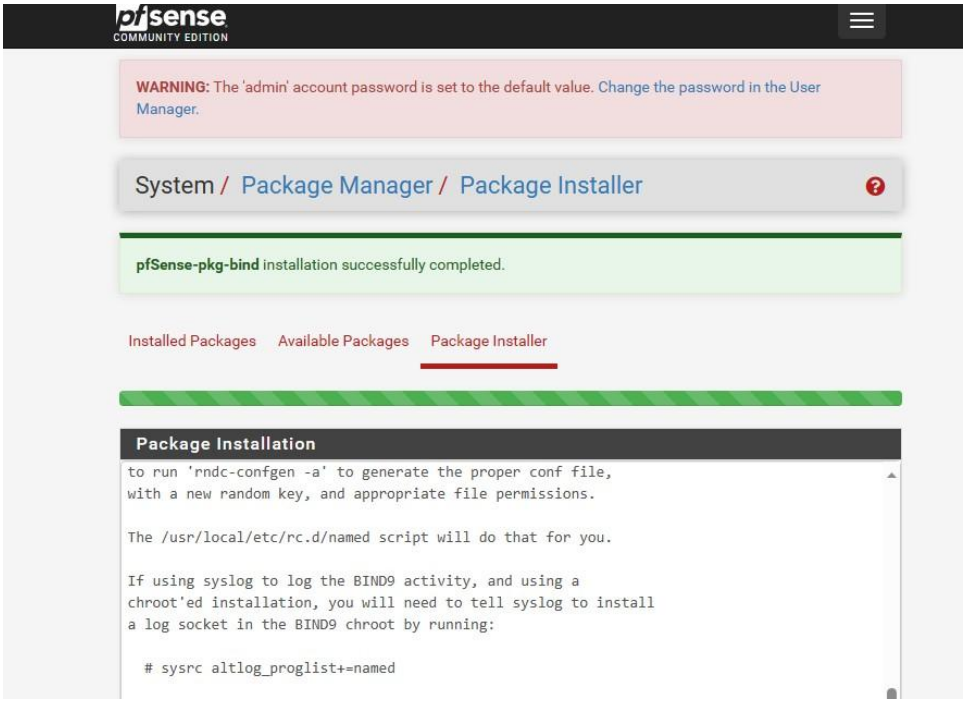
OVERVIEW:

The purpose of this lab was to configure DHCP and DNS on the pfSense firewall. I worked on setting up these protocols to better understand how they function and tested their connectivity. This experience is valuable because it provides hands-on knowledge for managing static IP addresses through DHCP and ensuring proper name resolution with DNS—skills that are essential for real-world network administration.

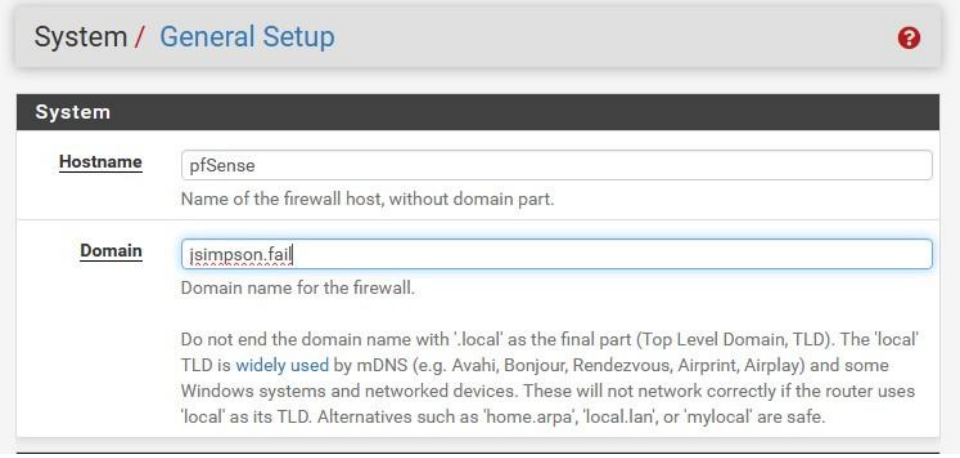
ANALYSIS:

