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Sun November 24th 2024

Lab 5.3.3: Configuring a DMZ / Screened Subnet on a Security Appliance (pfSense)

From TestOut CompTIA Security+ Course

In this lab I will be setting up and configuring a Screened Subnet / DMZ (DeMilitarized Zone) on a pfSense Security Appliance.

The scenario for this lab is as follows:

“You are the IT administrator for a small corporate network. You want to make a web server that runs services accessible from the internet. To help protect your company, you want to place this server and other devices in a demilitarized zone (DMZ). This DMZ and server need to be protected by the pfSense Security Gateway Appliance (pfSense). Since a few of the other devices in the DMZ require an IP address, you have also decided to enable DHCP on the DMZ network.

In this lab, your task is to perform the following:

- **Access the pfSense management console:**
  - **Username: admin**
  - **Password: P@ssw0rd (zero)**
- **Add a new pfSense interface that can be used for the DMZ.**
  - **Name the interface DMZ.**
  - **Use a static IPv4 address of 172.16.1.1/16.**
- **Add a firewall rule for the DMZ interface that allows all traffic from the DMZ.**
  - **Use a description of Allow DMZ to any rule.**
- **Configure and enable the DHCP server for the DMZ interface.**
  - **Use a range of 172.16.1.100 to 172.16.1.200.”**

First , I’ll navigate to the pfsense console and login with the credentials provided.

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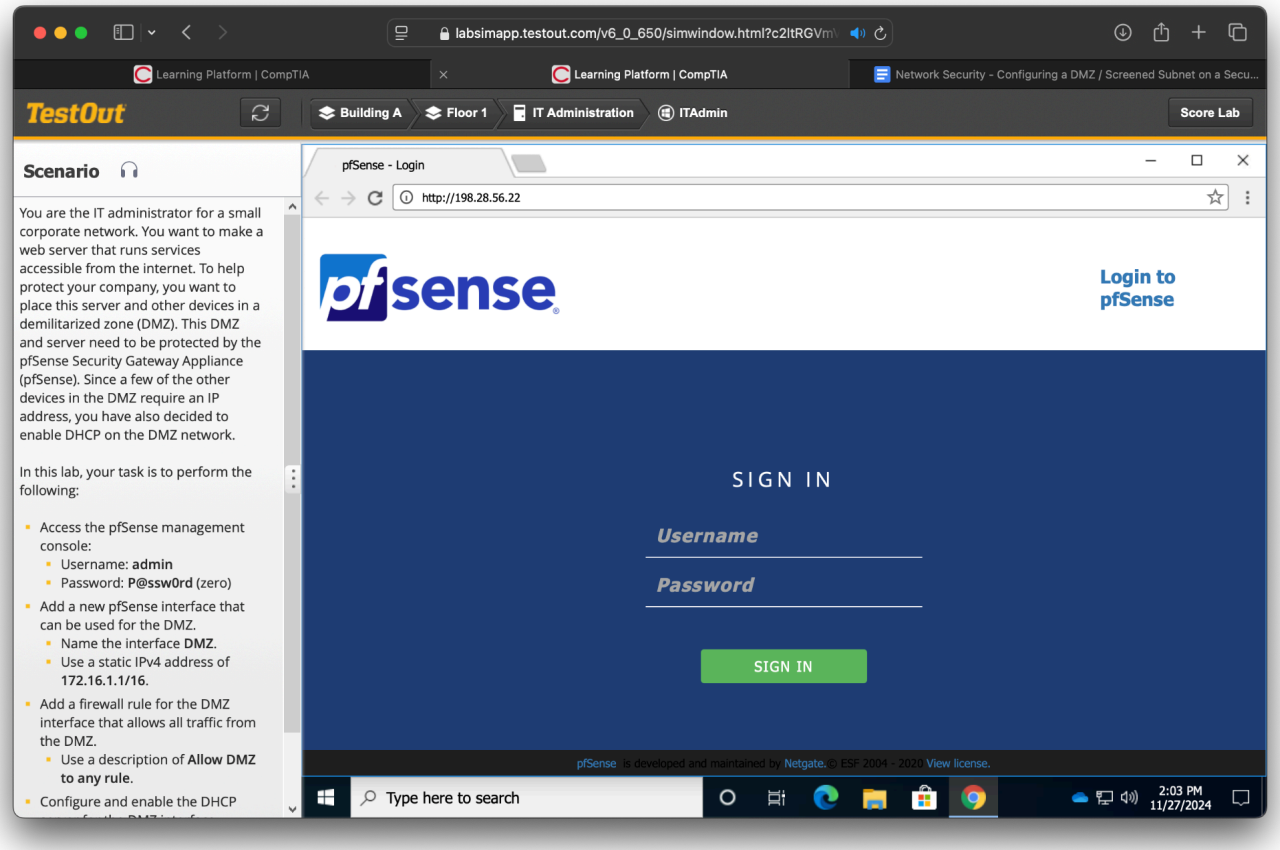

Our first task is to add a screened subnet. In order to do that, we'll need to create a new interface on the pfSense appliance that way we're able to route traffic to it. To add an interface I'll navigate to menu bar at the top of pfSense and go to **Interfaces > Assignments.**

