

Proxmox

- [Proxmox VE Administration Guide](#)
- [Wiki](#)
- [Video Tutorials](#)

Upgrading

Always upgrade with dist-upgrade !

```
apt update && apt dist-upgrade
```

Installation

- BIOS:
 - Enable VT
 - Enable IOMMU
- Choose ZFS
 - Leave some free space on HDD for swap partition
 - Click "Advanced Options" and manually set "hdspace"
 - Installer 6.1-2 BUG: On system with 2x 2TB HDDs, Proxmox installer on ZFS RAID1 propose only hdspace=953MB. This issue gone with Proxmox 6.2.
 - Do not create swap on ZFS zvol!
- reboot
- manually configure VLAN network from console [VLAN 802.1Q](#)
 - check if it is still necessary. Perhaps enabling VLAN aware bridge from GUI is enough
- https://ip_address:8006

issues

initramfs

Proxmox installed on ZFS RAID1. After reboot, Proxmox boots into initramfs. From initramfs console:

```
zfs list
Try running '/sbin/modprobe zfs' as root to load them.
```

REASON: no root cmdline, because UEFI boot was used instead of grub loader. SOLUTION: force legacy boot in BIOS OR TRY:

```
echo -n " rootdelay=5" >> /etc/kernel/cmdline
pve-efiboot-tool refresh
```

initramfs

REASON: ZFS invoked too soon:

https://pve.proxmox.com/wiki/ZFS:_Tips_and_Tricks#Boot_fails_and_goes_into_busybox

```
modprobe zfs
zpool import -N -f rpool
exit
```

post-installation tips

- set MAC address prefix: `Datacenter` → `Options`. Locally Administered Address Ranges are:

```
x2-xx-xx-xx-xx-xx
x6-xx-xx-xx-xx-xx
xA-xx-xx-xx-xx-xx
xE-xx-xx-xx-xx-xx
```

- Speedup migrations to set unencrypted network traffic (in secured networks!):

```
migration: network=first_cluster_host_ip/22,type=insecure
```

- disable subscription repo:

```
sed -i.bak 's|deb https://enterprise.proxmox.com/debian/pve buster pve-  
enterprise|\\#deb https://enterprise.proxmox.com/debian/pve buster pve-  
enterprise|' /etc/apt/sources.list.d/pve-enterprise.list
```

- add no subscription repo:

```
echo 'deb http://download.proxmox.com/debian/pve buster pve-no-  
subscription' > /etc/apt/sources.list.d/pve-no-sub.list
```

- **apt-get update**

- **apt-get upgrade**

- **apt-get install dropbear busybox-static --no-install-recommends**

- Update grub config:

[/etc/default/grub](#)

```
GRUB_CMDLINE_LINUX_DEFAULT="rootdelay=15 mitigations=off panic=30  
nomodeset textonly video=vesafb:off video=efifb:off"
```

update-grub

- SMART disk monitoring

[/etc/smartd.conf](#)

```
#                               Short  1AM  Long  Sat    2AM
DEVICESCAN -a -o on -S on -s (S/../.././01|L/../../6/02) -m root
```

```
systemctl restart smartmontools.service
```

- More here: [Disk Health Email Alerts](#)
- Activate ZFS e-mail notification
https://pve.proxmox.com/pve-docs/pve-admin-guide.html#chapter_zfs
 - `systemctl enable --now zfs-zed`
- Use own internal CA signed cert for Web UI: [Certificate Management](#)
 - For clustering Proxmox is using own self signed certs! Do not replace them!
- Postfix relay:

```
apt-get install postfix bsd-mailx
wget
https://raw.githubusercontent.com/Tontonjo/proxmox/master/ez_proxmox_mail_configurator.sh
bash ez_proxmox_mail_configurator.sh
```

- Assign admin permissions:
https://pve.proxmox.com/wiki/User_Management#_real_world_examples
- For HDDs storage, limit Proxmox operation speed to 50000KiB:

```
pvesm set local --bwlimit default=50000
```

- to remove limit:

```
pvesm set local --delete bwlimit
```

- Enable IOMMU
 - in `GRUB_CMDLINE_LINUX_DEFAULT` and add kernel parameter `intel_iommu=on` or `amd_iommu=on`
 - `vfio`
`vfio_iommu_type1`
`vfio_pci`
`vfio_virqfd`

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