

# Part 2: Configuring IP, User Privileges, and the Second Data Disk



## Objective of This Section

In this section, we further configure the freshly installed Debian VM. We assign a static IP address, establish proper user privileges, and permanently mount the second disk for Nextcloud data.

All packages will be updated to the latest state, and clean administrative privileges will be prepared.

At the end of this section:

- the VM is reachable via a static IP address
- a regular admin user with sudo privileges is configured
- the data disk is correctly mounted and persistently integrated

# Step 1: Log In to the VM and Initial Overview

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## Prerequisites

- Debian 13 has been successfully installed
- The VM is running in Proxmox
- Access to the Proxmox web interface
- An SSH client (e.g., Tabby, Terminal, iTerm, PuTTY)

## Hardware Recommendations

- The second virtual disk has already been added in Proxmox
- Size as required (e.g., 200 GB or more)
- The disk has **not yet** been configured inside Debian

## VM Parameters (Example)

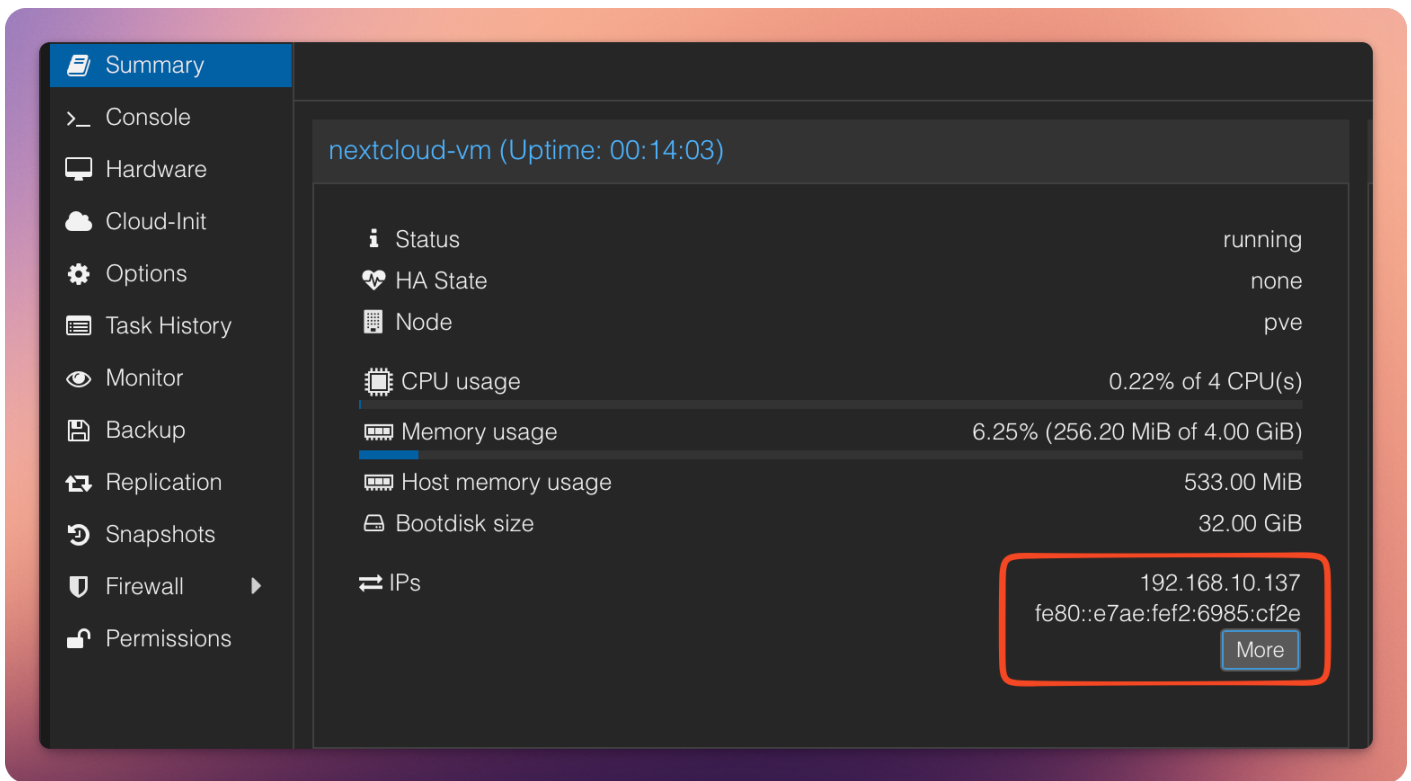
- **Hostname:** `nextcloud-vm`
- **Static IP (example):** `192.168.10.120`
- **Gateway:** `192.168.10.1`
- **DNS:** internal DNS + fallback

