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# Ubuntu Linux VM Creation

**Disk Configuration**

* enable Discard on SSD drives for VM creation
* Configure Start and startup or shutdown order

**Update server**

* sudo apt update && sudo apt dist-upgrade

**Install Qemu Guest agent**

* sudo apt install qemu-guest-agent

**Check if the service is running**

* systemctl status qemu-guest-agent.service

**Start the qemu guest agent**

* sudo systemctl start qemu-guest-agent.service

**Enable Qemu guest agent in Proxmox**

* requires the VM to be powered off to take effect
* sudo poweroff

**Optional Packages**

**Install apache**

* sudo apt install apache2

# Windows VM Creation

**Download Windows Drivers**

<https://pve.proxmox.com/wiki/Windows_VirtIO_Drivers>

**CPU**

Choose Host

**System Configuration**

SCSI Controller : VirtIO SCSI single

**Disks**

Bus/Device: SCSI

Cache: Write back

Discard – Checked

After creation before starting go to Hardware Configuration

Add CD/DVD Drive set ISO image to virtio-win ISO

During Windows Install you will have to load the drivers to see the disk

After install is complete look at devices

Missing PCI Device load Balloon driver

Other drivers scan the virtio driver CD

**Install Qemu Guest Agent**

Browes virtio CD go to guest-agent folder

# Centos VM Creation

**Processor Configuration**

Choose Slylake-Client-noTSX-IBRS

**QEMU Agent**

Set to enable it is already installed

**Configure Static IP**

Run sudo nmtui and configure static IP address

# Creating Virtual Machine Template Ubuntu

**Verify Cloud-init is installed**

Apt search cloud-init

**Delete SSH host keys**

Cd/etc/ssh

Sudo rm ssh\_host\_\*

**On Ubuntu clear the machine-id file**

Cat /etc/machine-id

Sudo truncate -s 0 /etc/machine-id

**Make sure this was a symbolic link**

Ls -l /var/lib/dbus/machine-id

**Add symbolic link if missing**

Sudo ln -s /etc/machine-id /var/lib/dbus/machine-id

**Clear the APT database**

Sudo apt clean

Sudo apt autoremove

**Convert to Template**

In Proxmox right click the VM and choose to convert to template

**Modify Hardware of the Template**

Remove the media from the CD/DVD drive

**Add a CloudInit Drive**

Click Add and choose CloudInit Drive choose local-lvm storage

**On the Template Modify Cloud-Init Settings**

Set default User

Set password

Set DNS Domain

Set DNS server

Add SSH Public key

Click Regenerate Image

Right click Template and choose Clone and choose Full Clone

**Login into new clone and set hostname**

Sudo nano /etc/hostname

Sudo nano /etc/hosts

# Proxmox Command Line

Virtual Machine Commands

QM list

QM start 100

Qm shutdown 100

Qm reboot 100

Qm reset 100 – hard reset could damage

Qm stop 100 – could damage hard stop

Qm set --onboot 0 100 – changes boot option on vm ID 100

Qm config 100

Qm config 100 | grep cores

Qm config 100 | grep memory

Qm set --memory 2048 100

Container Commands

Pct list

Pct config 100

Pct start 100

Pct shutdown 100

Pct reboot 100

Pct enter 100 – opens a shell on the container

Pct set 100 -onboot 1

Pct set 100 -memory 1024

# Troubleshooting

Not able to login from the chrome browser?

Fix: Delete the saved password from Last Pass

# Proxmox Configuration

Disable Proxmox VE Enterprise Repository

This is the default, stable, and recommended repository, available for all Proxmox VE subscription users. It contains the most stable packages and is suitable for production use. The pve-enterprise repository is enabled by default:

File /etc/apt/sources.list.d/pve-enterprise.list

deb https://enterprise.proxmox.com/debian/pve bookworm pve-enterprise

The root@pam user is notified via email about available updates. Click the *Changelog* button in the GUI to see more details about the selected update.

You need a valid subscription key to access the pve-enterprise repository. Different support levels are available. Further details can be found at <https://www.proxmox.com/en/proxmox-virtual-environment/pricing>.

|  |  |
| --- | --- |
| Note | You can disable this repository by commenting out the above line using a # (at the start of the line). This prevents error messages if your host does not have a subscription key. Please configure the pve-no-subscription repository in that case. |

Enable Proxmox VE No-Subscription Repository

This is the recommended repository for testing and non-production use. Its packages are not as heavily tested and validated. You don’t need a subscription key to access the pve-no-subscription repository.

We recommend to configure this repository in /etc/apt/sources.list.

File /etc/apt/sources.list

deb http://ftp.debian.org/debian bookworm main contrib

deb http://ftp.debian.org/debian bookworm-updates main contrib

# Proxmox VE pve-no-subscription repository provided by proxmox.com,

# NOT recommended for production use

deb http://download.proxmox.com/debian/pve bookworm pve-no-subscription

# security updates

deb http://security.debian.org/debian-security bookworm-security main contrib

Disable Ceph Reef Enterprise Repository

This repository holds the enterprise Proxmox VE Ceph 18.2 Reef packages. They are suitable for production. Use this repository if you run the Ceph client or a full Ceph cluster on Proxmox VE.

File /etc/apt/sources.list.d/ceph.list

deb https://enterprise.proxmox.com/debian/ceph-reef bookworm enterprise

Enable Ceph Reef No-Subscription Repository

This Ceph repository contains the Ceph 18.2 Reef packages before they are moved to the enterprise repository and after they where on the test repository.

|  |  |
| --- | --- |
| Note | It’s recommended to use the enterprise repository for production machines. |

File /etc/apt/sources.list.d/ceph.list

deb http://download.proxmox.com/debian/ceph-reef bookworm no-subscription

# Storage Configurations

## Disk Initialization

From the shell do the following steps for each hard drive that needs to be initialized. Be sure to not choose the drive that has Promox installed on it. The below steps is just an example of a drive.

To open the Fdisk utility type **Fdisk /dev/sda** then press enter.

Initlize the disk with a new GPT partition table type **G** then enter

To write and save changes type **W** then enter

Go back the Proxmox gui and click reload under the Disks section

## Create Storage Directory

Under disk click Directory then click create directory and choose any available drive to be used as a storage volume.

## Adding Mount Points

Before adding a mount point to a VM or Container shutdown the server first.

## Adding ZFS Pool

Execute commands from Proxmox shell

ZFS list – to list all ZFS pools

zfs create media/videos

ZFS Pool Quota

Zfs set quota=1T media/videos

## Adding Mount Point Manually on two nodes

Execute commands from Proxmox shell

Pct set 101 --mp2 /media/videos,mp=/mnt/videos

Pct set 102 --mp2 /media/videos,mp=/mnt/videos

Add permissions

chmod -R 777 /media/videos

# Cleanup Unused Disks

From the Proxmox shell run **pct rescan** this will make unused disks appear in the Proxmox GUI for deletion.