

# Installation steps

**Important: Before proceeding, please note that these steps will FORMAT your drive. Make sure you have backed up any important data on the drive.**

1. Boot into live USB, click "Try Ubuntu".
2. Identify your drive, where you want to install Ubuntu. Use `gparted`, `fdisk` or `lsblk`. I'm going to assume in this answer that it's `/dev/sda`, but **make sure you use correct path for your system**.
3. Inside terminal, enter `sudo su`, so you don't have to type `sudo` before every command.
4. Wipe the drive and create new GPT partition table.

```
wipefs -a /dev/sda
parted /dev/sda mklabel gpt
```

5. Create a new bootable partition `/boot/efi` with a size of 512 MiB, starting from 1 MiB.

```
parted /dev/sda mkpart ESP fat32 1MiB 513MiB
parted /dev/sda set 1 esp on
mkfs.fat -F32 /dev/sda1
```

6. Create a new partition for `/boot` with a size of 1024 MiB. While the exact size isn't critical, if you decide to change it, ensure that the starting and ending points of the partition are correctly aligned.

```
parted /dev/sda mkpart primary ext4 513MiB 1537MiB
mkfs.ext4 /dev/sda2
```

7. Create a main partition using the remaining unallocated space on the drive.

```
parted /dev/sda mkpart primary ext4 1537MiB 100%
```

Format the main partition with LUKS encryption. If your drive supports it, you can set the sector size to 4096 for improved performance (check using `hdparm -I /dev/sda | grep "Sector size"`).

```
cryptsetup luksFormat --sector-size=4096 /dev/sda3
```

8. Create an LVM on the main partition. You can choose any name you prefer instead of `crypt`, but make sure to update the path in the following steps accordingly.

```
cryptsetup open /dev/sda3 crypt
pvcreate /dev/mapper/crypt
vgcreate vgubuntu /dev/mapper/crypt
```

9. Now, create your root partition and swap if desired. I prefer to place the swap partition at the end of the disk.

Firstly create root partition to fill the entire available space, then reduce its size to allocate space for the swap partition.

```
lvcreate -l 100%FREE -n root vgubuntu
mkfs.ext4 /dev/vgubuntu/root
```

Then, shrink its size to make space for the swap partition.

```
lvresize --resizefs -L -8G /dev/vgubuntu/root
lvcreate -L 8G -n swap vgubuntu
mkswap /dev/vgubuntu/swap
```

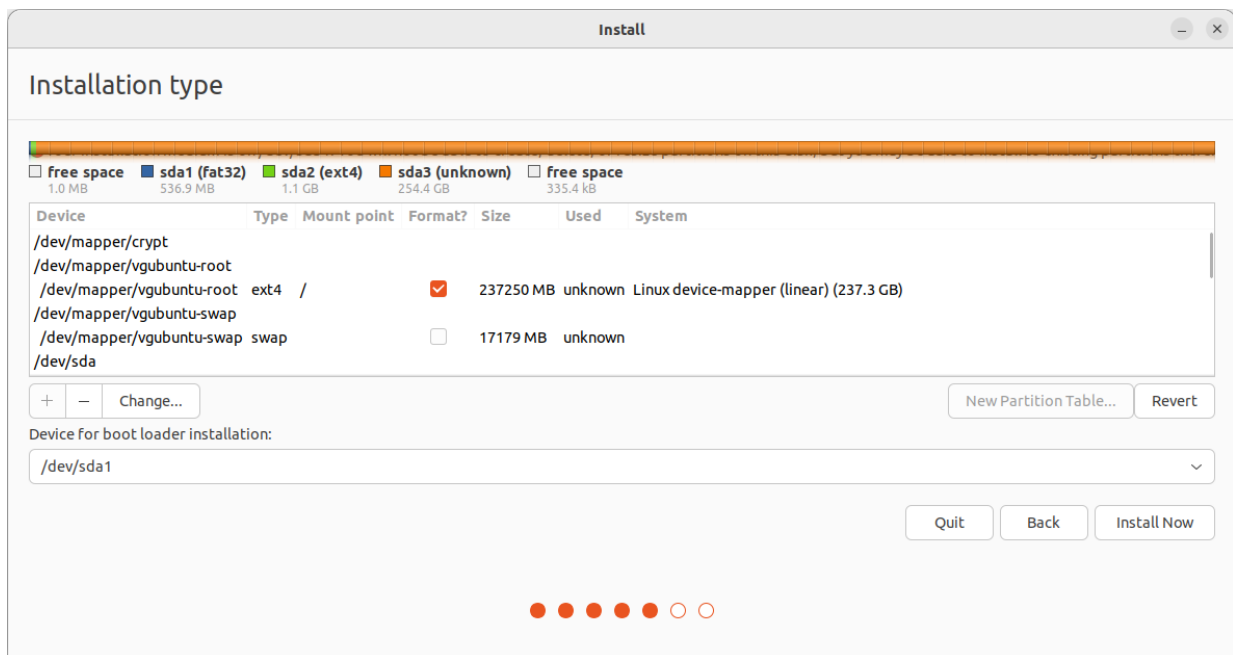
10.If you've made it this far without any issues, you can now run the following commands to grant access to the installer:

