DATASHEET

OSS VE PLATFORM

OVERVIEW

Virtualization Environment (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. The VE enables you to virtualize even the most demanding Linux and Windows application workloads.

By combining two virtualization technologies on a single platform, VE provides maximum flexibility to your DC. It includes strong high-availability (HA) support and 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

Small & Medium size Enterprises can use the powerful VE platform to easily manage and monitor hyperconverged infrastructures (HCI) in their DC.

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, monitoring and security environments.

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

FEATURES AT 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: backup/restore, storage replication, etc.
- Open-source license GNU AGPL, v3
- No Licensing Costs
- Enterprise support from installation to maintenance

KEY FEATURES

FEATURE RICH 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.

HIGH-AVAILABILITY CLUSTER

- No single point of failure (no SPOF).
- Multi-master cluster.
- Manage the HA settings for KVM and LXC via GUI.
- Unique 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 VE HA Manager uses self fencing provided by hardware Watchdog or kernel Softdog.
- No simultaneous data access or corruption.
- Works „out-of-the-box“.

COMMAND LINE (CLI)

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

LIVE MIGRATION

- Moving VMs 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 data

VIRTUALIZED NETWORKING

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

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 (clusterwide).

HYPER-CONVERGED INFRASTRUCTURE (HCI) WITH CEPH

- Integrated Ceph, a distributed object store and file system.
- Run Ceph RBD and CephFS directly on the VE cluster nodes and manage Ceph via GUI.
- Easy-to-use installation wizard for Ceph.

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.

KEY FEATURES

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.
- AJAX technologies for dynamic updates of resources.

ROLE-BASED ADMINISTRATION

- User and permission management for all objects (VMs, storage systems, nodes, etc.)
- The 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.

MULTIPLE AUTHENTICATION SOURCES

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

TWO-FACTOR AUTHENTICATION

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

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”

INTEGRAL VE FIREWALL

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

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**
- OSS Community support forum
- Extensive Documentation support.

TECHNICAL FEATURES

VIRTUAL ENVIRONMENT	
Base OS:	Debian GNU/Linux
License:	AGPL, v3
Hypervisor:	KVM
OS-level virtualization:	Linux Container (LXC)
Architecture:	x86_64
Installation:	Bare-metal ISO installer
max. RAM and CPU per host:	12TB RAM and 768 logical CPU
FEATURES	
Clustering:	Yes
HA:	Yes
Storage:	LVM, LVM-thin, iSCSI/kernel, iSCSI/libiscsi, Ceph/RBD, CephFS, ZFS over iSCSI, ZFS (local), directory, NFS, CIFS, GlusterFS
Network:	Bridged-Networking, Open vSwitch
Guests:	Linux, Windows, other operating systems are known to work and are community supported
Memory merging/sharing:	Yes, KSM
Firewall:	built-in, cluster-wide, IPv4 and IPv6
Cloud-ready:	Yes
Hyper-Converged Infrastructure (HCI):	Yes
MANAGEMENT	
GUI:	full-featured web interface
CLI:	Yes
API:	Yes (REST)
Monitoring:	Yes
User Management:	LDAP, AD, Two-factor authentication
Permission Management:	Yes, granular
3rd party tools:	Yes

TECHNICAL FEATURES

VM LIFECYCLE	
Backup/Restore:	Yes
Migration:	Yes
Live Migration:	Yes, interchangeable CPU
Storage Live Migration:	Yes
Snapshot:	Yes
Template and Clone:	Yes
Replication:	Yes
Export / Import:	Yes
Virtual CPU Overcommit:	Yes
V2V:	Yes
P2V:	Yes
SUPPORT AND PRICING	
Free software:	Yes, AGPL, v3
License cost:	No
Support:	Commercial
Trainings:	Yes

*Cluster & HA Setup is pre-requisite for Live VM Migration
** Bugtracker feature is with additional cost and please contact support/sales team.