

## **Datasheet**

# Proxmox Virtual Environment 6.2

## 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 containers (LXC), 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 multimaster 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 softwaredefined 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 for community cooperation.
- 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.

## HIGHLY AVAILABLE (HA) 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.

## COMMAND LINE (CLI)

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

## **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.
- Let's Encrypt TLS certificates via the DNS-based challenge mechanism (or http).
- Fast and easy creation of VMs and containers.
- Seamless integration and easy management of a whole cluster.
- Subscription management via GUI.
- Integrated 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).
- Full support for API tokens
- 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 or CephFS
- Encryption support for Ceph OSD and ZFS
- Unlimited number of storage definitions (clusterwide).

## **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.
- · Supports live migration.

# 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).
- Support for 'raw' tables; enable Synflood-Attack protection.

## **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.
- Run scheduled backup jobs manually in the GUI.
- All jobs from all nodes can be monitored via the GUI tab "Tasks".
- Back up VMs with IOThreads enabled.

## TWO-FACTOR AUTHENTICATION

- Providing high security.
- 2 types: Time-based One Time Passwords (TOTP) and YubiKey.
- Enabled to use a hardware-based TOTP key.

## 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.
- Linked and full clones.



## **LEARN MORE**

Wiki: <a href="https://pve.proxmox.com">https://pve.proxmox.com</a>

Community Forums: <a href="https://forum.proxmox.com">https://forum.proxmox.com</a>

Bugtracker: <a href="https://bugzilla.proxmox.com">https://bugzilla.proxmox.com</a>
Code repository: <a href="https://git.proxmox.com">https://git.proxmox.com</a>

## **HOW TO BUY**

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## **SALES INQUIRIES**

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## HELP AND SUPPORT

Proxmox Customer Portal:

Support Forum: <a href="https://forum.proxmox.com">https://forum.proxmox.com</a>

## TRAINING PROXMOX VE

Learn Proxmox VE easily – Visit a training: https://www.proxmox.com/training

#### 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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