## Required Credentials (Example)

- **User:** `ncadmin`
- Root password
- SSH access to the VM

## Log In via SSH

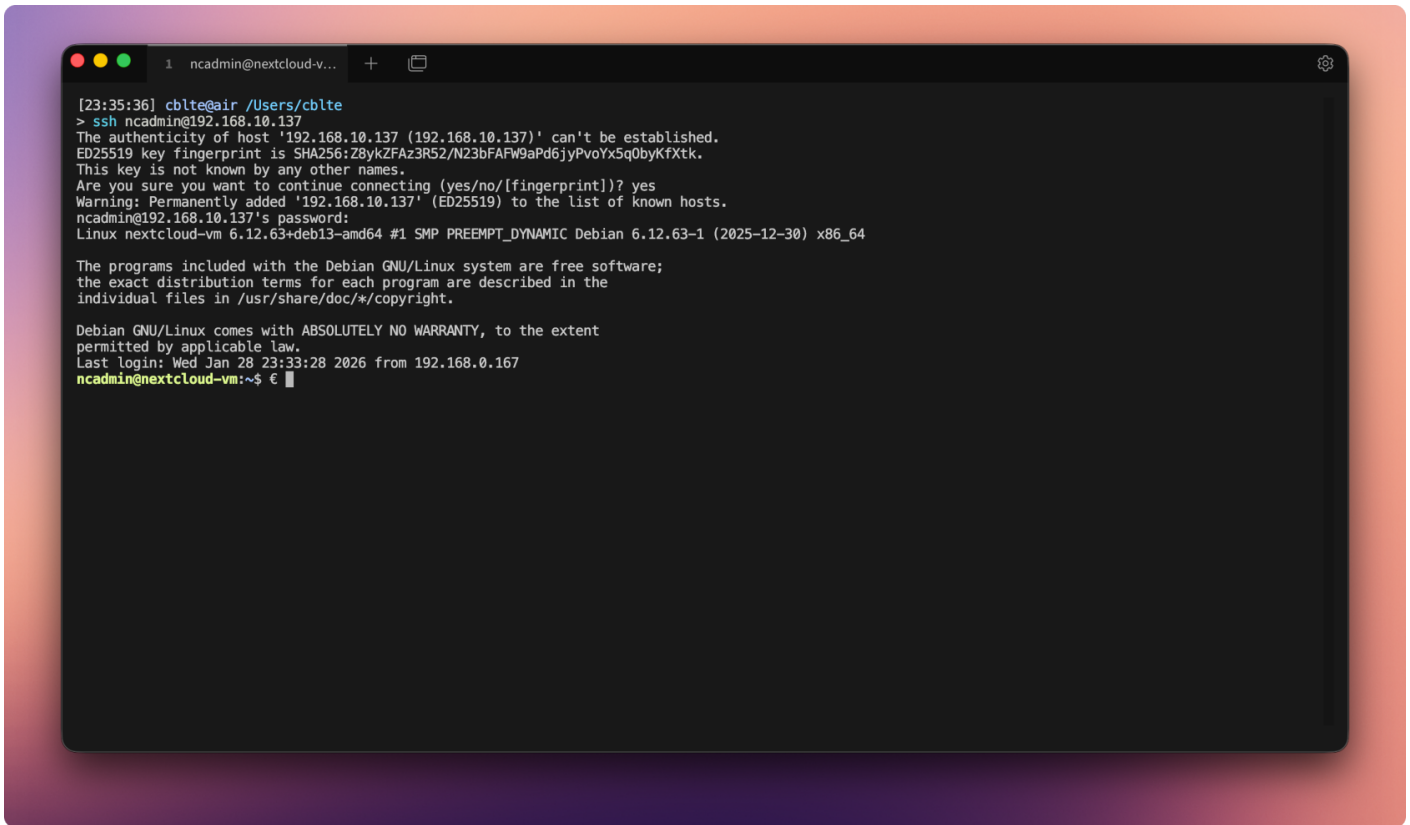
Start the VM in Proxmox and determine the currently assigned IP address.



Then connect via SSH using the admin user `ncadmin` (or the user created in Part 1):

```
# Use your VM's name and IP address  
ssh ncadmin@192.168.10.120
```

On first connection, confirm the fingerprint with `yes`, then enter the password.



