



# CREARE UN HOMELAB CON PROXMOX



**IMOLUG**

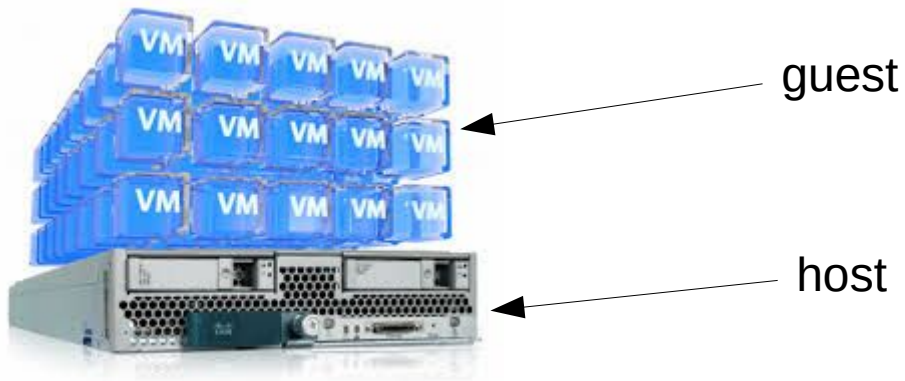
**Imola & Faenza linux User Group**

*9 giugno 2020*

## DEFINIZIONE di VIRTUALIZZAZIONE:

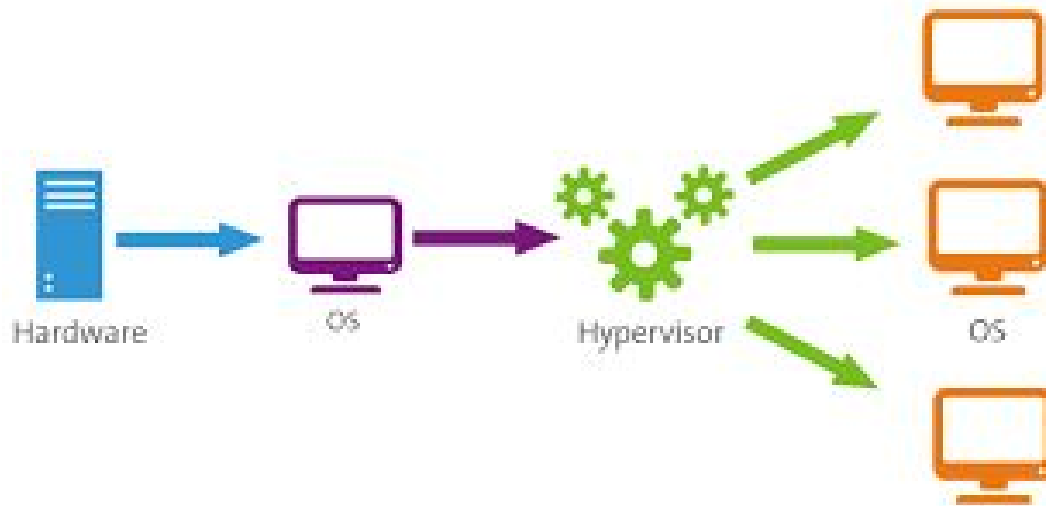
La tecnica dà possibilità di astrarre le componenti **hardware**, cioè fisiche, degli **elaboratori** al fine di renderle disponibili al **software** in forma di risorsa virtuale.

Tramite questo processo è quindi possibile installare **sistemi operativi** su hardware virtuale; l'insieme delle componenti hardware virtuali (**Disco fisso**, **RAM**, **CPU**, **Scheda di rete**) prende il nome di **macchina virtuale** e su di esse può essere **installato** il software come, appunto, i sistemi operativi e relative **applicazioni**. Tale tecnica è applicabile sia su sistemi **desktop** che su sistemi **server**.



