A VMsources Whitepaper

PVE Basic Setup

Basic installation of Proxmox Virtual Environment (PVE) with Network, iSCSI, Migration from ESXi and Building a VM JOHN BORHEK



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Proxmox Virtual Environment (PVE)

- Installing Proxmox (PVE) is a very simple process. Since PVE has such a wide hardware compatibility, it will install on most servers, even legacy hardware, but it is always recommended to use the best/latest servers your Organization can afford.
- Furthermore, PVE supports both traditional SAN and hyperconverged storage at no additional cost. That means you can use your existing servers and install PVE in-place of other hypervisors, then gradually migrate your VMs from the other platform to PVE.
- For the most part, managing PVE is simple and straightforward, using the embedded GUI. There are some instances where PVE will absolutely require the use of the command-line. In terms of features, PVE is comparable to all major hypervisors, and superior to many. PVE supports the flowing features critical to many Organizations:
 - High Availability failover of VMs
 - Live Migration of VMs between PVE hosts
 - iSCSI & FC SAN
 - Hyperconverged storage
 - Live patching of PVE hosts
 - Supported by major backup platforms including Veeam

Downloads:

- PVE
 - o https://www.proxmox.com/en/downloads
- VirtIO
 - o https://fedorapeople.org/groups/virt/virtio-win/direct-downloads/stable-virtio/virtio-win.iso



Installing PVE

1. Download the PVE ISO: https://www.proxmox.com/en/downloads

| × PROXMOX | | Home Products Do | Get Help ▼ Buy now Q Southers About | |
|--------------------------|------------------------------------|--------------------------------|-------------------------------------|-----------------|
| Downloads | | | | |
| Proxmox Virtual Environ | nent Proxmox | Backup Server | Proxmox Mail Gateway | |
| Latest Releases | | | | |
| Proxmox VE 8.4 ISO Ins | taller | | | |
| Version 8.4-1 | File Size 1.57 GB | Last Updated April 09, 2025 | Download | |
| d237d70ca48a9f6eb47f95fc | 4fd337722c3f69f8106393844d027d28c2 | 16523d8 | Torrenc | |
| | | | | |
| Proxmox Backup Server | 3.4 ISO Installer | | | ctivate Windows |

2. Mount the ISO to the server you will be installing to and boot to ISO:







3. Select the install disk, PVE can be installed to flash-media, but it is recommended to install PVE on redundant disks (RAID 1 or equivalent) such as HDD, SDD or NVMe

| | Proxmox VE Installer | | | |
|---|---|--|--|--|
| The Proxmox Installer automatically partitions your hard disk. It installs all required packages and makes the system bootable from the hard disk. All existing partitions and data will be lost. | Please verify the installation target The displayed hard disk will be used for the installation. Warning: All existing partitions and data will be lost. | | | |
| Press the Next button to continue the installation. | 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 (32.00 | GiB, Virtual disk) Options | | | |
| Abort | Previous Next | | | |



4. Select your country, time zone and language. We recommend using UTC for all infrastructure servers.

| | Proxmox VE Installer |
|---|---|
| The Proxmox Installer automatically ma location-based optimizations, like choosing nearest mirror to download files from. Also make sure to select the correct time zone keyboard layout. Press the Next button to continue the installation. | Country: The selected country is used to choose nearby mirror servers. This will speed up downloads and make updates more reliable. Time Zone: Automatically adjust daylight saving time. Keyboard Layout: Choose your keyboard layout. |
| Country | United States |
| Time zone | итс 👻 |
| Keyboard Layout | U.S. English |
| Abort | Previous Next |

5. Set password and email.

| | Administration Password and Email Address |
|----|--|
| | Proxmox Virtual Environment is a full featured, highly secure GNU/Linux system, based on Debian. In this step, please provide the <i>root</i> password. Email: 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 the installation. |
| | Password Confirm Email john@vmsources.com |
| a. | Abort Previous Next |



6. Set the initial network properties for this PVE host.

| × PRO×MC | Y 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 installing. After you have finished, press the Next button. You will be shown a list of the options that you chose during the previous steps. IP address (CIDR): Set the main IP address and netmask for your server in CIDR notation. Gateway: IP address of your gateway or firewall. DNS Server: IP address of your DNS server. | | | | |
| Management Interface | ens161 - 00:50:56:a7:69:33 (vmxnet3) 👻 | | | |
| Hostname (FQDN) | pve101.lab.vmsources.com | | | |
| IP Address (CIDR) | 172.20.100.201 / 16 | | | |
| Gateway 172.20.0.1 | | | | |
| DNS Server | 172.20.0.10 | | | |
| Abort | Previous Next | | | |

7. Summary

| (PRO) | Proxmox VE Inst |
|---|--|
| | Summary |
| Please confirm the dis begin to partition your d | played information. Once you press the Install button, the installer will rive(s) and extract the required files. |
| Option | Value |
| Filesystem: | ext4 |
| Disk(s): | /dev/sda |
| Country: | United States |
| Timezone: | UTC |
| Keymap: | en-us |
| Email: | john@vmsources.com |
| Management Interface: | ens161 |
| Hostname: | pve101 |
| IP CIDR: | 172.20.100.201/16 |
| Gateway: | 172.20.0.1 |
| DNS: | 172.20.0.10 |
| | |



8. Install complete.



9. Login as root with the password you set.

| tps://1/2.20.100.201:8006/ |
|----------------------------|

10. Test networking by pinging the gateway or other known good IP: ping 172.20.0.1

```
root@pue101:~ # ping 172.20.0.1
PING 172.20.0.1 (172.20.0.1) 56(84) bytes of data.
From 172.20.100.201 icmp_seg=1 Destination Host Unreachable
From 172.20.100.201 icmp_seg=2 Destination Host Unreachable
From 172.20.100.201 icmp_seg=3 Destination Host Unreachable
^C
--- 172.20.0.1 ping statistics ---
6 packets transmitted, 0 received, +3 errors, 100% packet loss, time 5110ms
pipe 4
root@pue101:~ # _
```

a.

a.