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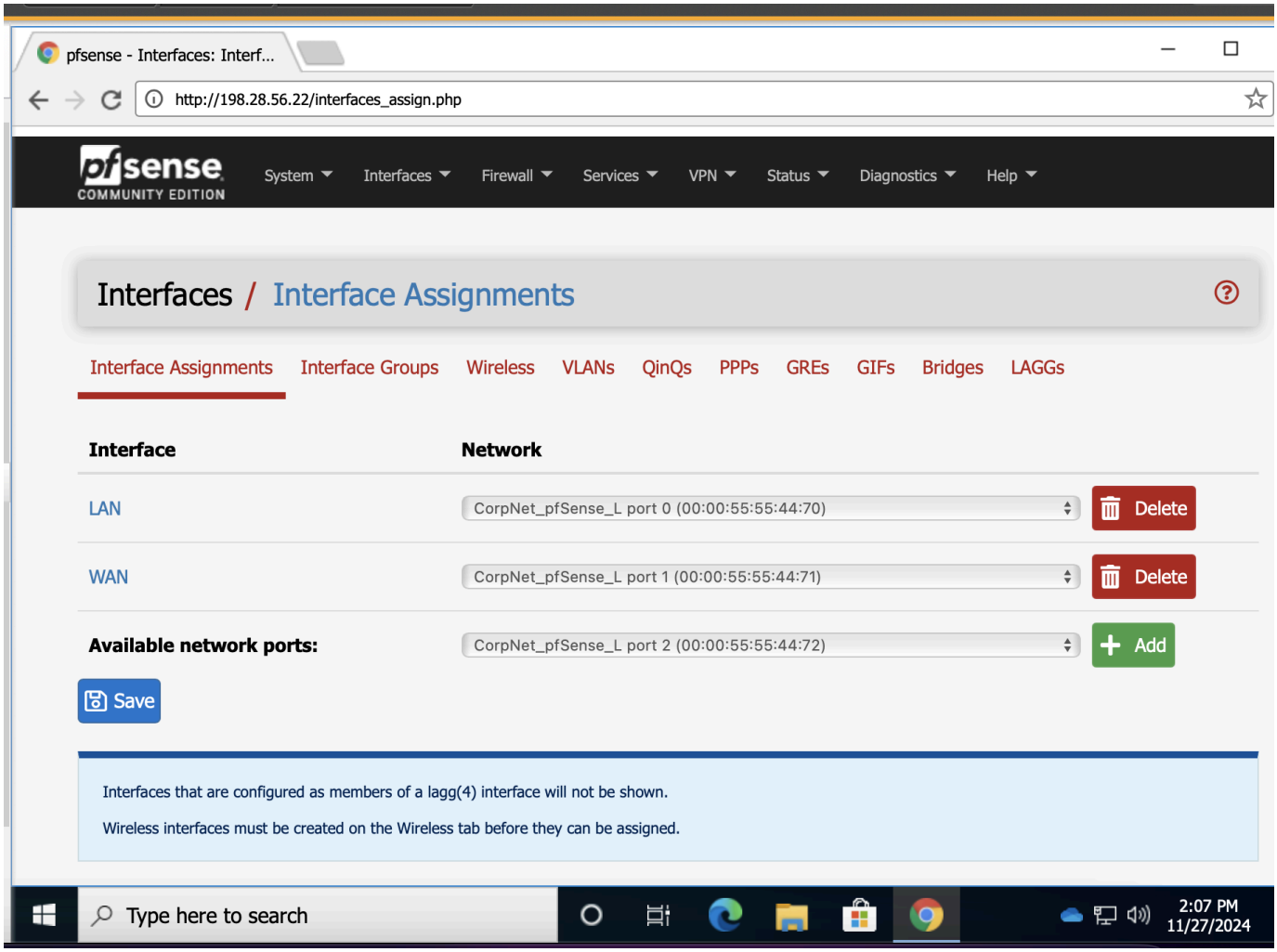

From here, I'll click the Add button. A new interface called **OPT1** appears. To edit the properties and rename it, we'll need to click the **OPT1** interface to bring up the configuration settings for it.

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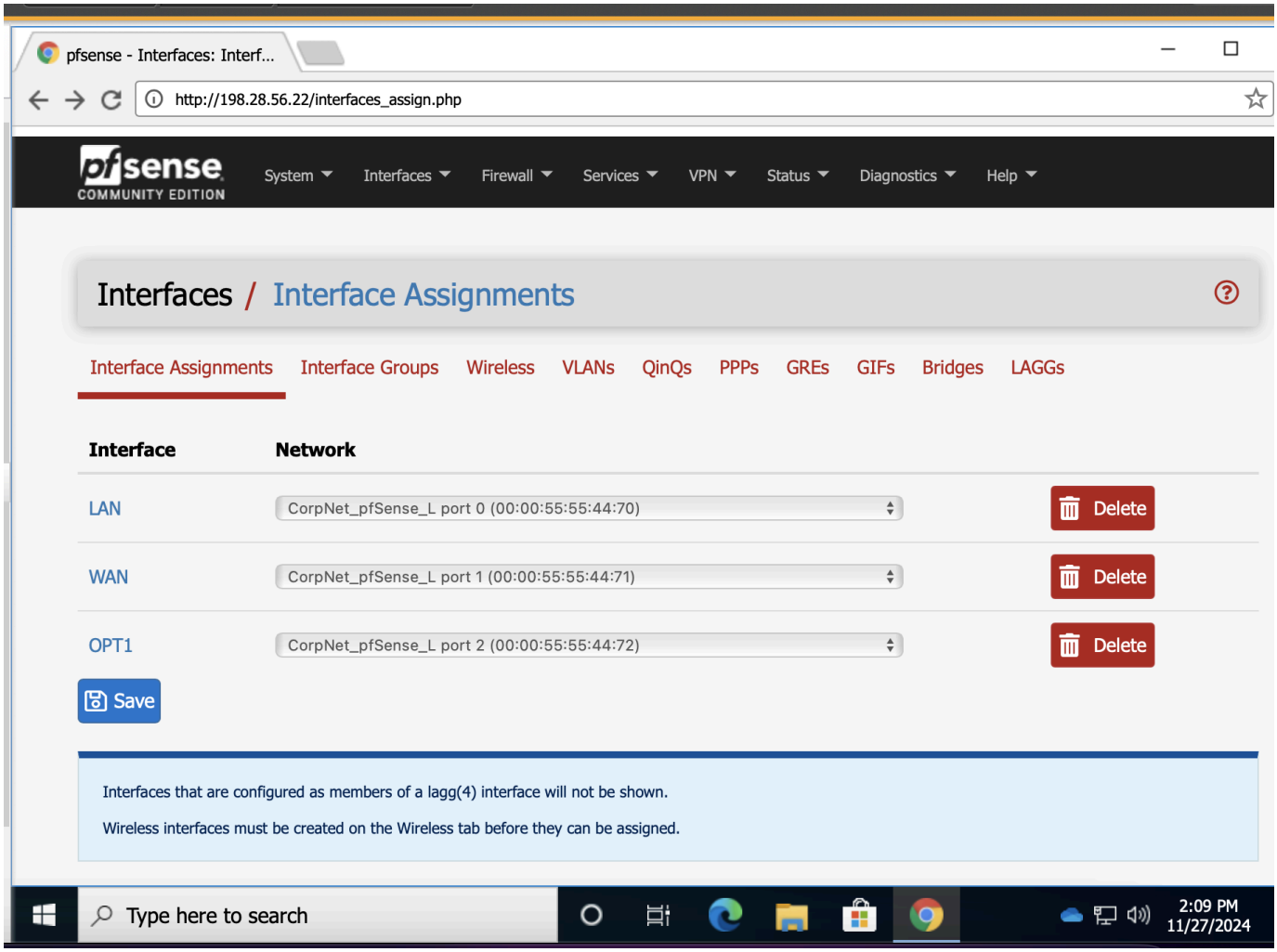

