

PROXMOX

OPEN SOURCE SERVER VIRTUALIZATION

2016 ICT Workshop . Trieste . 15/11/2016

Ivo Simonic . Proxmox VE Certified

SymTech IT S.r.l.
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- **Prima release** pubblica il 15 aprile 2008
- **GUI** per il management di containers (LXC) e VM (KVM)
disponibile in 19 lingue
- **Community** molto attiva:
oltre 31.600 membri nel forum
- **2016:** oltre 130.000 hosts in 140+ paesi

USERSPACE TOOLS

pvesh	qm	pvecm	pvesubscription
pct	vzdump	ha-manager	pve-
pvesm	pveum	pveceph	pveversion
pve-zsync	pveupgrade	pveperf	pveam

pveproxy

pvedaemon

pvestadt

QEMU/KVM

App

App

App

OS

Linux Kernel

QEMU

KVM Mod

LINUX CONTAINER

App

App

App

LINUX KERNEL

- Licenza GNU AGPL v3
- OS basato su Linux Debian
- Corosync 2.x
- KVM (full virtualization) & LXC (kernel virtualization)
- Proxmox VE HA web manager centralizzato

Tecnologie

- Web based GUI
- Multi node high availability cluster - HA
- VM Live migration (vmotion)
- Storage migration (storage vmotion)
- Templates
- Clones
- Cloudfinit (roadmap)

- **NETWORKING**

- Bridged networking model
- per ogni nodo/host fino a 4094 bridges (virtual switch)
- TCP/IP configuration
- IPv4 and IPv6 support
- VLANs
- Open vSwitch

- **CLUSTER WIDE FIREWALL**

- **STORAGE**

- SAN (FC, iSCSI, IB), NAS (NFS)
- Filesystem locali (OpenZFS), cluster e distribuiti (CEPH, GlusterFS, DRBD)
- apt-get install

- Autenticazione differenziata (PAM, VE, LDAP, AD, TF)
- Role-based administration
- CLI
- RESTful API – JSON schema

- **BACKUP E RESTORE**
 - Backup completi di containers e VM
 - Live Snapshot Backups
 - Compressione
 - Schedulazione
 - Storages differenti
 - Integrazione GUI e CLI

LXC - Linux Containers

- Linux in Linux
- Integrazione kernel level
- Hot Plug CPU, RAM, HDD
- Meno risorse
- Più velocità
- 500 CT in 256GB RAM

Tabella comparativa

	Proxmox VE	VMware vSphere	Windows Hyper-V	Citrix XenServer
Guest operating system support	Windows and Linux (KVM) Other operating systems are known to work and are community supported	Windows, Linux, UNIX	Modern Windows OS, Linux support is limited	Most Windows OS, Linux support is limited
Open Source	yes	no	no	yes
Linux Containers (LXC) (known as OS Virtualization)	yes	no	no	no
Single-view for Management (centralized control)	yes	Yes, but requires dedicated management server (or VM)	Yes, but requires dedicated management server (or VM)	yes
Simple Subscription Structure	Yes, one subscription pricing, all features enabled	no	no	no
High Availability	yes	yes	Requires Microsoft Failover clustering, limited guest OS support	yes
Live VM snapshots: Backup a running VM	yes	yes	limited	yes
Bare metal hypervisor	yes	yes	yes	yes
Virtual machine live migration	yes	yes	yes	yes
Max. RAM and CPU per Host	160 CPU/2 TB Ram	160 CPU/2 TB Ram	64 CPU/1 TB Ram	?

Browser: pve1 - Proxmox Virtual Environment - Mozilla Firefox
 URL: https://192.168.0.203:8006/#v1:0=node%2Fpve2:4:5:19::20:

PROXMOX Virtual Environment 4.3-1/e7cdc165

You are logged in as 'root@pam' | Help | Create VM | Create CT | Logout

Server View: Node 'pve2' | Restart | Shutdown | Shell | More | Help

Search: Package versions | Hour (average)

Summary: pve2 (Uptime: 45 days 05:26:46)

CPU usage	3.84% of 4 CPU(s)	IO delay	0.00%
Load average	0.27,0.49,0.54		
RAM usage	63.07% (9.88 GiB of 15.66 GiB)	KSM sharing	1.20 GiB
HD space(root)	8.31% (4.08 GiB of 49.09 GiB)	SWAP usage	0.00% (824.00 KiB of 16.00 GiB)

CPUs: 4 x Intel(R) Xeon(R) CPU E31220 @ 3.10GHz (1 Socket)
 Kernel Version: Linux 4.4.19-1-pve #1 SMP Wed Sep 14 14:33:50 CEST 2016
 PVE Manager Version: pve-manager/4.3-1/e7cdc165

CPU usage graph: Mon Nov 14 2016 21:11:00 GMT+0100 (CET) | CPU usage: 18.47%

Tasks | Cluster log

Start Time	End Time	Node	User name	Description	Status
Nov 14 21:24:48	Nov 14 21:24:57	pve2	root@pam	CT 502 - Start	OK
Nov 14 21:24:33	Nov 14 21:24:47	pve2	root@pam	CT 502 - Create	OK
Nov 14 21:23:53	Nov 14 21:23:57	pve2	root@pam	CT 502 - Destroy	OK
Nov 14 21:23:32	Nov 14 21:23:37	pve2	root@pam	CT 430 - Destroy	OK
Nov 14 21:23:24	Nov 14 21:23:27	pve2	root@pam	CT 428 - Start	OK

- **SERVER, BLADE**
 - Debian HCL
- **ADD-ON: HBA, HCA, NIC, GPU ...**
 - Debian HCL
- **STORAGE**
 - Debian HCL

- PREMIUM, STANDARD, BASIC, COMMUNITY
 - Enterprise repository
 - Aiuto tramite portale utente
 - Numero di ticket di supporto
 - Tempo di risposta
 - Supporto remoto via SSH

- Hosting - Servizi WWW
- RDP, VNC, Spice, Thin Client
- Sviluppo SW
- Calcolo
- CAD
- Servizi a dominio
- DB
- Continuous integration

Grazie per la vostra attenzione.

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