 As you can see, network connectivity is not presently functioning because our environment uses TRUNK ports for everything except iSCSI storage. We will need to configure our VLAN at the CLI to proceed



If you use VLANs and ping was unsuccessful, run: vi /etc/network/interfaces



11. This is the configuration created by the installer without VLAN





12. If you use VLANs (TRUNK ports), you will need to make your initial config look like the example, except substituting your correct values.

auto lo iface lo inet loopback iface ens161 inet manual auto vmbr0.26 iface umbr0.2<u>6</u> inet static address 172.20.100.201/16 gateway 172.20.0.1 auto vmbr0 iface vmbr0 inet manual bridge-ports ens161 bridge-stp off bridge-fd 0 bridge-vlan-aware yes bridge-vids 24-26 iface ens192 inet manual iface ens193 inet manual iface ens224 inet manual iface ens225 inet manual iface ens256 inet manual source /etc/network/interfaces.d/*

- a.
- b. We are using VLAN 26, so we have specified that in several places with: vmbr0.26
- c. We have also separated the bridge settings and added some VLAN specific lines under: auto vmbr0





Initial Updates for PVE

1. Now we can access the PVE host in-band at its assigned IP address with SSH

| ategory | |
|--|--|
| anadari'. | |
| | Basic options for your PuTTY session |
| Logging | Specify the destination you want to connect to |
| E Terminal | Host <u>N</u> ame (or IP address) <u>P</u> ort |
| Bell | 172.20.100.201 22 |
| Features C | Connection type: |
| Window | ● <u>S</u> SH ○ Serjal ○ Other: Telnet ∨ |
| Behaviour | oad, save or delete a stored session |
| Translation | Saved Sessions |
| Colours | |
| | Default Settings Load |
| Data | |
| Proxy | Save |
| | Delete |
| Telnet | |
| Rlogin | |
| SUPDUP (| Jose window on e <u>x</u> it: ○ Always ○ Never ● Only on clean exit |
| | |
| About Help | Open Cancel |
| 2.14 | |
| | |
| PuTTY Security Alert | rached for this server. |
| PuTTY Security Alert | cached for this server: |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port | cached for this server: t 22) |
| PuTTY Security Alert PuTTY Security Alert The host key is not c 172.20.100.201 (port You have no guarant | cached for this server: t 22) itee that the server is the computer you think it is. |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 | cached for this server: t 22) itee that the server is the computer you think it is. 25519 key fingerprint is: |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guarant The server's ssh-ed2 ssh-ed25519 255 SH | cached for this server: t 22) itee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 ssh-ed25519 255 SH if you trust this host, | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: 1A256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 ssh-ed25519 255 SH If you trust this host, connecting. | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guarant The server's ssh-ed2 ssh-ed25519 255 SH If you trust this host, connecting. If you want to camp of "Connect Once". | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on on connecting just once, without adding the key to the cache, press |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 ssh-ed25519 255 SH If you trust this host, connecting. If you want to carry of "Connect Once". If you do not trust this | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on on connecting just once, without adding the key to the cache, press is host, press "Cancel" to abandon the connection. |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 ssh-ed25519 255 SF If you trust this host, connecting. If you want to carry of "Connect Once". If you do not trust this | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on on connecting just once, without adding the key to the cache, press is host, press "Cancel" to abandon the connection. |
| PuTTY Security Alert The host key is not of 172.20.100.201 (port You have no guaran The server's ssh-ed2 ssh-ed25519 255 SH If you trust this host, connecting. If you want to carry of "Connect Once". If you do not trust this Help More info | cached for this server: t 22) tee that the server is the computer you think it is. 25519 key fingerprint is: HA256:I+WKCfEOg15fCsIsMZY3oGOUutNTpNBGO5nCEaaevnU press "Accept" to add the key to PuTTY's cache and carry on on connecting just once, without adding the key to the cache, press is host. press "Cancel" to abandon the connection. |



2. Login as: root

```
    172.20.100.201 - PuTTY
    login as: root
    root@172.20.100.201's password:
Linux pvel01 6.8.12-9-pve #1 SMP PREEMPT_DYNAMIC PMX 6.8.12-9 (2025-01)
    x86_64

The programs included with the Debian GNU/Linux system are free softwa
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed May 7 15:17:39 2025
root@pvel01:~#
```

3. Run: apt update

a.

а.

```
PuTTY 172.20.100.201 - PuTTY
                                                                                                                                        \times
  ermitted by applicable
 ast login: Wed May 7 15:17:39 2025
 coot@pvel01:~# apt update
 Get:1 http://ftp.us.debian.org/debian bookworm InRelease [151 kB]
Get:3 http://security.debian.org bookworm-security/main amd64 Packages [258 kB]
Get:6 http://security.debian.org bookworm-security/contrib amd64 Packages [896 B]
Get:6 http://security.debian.org bookworm-security/contrib Translation-en [652 B]
Get:7 http://ftp.us.debian.org/debian bookworm-updates InRelease [55.4 kB]
 Get:8 http://ftp.us.debian.org/debian bookworm/main amd64 Packages [8,792 kB]
Err:9 https://enterprise.proxmox.com/debian/ceph-quincy bookworm InRelease
Err:10 https://enterprise.proxmox.com/debian/pve bookworm InRelease
  401 Unauthorized [IP: 66.70.154.82 443]
 Get:11 http://ftp.us.debian.org/debian bookworm/main Translation-en [6,109 kB]
Get:12 http://ftp.us.debian.org/debian bookworm/contrib amd64 Packages [54.1 kB]
Get:13 http://ftp.us.debian.org/debian bookworm/contrib Translation-en [48.8 kB]
 Get:14 http://ftp.us.debian.org/debian bookworm-updates/main amd64 Packages [512 B]
 Get:15 http://ftp.us.debian.org/debian bookworm-updates/main Translation-en [360 B]
 Reading package lists... Done
  : Failed to fetch https://enterprise.proxmox.com/debian/ceph-quincy/dists/bookworm/InRelease 401 Unauthorized
 : The repository 'https://enterprise.proxmox.com/debian/ceph-quincy bookworm InRelease' is not signed.
I: Updating from such a repository can't be done securely, and is therefore disabled by default.
 : See apt-secure(8) manpage for repository creation and user configuration details.
: Failed to fetch https://enterprise.proxmox.com/debian/pve/dists/bookworm/InRelease 401 Unauthorized [IP: 66.
 0.154.82 4431
   The repository 'https://enterprise.proxmox.com/debian/pve bookworm InRelease' is not signed.
 I: Updating from such a repository can't be done securely, and is therefore disabled by default.
 : See apt-secure(8) manpage for repository creation and user configuration details.
root@pve101:~#
```



4. Run: apt upgrade





GUI Network Config for PVE

1. Now connect to the GUI at: https://<IP>:8006

| | | | | | v |
|----------------------|------------------------|----------------------------|---------------------|----------------|----------|
| | | | | | _ |
| | al Environment 8.4.0 S | | Documentation | | |
| Server View | × 💠 | | | | |
| Datacenter | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Proxmox VE | Login | | | |
| | User server a | -1 | | | |
| | Oser name. To | 01 | | | |
| | Password: •• | | | | |
| | Realm: Li | nux PAM standard authentic | ation | | |
| | Language: Ei | nglish - English | <u> </u> | | |
| | | Save User i | name: 🗌 🛛 Login | | |
| | | | | | |
| | | | | | |
| No valid subscriptio | | | | 0 | |
| No valid subscriptio | | | | \otimes | |
| A You do not have | e a valid subscriptio | n for this server. Plea | se visit www.proxmo | x.com to get a | |
| List of available | options. | | I | | |
| | | | | | |



