

# Installation Open-Source Virtualisierungsplattform Proxmox VE 6.1

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# Agenda

1. Motivation
2. Installation Virtualisierungsplattform Proxmox VE 6.1
3. Installation VM mit Ubuntu-Server 18.04
4. Installation „Jitsi Meet“ als Container
5. Praktische Erfahrungen
6. Ausblick: Single-Node Kubernetes-Cluster
  
7. Demo

# Warum ... ?

- ... Virtualisierung, und kein Bare-Metal?
  - Flexiblere Nutzung der HW-Ressourcen
  - Bessere Beobachtung der virtuellen Maschinen
- ... KVM/qemu, und nicht Vmware, XEN, Hyper-V, Virtualbox?
  - Bestandteil des Linux-Kernels
  - Open-Source, keine Lizenzkosten oder Nutzungsbeschränkungen
- ... Proxmox VE, und nicht openSUSE 15.1 oder Fedora 31?
  - openSUSE 15.1 funktioniert, hat aber nur **virt-manager** und **virsh**
  - **virt-manager** hat keine ‚schöne‘ Oberfläche; **virsh** hat nur CLI
  - Proxmox VE 6.1 hat eine Community Edition mit einem Web-GUI, das gut aussieht und einfach zu bedienen ist.
  - Proxmox VE kommt aus Europa (Österreich)

# Proxmox VE

- Proxmox VE basiert auf Debian-Linux 10 (Buster)  
<https://www.proxmox.com/de/proxmox-ve>
- Download ISO image (Proxmox VE 6.1-2)
- ISO-Datei mittels `dd` auf einen USB-Stick (2GB) kopieren
- Rechner vorbereiten:  
viel RAM, viel CPU, viel Disk,  
>= 1 Netzwerk-Interface,  
UEFI-Boot von USB-Stick

Download-URL: <https://www.proxmox.com/de/downloads/item/proxmox-ve-6-1-2-iso-installer>  
Support Wiki: [https://pve.proxmox.com/wiki/Main\\_Page](https://pve.proxmox.com/wiki/Main_Page)



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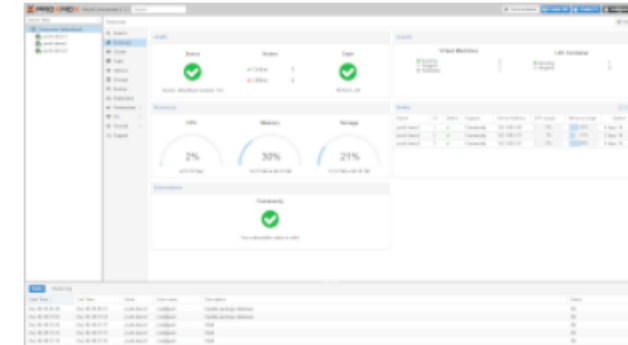
Startseite | Virtualisierung

## Open Source-Virtualisierungsplattform

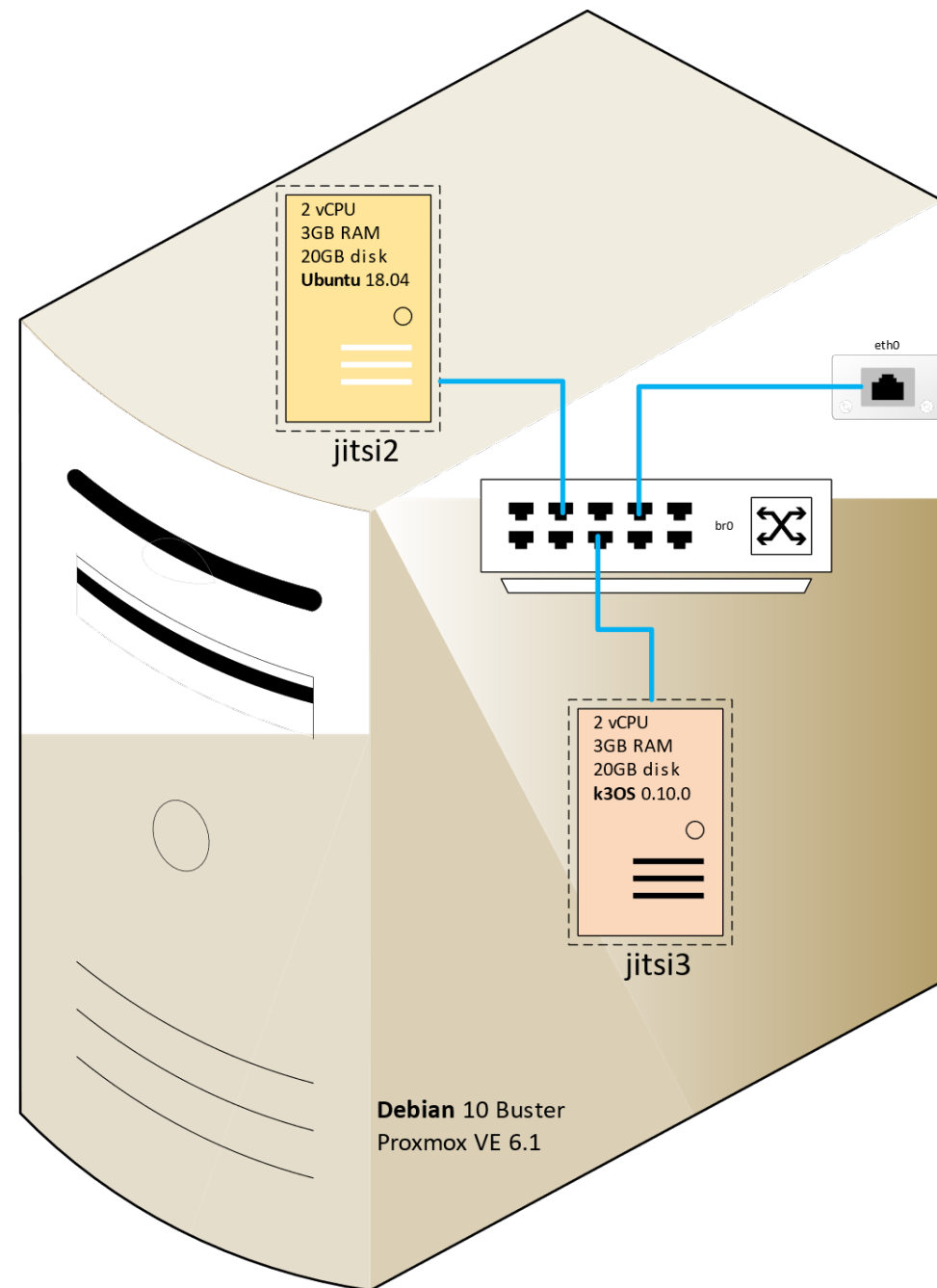
### Server, Netzwerk und Storage in einer Softwarelösung