Since we would like this to be a static IP address I will select from the **IPv4 Configuration Type** drop-down menu the “**Static IPv4”** option.

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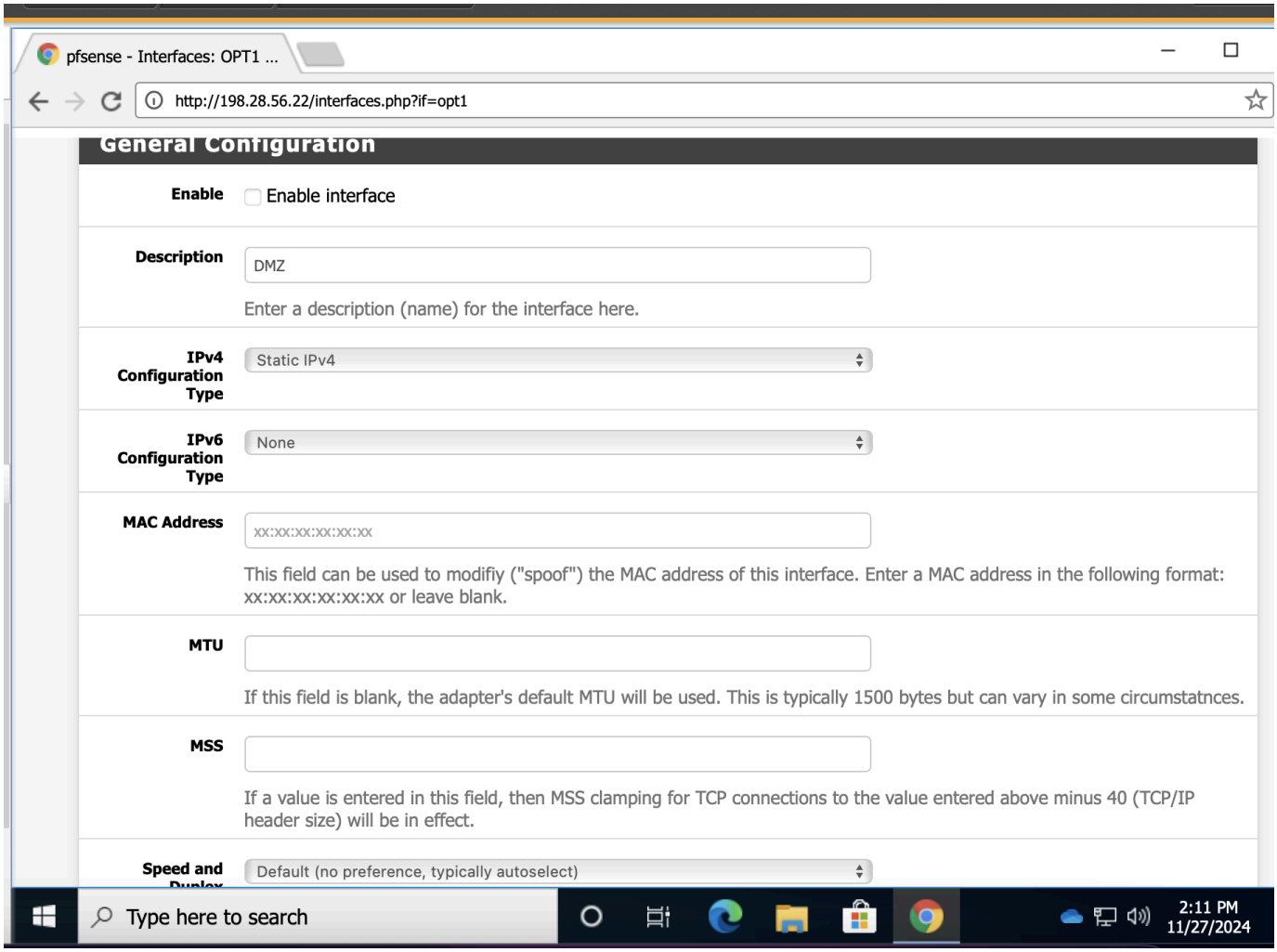

Note that I've also renamed the interface to "**DMZ"** as requested from the lab instructions. We will also need to set the IP address and subnet mask for it. The lab would like us to use **172.16.1.1/16**. Note that the "/16" is **CIDR Notation** for the subnet mask, where 16 represents the number of bits that indicate the network portion. In this case since each IP address is 32 bits long we know that the first 2 octets indicate that this machine is part of the **172.16.x.x subnet.**

Be sure to hit the save button after making the changes!