2. First thing we are going to do is setup the basic network for trunking all available TRUNK ports. Select the LinuxVLAN (if specified) and remove

| | V 🗙 pye101 - Proxmox Virt | tual Envirc × + | | | | | | - 0 | × |
|----|---------------------------|----------------------------------|-------------------|-----------------------|--------------|------------------|------------|--------------|------------------|
| | | | | | | | | _ | ~ |
| | ← → C 🛛 😵 Not see | cure <u>https</u> ://172.20.100. | .201:8006/#v1:0:= | node%2Fpve101:4 | k:11::::: | | | ☆ 🚳 |) : |
| | | irtual Environment 8.4.0 | Search | <i>D</i> | ocumentation | Create VI | M 🝞 Create | e CT 💄 root@ | pam \checkmark |
| | Server View 🗸 🌣 | Node 'pve101' | | ") Reboot | O Shutdown | n >_ Shell | V Bul | Actions 🗸 🔞 | Help |
| | ✓ ■ Datacenter | | Create V | Revert Edit | Remove | only Configura | tion | | |
| | > ស pve101 | Q Search | | | | , ppi) ooniigara | | | |
| | | Summary | Name ↑ | Туре | Active | Autostart | VLAN a | Ports/Slaves | Bond |
| | □ Notes | | ens161 | Network Device | Yes | No | No | | |
| | | | ens192 | Network Device | No | No | No | | |
| | | of System | ens193 | Network Device | No | No | No | | |
| | | | ens224 | Network Device | No | No | No | | |
| | | | ens225 | Network Device | No | No | No | | |
| | | | vmbr0 | Linux Bridge | Yes | Yes | Yes | ens161 | |
| | | ODNS | vmbr0.26 | Linux VLAN | Yes | Yes | No | 010101 | |
| _ | | Hosts | | | | | | | |
| a. | iem and and a | * Ontions | daa Ma | Ma | | | | | |
| | ens224 | Network De | VICE INO | NO | | | | | |
| | Confirm | | | ⊗ ^{No} | | | | | |
| | ertificates | | | No | | | | | |
| | INS (?) Are you | sure you want to remo | ove entry 'vmb | r0.26' _{Yes} | | | | | |
| | | | | Yes | | | | | |
| | losts | Yes No | | | | | | | |
| | ptions | | | | | | | | |
| b. | ime | | | | | | | | |

3. Now select the bridge itself and remove

| 💉 🗴 pve101 - Proxmox Virtu | ual Enviro × + | | | | | | - |
|----------------------------|----------------------------------|------------------|----------------|---------------|---------------|------------|--------------|
| ← → C S Not secu | ure <u>https</u> ;//172.20.100.3 | 201:8006/#v1:0:- | =node%2Fpve101 | :4:11::::: | | | ☆ |
| | tual Environment 8.4.0 | Search | | Documentation | Create V | /M 🝞 Creat | e CT 💄 r |
| Server View 🗸 🌣 | Node 'pve101' | | S Reboot | ් Shutdow | n >_ Shel | I 🖂 🗄 Bul | k Actions $$ |
| ✓ Datacenter > ₽ pve101 | ∧ | Create v | Revert Edit | Remove | Apply Configu | ration | |
| | | Name \uparrow | Туре | Active | Autostart | VLAN a | Ports/Slav |
| | | ens161 | Network Device | Yes | No | No | |
| | L, Notes | ens192 | Network Device | No | No | No | |
| | >_ Shell | ens193 | Network Device | No | No | No | |
| | og System - | ens224 | Network Device | No | No | No | |
| | | ens225 | Network Device | No | No | No | |
| | Certificates | ens256 | Network Device | No | No | No | |
| | ONS | vmbr0 | Linux Bridge | Yes | Yes | Yes | ens161 |
| OTOLLI | Q Hosts | | | | | | |
| Confirm | | \otimes | No | | | | |
| Are you sure y | you want to remove | entry 'vmbr0' | Yes | | | | |
| Yes | s No | | | | | | |
| | | | | | | | |



4. Now we'll add a Bond so that we can specify load-balancing

| yve101 - Proxmox Virt | rual Envirc 🗙 🕂 | | | |
|-----------------------|--------------------------|------------------------|--------------|------------------|
| ← → C ONot sec | ture https://172.20.100. | 201:8006/#v1:0:=node | %2Fpve101:4: | 11:: |
| | rtual Environment 8.4.0 | Search | 🗐 Do | ocumentation 🖵 c |
| Server View 🗸 🌣 | Node 'pve101' | | "D Reboot | () Shutdown >_ |
| Datacenter | | Create V Rever | t Edit R | Apply C |
| Preior | Q Search | Linux Bridge | | Active Auto |
| | Summary | Linux Bond | work Device | Yes No |
| | | OVC Bridge | ork Device | No No |
| | >_ Snell | OVS Bridge OVS Bond | ork Device | No No |
| | Q; System | OVS IntPort | ork Device | No No |
| | | CHOZZJ INCIW | ork Device | No No |
| | Certificates | ens256 Netw | ork Device | No No |
| a. | O DNS | | | |

b. Set the Bond to use all TRUNKED ports available and name it

| Name: | bond0 | Autostart: | \checkmark | |
|-----------------|-------|---------------|------------------|-----------|
| IPv4/CIDR: | | Slaves: | ens161 ens192 er | ns193 ens |
| Gateway (IPv4): | | Mode: | balance-rr | ~ |
| IPv6/CIDR: | | Hash policy: | | |
| Gateway (IPv6): | | bond-primary: | | |
| | | Comment: | 10GbE Bond for T | runk |

c.



5. Next we'll create a Linux VLAN (IP) on the bond for management



b. Specify a name, IP, Gateway, bond and VLAN as shown

| Name: | MGMT | Autostart: | \checkmark |
|-------------------|--------------------------------|---------------------|---------------------------|
| Pv4/CIDR: | 172.20.100.201/16 | Vlan raw device: | bond0 |
| Gateway (IPv4): | 172.20.0.1 | VLAN Tag: | 26 |
| Pv6/CIDR: | | Comment: | Management IP |
| Gateway (IPv6): | | | |
| Either add the VL | AN number to an existing inter | ace name, or choose | your own name and set the |

c.