## Step 2: Configure a Static IP Address

### Objective

The VM must always be reachable under the same IP address. This is a prerequisite for DNS configuration, reverse proxy usage, and later for Nextcloud itself.

### Edit Network Configuration

Open the file: `/etc/network/interfaces`:

```
sudo nano /etc/network/interfaces
```

Modify the primary interface as follows (the interface name may differ, often `ens18`):

```
# The primary network interface
allow-hotplug ens18
#iface ens18 inet dhcp
iface ens18 inet static
    address 192.168.10.120
    netmask 255.255.255.0
    gateway 192.168.10.1
```

```
dns-nameservers 192.168.10.6 1.1.1.1
```

Adjust the IP addresses to match **your** network.

Save with `CTRL+O`, confirm with Enter, exit with `CTRL+X`.

To ensure that the `dns-nameservers` defined in the `interfaces` file are actually applied, the **resolvconf** package must be installed and enabled:

```
sudo apt install resolvconf
sudo systemctl enable resolvconf
sudo systemctl start resolvconf
```

Restart networking:

```
sudo systemctl restart networking
```

**Important:** Do not close the current terminal.

Instead, open a **new terminal** and test whether SSH login works again.

- Connection successful ? configuration is correct
- Connection fails ? use the existing terminal session to correct the network configuration

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## Step 3: Update the System and Root Access

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### Switch to Root Mode

```
su -
```

### Update the System

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

This updates both the package lists and all installed packages.

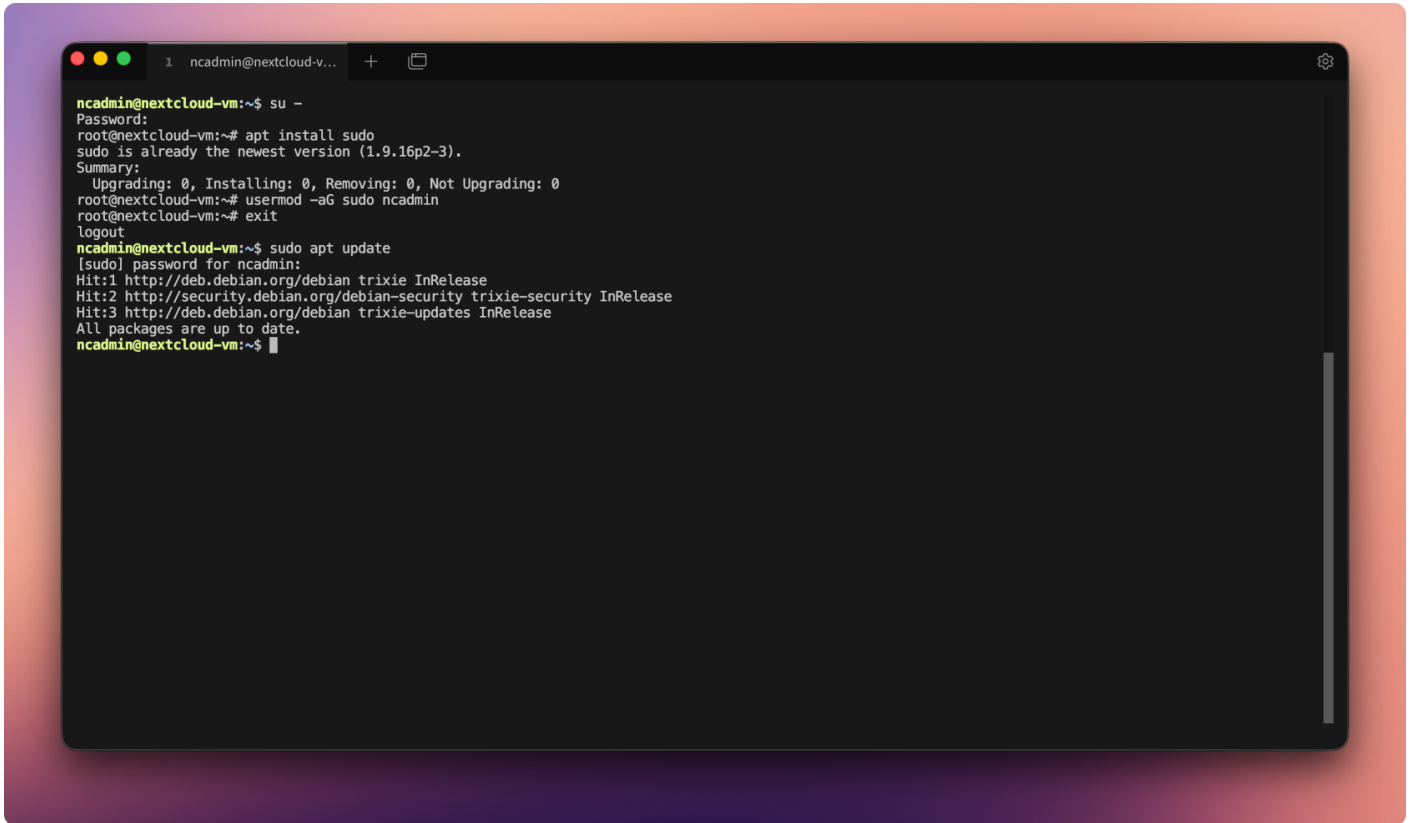
Optionally, the hostname can also be adjusted at this stage.