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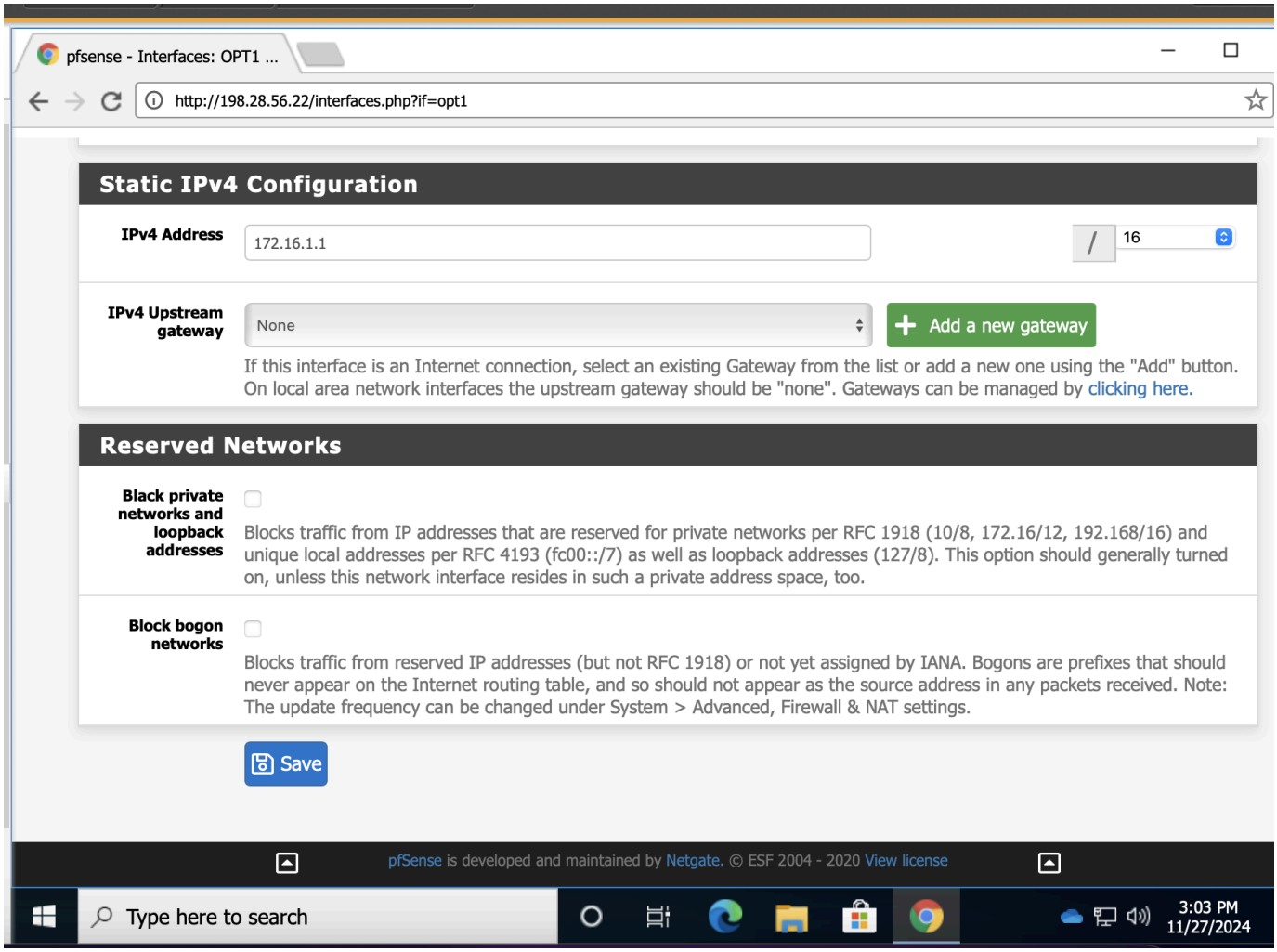

Now we can move on to create the firewall rules. We need to allow all traffic from the DMZ interface. To configure this we'll go to the pfSense menu bar at the top and navigate to **Firewall > Rules.**