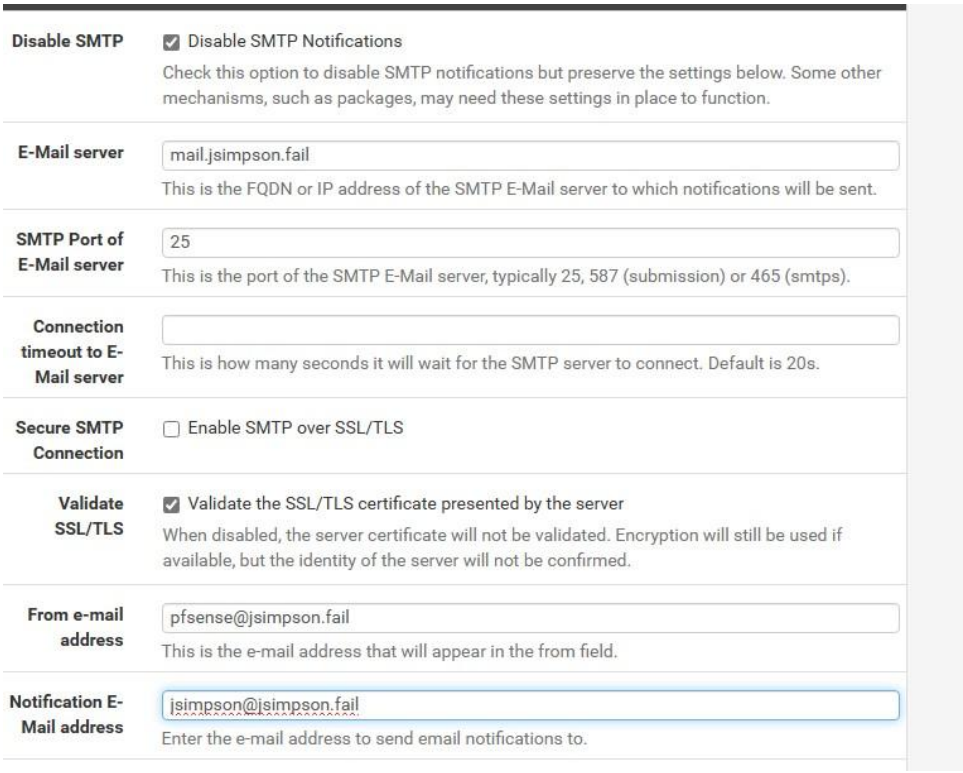
First, I installed BIND on pfSense to enable DNS services.

After installation, I verified that BIND was successfully installed and operational.



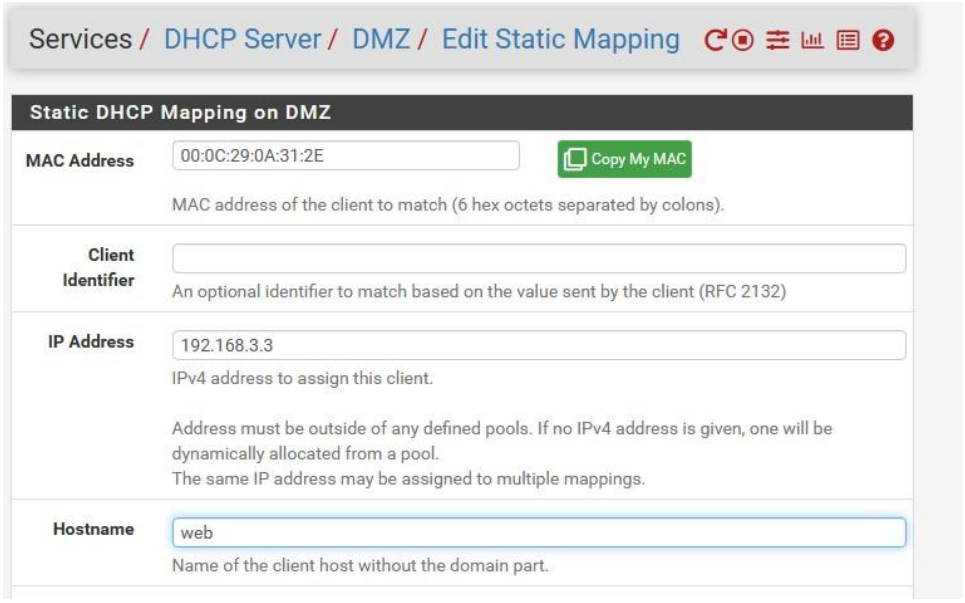
Next, I navigated to the general setup section of pfSense and updated the information to match the network's requirements.