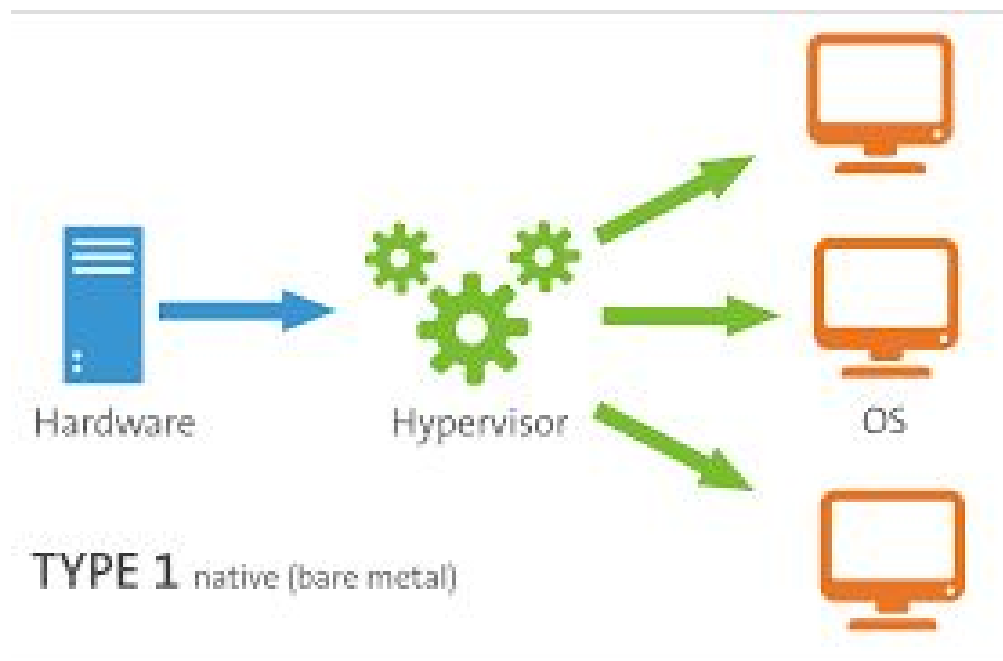
# MACRO CATEGORIE di SOFTWARE di VIRTUALIZZAZIONE:

## Hosted virtualization



# MACRO CATEGORIE di SOFTWARE di VIRTUALIZZAZIONE:

## Bare-metal virtualization



**X** PROXMOX

**Xen**™

vmware®  
ESXi



## HOME LAB, CONSIGLI:

- ✓ **Progettare il laboratorio**
- ✓ **Workstation o rack**
- ✓ **Studiare i datasheet delle workstation o del rack**
- ✓ **Studiarsi la rete casalinga e i dispositivi connessi**
- ✓ **Risparmiare tempo**



## LA FERRAGLIA:



Xeon E3-1240  
32gb ddr3 1333 mhz ECC unbuffered  
Ssd Sandisk 512gb  
nVidia Quadro k600  
HP Smart Array P420 Controller RAID-SAS  
2 HardDisk Seagate 3Tb 7.2k SAS