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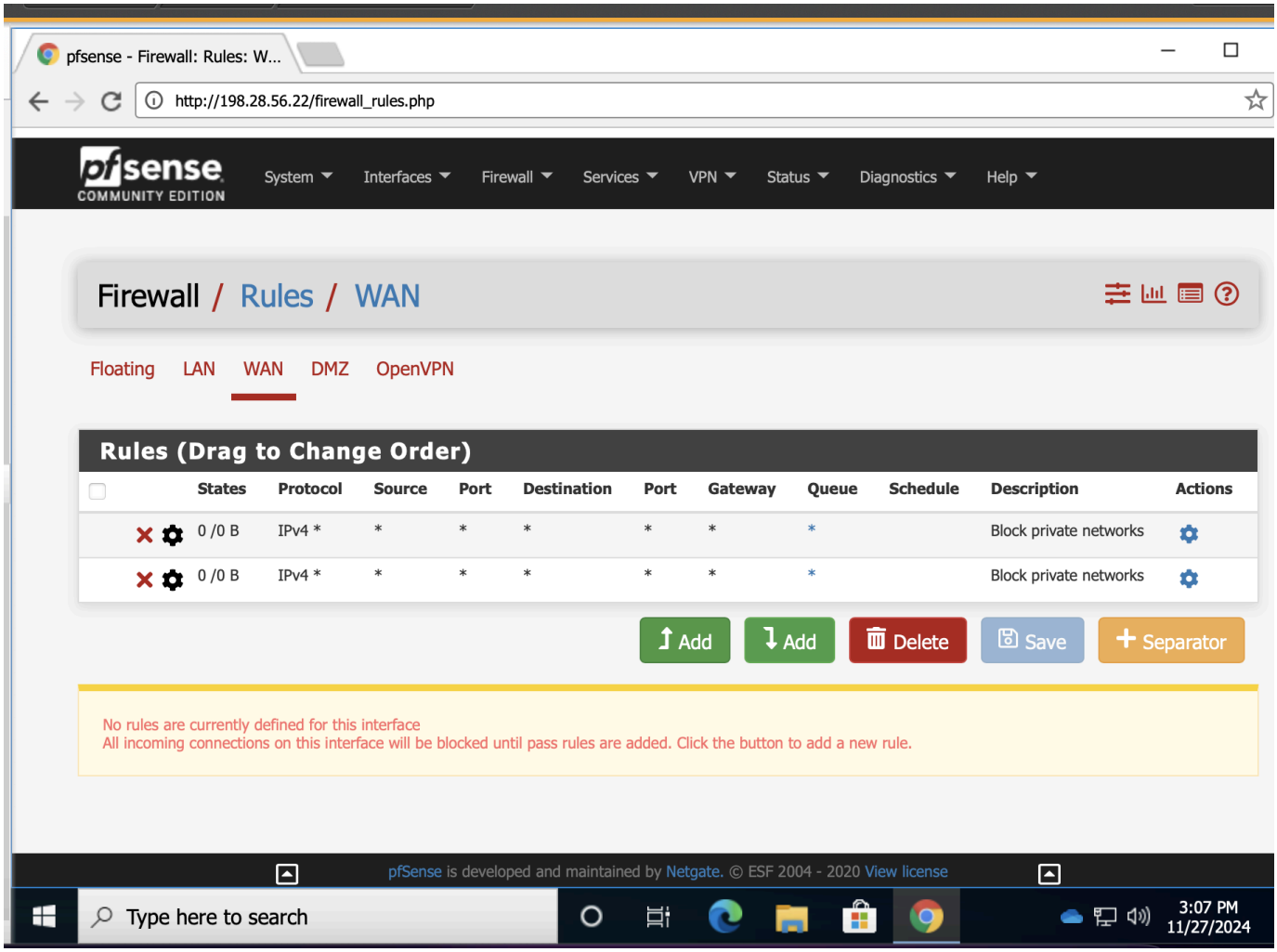

Click the add button and open the rule to set the configuration. We will pass LAN traffic through the DMZ and apply our rules on the DMZ interface. I will select the LAN from the breadcrumb menu and copy the rules from the LAN.

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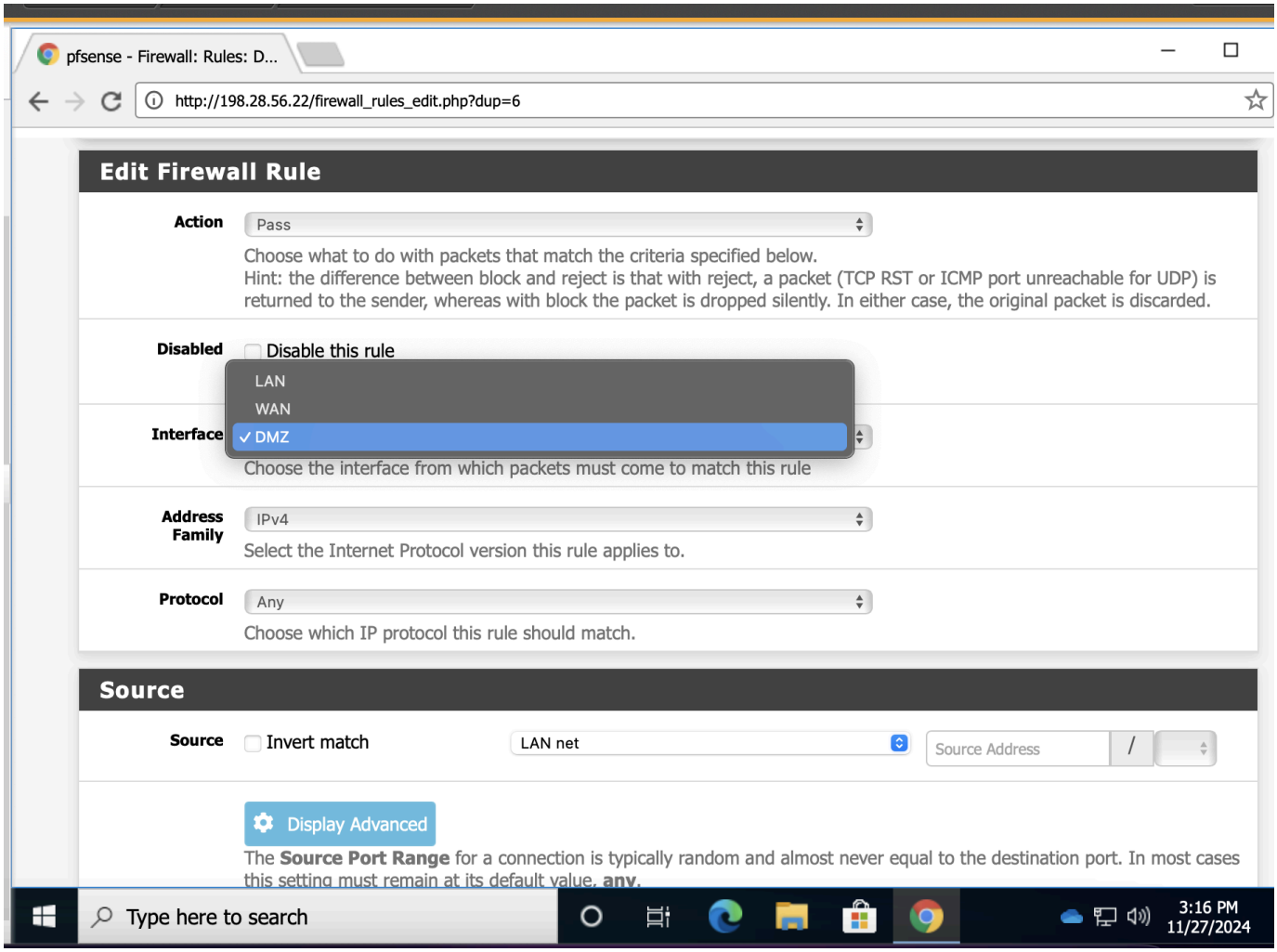

