



Datasheet

Proxmox Virtual Environment 6

AT A GLANCE

- Complete open-source platform for enterprise virtualization
- Easy management of compute, network, and storage with the central web interface
- 100% software-defined architecture
- Two virtualization technologies supported: KVM hypervisor & Linux Container (LXC)
- Web-based UI, CLI, API
- High-Availability (HA) Cluster Manager
- Live Migration
- Built-in services: firewall, backup/restore, storage replication, etc.
- Open-source license GNU AGPL, v3
- Enterprise support agreements

OVERVIEW

Proxmox VE is a complete open-source solution for enterprise virtualization that tightly integrates KVM hypervisor and LXC containers, software-defined storage and networking functionality on a single platform. With the central user interface you can easily run VMs and containers, manage software-defined storage resources and networking functionality, highly available clusters, and multiple out-of-the-box tools like backup/restore, live migration, storage replication, or the integrated firewall. Proxmox VE enables you to virtualize even the most demanding Linux and Windows application workloads.

By combining two virtualization technologies on a single platform, Proxmox VE provides maximum flexibility to your data center. It includes strong high-availability (HA) support and—thanks to the unique multi-master design—you don't need an additional management server thus saving resources and allowing HA without single point of failure (SPOF).

ENTERPRISE-READY

Enterprises use the powerful Proxmox VE platform to easily install, manage and monitor hyperconverged infrastructures (HCI) in their data center. Multiple authentication sources combined with role-based user and permission management enable full control of the HA clusters. The REST API enables easy integration of third-party management tools like for example custom hosting environments.

The future-proof and open-source development model of Proxmox VE guarantees full access to the products source code as well as maximum flexibility and security.

KEY FEATURES

INDUSTRY-LEADING

ENTERPRISE VIRTUALIZATION

- Linux and Windows servers, 32 and 64 bit operation systems.
- Support for the latest Intel and AMD server chip sets – for great VM performance.
- Performance relative to bare-metal for real-world enterprise workloads.
- Management layer containing all the capabilities to manage and monitor an open-source software-defined data center.

OPEN-SOURCE SOFTWARE

- Published under the free and open-source GNU Affero General Public License, version 3 (AGPL, V3: <http://www.gnu.org/licenses/agpl-3.0.html>)
- Designed to ensure cooperation with community
- Public code repository (Git)
- Bugtracker for issue tracking
- Community support forum
- Documentation, Wiki, video tutorials, how-tos,...

ENTERPRISE SUPPORT AGREEMENT

- Subscriptions to ensure business continuity.
- Exclusive access to the stable Enterprise Repository.
- Updates and version upgrades via GUI.
- Professional support from the Proxmox developers.

HIGH-AVAILABILITY CLUSTER

- No single point of failure (no SPOF).
- Multi-master cluster.
- Manage the HA settings for KVM and LXC via GUI.
- pmxcfs—unique Proxmox VE Cluster File System: database-driven file system for storing configuration files replicated in real-time on all nodes using Corosync.
- Based on proven Linux HA technologies, providing stable and reliable HA service.
- Resource agents for KVM and containers (LXC).
- Watchdog-based fencing.

FENCING

- The Proxmox VE HA Manager uses self fencing provided by hardware Watchdog or kernel Softdog.
- No simultaneous data access or corruption.
- Works „out-of-the-box“.

- Included Proxmox VE HA Simulator for testing.

WEB-BASED MANAGEMENT INTERFACE

- Integrated - no need to install a separate management tool or any additional management node.
- Fast, search-driven interface, able to handle thousands of VMs.
- Based on the Ext JS JavaScript framework.
- Secure HTML5 console, supporting SSL.
- Fast and easy creation of VMs and containers.
- Seamless integration and easy management of a whole cluster.
- Subscription management via GUI.
- AJAX technologies for dynamic updates of resources.

COMMAND LINE (CLI)

- Manage all components of your virtual environment.
- CLI with intelligent tab completion.
- Full UNIX man page documentation.