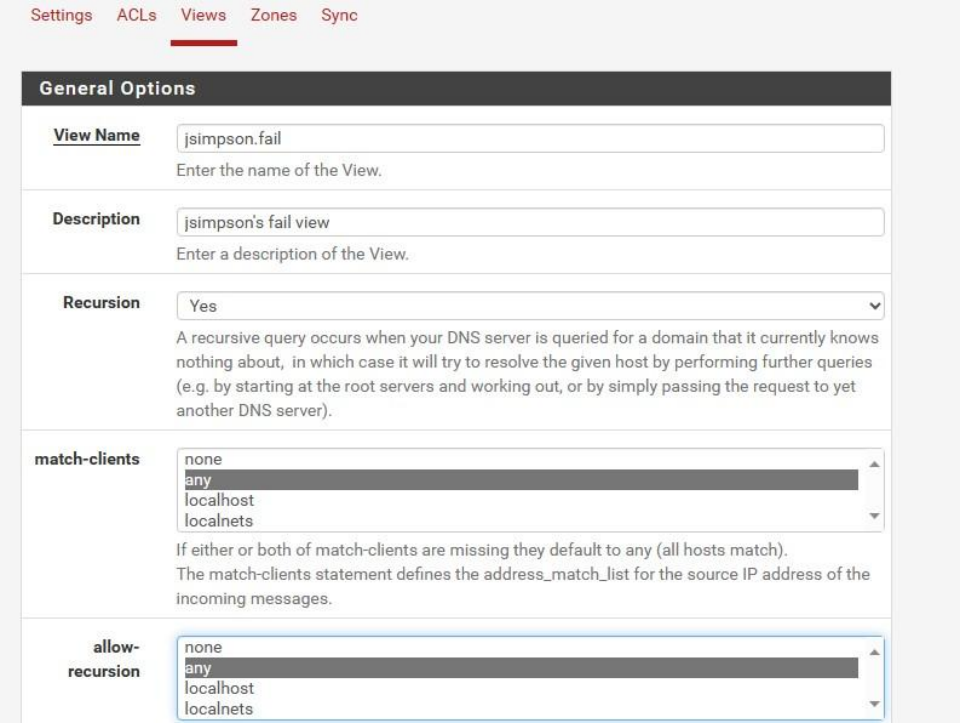


To better reflect the network structure, I renamed the OPT1 interface to DMZ.

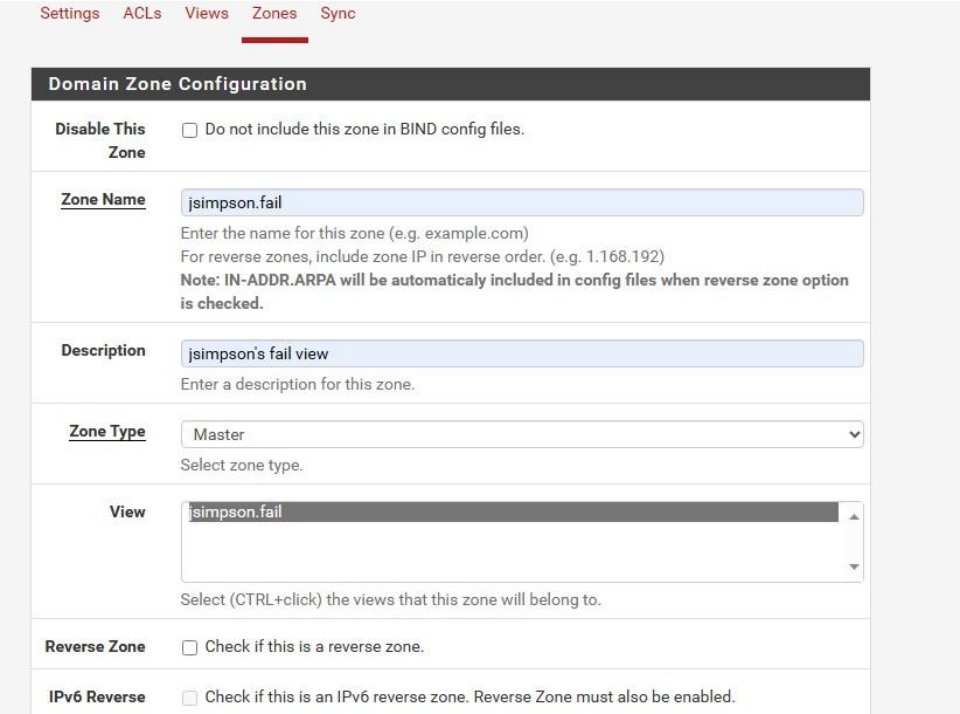
I disabled the DNS resolver on pfSense to avoid conflicts with the new DNS settings.