Proxmox VE ist eine komplette Open Source-Virtualisierungslösung für Server. Es kombiniert KVM- und Container-basierte Virtualisierung und verwaltet virtuelle Maschinen, Container, Storage, virtuelle Netzwerke und Hochverfügbarkeits-Cluster übersichtlich über die zentrale Managementoberfläche.

Mit den vielen professionellen Funktionen und dem intuitiven, web-basierten Interface lassen sich vorhandene Ressourcen optimal ausschöpfen sowie Hardware- und Administrationskosten, egal ob im Unternehmen oder privat, reduzieren. Mit Proxmox VE lassen sich problemlos die anspruchsvollsten Linux- oder Windows-Workloads virtualisieren.

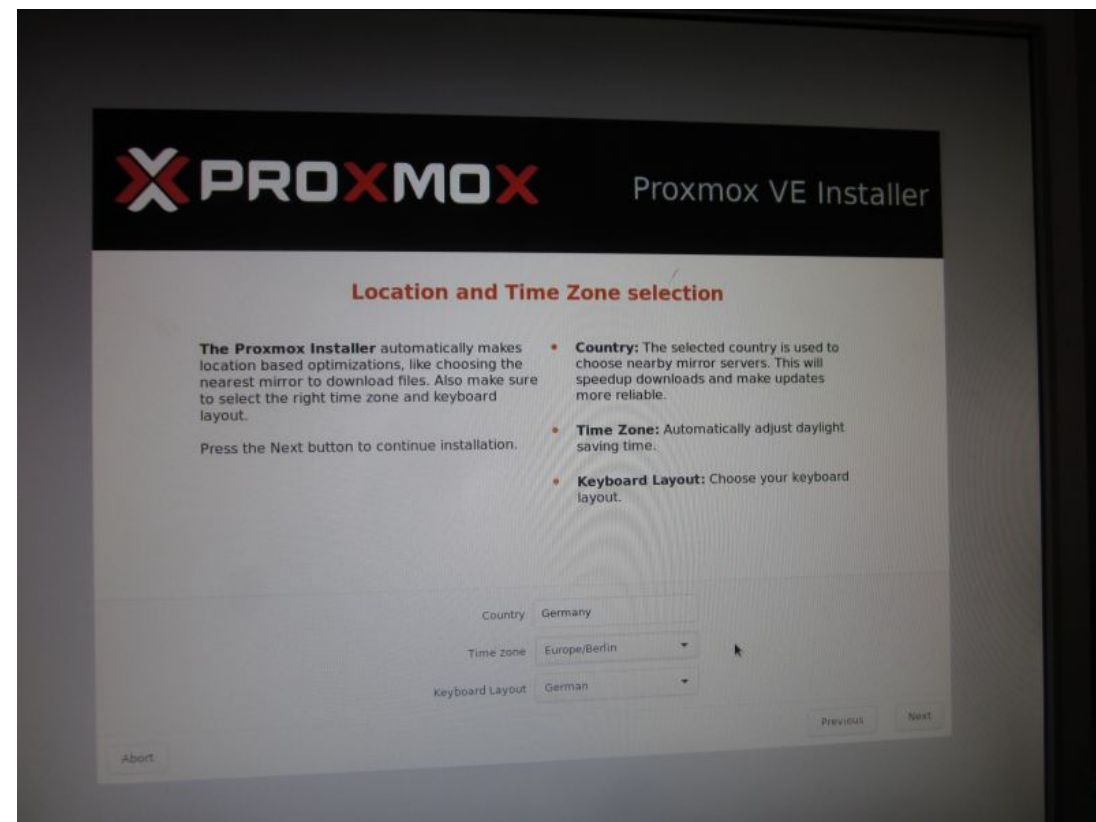
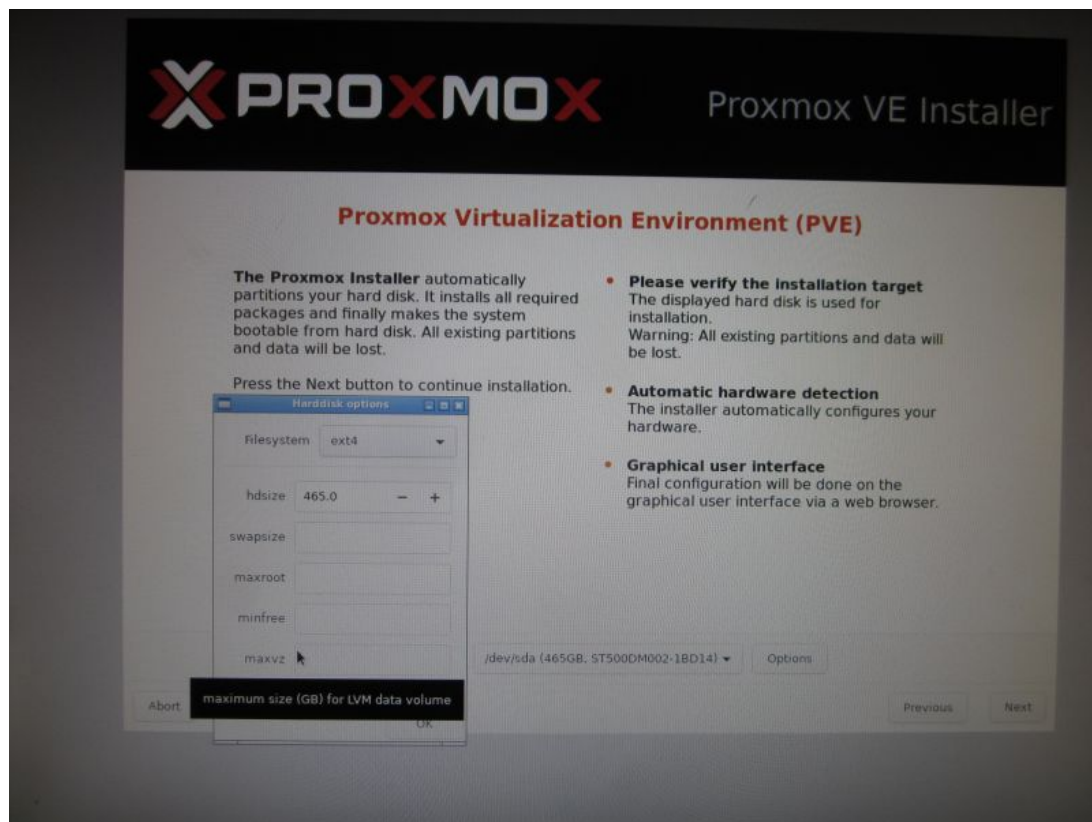


