Proxmox 8.x

Installation / Setup / Use

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What is Proxmox

Promox VE

Proxmox Virtual Environment is an open source server virtualization management solution based on QEMU/KVM and LXC. You can manage virtual machines, containers, highly available clusters, storage and networks with an integrated, easy-to-use web interface or via CLI. Proxmox VE code is licensed under the GNU Affero General Public License, version 3. The project is developed and maintained by Proxmox Server Solutions GmbH

What is a hypervisor?

A hypervisor is software that pools computing resources—like processing, memory, and storage—and reallocates them among virtual machines (VMs). This technology makes virtualization possible, meaning you can create and run many VMs from a single physical machine.

The hypervisor gives each virtual machine the resources that have been allocated and manages the scheduling of VM resources against the physical resources. The physical hardware still does the execution, so CPU is still executing CPU instructions as requested by the VMs, for example, while the hypervisor manages the schedule.

Multiple different operating systems can run alongside each other and share the same virtualized hardware resources with a hypervisor. This is a key benefit of virtualization. Without virtualization, you can only run 1 operating system on the hardware.

Types of hypervisors

There are 2 different types of hypervisors that can be used for virtualization: type 1 and type 2 hypervisors.

Type 1

A type 1 hypervisor, also referred to as a native or bare metal hypervisor, runs directly on the host's hardware to manage guest operating systems. It takes the place of a host operating system and VM resources are scheduled directly to the hardware by the hypervisor.

This type of hypervisor is most common in an enterprise data center or other server-based environments.

KVM, Microsoft Hyper-V, Proxmox, and VMware vSphere are examples of a type 1 hypervisor. KVM was merged into the Linux kernel in 2007, so if you're using a modern version of Linux, you already have access to KVM.

Type 2

A type 2 hypervisor is also known as a hosted hypervisor, and is run on a conventional operating system as a software layer or application.

It works by abstracting guest operating systems from the host operating system. VM resources are scheduled against a host operating system, which is then executed against the hardware.

A type 2 hypervisor is better for individual users who want to run multiple operating systems on a personal computer.

VMware Workstation and Oracle VirtualBox are examples of a type 2 hypervisor.

Proxmox Installation

Overview (https://pve.proxmox.com/pve-docs/chapter-pve-installation.html)

Download ISO image which includes:
- Complete operating system (Debian Linux, 64-bit)
- The Proxmox VE installer, which partitions the local disk(s) with ext4, XFS, BTRFS or ZFS and installs the operating system
- Proxmox VE Linux kernel with KVM and LXC support
- Complete toolset for administering virtual machined, containers, the host system, clusters and all necessary resources
- Web based management interface

Boot from USB or CD/DVD
- Text based or Graphical

Configure the host Machine
- Hostname / IPaddress
- Disk partition type
- Timezone / keyboard type

Note: Proxmox VE is a bare-metal installer, please be aware that the complete server is used and existing data on the selected disks will be removed.

Proxmox Host Configuration
After the installation

Repository Configuration

Software update

Network Configuration

Add NAS disk

Enable VLAN awareness

Optional add second node (create a cluster)

DEMO

Online DEMO

Proxmox Host Configuration
Helper scripts

https://github.com/tteck/Proxmox

Proxmox Questions