After setting all the configuration settings and hitting the “SAVE” button I can see that a new rule has appeared in the DMZ interface breadcrumb menu:

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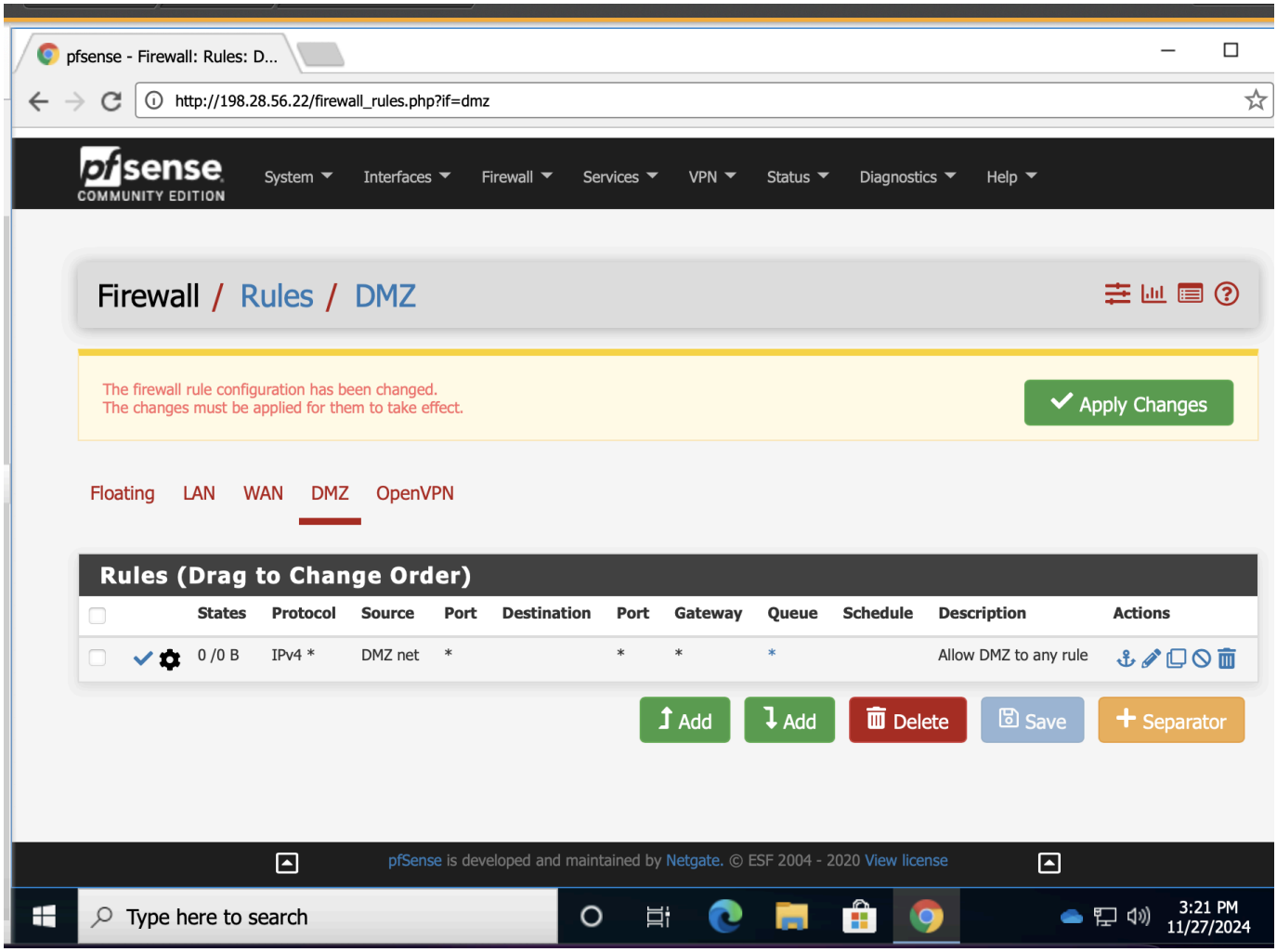

Awesome! With that configured we can move on to the last part of the lab which is the configure our DHCP server with a reserved range. When devices connect to the DMZ subnet we want our DHCP server to hand out leases for the IP range of **172.16.1.100 to 172.16.1.200.** This will make managing the DMZ easier because we'll know that if a device has an IP in that range , we know that the DHCP server handed out that IP.