# Installation Host: pve-002

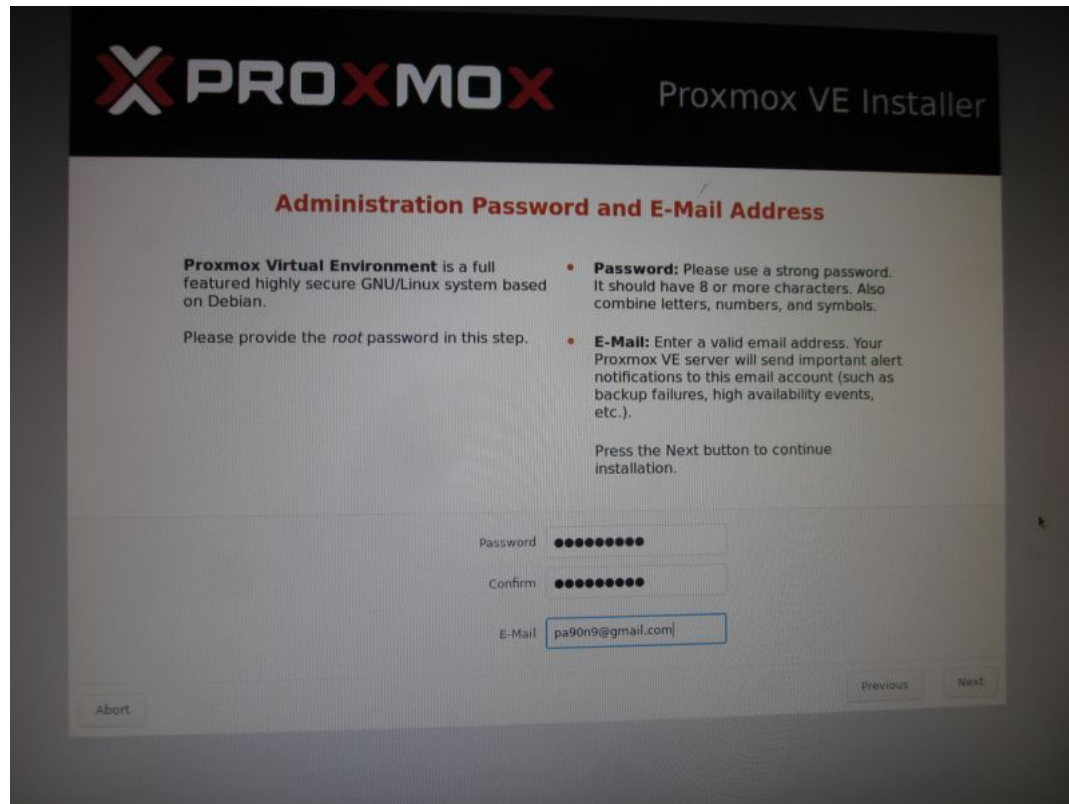


Proxmox-Host: pve-002

# <https://pve.proxmox.com/wiki/Installation>



# Phase 1



**PROXMOX** Proxmox VE Installer

### Administration Password and E-Mail Address

**Proxmox Virtual Environment** is a full featured highly secure GNU/Linux system based on Debian.

Please provide the *root* password in this step.

- Password:** Please use a strong password. It should have 8 or more characters. Also combine letters, numbers, and symbols.
- E-Mail:** Enter a valid email address. Your Proxmox VE server will send important alert notifications to this email account (such as backup failures, high availability events, etc.).