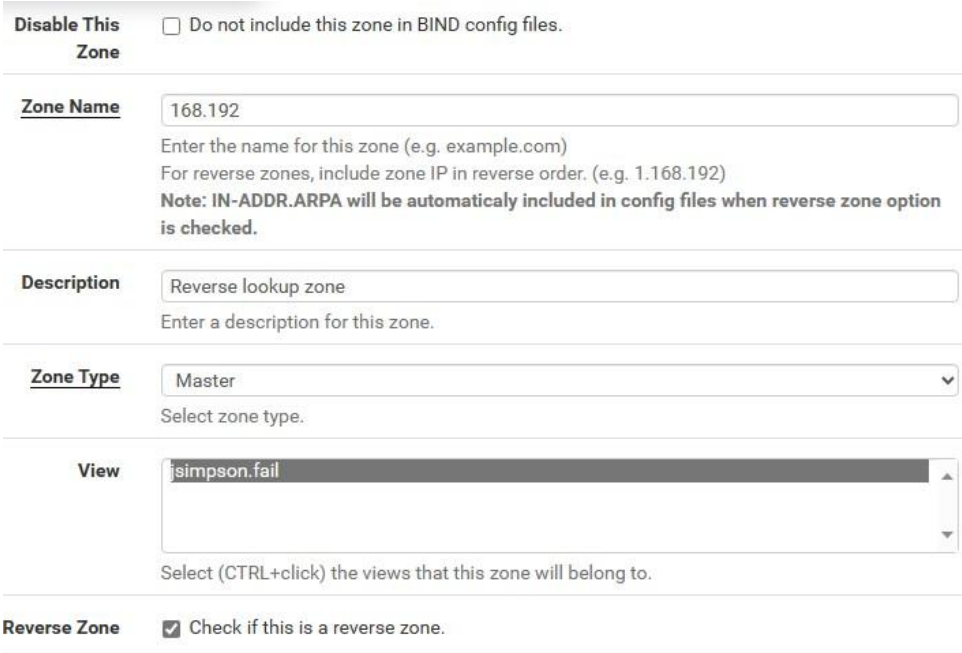
I proceeded to create a custom view to organize the DNS configuration as needed.

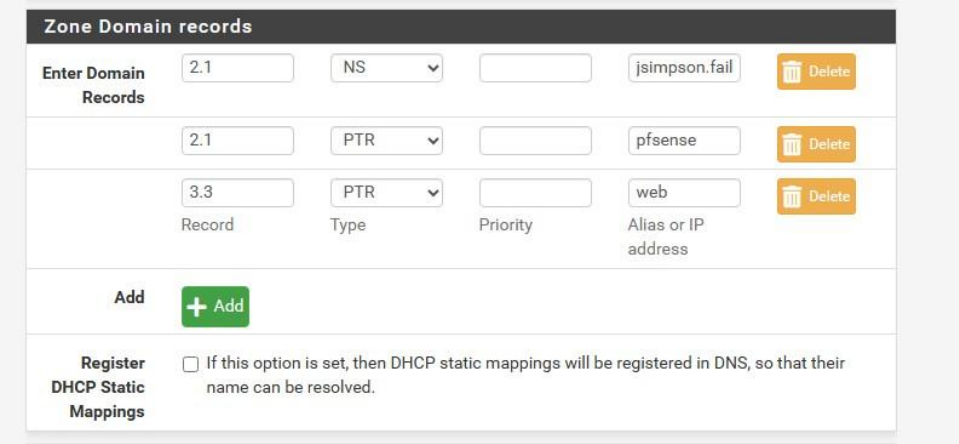


A forward lookup zone was then created to allow for proper resolution of domain names to IP addresses.

