

# Proxmox VE

## Course Description:

Proxmox Virtual Environment (Proxmox VE; short PVE) is an open-source server virtualization management platform. It is a Debian-based Linux distribution with a modified Ubuntu LTS kernel and allows deployment and management of virtual machines and containers. Proxmox VE includes a web console and command-line tools, and provides a REST API for third-party tools. Two types of virtualization are supported: container-based with LXC (starting from version 4.0 replacing OpenVZ used in version up to 3.4, included), and full virtualization with KVM. It comes with a bare-metal installer and includes a web-based management interface.

## Modes of Trainings Available:

Online Training  
Class Room Training  
Regular Classes Available  
Weekend Classes Available

## Course Outline

### Introduction

- What is Proxmox?
- Proxmox main advantages and features

### Installation and setting up Proxmox

#### a: Installation

- How to install on Debian 10 and from official ISO.
- Proxmox file systems: ZFS vs MDRAID.
- Upgrade from the previous version to 6.0.

#### b: WEB GUI Interface

General datacenter options  
General node options

#### c: Network configuration and bridging

- SSL certificate



## **d: Storage networking**

- How to work with any storage via Directory storage type

## **Working with Guests**

### **a: Creating a Virtual Machine**

- Options and settings
- Guest Agent

### **b: Creating a Container**

- Options and settings
- Guest Agent
- Templates and Clones

### **c: Backup and Restore**

- Options and settings
- Guest Agent
- Templates and Clones

### **c: Backup and Restore**

- Snapshots
- Archives
- Zsync

## **Firewall**

### **a: Built-in Firewall overview**

- Understanding of Groups and Rules
- IPAliases and IPSets

### **b: Alternative CSF/LFD firewall configuration**

- Pros and Cons

## **User management**

- Groups & User management
- Add Group
- User
- Access management regarding VMs/Containers
- Understanding of Pools & User roles



## Clustering

### a: Understanding Cluster

- HA Cluster
- Quorum understanding
- Proxmox cluster file system
- Creating 3 nodes cluster
- HA Cluster setting up for VM
- Live migration of VMs between nodes in the cluster

### Command line tools

- Useful command-line tools to Manage config files