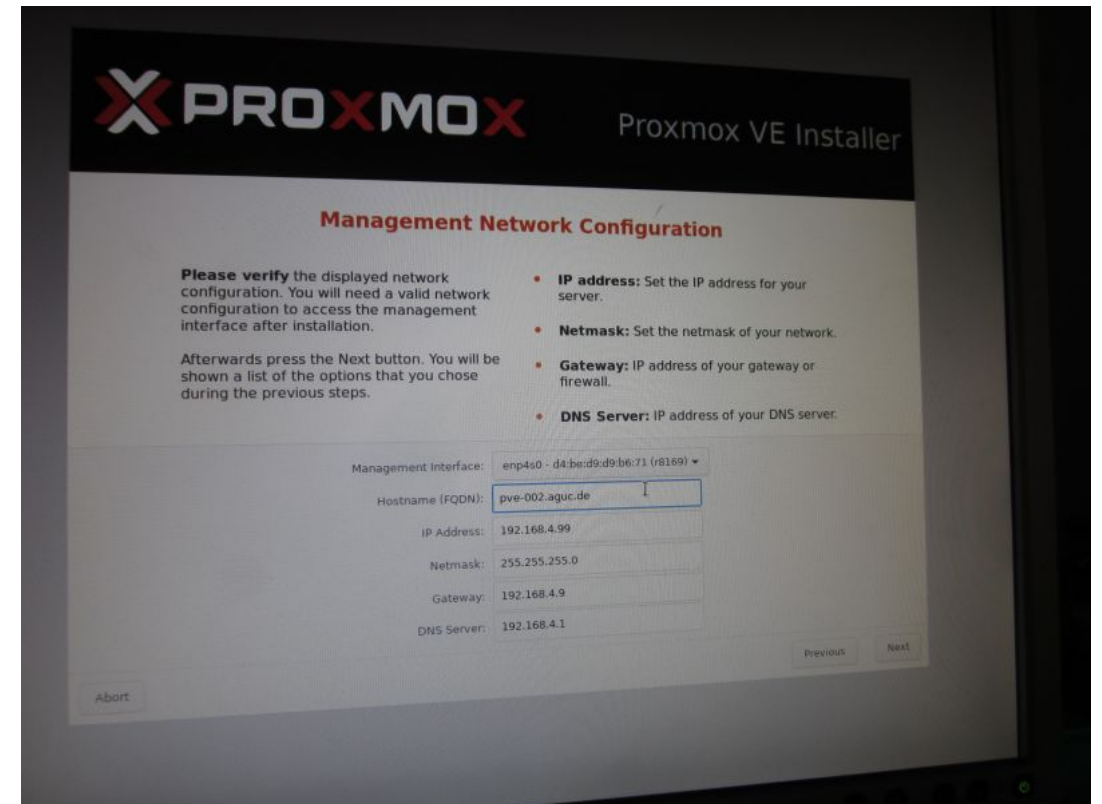
Press the Next button to continue installation.

Password: ●●●●●●●●

Confirm: ●●●●●●●●

E-Mail: pa90n9@gmail.com

Abort Previous Next



**PROXMOX** Proxmox VE Installer

### Management Network Configuration

Please **verify** the displayed network configuration. You will need a valid network configuration to access the management interface after installation.

Afterwards press the Next button. You will be shown a list of the options that you chose during the previous steps.

- IP address:** Set the IP address for your server.
- Netmask:** Set the netmask of your network.
- Gateway:** IP address of your gateway or firewall.
- DNS Server:** IP address of your DNS server.