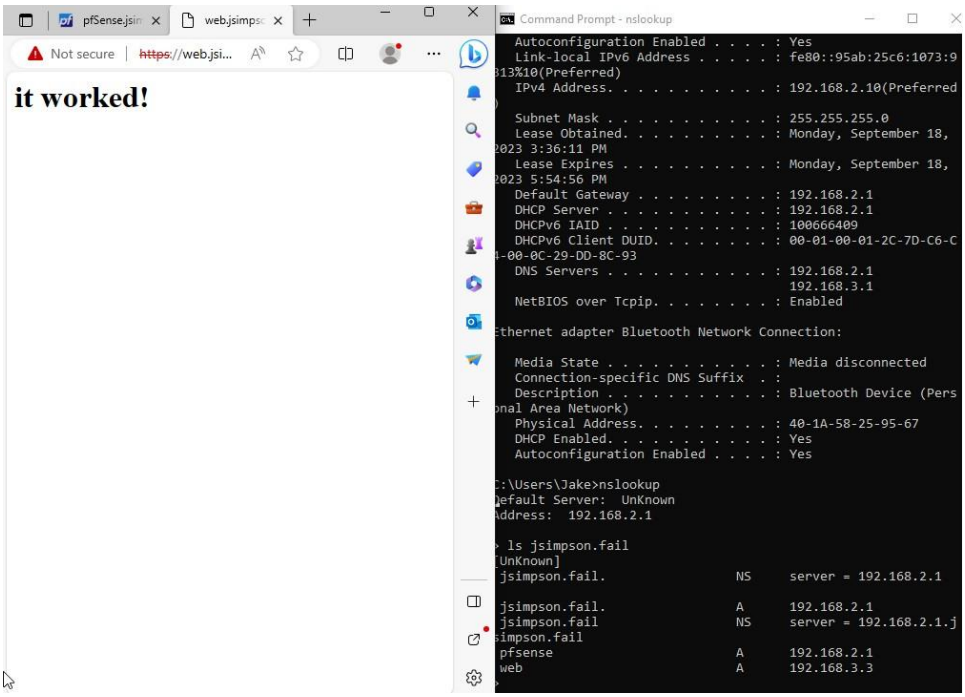


Following that, I set up a reverse lookup zone to resolve IP addresses back to domain names.





After completing the DNS configuration, I renewed the address to clear the IPv6 address listing, ensuring everything was functioning correctly. Finally, after the renewal, I confirmed that the setup was working as expected.


pfSense.jsim
web.jsimpsc
Not secure
https://web.jsi...
it worked!
Command Prompt - nslookup
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::95ab:25c6:1073:9
313%10(Preferred)
IPv4 Address. . . . . : 192.168.2.10(Preferred
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Monday, September 18,
2023 3:36:11 PM
Lease Expires . . . . . : Monday, September 18,
2023 5:54:56 PM
Default Gateway . . . . . : 192.168.2.1
DHCP Server . . . . . : 192.168.2.1
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7D-C6-C
4-00-0C-29-DD-8C-93
DNS Servers . . . . . : 192.168.2.1
192.168.3.1
NetBIOS over Tcpip. . . . . : Enabled
thernet adapter Bluetooth Network Connection:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Bluetooth Device (Pers
onal Area Network)
Physical Address. . . . . : 40-1A-58-25-95-67
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
C:\Users\Jake>nslookup
Default Server: UnKnown
Address: 192.168.2.1
> ls jsimpson.fail
[UnKnown]
jsimpson.fail. NS server = 192.168.2.1
jsimpson.fail. A 192.168.2.1
jsimpson.fail NS server = 192.168.2.1.j
simpson.fail
pfsense A 192.168.2.1
web A 192.168.3.3