

Proxmox Virtual Environment (PVE)

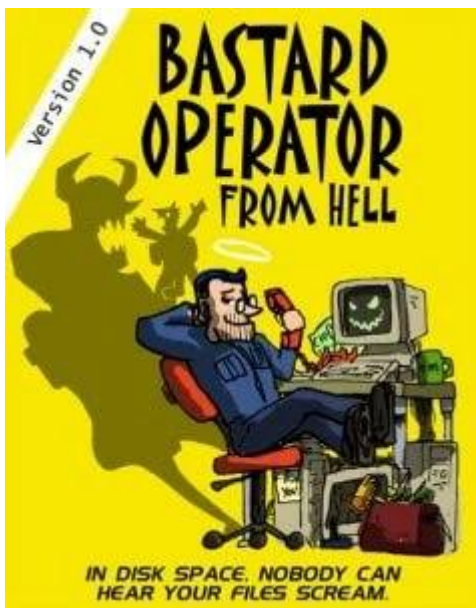
Overview

This workshop will take participants through real-world lessons learned from deploying and managing Proxmox Virtual Environment (PVE) and Proxmox Backup Server (PBS). From core principles to practical deployment scenarios, we'll cover the truths every sysadmin should know, common pitfalls, and strategies for building reliable, secure, and scalable infrastructure.

Workshop Level

Intermediate to Advanced

Designed for sysadmins, network engineers, and IT professionals who want practical insights into deploying and running PVE/PBS in production.



Trainer

Hendrik Visage

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Learning Objectives

By the end of the workshop, participants will:

- Understand key principles of system administration (truths & best practices).
- Learn what PVE & PBS are, and how they fit into modern IT infrastructure.
- Compare LXC/containers vs QEMU/VMs and when each is appropriate.
- Explore ZFS (strengths, weaknesses, and gotchas) and discuss CEPH.
- Review deployment examples with SSDs, HDDs, and NVMeS.
- Understand PVE networking models (Linux Bridge vs OpenVSwitch, MCLAG, L3 networking).
- Learn about IPv6 adoption challenges with PVE/PBS.
- Gain practical tips on backup strategy, offsite storage, and firewalling.

Agenda

1. Introduction: The Sysadmin Truths

- General truths (what applies globally vs locally).
- RFC1925 - truths to remember.
- Hendrik's Rule of Computers: Backups, backups, and checking backups.

2. Proxmox VE & PBS - What & Why

- Overview of PVE & PBS features.
- Containers vs Virtual Machines: LXC vs QEMU.
- ZFS: the Good, the Bad, and the Ugly.
- CEPH? When to consider distributed storage.

3. Deployment Insights

- Real-world deployment experiences (SSD, HDD, NVMe combinations).
- Still using HDDs + NVMeS effectively.
- PBS storage considerations (SSD vs HDD, offsite backup strategies).
- ZFS warnings and performance tips.

4. Networking in PVE

- Linux Bridge vs OpenVSwitch.
- MCLAG, bonding, and L3 networking - choosing the right setup.
- SDN integration.
- IPv6 support: what works, what doesn't.
- Security: firewalling everything, example architectures.

5. Q&A and Open Discussion

Slides

https://drive.google.com/file/d/19bk7HI27Ibt7_ijx7wOXjS_splKKwu_Y/view?usp=share_link

Session's record

https://drive.google.com/file/d/1gWS-xeqLVtPqNM5j0WEy_PYK18Pvkui2/view?usp=share_link

interesting reading/watching

- <https://postgresconf.org/conferences/SouthAfrica2018/program/proposals/using-zfs-on-linux-with-postgresql>
 - <https://www.youtube.com/watch?v=o3iCXk7d0Ss>
 - https://archive.org/details/lca18-ZFS_on_Linux_and_inside_VMs
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