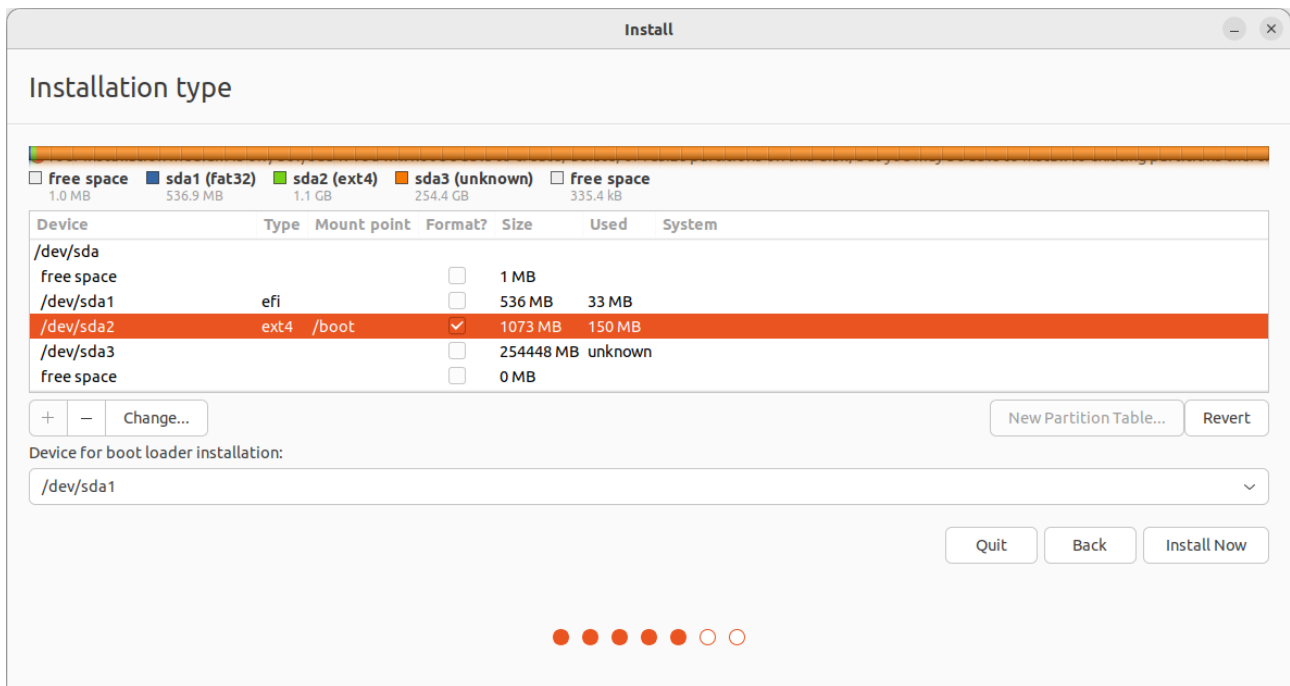
```
vgscan --mknodes
vgchange -ay
swapoff -a
```

11.Now, you can run the installer. When asked **Installation type**, choose **Something else** option. You will have to set mount points for partitions you created. Do not format `/dev/sda3`, because if you will, you will have to start over.

- `/dev/sda1` -> `/boot/efi` (type: efi, device for boot loader installation)
- `/dev/sda2` -> `/boot` (type: ext4, format: yes)
- `/dev/vgubuntu/root` -> `/` (type: ext4, format: yes)

This is how it should look like:





12. After install is completed, you will have to set UUID of your main partition, so your system will recognize it.

```
mount /dev/vgubuntu/root /mnt
mount /dev/sda2 /mnt/boot
mount /dev/sda1 /mnt/boot/efi
mount --bind /dev /mnt/dev
mount --bind /proc /mnt/proc
mount --bind /sys /mnt/sys
chroot /mnt
```

Inside chroot register partition UUID and update initramfs.

```
echo "crypt UUID=$(blkid -s UUID -o value /dev/sda3) none luks,discard" |
tee -a /etc/crypttab
update-initramfs -u
exit
```

If everything worked without errors, then you're all set.

```
umount -R /mnt
sudo reboot
```