Management Interface: enp4s0 - d4:be:d0:d9:b6:71 (f8169) ▼

Hostname (FQDN): pve-002.aguc.de

IP Address: 192.168.4.99

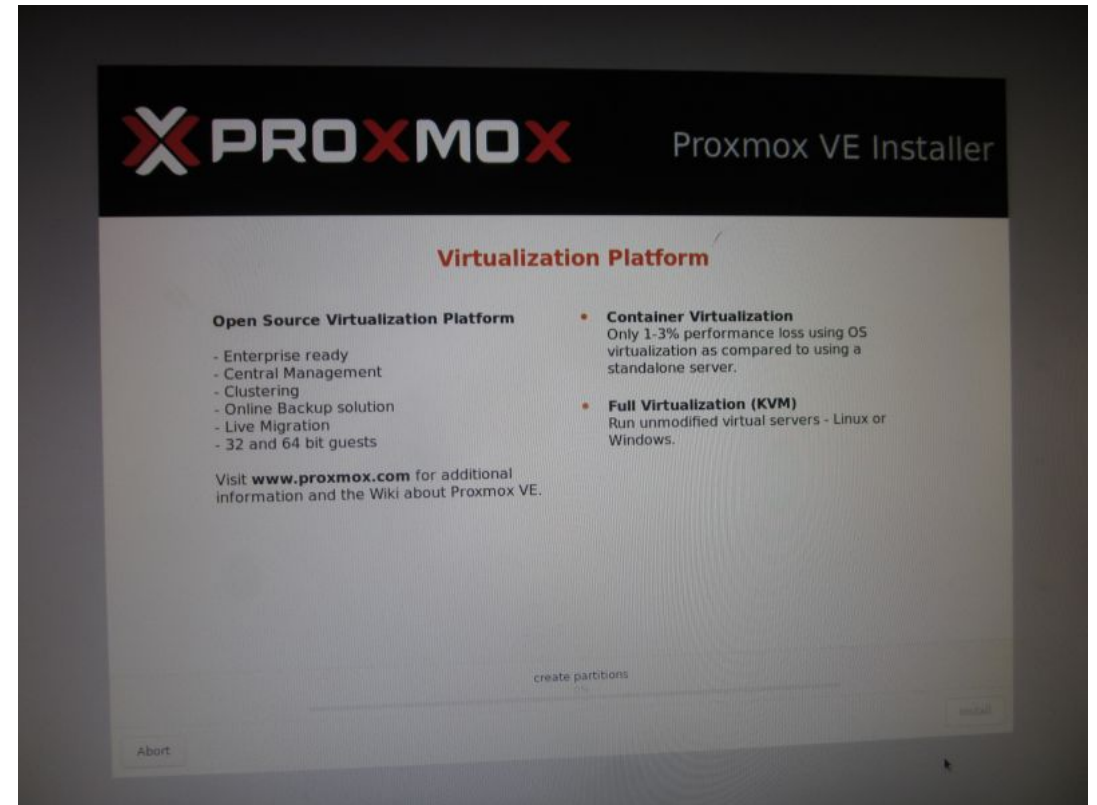
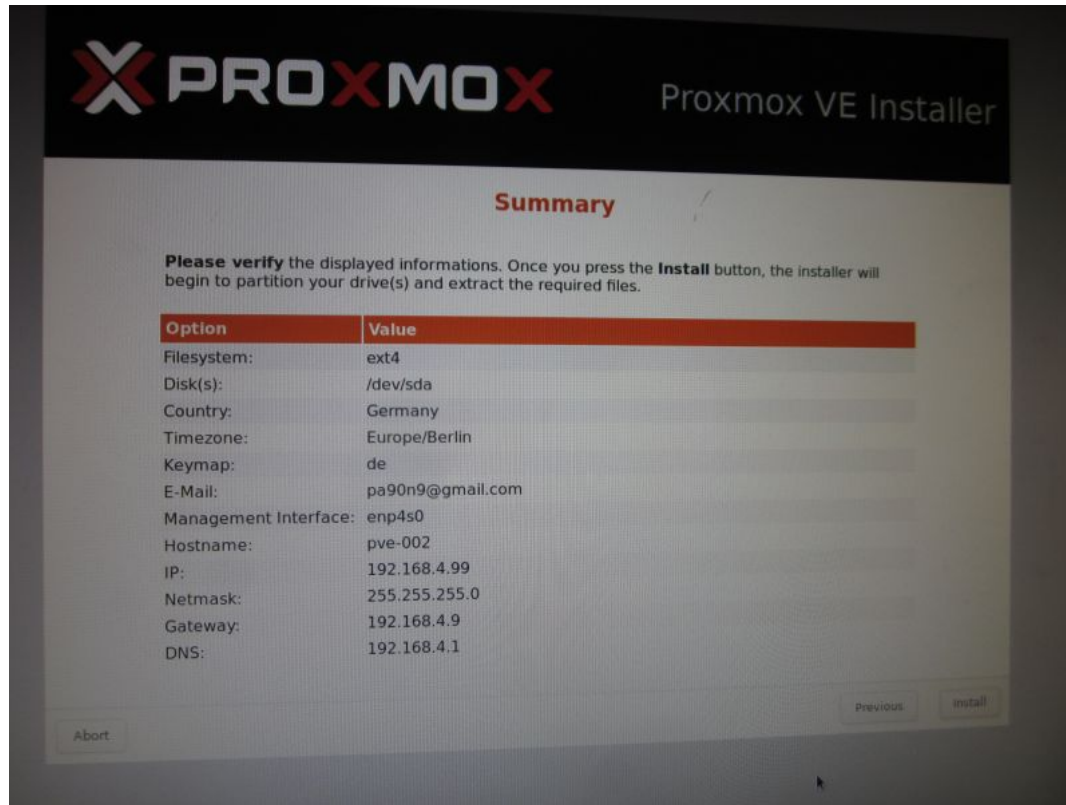
Netmask: 255.255.255.0