6. Now Apply Configuration

| | ✓ X pve101 - Proxmox Virt ← → C ⊗ Not set | tual Envirc × + cure https://172.20.100. | 201:8006/#v1:0: | =node%2Fpve101: | 4:11::::: | | |
|----|---|--|-----------------|-------------------|---------------|-----------------|------------|
| | | irtual Environment 8.4.0 | Search | | Documentation | n 🖵 Create V | M 🝞 Create |
| | Server View 🗸 🌣 | Node 'pve101' | | ") Reboot | ් Shutd | own >_ Shell | ∨ ∎ Bulk |
| | ✓ ■ Datacenter > ■ pve101 | | Create \lor | Revert Edit | Remove | Apply Configura | ation |
| | | | Name ↑ | Туре | Active | Autostart | VLAN a |
| | | | MGMT | Linux VLAN | No | Yes | No |
| | | | bond0 | Linux Bond | No | Yes | No |
| | | >_ Shell | ens161 | Network Device | Yes | Yes | No |
| | | 🔅 System 🔍 | ens192 | Network Device | No | Yes | No |
| | | | ens193 | Network Device | No | Yes | No |
| | | Certificates | ens224 | Network Device | No | Yes | No |
| | | ODNS | ens225 | Network Device | No | No | No |
| a. | ens192 Ne | etwork Device No | Yes | Notwork Davica No | | No | No |
| Γ | k Confirm | (| Xes | | | | |
| 2 | Do you want to app | ly pending network change | s? No | | | | |
| h | Yes | No | No | | | | |



GUI iSCSI Config for PVE

a.

c.

1. We are going to set up networking for iSCSI. Choose an iSCSI interface and select Edit.

| 💌 💥 pve101 - Proxmox Virt | ual Envirc 🗙 🕂 | | | | | |
|---|--------------------------|-----------------|------------------|--------------|-----------------|------------|
| ← → C S Not see | ture https://172.20.100. | 201:8006/#v1:0: | =node%2Fpve101:4 | :11::::: | | |
| | rtual Environment 8.4.0 | Search | <i>D</i> | ocumentation | Create V | м 📦 о |
| Server View 🗸 🌣 | Node 'pve101' | | ") Reboot | () Shutdow | n >_ Shell | ~ I |
| ✓ Datacenter ✓ Image: Weight of the second seco | | Create v | Revert Edit | Remove | Apply Configura | ation |
| localnetwork (pve1 | | Name \uparrow | Туре | Active | Autostart | VLAN a |
| Iocal (pve101) | Notes | MGMT | Linux VLAN | Yes | Yes | No |
| SUlocarivin (breio) | | bond0 | Linux Bond | Yes | Yes | No |
| | >_ Snell | ens161 | Network Device | Yes | Yes | No |
| | ¢ ₿ System - | ens192 | Network Device | Yes | Yes | No |
| | ≓ Network | ens193 | Network Device | Yes | Yes | No |
| | Certificates | ens224 | Network Device | Yes | Yes | No |
| | O DNS | ens225 | Network Device | No | No | No |
| | Hosts | ens256 | Network Device | No | No | No |

b. Give the iSCSI interface an appropriate IP on your storage network, set MTU and name it.

| Name: | ens225 | Autostart: | | |
|-----------------|---------------|------------|---------|--|
| IPv4/CIDR: | 10.0.0.201/24 | Comment: | iSCSI 1 | |
| Gateway (IPv4): | | | | |
| Pv6/CIDR: | | | | |
| Gateway (IPv6): | | | | |
| MTU: | 9000 | 0 | | |



2. If you have more than one iSCSI interface, do the same for all of them,





a.

3. Now we are going to connect to the SAN: Datacenter > Storage > Add > iSCSI



b. Name the SAN (ID) set the SAN discovery IP (Portal) and then your SANs IQN should show up (Target). If your SAN has more than one IQN, select the appropriate one for PVE.

| - | local-ivm | LV Disk im | iage, Contai | |
|------------|-------------------------|-----------------------|-----------------------|-----------|
| Add: iSCSI | | | | \otimes |
| General | Backup Retention | | | |
| ID: | iSCSI-SAN-1 | Nodes: | All (No restrictions) | ~ |
| Portal: | 10.0.0.24 | Enable: | | |
| Target: | iqn.2009-10.com.vmsou 🗸 | Use LUNs directly: | | |
| Help | | | | dd |
| 8 APLI | okens | | | |



4. Now go to: Datacenter > Storage > Add > LVM (NOTE: LVM is only one of the ways to use iSCSI in PVE)

| yve101 - Proxmox Virt | tual Envirc 🗙 🕂 | | |
|----------------------------|------------------------------|--------------------------|---------------|
| ← → C S Not set | cure https://172.20.100.201: | 8006/#v1:0:18:4:11:::::2 | |
| | rtual Environment 8.4.0 Sea | ch | Documentation |
| Server View 🗸 🌣 | Datacenter | | |
| ✓ ■ Datacenter | | Add V Remove | Edit |
| pve101 Incalnetwork (pve1) | Q Search | Directory | nt |
| iSCSI-SAN-1 (pve | Summary | LVM | n. |
| Salocal (pve101) | D Notes | LVM-Thin | mage |
| Iocal-lvm (pve101 | 📑 Cluster | BTRFS | ip, ISO imag |
| | Cenh | NFS | mage, Contai |
| | * Ontions | SMB/CIFS | |
| | Options | GlusterFS | |
| | Storage | ISCSI | |
| | 🖺 Backup | CephFS | |

b. Set the name for your volume (ID), Choose the SAN (Base storage), select the SAN LUN (Base Volume), name the (Volume group) and select Add. NOTE: Do not use a SAN LUN (Base Volume) that contains any valid or in-use data as this process will overwrite the SAN LUN which you have chosen.

| General Ba | ckup Retention | | | | |
|---------------|-----------------------|--------|--------------|-----------------------|---|
| ID: | PVE-VOL-1 | | Nodes: | All (No restrictions) | ~ |
| Base storage: | iSCSI-SAN-1 (iSCSI) | \sim | Enable: | | |
| Base volume: | CH 00 ID 0 LUN 106 | \sim | Shared: | | |
| Volume group: | iSCSI1 | | Wipe Removed | | |
| Content: | Disk image, Container | \sim | Volumes: | | |



GUI SMB/CIFS for ISO Images

 Now we are going to set up a SMB share as a source for ISO images: Datacenter > Storage > Add > SMB/CIFS