To get to the DHCP configuration settings navigate from the top pfSense menu to **Services > DHCP Server.**

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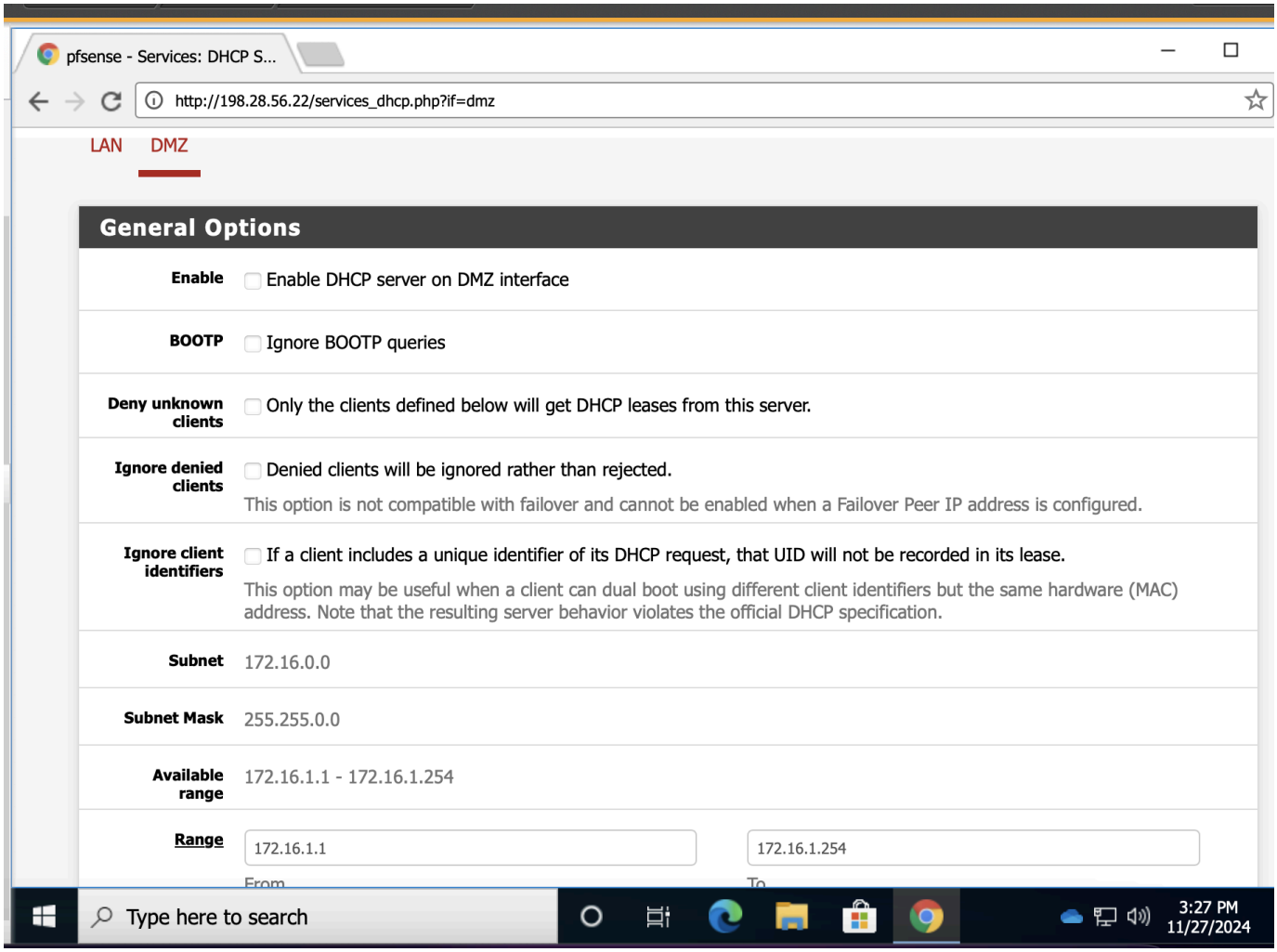

See the default range ? Let’s change that!

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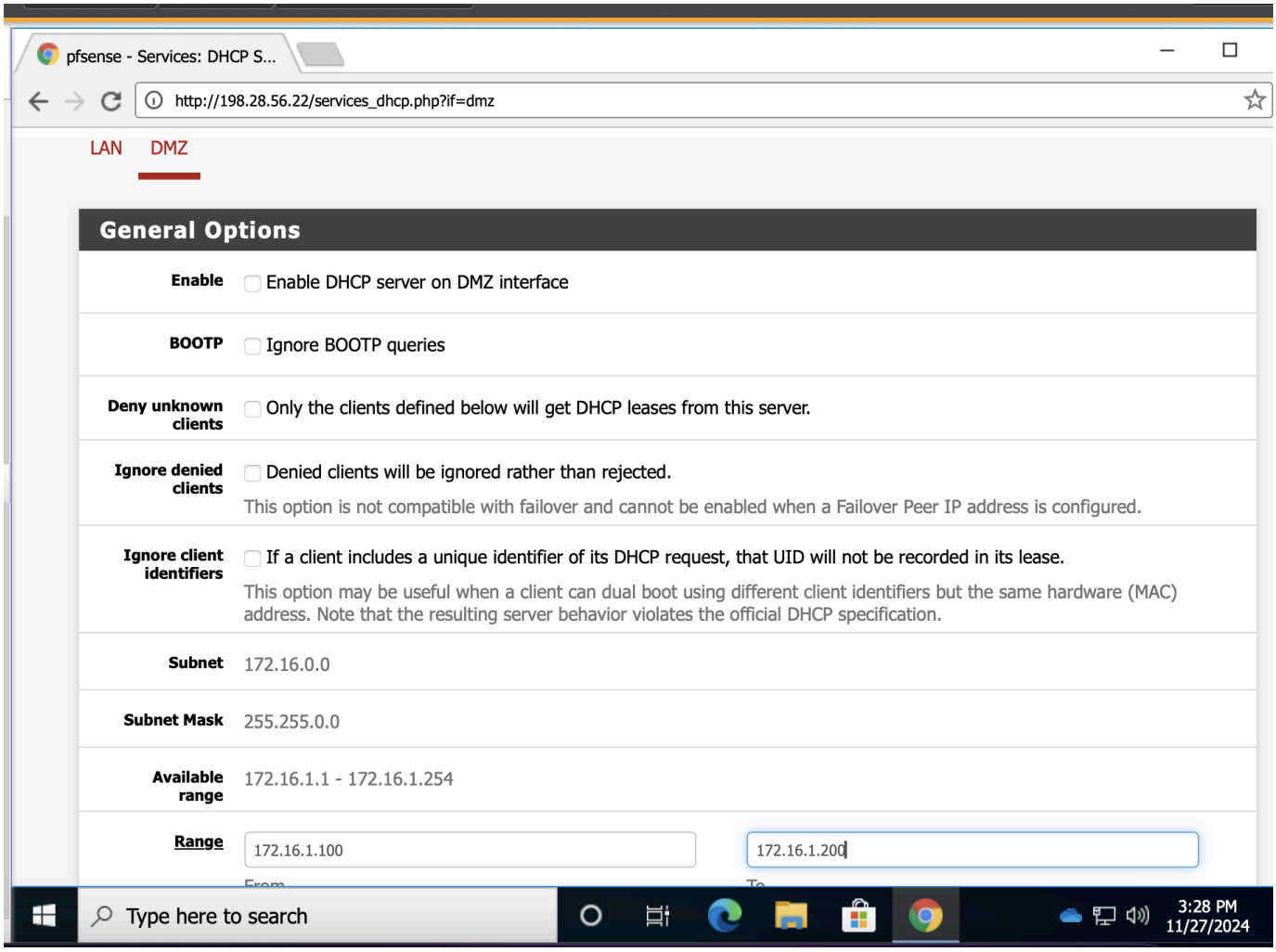