Gateway: 192.168.4.9

DNS Server: 192.168.4.1

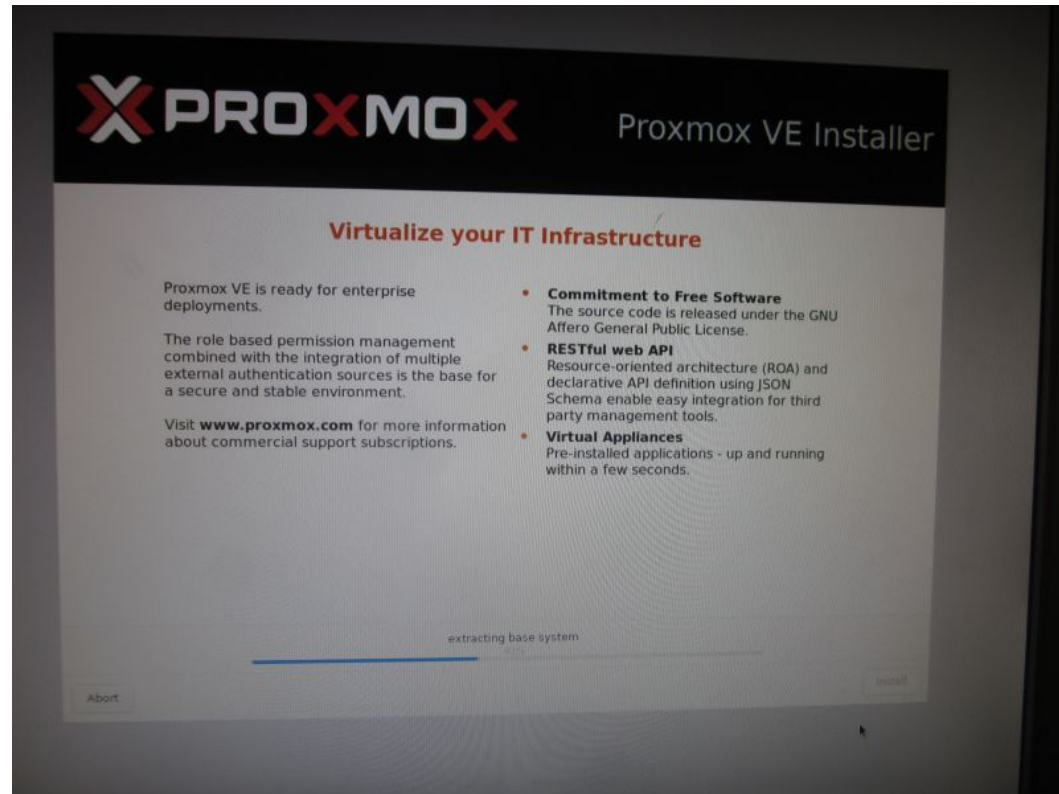
Abort Previous Next

# Phase 2





# Phase 3



**PROXMOX** Proxmox VE Installer

## Virtualize your IT Infrastructure

Proxmox VE is ready for enterprise deployments.

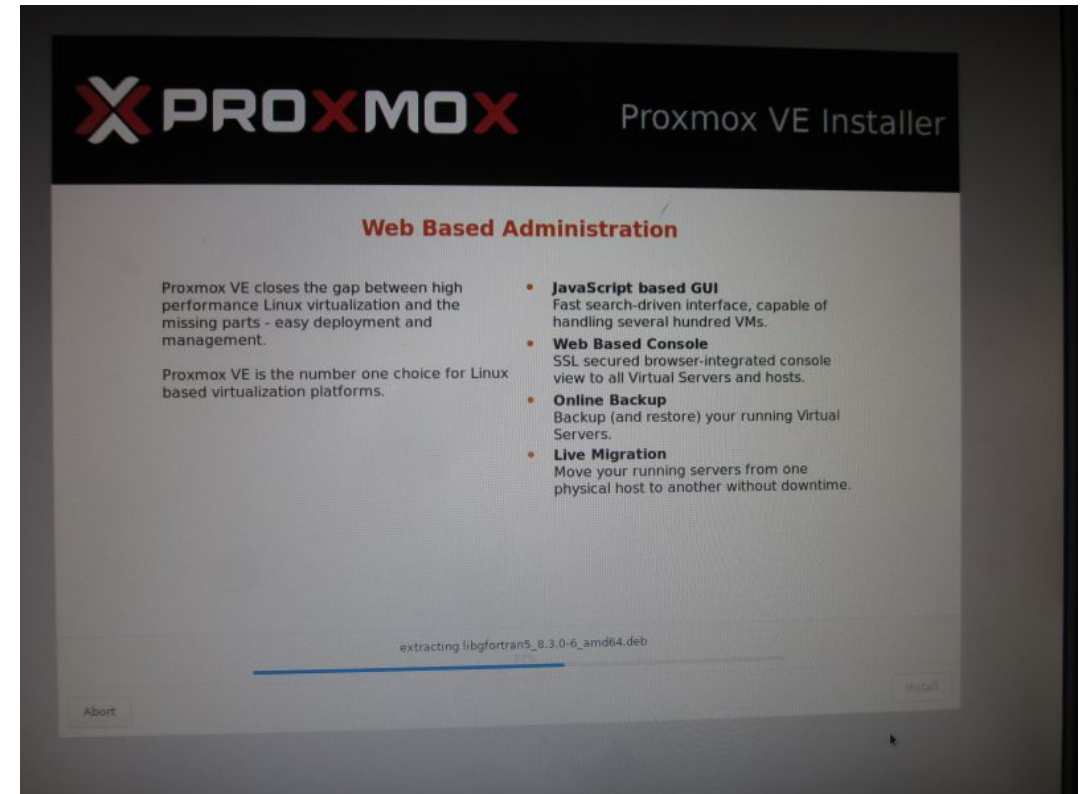
The role based permission management combined with the integration of multiple external authentication sources is the base for a secure and stable environment.