2. PVE will create folders on your SMB/CIFS Share, you need to put the ISOs in the correct folder: <FOLDERNAME>\template\iso

| - | | | | | | | |
|----------------|---------|---------------|---------------------|------|-------------------|-----------------|--------------|
| , , | | | Manage | iso | | | |
| Home | Share | View | Disc Image Tools | | | | |
| 1 | \\share | e\files\ISOs\ | \template\iso | | | | |
| | | Name | ^ | | Date modified | Туре | Size |
| access | | ivirtio | -win-0.1.271.iso | | 5/7/2025 10:49 AM | Disc Image File | 709,474 KB |
| nloads | * | SERV | ER_EVAL_x64FRE_en-u | siso | 2/7/2025 6:56 AM | Disc Image File | 4,925,874 KB |
| uments | * | | | | | | |
| ures | * | | | | | | |
| | | | | | | | |

a. perating Syster 🖈



Migrate VMs from ESXi

1. To migrate VMs, we'll need a Bridge: Host > Network > Create > Linux Bridge

| | ~ | X p | ve101 - Pi | roxmox Virtu | al Enviro 🗙 | 🛅 vSph | iere - wiresha | rk-101 - Su | ımr 🗙 💙 | 🔇 pve101 | - Proxmox Virtu | al Envirc 🗙 | + | |
|----------|---|--|--|--------------------------|---------------|-----------------|--|-----------------|------------------------|-------------|-----------------|------------------|-------|------------------------|
| | ÷ | \rightarrow | G | 8 Not second | ure https://1 | 72.20.10 | 0.221:8006/ | #v1:0:=nd | ode%2Fpve* | 101:4:11::: | | | | |
| | × | PR | | 10× Vir | tual Environm | ent 8.4.0 | Search | | | | | | 🔊 Do | cumentat |
| | Serv | /er View | 1 | | ~ | No | Node 'pve101' | | | | | | eboot | ් Shu |
| | | Datac | enter e101 | | | Q | Search Summary | | Create ~ Linux Brid | dge dd | ert Edit | Remove Active | Apply | / Configui utostart |
| | | | | | | D | Notes | | – Linux VLA | AN | JX VLAN | Yes | Ye | es |
| | | | | | | >_ | Shell | | OVS Brid | ge | work Device | Yes | Ye | 15 |
| | | | | | | o; | System | ~ | OVS Bon | d | work Device | Yes | Ye | es |
| | | | | | | | ≓ Network | | OVS IntP | ort | work Device | Yes | Ye | es |
| | | | | | | | Certifica | tes | ens224 | Ne | twork Device | Yes | Ye | es |
| a. | marv | | | | | | O DNC | | ens225 | Ne | twork Device | Yes | Ye | es |
| | s em etwork ertifica NS psts ptions | Edit: L Name: IPv4/C Gatew IPv6/C Gatew | IDR: ay (IPv4): IDR: ay (IPv6): | dge vmbr0 172.20.1 | 00.221/16 | Au VL Bri | itostart: AN aware: idge ports: pmment: | bond0 Bridge | for importing | S & | | | | |
| | me | MTU: | | 1500 | | ≎ VL | AN IDs: | 26 | | | | | | |
| | /stem | | | | | | | Adva | anced 🖂 📃 | ОК | | | | |
| b. c. | Don | 't for | get to | apply | configurat | tion | N | | | | | | | |
| | 192 | | Network D | evice Y | es Yes | | | | | | | | | |
| | 224 | Confi | m | | | (| ×) | | | | | | | |
| | 225 | ? | Do you v | vant to apply | pending netwo | k changes | s? | | | | | | | |
| | ;256 | | ſ | Yes | No | | | | | | | | | |
| | 010 | | | | | | | | | | | | | |



2. Now we can add our ESXi host(s): Datacenter > Storage > Add > ESXi





3. At this point we are ready to import VMs from ESXi: PVE Host > ESXi > Import

| yve101 - Proxmox Virt | tual Envire 🗙 👩 vSph | ere - vcsa101.vmclassroom 🗙 + | | - | |
|---------------------------|-------------------------|----------------------------------|------------------------------|-----------------|--------|
| ← → C S Not see | ture https://172.20.100 | 0.201:8006/#v1:0:=storage%2Fpve | 101%2Fesxi101.vmclassroom.co | om:4:11:::::2 🕁 | ٩ |
| XPROXMOXVI | rtual Environment 8.4.0 | Search | Documentation Create VM | Create CT | root@p |
| Server View 🗸 🗘 | Storage 'esxi101.vmclas | sroom.com' on node 'pve101' | | | 0 |
| ✓ ■ Datacenter ✓ ■ pve101 | Virtual Guests | 4 Import | Search: | Name, Format | |
| localnetwork (pve1 | Permissions | Name | | | |
| ISOs (pve101) | | ha-datacenter/101/wireshark-101/ | wireshark-101.vmx | | vmx |
| esvi101 vmclassro | | ha-datacenter/102/Ubuntu-102-2/ | Jbuntu-102-2.vmx | | vmx |
| SCSI-SAN-1 (pve | | ha-datacenter/102/vcsa102/vcsa1 | 02.vmx | | vmx |
| local (pve101) | | ha-datacenter/103/ubuntu-103-1/u | buntu-103-1.vmx | | vmx |
| Iocal-lvm (pve101 | | ha-datacenter/103/ubuntu-103-2/u | buntu-103-2.vmx | | vmx |
| | | ha-datacenter/105/Ubuntu-105-1/ | Jbuntu-105-1.vmx | | vmx |
| | | ha-datacenter/105/Ubuntu-105-2/ | Jbuntu-105-2.vmx | | vmx |
| | | ha-datacenter/105/vcsa105/vcsa1 | 05.vmx | | vmx |
| | | ha-datacenter/105/W11-105-1/W1 | 1-105-1.vmx | | vmx |
| | | | | | |

4. Set the parameters, especially destination storage > Import

| | 100 | 🗘 Na | ime: | wireshark-101 | |
|------------------|-----------------------------|--------------------------|---------------|-----------------------------------|-------|
| Sockets: | 2 | ≎ CF | PU Type: | x86-64-v2-AES | × · |
| Cores: | 1 | 🗘 To | tal cores: | 2 | |
| Memory (MiB): | 4096 | 09 05 | S Туре: | Microsoft Windows | · · · |
| | | Ve | rsion: | 11/2022/2025 | |
| | | | | | |
| Default Storage: | PVE-VOL-1 | ✓ De | ault Bridge: | vmbr0 | · · · |
| Format: | Raw disk image (raw) | | | | |
| | Starts a previously stopped | I VM on Proxmo | x VE and impo | orts the disks in the background. | |
| Live Import: | | | | | |