Nome server: "FATANZA", problemi in abbondanza



Fastidio

Pandora



Spatacco



## FERRI ALTERNATIVI:



## PROXMOX, INSTALLAZIONE CLASSICA:

Proxmox VE 6.2 (iso release 1) - <https://www.proxmox.com/>



Welcome to Proxmox Virtual Environment

Install Proxmox VE

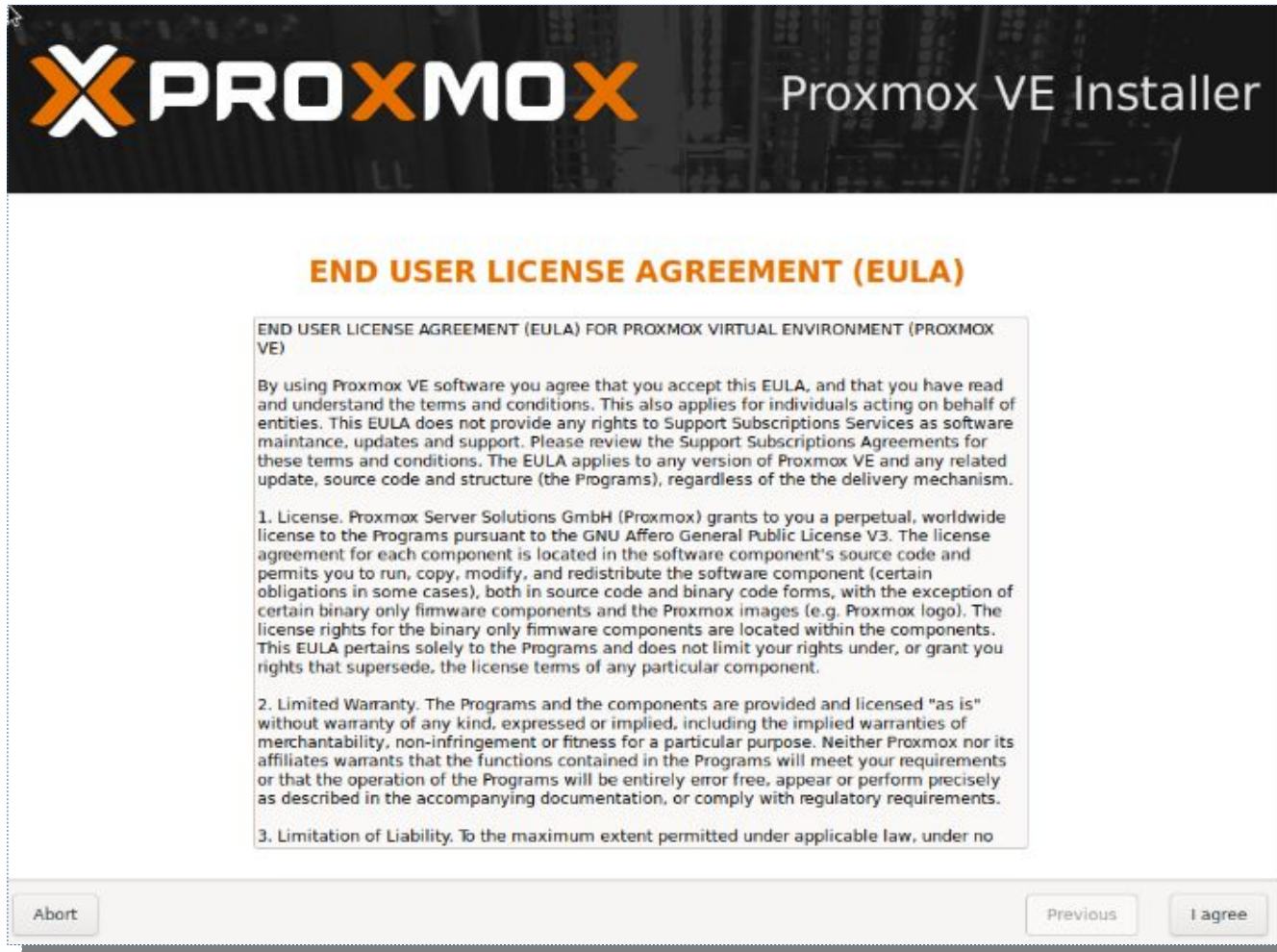
Install Proxmox VE (Debug mode)

Rescue Boot

Test memory (Legacy BIOS)



# PROXMOX, INSTALLAZIONE CLASSICA:



**PROXMOX** Proxmox VE Installer

## END USER LICENSE AGREEMENT (EULA)

END USER LICENSE AGREEMENT (EULA) FOR PROXMOX VIRTUAL ENVIRONMENT (PROXMOX VE)

By using Proxmox VE software you agree that you accept this EULA, and that you have read and understand the terms and conditions. This also applies for individuals acting on behalf of entities. This EULA does not provide any rights to Support Subscriptions Services as software maintenance, updates and support. Please review the Support Subscriptions Agreements for these terms and conditions. The EULA applies to any version of Proxmox VE and any related update, source code and structure (the Programs), regardless of the the delivery mechanism.

- 1. License.** Proxmox Server Solutions GmbH (Proxmox) grants to you a perpetual, worldwide license to the Programs pursuant to the GNU Affero General Public License V3. The license agreement for each component is located in the software component's source code and permits you to run, copy, modify, and redistribute the software component (certain obligations in some cases), both in source code and binary code forms, with the exception of certain binary only firmware components and the Proxmox images (e.g. Proxmox logo). The license rights for the binary only firmware components are located within the components. This EULA pertains solely to the Programs and does not limit your rights under, or grant you rights that supersede, the license terms of any particular component.
- 2. Limited Warranty.** The Programs and the components are provided and licensed "as is" without warranty of any kind, expressed or implied, including the implied warranties of merchantability, non-infringement or fitness for a particular purpose. Neither Proxmox nor its affiliates warrants that the functions contained in the Programs will meet your requirements or that the operation of the Programs will be entirely error free, appear or perform precisely as described in the accompanying documentation, or comply with regulatory requirements.
- 3. Limitation of Liability.** To the maximum extent permitted under applicable law, under no

Abort Previous I agree





# PROXMOX, INSTALLAZIONE CLASSICA:



**PROXMOX** Proxmox VE Installer

### Proxmox Virtualization Environment (PVE)

**The Proxmox Installer** automatically partitions your hard disk. It installs all required packages and finally makes the system bootable from hard disk. All existing partitions and data will be lost.