Visit [www.proxmox.com](http://www.proxmox.com) for more information about commercial support subscriptions.

- **Commitment to Free Software**  
The source code is released under the GNU Affero General Public License.
- **RESTful web API**  
Resource-oriented architecture (ROA) and declarative API definition using JSON Schema enable easy integration for third party management tools.
- **Virtual Appliances**  
Pre-installed applications - up and running within a few seconds.

extracting base system

Abort install



**PROXMOX** Proxmox VE Installer

## Web Based Administration

Proxmox VE closes the gap between high performance Linux virtualization and the missing parts - easy deployment and management.

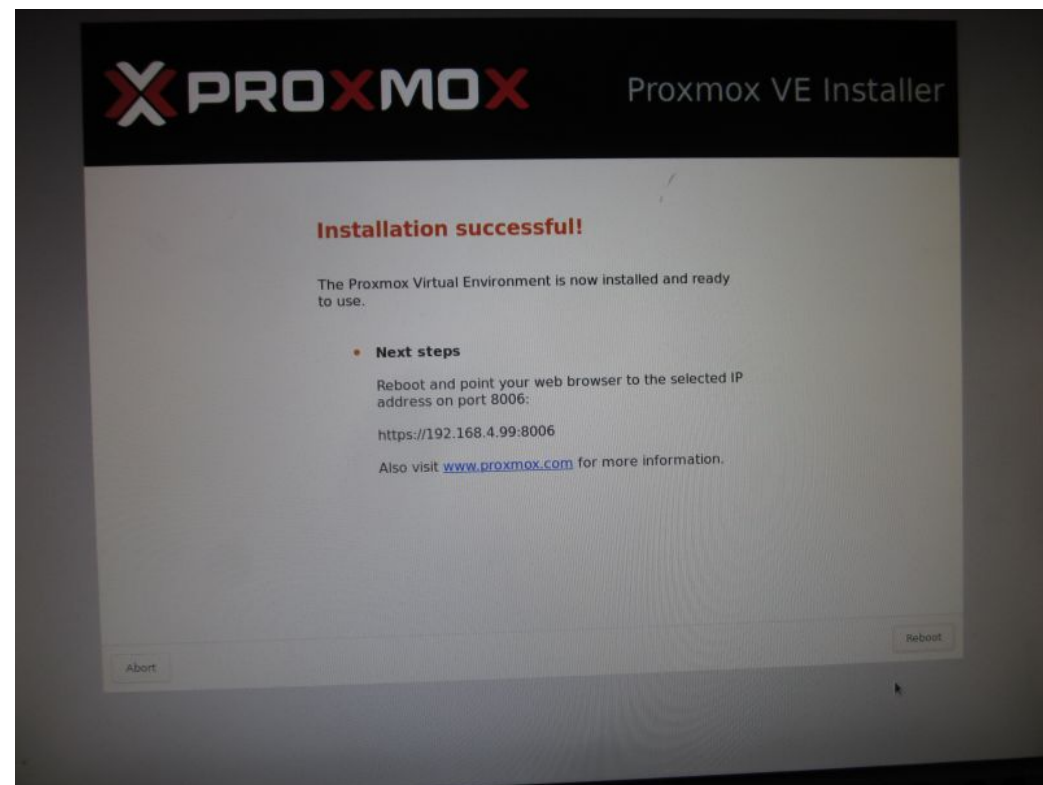
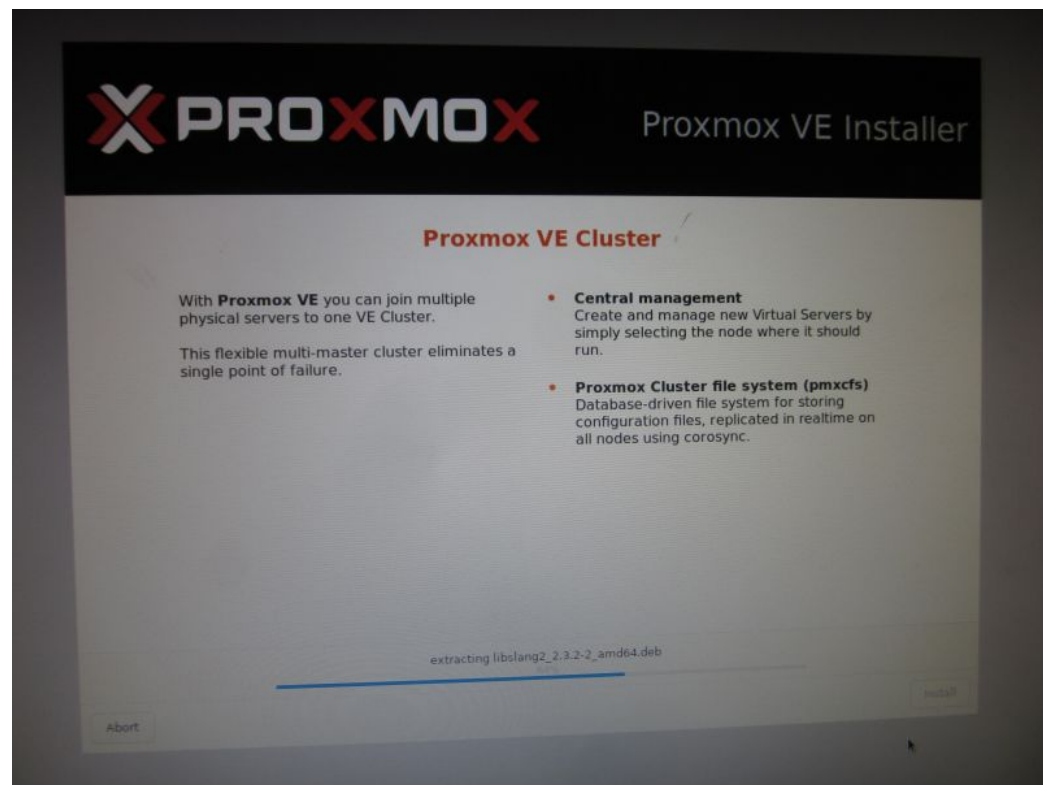
Proxmox VE is the number one choice for Linux based virtualization platforms.