a. If you get an error, the source VM may be powered-on

| Output | Status | | |
|--|---|--|-------------------------|
| Stop | | | 🛓 Down |
| Rounding u Logical volu transferred 1 transferred 1 efidisk0: suc create full ch Logical volu transferred 0 qemu-img: e Logical volu Logical volu TASK ERROR | p size to full physical extent 4.00 MiB me "vm-100-disk-0" created. .0 B of 128.0 KiB (0.00%) 28.0 KiB of 128.0 KiB (100.00%) 28.0 KiB of 128.0 KiB (100.00%) creasfully created disk 'PVE-VOL-1:vm-100-disk-0,size=4M' one of drive (esxi101.vmclassroom.com:ha-datacenter/101/wireshark-101/wi me "vm-100-disk-1" created. .0 B of 100.0 GiB (0.00%) rror while reading at byte 0: Input/output error me "vm-100-disk-0" successfully removed. me "vm-100-disk-1" successfully removed. : unable to create VM 100 - cannot import from 'esxi101.vmclassroom.com:h | reshark-101.vmdk) ha-datacenter/101/wireshark-101/wireshark | k-101.vmdk' - copy fail |
| | | | |
| 1 Sis what | at it should look like | | |
| nis is what is such as the second sec | at it should look like VI-111 vmclassroom com on node "rve111" er: VM 101 - Create | |) |
| nis is what is some for the second se | at it should look like wi-101 vmclassroom com' on node 'nve101' er: VM 101 - Create Status | ⊗ | ne, F |
| 1 Is is what Storage in Task view Output Stop | at it should look like vi-101 vmclassroom com on onde "ove101" er: VM 101 - Create Status | ⊗ ≛ Download | ne, f |

d.



e.

| cen Task viewer: VM 101 - Create | 8 |
|---|------------|
| Ceni Output Status | |
| Stop | 📩 Download |
| cent | |
| transferred 22.0 GiB of 100.0 GiB (22.04%) | |
| transferred 23.0 GiB of 100.0 GiB (23.04%) | |
| ceni transferred 24.0 GiB of 100.0 GiB (24.05%) | |
| transferred 25.0 GiB of 100.0 GiB (25.05%) | |
| transferred 26.0 GiB of 100.0 GiB (26.05%) | |
| cen transferred 27.0 GiB of 100.0 GiB (27.05%) | |
| transferred 28.0 GiB of 100.0 GiB (28.05%) | |
| transferred 29.1 GB of 100.0 GB (29.06%) | |
| transferred 30.1 GIB of 100.0 GIB (30.06%) | |
| transferred 32.1 GiB of 100.0 GiB (32.06%) | |
| transferred 32.1 GB of 100.0 GB (32.00%) | |
| transferred 34.1 GB of 100.0 GB (34.07%) | |
| transferred 35.1 GB of 100.0 GB (35.07%) | |
| transferred 36.1 GiB of 100.0 GiB (36.07%) | |
| transferred 37.1 GiB of 100.0 GiB (37.07%) | |
| transferred 38.1 GiB of 100.0 GiB (38.07%) | |
| transferred 39.1 GiB of 100.0 GiB (39.08%) | |
| transferred 40.1 GiB of 100.0 GiB (40.08%) | |
| transferred 41.1 GiB of 100.0 GiB (41.08%) | |
| transferred 42.1 GiB of 100.0 GiB (42.08%) | |
| transferred 43.1 GiB of 100.0 GiB (43.08%) | |
| transferred 44.1 GiB of 100.0 GiB (44.09%) | |
| transferred 45.1 GiB of 100.0 GiB (45.09%) | |

5. Once the VM is fully imported, you will need to add or assign the CD/DVD to the VirtIO ISO in the SMB share you created earlier and install the VirtIO Tools for Windows (if it is a Windows VM)



Building a VM

1. Click on > Create VM

| 👻 🗶 pve101 - Proxmox Virtual Envire 🗙 🛛 🛅 | vSphere - wireshark-101 - Su | ımı 🗙 💥 pv | e101 - Proxmox Virtua | al Envirc 🗙 | + | | | - C | ı x |
|--|------------------------------|------------------------|-----------------------|-------------|-----------------|------------|---------------|-------------|--------|
| ← → C ONot secure https://172.2 | 20.100.221:8006/#v1:0:=n | ode%2Fpve101:4 | :11::::: | | | | | ☆ | 🚳 : |
| | 8.4.0 Search | | | ł | Documentati | ion 🖵 Crea | te VM 🕝 Creat | e CT 💄 root | @pam 🗸 |
| Server View 🗸 🔅 | Node 'pve101' | | | "D Reb | oot 🖒 Shut | tdown >_ S | Shell 🗸 🗄 Bul | k Actions 🗸 | Help |
| ✓ ■ Datacenter ✓ ■ Datacenter ✓ ■ pve101 | O Search | Create v | Revert Edit | Remove | Apply Configure | ation | | | |
| □ 100 (VM 100) | | Name \uparrow \sim | Туре | Active | Autostart | VLAN a | Ports/Slaves | Bond Mode | CIDR |
| 101 (VM 101) | | MGMT | Linux VLAN | Yes | Yes | No | | | 172.2 |
| Sos (pve101) | | bond0 | Linux Bond | Yes | Yes | No | ens161 en | balance-rr | |
| PVE-VOL-1 (pve101) | >_ Shell | ens161 | Network Device | Yes | Yes | No | | | |
| esxi-101.vmclassroom.com (pve101) | ot System - | ens192 | Network Device | Yes | Yes | No | | | |
| iSCSI-SAN-1 (pve101) | | ens193 | Network Device | Yes | Yes | No | | | |
| Seal (pve101) | Certificates | ens224 | Network Device | Yes | Yes | No | | | |
| Seal-lvm (pve101) | O DNS | ens225 | Network Device | Yes | Yes | No | | | 10.0.(|
| | O Hasta | ens256 | Network Device | Yes | Yes | No | | | 10.0.0 |
| | Options | vmbr0 | Linux Bridge | Yes | Yes | Yes | bond0 | | 172.2 |
| | O Time | | | | | | | | |
| | 😑 Suntam Lag | | | | | | | | |

2. Set the VM friendly name

| 100000000000000000000000000000000000000 | pve101 | | \sim | Resource Pool: | | \vee |
|---|--------|----|------------|----------------|--|--------|
| VM ID: | 102 | | \bigcirc | | | |
| Name: | W2K22 | -1 | | | | |
| co | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | | | | | | |



3. Choose the source for the ISO and select your ISO. Then add an additional disk for VirtIO drivers and choose the VirtIO ISO

| | OS System | Disks CPU | Memory | Network | Confirm | | |
|------------|-----------------|-------------|---------|-------------|------------------|------------------------|---|
| Use CD/I | DVD disc image | file (iso) | | Guest OS: | | | |
| | Storage: | ISOs2 | \sim | Туре: | Microsof | t Windows | ~ |
| | ISO image: | SERVER_EVAL | _x64F ~ | Version: | 11/2022/ | 2025 | ~ |
| O Use phys | sical CD/DVD Dr | rive | | Add additio | onal drive for V | /irtIO drivers | |
| Do not us | se any media | | | | Storage: | ISOs2 | ~ |
| | | | | | ISO image: | virtio-win-0.1.271.iso | ~ |
| | | | | | | | |
| | | | | | | | |