REST API

- Easy integration for third-party management tools.
- REST like API (JSON as primary data format).
- Easy and human readable data format (native web browser format).
- Automatic parameter verification (verification of return values).
- Automatic generation of the API documentation.
- Easy way to create command line tools (use the same API).
- Resource Oriented Architecture (ROA).
- Declarative API definition using JSON Schema.

SOFTWARE-DEFINED STORAGE

- Local storage such as ZFS (encryption possible), LVM, LVMthin, ext4, and XFS.
- Shared storage such as FC, iSCSI or NFS.
- Distributed storage such as Ceph RBD, CephFS or GlusterFS
- Encryption support for Ceph OSD and ZFS
- Unlimited number of storage definitions (cluster-wide).

KEY FEATURES

LIVE MIGRATION

- Moving QEMU virtual servers from one physical host to another with zero downtime

STORAGE REPLICATION STACK (ZFS)

- Built-in open-source storage replication framework.
- Redundancy for guests using local storage.
- Data availability without using shared storage.
- Asynchronous replication.
- Minimize data loss in the case of a failure.
- Improve reliability, fault-tolerance, and accessibility of your data.

HYPER-CONVERGED INFRASTRUCTURE (HCI) WITH CEPH

- Integrated Ceph, a distributed object store and file system.
- Run Ceph RBD and CephFS directly on the Proxmox VE cluster nodes and manage Ceph via GUI.
- Easy-to-use installation wizard for Ceph.
- Proxmox delivers its own Ceph packages.
- Ceph support is included in the support agreement.

VIRTUALIZED NETWORKING

- Bridged networking model
- Each host with up to 4094 bridges
- TCP/IP configuration
- IPv4 and IPv6 support
- VLANs
- Open vSwitch

PROXMOX VE FIREWALL

- Supporting IPv4 and IPv6.
- Linux-based netfilter technology. Stateful firewall, provides high bandwidth.
- Distributed: main configuration in Proxmox VE cluster file system, iptable rules are stored in nodes.
- Cluster-wide settings
- 3 levels of configuration (data center, host, VM/CT)

BACKUP AND RESTORE

- Full backups of VMs and containers
- Live snapshot backups
- Multiple schedules and backup storage
- GUI integrations, but also via CLI
- "Backup Now" and restore via GUI
- All jobs from all nodes can be monitored via the GUI tab "Tasks"

TWO-FACTOR AUTHENTICATION

- Providing high security.
- 2 types: Time-based One Time Passwords (TOTP) and YubiKey.

MULTIPLE AUTHENTICATION SOURCES

- Proxmox VE supports multiple authentication sources.
- Linux PAM standard authentication (e.g., 'root' and other local users)
- Built-in Proxmox VE authentication server
- Microsoft Active Directory (MS ADS)
- LDAP

ROLE-BASED ADMINISTRATION

- User and permission management for all objects (VMs, storage systems, nodes, etc.)
- Proxmox VE comes with a number of predefined roles (lists of privileges) which satisfies most needs. The GUI provides an overview the whole set of predefined roles.
- Permissions to control access to objects (access control lists). In technical terms they are simply a triple containing <path,user,role>. Each permission specifies a subject (user or group) and a role (set of privileges) on a specific path.

VM TEMPLATES AND CLONES

- Deploying VMs from templates is blazing fast, very comfortable, and if you use linked clones you can optimize your storage by using base images and thin-provisioning.

„Exactly what we needed: High availability features, ease of use and proper integration of a shared storage technology (Ceph) without the need to set up separate storage systems.“

Martin Gollowitz,
Voluntary System Administrator at FSFE

LEARN MORE

Wiki: <https://pve.proxmox.com>

Community Forums:

<https://forum.proxmox.com/>

Bugtracker: <https://bugzilla.proxmox.com>

Code repository: <https://git.proxmox.com>

HOW TO BUY

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Support Forum: <https://forum.proxmox.com>


TRAINING PROXMOX VE

Learn Proxmox VE easily – Visit a training:

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ABOUT PROXMOX

Proxmox Server Solutions GmbH is a software provider dedicated to develop powerful and efficient open-source server solutions. The privately held company is based in Vienna (Europe).



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