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## Step 4: Configure sudo Privileges

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The regular user should be able to perform administrative tasks without remaining logged in as root.



```
ncadmin@nextcloud-vm:~$ su -
Password:
root@nextcloud-vm:~# apt install sudo
sudo is already the newest version (1.9.16p2-3).
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
root@nextcloud-vm:~# usermod -aG sudo ncadmin
root@nextcloud-vm:~# exit
logout
ncadmin@nextcloud-vm:~$ sudo apt update
[sudo] password for ncadmin:
Hit:1 http://deb.debian.org/debian trixie InRelease
Hit:2 http://security.debian.org/debian-security trixie-security InRelease
Hit:3 http://deb.debian.org/debian trixie-updates InRelease
All packages are up to date.
ncadmin@nextcloud-vm:~$
```

### Install sudo

```
apt install sudo
```

### Add User to sudo Group

```
usermod -aG sudo ncadmin
```

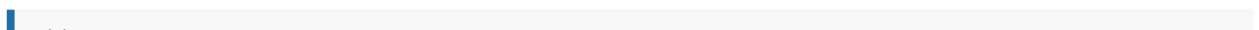
Afterward, log out from root. Future administrative commands can be executed using `sudo`.

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## Step 5: Prepare the Second Disk

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The second virtual disk will be partitioned, formatted, and mounted as the data directory for Nextcloud.



?? The mount point `/srv/cloud.zn80.net` is only an example. You may use any suitable path, such as `/srv/nextcloud/data`, `/var/lib/nextcloud`, or `/home/ncadmin/cloud-data`. Choose a structure that aligns with your system design and remains intuitive.

## Overview of Available Drives

```
lsblk
```

The second disk is usually `/dev/sdb`.

```
ncadmin@nextcloud-vm:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda         8:0    0   32G  0 disk
├─sda1      8:1    0  30.3G  0 part /
├─sda2      8:2    0    1K  0 part
└─sda5      8:5    0   1.7G  0 part [SWAP]
sdb         8:16   0  200G  0 disk
sr0        11:0    1   754M  0 rom
```

## Create Partition

```
sudo fdisk /dev/sdb
```

Within `fdisk`, enter:

- `n` (new)
- `p` (primary)
- `1`
- Enter (start)
- Enter (end)
- `w` (write)

```
ncadmin@nextcloud-vm:~$ sudo fdisk /dev/sdb
[sudo] password for ncadmin:

Welcome to fdisk (util-linux 2.41).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS (MBR) disklabel with disk identifier 0xa42186cf.

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-419430399, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-419430399, default 419430399):

Created a new partition 1 of type 'Linux' and of size 200 GiB.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

ncadmin@nextcloud-vm:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda         8:0    0   32G  0 disk
├─sda1      8:1    0  30.3G  0 part /
├─sda2      8:2    0    1K  0 part
└─sda5      8:5    0   1.7G  0 part [SWAP]
sdb         8:16   0  200G  0 disk
└─sdb1      8:17   0  200G  0 part
sr0        11:0    1   754M  0 rom
```

## Create Filesystem

```
sudo mkfs.ext4 -L cloud.zn80.net /dev/sdb1
```

```
ncadmin@nextcloud-vm:~$ sudo mkfs.ext4 /dev/sdb1
mke2fs 1.47.2 (1-Jan-2025)
Discarding device blocks: done
Creating filesystem with 52428544 4k blocks and 13107200 inodes
Filesystem UUID: cfd8d315-8e5e-44e5-8918-53717a42d627
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
    4096000, 7962624, 11239424, 20480000, 23887872

Allocating group tables: done
Writing inode tables: done
Creating journal (262144 blocks): done
Writing superblocks and filesystem accounting information: done
```

## Create Mount Directory

```
sudo mkdir -p /srv/cloud.zn80.net
```

## Step 6: Permanently Mount the Disk

### Objective

The data disk should automatically mount at system startup.

