Lab 01: Configuring a Proxmox VE

Objective

You will learn how to prepare your system, install Proxmox Virtual Environment (VE), and access it through a web interface by setting up a local Proxmox Virtual Environment (VE) server on your laptop using virtualization tools.

Requirements

- A laptop with:
  - **At least 8 GB RAM** (16 GB recommended)
  - **At least 100 GB of free disk space**
  - **Intel VT-x/AMD-V** enabled in BIOS/UEFI (hardware virtualization)

- Software:
  - A **Proxmox VE ISO** (download from https://www.proxmox.com/en/downloads)
  - **VirtualBox** or **VMware Workstation** installed (VirtualBox is recommended)
  - An **ISO mounting tool** (built-in in Windows 10/11, Linux, macOS)

- Internet Connection
- Basic knowledge of Linux terminal commands

Tasks

Task 1: Prepare Your Laptop

1. **Install VirtualBox or virt-manager** (if not already installed):

   - Download links
     i. https://www.virtualbox.org/wiki/Downloads.
     ii. https://virt-manager.org/
   - Install it with default settings.

2. **Download the latest Proxmox VE ISO**:

   - Go to https://www.proxmox.com/en/downloads/proxmox-virtual-environment.

- Download the "Proxmox VE ISO Installer".

3. **Check virtualization support**:
   - Windows: Open Task Manager → Performance → CPU → Check "Virtualization: Enabled".
   - Linux/macOS: Run `lscpu` (Linux) or check System Report (macOS).

Task 2: Create a Virtual Machine for Proxmox

1. **Open VirtualBox** → Click **New**.
2. **VM Name**: `Proxmox-Server`
3. **Type**: Linux
4. **Version**: Debian (64-bit)
5. **Memory**: Allocate **4 GB minimum**, **8 GB recommended**.
6. **Hard Disk**:
   - Create a **new virtual hard disk**.
   - Size: **64 GB minimum**.
   - Type: VDI (VirtualBox Disk Image).

7. **Settings**:
   - Go to **System** → **Processor** → Allocate at least **2 CPUs**.
   - **Enable EFI (special OSes only)** in System → Motherboard if Proxmox fails to boot.
   - Go to **Network** → Adapter 1 → Set **Attached to: Bridged Adapter** (or NAT if bridged is unavailable).

8. **Mount Proxmox ISO**:
   - Settings → Storage → Empty CD drive → Click CD icon → **Choose a disk file...** → Select the Proxmox ISO you downloaded.

Task 3: Install Proxmox VE

1. **Start** the VM.
2. Select **Install Proxmox VE**.
3. Accept the license agreement.

4. Configure the following:
   - Target Disk: Choose the default (your virtual disk).
   - Country/Timezone: Set your location.

- Password: **Set a strong root password** (write it down!).
- Email: Your email address (use a dummy one if needed).
- Network configuration:
  - Hostname: `proxmox.local`
  - IP address: Automatic (DHCP) or set manually (optional).

5. Complete installation and **reboot**.

Note: After reboot, **REMOVE** the ISO from the virtual drive to avoid boot looping.

Task 4: Access Proxmox Web Interface

After boot, you will see a message:

```
You can now connect to the Proxmox VE web interface:
https://your-ip-address:8006
```

1. Open your laptop browser and enter the IP address shown.
2. Log in:
   - Username: `root`
   - Password: (the one you set during installation)
   - Realm: **Linux PAM standard authentication**

3. Explore the Proxmox Dashboard.

Submission

A PDF report names `E19XXX_Lab01.pdf`, where `XXX` is your enumber which includes all of the following,

Installation Steps Summary

- A short description (3–5 sentences) of **what you did to install Proxmox**.
- Mention any **issues faced** and **how you solved them**.

Screenshots

- **VirtualBox settings** for the Proxmox VM.
- **Proxmox web login page**.

- **Proxmox dashboard** (Datacenter view).
- **Storage overview**.
- **Network settings page**.
- **Create VM wizard** (summary before creating VM).
- **Console** with the new VM booting or installing an OS.

Observations

For each major step (installation, configuration, VM creation), write 2-3 sentences about things you noticed, difficulties, and unexpected incidents.

Deployment

Include a summary of the necessary steps that need to be taken in order to make your Proxmox installation a fully deployed cloud environment.

Bonus Task (Optional)

- Create your first Virtual Machine inside Proxmox VE.
- Install a lightweight Linux distro (like Ubuntu Server or Alpine Linux).

Notes

- Always **shut down** the VM properly from the Proxmox web interface, not from VirtualBox!
- Proxmox might show a **subscription warning**; you can safely ignore it.
- Use **Ctrl+Alt+Del** in VirtualBox if you need to send a reboot signal to the VM.