Press the Next button to continue installation.


- **Please verify the installation target**  
The displayed hard disk is used for installation.  
Warning: All existing partitions and data will be lost.
- **Automatic hardware detection**  
The installer automatically configures your hardware.
- **Graphical user interface**  
Final configuration will be done on the graphical user interface via a web browser.

Target Harddisk: /dev/sda (12GB, QEMU HARDDISK) Options

Abort Previous Next



## PROXMOX, INSTALLAZIONE CLASSICA:

Proxmox VE Installer

### Location and Time Zone selection

**The Proxmox Installer** automatically makes location based optimizations, like choosing the nearest mirror to download files. Also make sure to select the right time zone and keyboard layout.

Press the Next button to continue installation.

- **Country:** The selected country is used to choose nearby mirror servers. This will speedup downloads and make updates more reliable.
- **Time Zone:** Automatically adjust daylight saving time.
- **Keyboard Layout:** Choose your keyboard layout.

Country	<input type="text" value="Italy"/>
Time zone	Europe/Rome ▾
Keyboard Layout	Italian ▾

Abort

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# PROXMOX, INSTALLAZIONE CLASSICA:

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


Abort

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Next



# PROXMOX, INSTALLAZIONE CLASSICA:

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:	ens18 - a6:d2:6c:b1:3b:39 (e1000) ▼
Hostname (FQDN):	<input type="text" value="pve.fritz.box"/>
IP Address:	<input type="text" value="192.168.0.158"/>
Netmask:	<input type="text" value="255.255.255.0"/>
Gateway:	<input type="text" value="192.168.0.1"/>
DNS Server:	<input type="text" value="192.168.0.1"/>

Abort

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# PROXMOX, INSTALLAZIONE CLASSICA:

**Summary**

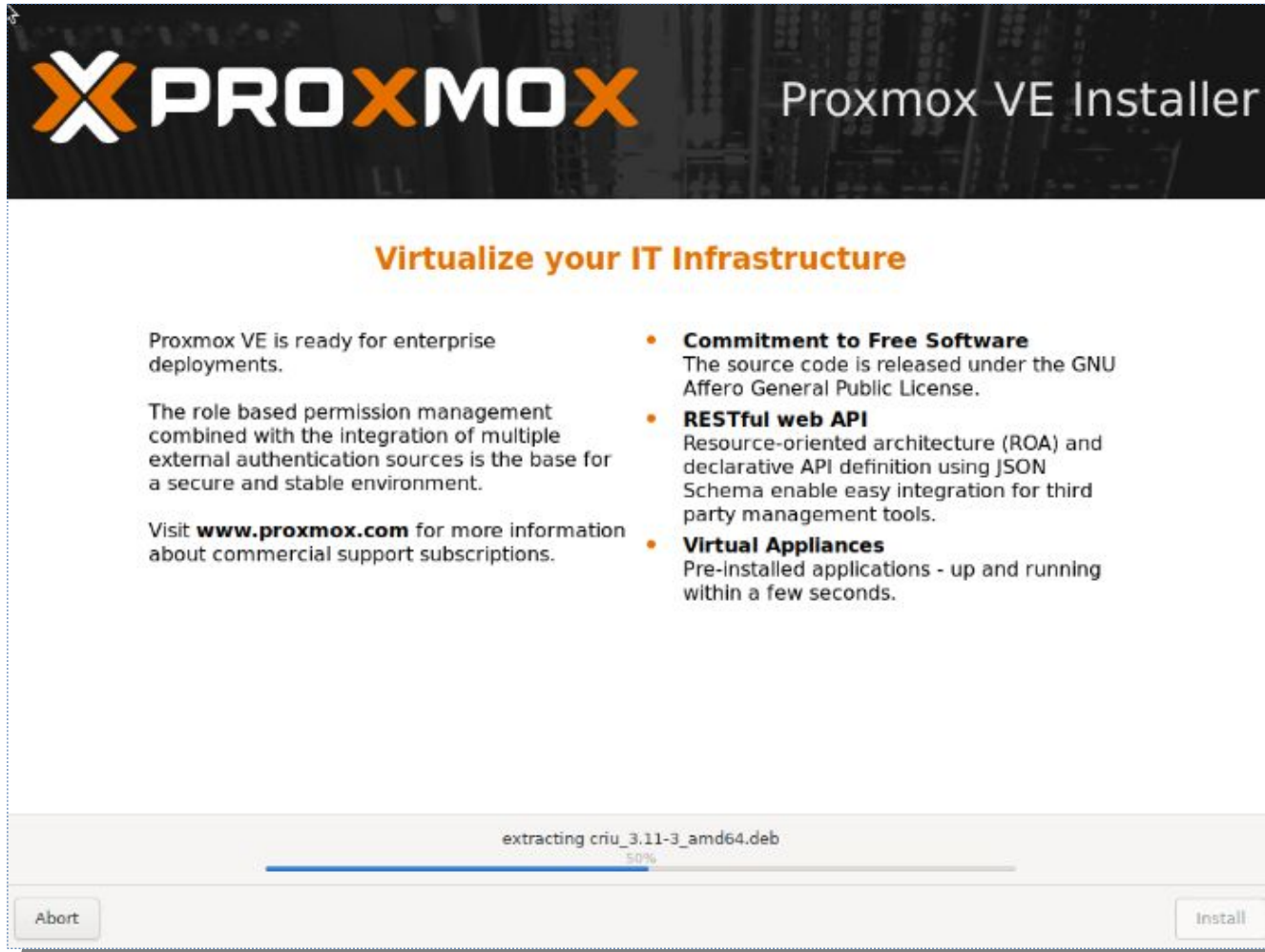
Please verify the displayed informations. Once you press the **Install** button, the installer will begin to partition your drive(s) and extract the required files.