- **JavaScript based GUI**  
Fast search-driven interface, capable of handling several hundred VMs.
- **Web Based Console**  
SSL secured browser-integrated console view to all Virtual Servers and hosts.
- **Online Backup**  
Backup (and restore) your running Virtual Servers.
- **Live Migration**  
Move your running servers from one physical host to another without downtime.

extracting libgfortran5\_8.3.0-6\_amd64.deb

Abort install

# Fertig !



# Nacharbeiten

- Proxmox-Paketquellen von [enterprise](#) auf [no-subscription](#) ändern
  - In `/etc/apt/sources.list.d/pve-enterprise.list`
  - `# disable`  
`# deb https://enterprise.proxmox.com/debian/pve`  
`buster pve-enterprise`
  - `# enable`  
`deb http://download.proxmox.com/debian/pve`  
`buster pve-no-subscription`
- Aktuelle Patches nachinstallieren
  - `apt update`
  - `apt upgrade`

# Zusatzarbeiten

- Statische IP-Adresse konfigurieren
  - In Datei `/etc/networks/interfaces`
  - In Datei `/etc/hosts` den Hostnamen kontrollieren
  - In Datei `/etc/resolv.conf` die DNS-Domäne kontrollieren
- ISO-Datei des gewünschten Ubuntu-Servers (hier 18.04.4 LTS)  
(und optional ISO-Dateien weiterer Betriebssysteme)  
in den Image-Store des Proxmox VE hochladen
- Reboot, tut gut.

Server View

- Datacenter
  - pve-002
    - 100 (jitsi2)
    - local (pve-002)
    - local-lvm (pve-002)

Node 'pve-002'

- Search
- Summary
- Notes
- Shell
- System
  - Network
  - Certificates
  - DNS
  - Hosts
  - Time
  - Syslog
- Updates
- Firewall
- Disks
  - LVM
  - LVM-Thin
  - Directory
  - ZFS
- Ceph
- Replication
- Task History
- Subscription

Reboot Shutdown Shell Bulk Actions Help

Package versions Hour (average)

pve-002 (Uptime: 01:05:10)

CPU usage	0.20% of 2 CPU(s)	IO delay	0.40%
Load average	0.09,0.52,0.76	KSM sharing	0 B
RAM usage	11.08% (867.79 MiB of 7.65 GiB)	SWAP usage	0.00% (0 B of 7.00 GiB)
HD space(root)	5.29% (4.97 GiB of 93.99 GiB)		

CPU(s) 2 x Intel(R) Core(TM)2 Duo CPU E8400 @ 3.00GHz (1 Socket)  
 Kernel Version Linux 5.3.18-3-pve #1 SMP PVE 5.3.18-3 (Tue, 17 Mar 2020 16:33:19 +0100)  
 PVE Manager Version pve-manager/6.1-8/806edfe1

