My Custom Proxmox Setup

Overview of Proxmox

Proxmox VE (Virtual Environment) is an open-source server management platform designed to manage all your virtual machines (VMs), containers, and storage, within a single integrated environment. Built on top of Debian Linux and using KVM and LXC for virtualization, Proxmox provides a robust and scalable solution for virtual infrastructure management.

Key Features

- Integrated Virtualization: Proxmox combines two virtualization technologies: KVM (Kernel-based Virtual Machine) for full virtual machines and LXC (Linux Containers) for container-based virtualization. This allows users to manage both types of virtual environments through a single interface.
- High Availability: With features such as clustering, automatic failover, and live migration, Proxmox ensures that applications and services can maintain availability and minimal downtime.
- Web-Based Management Interface: Proxmox offers a user-friendly, web-based interface that simplifies the administration of virtual resources, making it accessible even to those with limited command-line experience.

(visit proxmox.com to read more and get a better overview)

Hardware Details

Minimum System Requirements

Processor: 64-bit processor with support for Intel VT or AMD-V (virtualization technology).

Memory: At least 4 GB RAM, though more is recommended for better performance, especially when running multiple VMs.

Storage: Minimum of 16 GB of disk space; SSD is recommended for the Proxmox OS and VM data to enhance performance.

Network Interface: At least one Ethernet (1 Gbps recommended).

My Hardware Configuration

This is the hardware that I chose because I had recently upgraded my main computer these were parts that I replaced:

Processor: AMD Ryzen 5 3600

A 6-core, 12-thread processor capable of handling tasks and multiple virtual machines.

Memory: 32GB of Corsair RAM

Storage:

2TB HDD from Seagate: Used for extensive storage needs such as VM backups and data where high speed is not critical.

500GB M.2 SSD from Kingston: Dedicated to hosting the Proxmox operating system and active VMs.

Installation Steps for Proxmox VE

Prepare Installation Media

- Download the Proxmox VE ISO: Visit the official Proxmox website and download the latest version of Proxmox VE ISO file from the downloads section.
- Create a Bootable USB Drive: Using a tool like Rufus or Etcher, select the downloaded ISO file and the USB drive you wish to use.

Boot from the USB Drive

- Insert the USB Drive: Place the USB drive into your server.
- Access the Boot Menu: Restart the server and access the boot menu. This is usually done by pressing a specific key during the startup process, such as F12, F2, or DEL, depending on the motherboard.
- Select the USB Drive: From the boot menu, select the USB drive as the boot device to start the Proxmox installation process.

Proxmox Installation Wizard

- Welcome Screen: Once the Proxmox installer loads, you will see the welcome screen. Click 'Install Proxmox VE'.
- Accept License Agreement: Read and accept the Proxmox VE End User License Agreement to proceed.
- Select Target Hard Disk: Choose the disk where Proxmox VE will be installed. This action will erase all existing data on the disk.
- Configure Time Zone and Keyboard Layout: Select your time zone and the appropriate keyboard layout.
- Set Password and Email Address: Enter a secure password for the root account and provide an email address for system notifications.

Network Configuration

- Configure Hostname and IP Address: Enter a hostname for your Proxmox server and configure the IP address. Make sure the IP address is appropriate for your network and not currently in use.
- Subnet Mask and Gateway: Enter the subnet mask and default gateway corresponding to your network configuration.
- DNS Server: Specify the DNS server. This can be your router's IP address or a public DNS like Google's 8.8.8.8.

Tip: Before starting the installation, you can find out your network details:

- On Windows: Open Command Prompt and type ipconfig /all to see all network configuration details including DHCP, DNS, and gateway.
- On Linux: Open a terminal and type ip a to view IP addresses and network interfaces, or nmcli device show if you have NetworkManager installed to get detailed network information.

Reboot and Access Proxmox Web Interface

- Remove Installation Media: Once the installation completes, remove the USB drive.
- Reboot the Server: Allow the server to reboot.
- Access the Web Interface: Open a web browser on a computer within the same network and navigate to https://<Your-Proxmox-IP>:8006. The interface uses HTTPS, so you may need to accept a security exception due to the self-signed certificate.

Post-Installation Setup

- Log in to Proxmox VE: Use the username 'root' and the password you set during installation.
- Verify Network Connectivity: Check if you can update packages and connect to the internet from your Proxmox server. If there are issues, you may need to recheck your network settings.
- Configure Storage and VMs: Begin setting up your storage according to your needs and start creating virtual machines.

Conclusion

Setting up Proxmox VE was not just a fun project but also a good learning experience. I got to dive deep into DHCP configurations and figure out how important it is to know which IP addresses my router can handle. Plus, learning to spot which IPs were already taken on my network.

Tackling this project really showed me how crucial it is to triple check your network settings when you're setting up a server environment like Proxmox. I ran into a few hiccups with IP address and DNS settings at first, but getting past those issues taught me a lot about troubleshooting and network management.

All in all, getting Proxmox VE up and running was super rewarding. It didn’t just boost my tech skills, it also gave me more confidence in handling and configuring virtual environments.