4. Choose EFI Storage (presumably iSCSI SAN volume)

| 1 | Croate: Virtual I | Machina | | | 0 |
|-------|-------------------|-----------------------|------------------|--------------------|-----------|
| - | Create. Virtuari | Machine | | | \otimes |
| | General OS | System Disks CPU Memo | ry Network Co | onfirm | |
| | Graphic card: | Default ~ | SCSI Controller: | VirtIO SCSI single | ~ |
| 1) | Machine: | q35 ~ | Qemu Agent: | | |
| | Firmware | | | | |
| 1) | BIOS: | OVMF (UEFI) | Add TPM: | | |
| om.co | Add EFI Disk: | | | | |
| 01) | EFI Storage: | PVE-VOL-1 V | | | |
| | Format: | Raw disk image (raw) | | | |
| | Pre-Enroll keys: | | | | |
| | | | | | |
| - | | | | | |
| | | | | | |
| Time | | | | | |
| | | | | | |
| 07 11 | | | | | |
| 07 11 | Help | | | Advanced Back | Next |
| 07.44 | 24:40 | 404 | 01.402 Occube | | |



5. Choose disk storage (presumably iSCSI SAN volume)

| 00010 | Û | Disk Bandwi | dth | | | |
|-------|---|------------------|--------------------------|------------|--------------------|--|
| | | Bus/Dovico: | 909I × 0 ^ | Cacho | Dofault (No cacho) | |
| | | SCSI Controller: | VittlO SCSI - U V | Discord: | Delaur (No cache) | |
| | | SCSI Controller. | VIIIIO SCSI single | Discard. | | |
| | | Storage: | PVE-VOL-1 | IO thread: | \checkmark | |
| | | Disk size (GiB): | 120 🗘 | | | |
| | | Format: | Raw disk image (raw \vee | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

6. Set CPU

a.

| General | OS | System | Disks | CPU | Memory | Network C | onfirm | |
|---|------------------------------|---|---|--|--|--|---|---|
| Sockets: | | 1 | | | $\hat{\mathbf{x}}$ | Туре: | x86-64-v2-AES | × |
| Cores: | | 2 | | | \bigcirc | Total cores: | 2 | |
| VCPUs: | | 2 | | | $\hat{\mathbf{x}}$ | CPU units: | 100 | |
| CPU limit: | | unlimited | | | $\hat{}$ | Enable NUMA: | | |
| CPU Affinity | | All Cores | | | | | | |
| Extra CPU F | lags: | | | | | | | |
| Default | - 00 | • • | md-clear | Requ | uired to I | et the guest OS kr | now if MDS is mitigated correctly | |
| Default Default | - 00 | ●○ + ●○ + | md-clear pcid | Requ Melto Intel | uired to I down fix CPUs | et the guest OS kr | ow if MDS is mitigated correctly Westmere, Sandy-, and IvyBridge | |
| Default Default Default | - 0(| + + + + + | md-clear pcid spec-ctrl | Requ Melte Intel Allov | uired to I down fix CPUs ws impro | et the guest OS kr cost reduction on ved Spectre mitiga | ow if MDS is mitigated correctly Westmere, Sandy-, and IvyBridge ttion with Intel CPUs | |
| Default Default Default Default | - 0(- 0(- 0(| + + + + + + + | md-clear pcid spec-ctrl ssbd | Requ Meltr Intel Allov Prote | uired to I down fix CPUs ws impro ection fo | et the guest OS kr cost reduction on ved Spectre mitiga r "Speculative Stor | ww if MDS is mitigated correctly Westmere, Sandy-, and IvyBridge tion with Intel CPUs e Bypass" for Intel models | |
| Default Default Default Default Default | - 0(- 0(- 0(- 0(| + + + + + + + + + | md-clear pcid spec-ctrl ssbd ibpb | Required Req | uired to I down fix CPUs ws impro ection for ws impro | et the guest OS kr cost reduction on ved Spectre mitiga "Speculative Stor ved Spectre mitiga | ww if MDS is mitigated correctly Westmere, Sandy-, and IvyBridge tion with Intel CPUs e Bypass" for Intel models tion with AMD CPUs | |



7. Set memory

| | 4096 | |
|-----------------------|----------------|--|
| Minimum memory (MID): | 4000 | |
| winimum memory (wib). | 4096 | |
| | Default (1000) | |
| Ballooning Device: | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

8. Provide a VLAN if required

| Control | OC Sustan Disks CDU Manage | turali Carlina |
|------------|--------------------------------|--------------------------------|
| General | OS System Disks CPU Memory Net | Contirm |
| No netw | rk device | |
| Bridge: | vmbr0 · Mode | el: VirtIO (paravirtualized) ~ |
| VLAN Tag: | 26 OMAC | address: auto |
| Firewall: | | |
| Disconnect | Rate | limit (MB/s): unlimited |
| MTU: | 1500 (1 = bridge MTU) | queue: |
| | | |
| | | |



9. Click finish

| General OS | System Disks CPU Memory Network | Confirm |
|------------------|--|-------------|
| Key 1 | Value | |
| him | aumf | |
| bios | | 1 |
| 1000 | order=scsi0,ide2,ide0,net0 | |
| cores | 2 | |
| cpu | X86-64-V2-AES | |
| etidisk0 | PVE-VOL-1:1,etitype=4m,pre-enrolled-keys=1 | |
| ide0 | ISOs2:iso/virtio-win-0.1.2/1.iso,media=cdrom | |
| ide2 | ISOs2:iso/SERVER_EVAL_x64FRE_en-us.iso, | media=cdrom |
| machine | q35 | |
| memory | 4096 | |
| name | W2K22-1 | U |
| net0 | virtio,bridge=vmbr0,tag=26,firewall=1 | |
| nodename | pve101 | |
| numa | 0 | |
| ostype | win11 | * |
| Start after crea | ted | |

10. Wait for the VM to create and click Start

| 👻 🗙 pve101 - Proxmox Virtual Envira 🗙 🛛 🛅 | vSphere - wireshark-101 · | - Sumr 🗙 💥 pve101 - P | roxmox Virtual Envirc 🗙 🕂 | |
|--|--|---|--|----------------------|
| ← → C ⊗ Not secure https://172.2 | 0.100.221:8006/#v1:0:= | =qemu%2F102:4:11:::::2 | | |
| | 8.4.0 Search | | 8 | Documentation 🖵 Crea |
| Server View 🗸 🔅 | Virtual Machine 102 (V | W2K22-1) on node 'pve101' | No Tags 🖋 📄 St | art 🕐 Shutdown 🗸 |
| → Datacenter → pve101 → 100 (VM 100) | Summary | | | |
| 100 (VM 100) | >_ Console | W2K22-1 | | Notes |
| Iocalnetwork (pve101) ISOs (pve101) ISOs2 (pve101) ISOs2 (pve101) PVE-VOL-1 (pve101) esxi-101.vmclassroom.com (pve101) | Cloud-Init Options Task History Monitor | i Status ♥ HA State ■ Node ﷺ CPU usage | stopped none pve101 0.00% of 2 CPU(s) | |
| <pre>SECSI-SAN-1 (pve101) S□ local (pve101) S□ local-lvm (pve101)</pre> | Backup Replication Snapshots | œ Memory usage ⊟ Bootdisk size ≓IPs | 0.00% (0 B of 4.00 GiB) 120.00 GiB No Guest Agent configured | |