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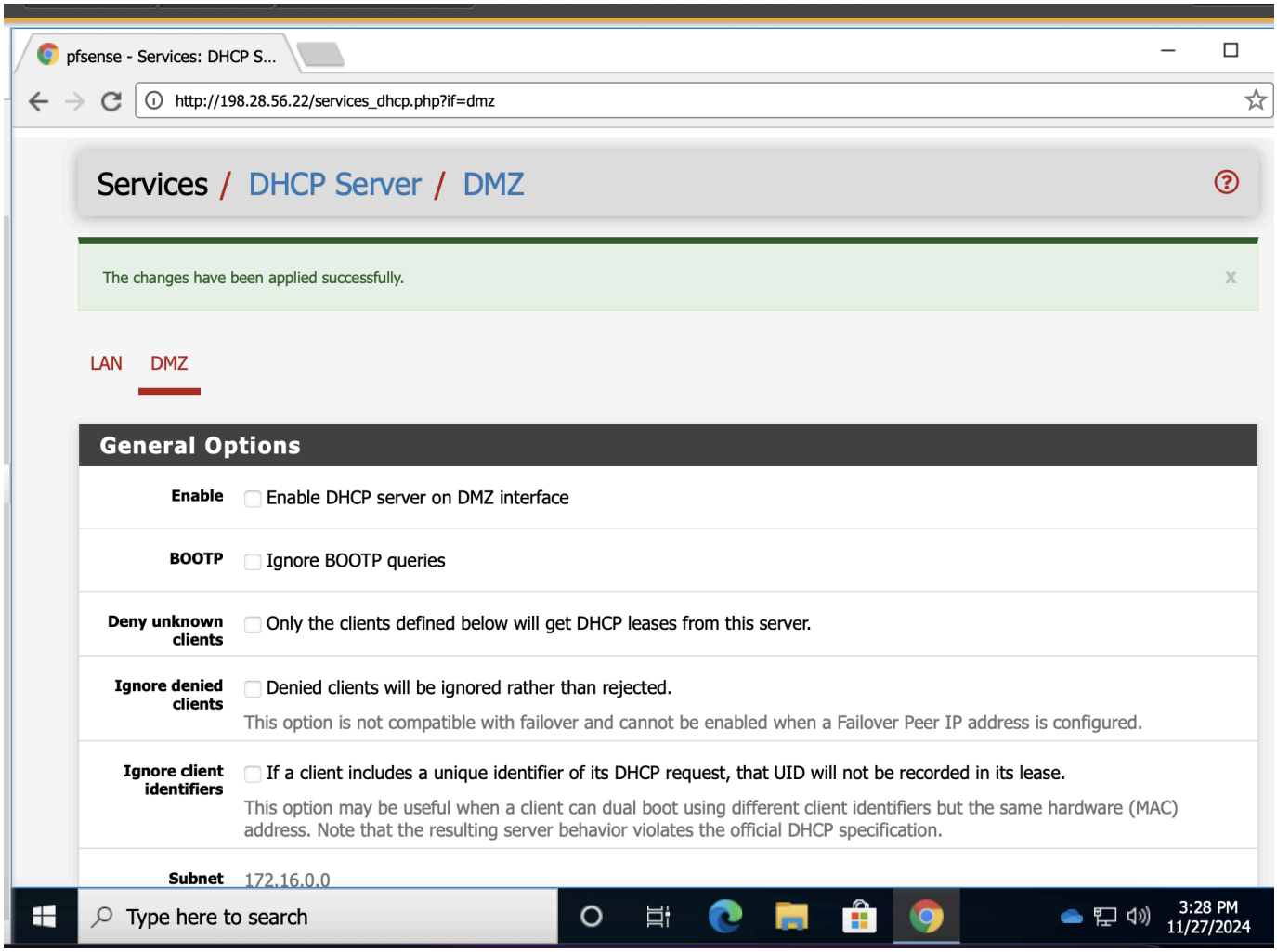

After hitting save we are now finished! This now concludes this lab!

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