### Determine UUID

```
blkid
```

Note the UUID of `/dev/sdb1`.

```
ncadmin@nextcloud-vm:~$ sudo blkid
/dev/sdb1: UUID="cfd8d315-8e5e-44e5-8918-53717a42d627" BLOCK_SIZE="4096"
/dev/sr0: BLOCK_SIZE="2048" UUID="2026-01-10-11-03-38-00" LABEL="Debian"
/dev/sda5: UUID="7b1886ef-4b08-40f2-aaaf-0261075861df" TYPE="swap" PARTUUID="1-1"
/dev/sda1: UUID="c2aebd8a-8d66-4e19-9c99-dfbc6bd178d3" BLOCK_SIZE="4096"
```

The UUID is important because device names may change after reboot, whereas UUIDs remain constant.

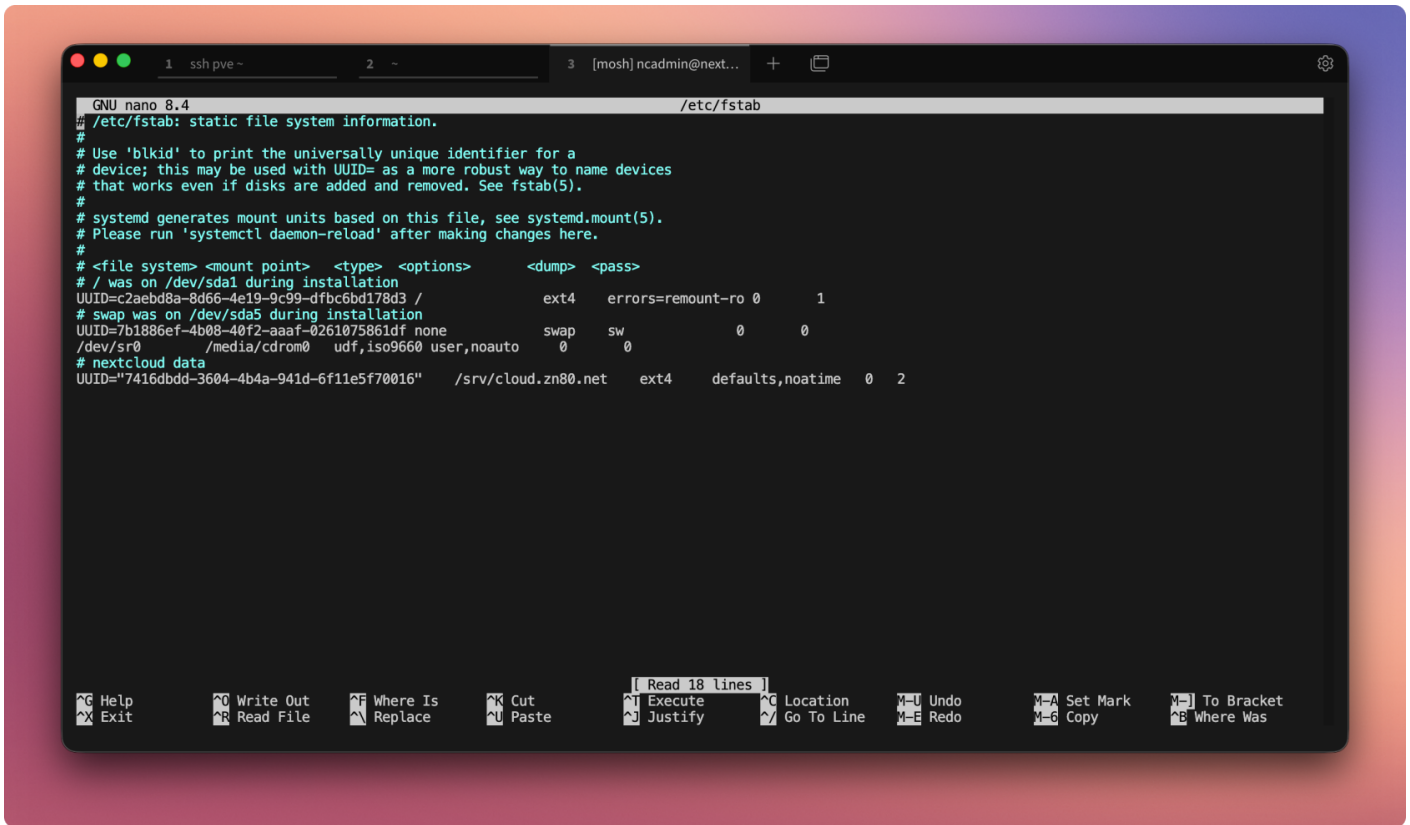
Edit `/etc/fstab`

```
sudo nano /etc/fstab
```

Add or modify the following line:

```
# nextcloud data
UUID=XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX /srv/cloud.zn80.net ext4
defaults,noatime 0 2
```

Save and close the editor.