11. VM is now on

| 👻 🗙 pve101 - Proxmox Virtual Envirc 🗙 🛛 🛅 | vSphere - wireshark-101 - | Sumr 🗙 🗙 pve101 - Prox | mox Virtual Envire 🗙 🕂 | |
|--|--|--|--|----------------|
| ← → C ONot secure https://172.20 | 0.100.221:8006/#v1:0:= | -qemu%2F102:4:11:::::2 | | |
| | 3.4.0 Search | | 🔊 Doc | umentation 🖵 🤇 |
| Cerver view Carlos Cerver view | Virtual Machine 102 (V | V2K22-1) on node 'pve101' | No Tags 🖋 🕒 Start | () Shutdown |
| ■ 100 (VM 100) ■ 101 (VM 101) ■ 102 (W2K22-1) | >_ Console ➡ Hardware | W2K22-1 (Uptime: 00:0 | 0:21) | Notes |
| Iocalnetwork (pve101) I ISOs (pve101) I ISOs2 (pve101) I PVE-VOL-1 (pve101) esxi-101.vmclassroom.com (pve101) | Cloud-Init Options Task History Monitor | i Status ♥ HA State ■ Node ﷺ CPU usage | running none pve101 3.04% of 2 CPU(s) | |
| SCSI-SAN-1 (pve101) □ local (pve101) □ local-lvm (pve101) | Backup Replication Snapshots | œ Memory usage 2.21 ☐ Bootdisk size ➡ IPs N | % (90.47 MiB of 4.00 GiB) 120.00 GiB | |

12. Click your VM > Console. You may need to reset if boot has timed-out and you find yourself at UEFI. Follow standard OS Installation.





| | | Windows Boot Manager | |
|----|-----------------------------------|---|------------|
| | Choose an opera (Use the arrow | ating system to start, or press TAB to select a tool: keys to highlight your choice, then press ENTER.) | |
| | Windows Se | etup [EMS Enabled] | > |
| | | | |
| | To specify an a | advanced option for this choice, press F8. | |
| | Tools: | | |
| | Windows Me | emory Diagnostic | |
| | | | |
| | | | |
| c. | ENTER=Choose | TAB=Menu | ESC=Cancel |
| c. | ENTER=Choose | TAB=Menu | ESC=Cance1 |
| c. | ENTER=Choose | TAB=Menu | ESC=Cance1 |
| с. | ENTER=Choose | for Microsoft Server Operating System Setup Image to initialit English (United States) Image and currency format: English (United States) English (United States) Image and currency format: English (United States) Image and currency format: English (United States) Image and currency format: English (United States) Image and other preferences and click: "Neat" to continue. | ESC=Cance1 |
| с. | ENTER=Choose | If Microsoft Server Operating System Setup | ESC=Cance1 |



| Microsoft Server Operating System Setup | |
|--|--|
| - Microsoft | |
| Install now | |
| Bepair your computer ● Microsof Carpondon Al rights reserved. | |
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| | |
| | |
| 😡 🔏 Microsoft Server Operating System Setup | |
| Select the operating system you want to install | |
| Image: Select the operating System Setup Select the operating system you want to install Operating system Architecture Date modified Windows Servez 2022 Standard Evaluation 464 32/2022 Windows Servez 2022 Datacenter Evaluation 464 3/2/2022 Windows Servez 2022 Datacenter Evaluation 464 3/2/2022 | |
| Select the operating system Setup Select the operating system you want to install Operating system Architecture Date modified Windows Servez 2022 Standard Evaluation 64 32/70022 Windows Servez 2022 Standard Evaluation 64 32/70022 Windows Servez 2022 Characterter Evaluation x64 32/70022 Windows Servez 2022 Datacenter Evaluation x64 32/70022 Windows Servez 2022 Datacenter Evaluation x64 32/7/2022 Windows Servez 2022 Datacenter Evaluation (Desktop Eperi | |





h. When you get to this screen, there is no disk shown because the VirtIO SCSI driver is not loaded > Load Driver

| Where do you | want to install the | operating system? | | | |
|--------------------------------------|---------------------------|------------------------------|-----------------|------|--|
| Name | | Total size | Free space Type | | |
| 14 | | | | | |
| € <u>2 R</u> efresh ⓓ Load driver | Delete | errmat | ₩ N <u>s</u> w | | |
| we couldn't find a | ny drives. To get a stora | ge anver, click Load driver. | | Next | |
| | | | | | |

13. OK



| Select the driver to install |
|---|
| Load driver To install the device driver for your drive, insert the installation media containing the driver files, and then click OK. Note: The installation media can be a CD, DVD, or USB flash drive. |
| Browse OK Cancel |
| Brgwse <u>R</u> escan <u>N</u> est |

b. Select the VirtIO driver for your OS

| 🚱 🎪 Microsoft Server Operating System Setup | |
|---|---|
| Select the driver to install | |
| Red Hat VirtIO SCSI pass-through controller (D\amplitude) Red Hat VirtIO SCSI pass-through controller (D\amplitude) | 464/246/viosci.inf) 664/249/viosci.inf) 664/242/viosci.inf) 664/242/viosci.inf) 664/249/viosci.inf) 664/u1/viosci.inf) |
| μ μ | |
| ☑ Hide drivers that aren't compatible with this com | uuter's hardware. |
| Brgwse | Next |
| | |
| | |
| Collecting information 2 Installing Microsoft Server Operating System | |



c. Now you see your disk

| Where do you want to install the | | operating system? | | |
|--------------------------------------|--------|--|-----------------------------|-----|
| Name Drive 0 Unallocated Space | | Total size Free space 120.0 GB 120.0 GB | | |
| € <u>n R</u> efresh € Load driver | Delete | Pormat | <mark>∦</mark> N <u>e</u> w | |
| | | | | Net |

d. Install begin

| Microsoft Server Operating System Setup | |
|---|----|
| Installing Microsoft Server Operating System Status | |
| Copying Microsoft Server Operating System files (0%) Getting files ready for installation Installing septates Installing updates Finishing up | |
| | La |
| | |



g.

f. Install complete