Option	Value
Filesystem:	ext4
Disk(s):	/dev/vda
Country:	Italy
Timezone:	Europe/Rome
Keymap:	it
E-Mail:	stefano.ballardini@gmail.com
Management Interface:	ens18
Hostname:	sclero
IP:	192.168.0.7
Netmask:	255.255.255.0
Gateway:	192.168.0.1
DNS:	192.168.0.1

Abort Previous Install



# PROXMOX, INSTALLAZIONE CLASSICA:



**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 criu\_3.11-3\_amd64.deb  
50%

Abort Install



# PROXMOX, INSTALLAZIONE ALTERNATIVA: Debian 10.x Buster + repo Proxmox

→ **prima installare Debian 10.x Buster**

→ **Poi da terminale dare i seguenti comandi**

```
nano /etc/hosts e impostare il nome host
```

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

```
wget http://download.proxmox.com/debian/proxmox-ve-release-6.x.gpg -O /etc/apt/trusted.gpg.d/proxmox-ve-release-6.x.gpg
```

```
apt update && apt full-upgrade
```

```
apt install proxmox-ve postfix open-iscsi
```

```
apt remove os-prober
```



## PROXMOX, INSTALLAZIONE ALTERNATIVA: Debian 10.x Buster + repo Proxmox

Una volta fatto il login, create un BRIDGE Linux chiamato vubr0 e aggiungeteci la vostra prima interfaccia di rete.

Oppure

*etc/network/interfaces*

```
auto lo
iface lo inet loopback

iface eth0 inet manual
auto vubr0

iface vubr0 inet static
    address 192.168.0.9
    netmask 24
    gateway 192.168.0.1
    dns-nameservers 8.8.8.8 8.8.4.4
    bridge-ports eth0
```

Crea: Linux Bridge

Nome:	<input type="text" value="vubr0"/>	Avvio automatico:	<input checked="" type="checkbox"/>
IPv4/CIDR:	<input type="text" value="192.168.0.9/24"/>	supporta VLAN:	<input type="checkbox"/>
Gateway (IPv4):	<input type="text" value="192.168.0.1"/>	Bridge ports:	<input type="text" value="eth0"/>
IPv6/CIDR:	<input type="text"/>	Commento:	<input type="text"/>
Gateway (IPv6):	<input type="text"/>		

Advanced





**PROXMOX, collegamento alla GUI:** [https://IP\\_di\\_proxmox:8006](https://IP_di_proxmox:8006)

- ✓ Creare VM
- ✓ Creare Container/Template
- ✓ Nested Virtualization
- ✓ Subscription
- ✓ BackUp/Restore
- ✓ Usb Passthrought
- ✓ GPU Passthrought
- ✓ Storage
- ✓ Cluster/Live Migration



## CREDITS:

<https://www.proxmox.com/en>

[http://guide.debianizzai.org/index.php/IP\\_fissi](http://guide.debianizzai.org/index.php/IP_fissi)

[https://pve.proxmox.com/wiki/Install\\_Proxmox\\_VE\\_on\\_Debian\\_Buster](https://pve.proxmox.com/wiki/Install_Proxmox_VE_on_Debian_Buster)



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