## Test Mount

```
sudo mount -a
df -h
```

The disk should now be mounted under `/srv/cloud.zn80.net`.

The system is now fully prepared. The actual Nextcloud installation follows in:

[Part 3: Downloading, Installing, and Configuring Nextcloud](#)

## Step 7: Resize the Disk (Optional)

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### ?? Important Notice Before Resizing

Before resizing the data disk, create a backup of the VM or critical data. A mistake (e.g., selecting the wrong partition) can result in complete data loss. The VM must be powered off and on again for the rescan and parted steps. Live resizing using `resize2fs` works only with ext4 and a mounted filesystem, but

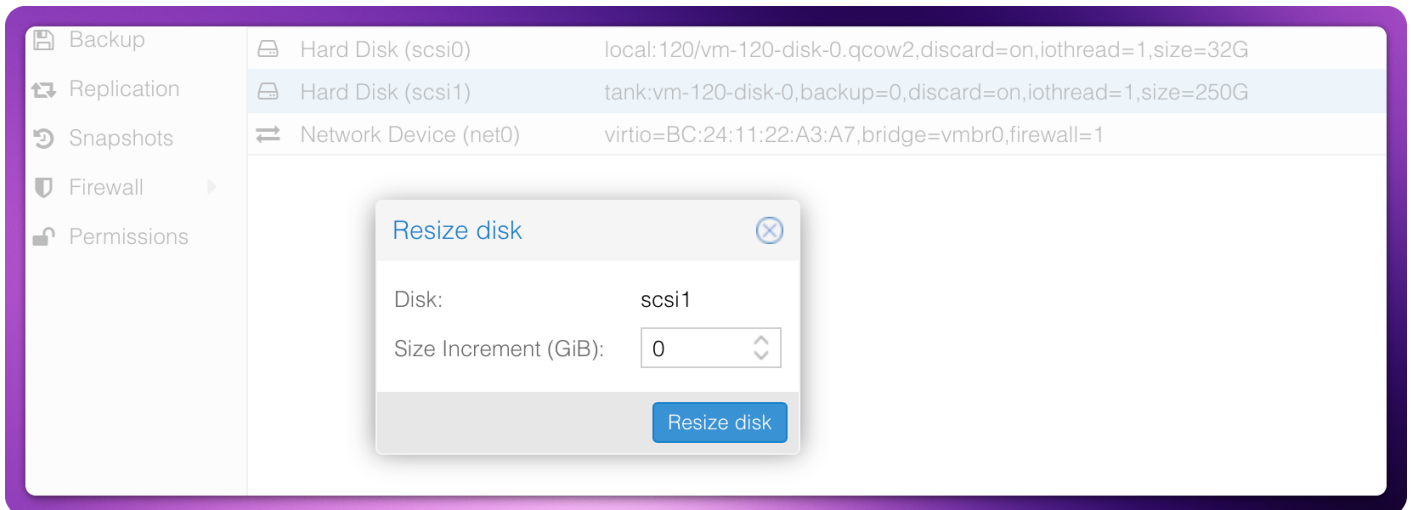
it is riskier and not always recommended. Proceed carefully and verify the partition before modifying it.

## Objective

If additional storage is required later, the existing partition can be expanded without data loss.

## Resize Disk in Proxmox

- Select VM
- Disk ? Resize
- Add desired capacity



## Rescan in Debian

```
echo 1 > /sys/block/sdb/device/rescan
```

Reboot the VM if necessary.

## Check Free Space

```
parted -s -a opt /dev/sdb "print free"
```

## Resize Partition

```
parted -s -a opt /dev/sdb "resizepart 1 100%"
```

## Resize Filesystem

```
e2fsck -f /dev/sdb1  
resize2fs /dev/sdb1
```

Afterward, `lsblk` and `df -h` will reflect the new size.

Note: Differences in displayed sizes are due to GB vs. GiB.

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