Debian install guide

1. Reference

- a) https://morfikov.github.io/post/instalacja-debiana-z-wykorzystaniem-debootstrap/
- b) https://gist.github.com/varqox/42e213b6b2dde2b636ef

2. Steps

1. **Install required packages**

   Update packages database:

   ```
   apt update
   ```

   Install packages:

   ```
   apt install neovim gdisk debootstrap arch-install-scripts
   ```

---

2. **Partition disk**

   ```
   gdisk /dev/sda
   ```

---

3. **Prepare encrypted partition and lvm**

   Encryption:

   ```
    cryptsetup --debug --type luks2 -v --verify-passphrase --cipher aes-xts-plain64
   \
    --key-size 512 --key-slot 0  --key-description "Basic key" --hash sha256 \
    --iter-time 11654 --pbkdf argon2id  --pbkdf-memory 524288 --pbkdf-parallel 4 \
    --use-random --label xyz-locked --timeout 60 luksFormat /dev/sda3
   ```

   Open encrypted container:

   ```
   cryptsetup open /dev/sda3 xyz-unlocked
   ```

   LVM:

   ```
   pvcreate /dev/mapper/xyz-unlocked
   vgcreate vg /dev/mapper/xyz-unlocked
   lvcreate -L 30G vg --name root
   lvcreate -L 4G vg --name swap
   lvcreate -L 40G vg --name home
   ```

---

4. **Format and mount partitions**

```
#
# dir for chroot
mkdir -p /target
# root partition
mkfs.ext4 -L RootFs /dev/mapper/vg-root
mount /dev/mapper/vg-root /target
# boot partition
mkdir -p /target/boot
mkfs.ext2 -L BootFs /dev/sda2
mount /dev/sda2 /target/boot
# efi partition
mkdir -p /target/boot/efi
mkfs.vfat -F 32 -n EFI /dev/sda1
mount /dev/sda1 /target/boot/efi
# home partition
mkdir -p /target/home
mkfs.ext4 -L HomeFs /dev/mapper/vg-home
mount /dev/mapper/vg-home /target/home
# swap partition
mkswap -L SWAP /dev/mapper/vg-swap
swapon /dev/mapper/vg-swap
#
```

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5. **Install base system with deboostrap**

```
debootstrap --verbose --arch=amd64 trixie /target
http://ftp.pl.debian.org/debian/
```

---

6. **Prepare apt sources file for new installed system**

```
#
vim /target/etc/apt/sources.list
#
# Content of file:
##############################################################################
########################################
##
#
## trixie
#
deb http://ftp.pl.debian.org/debian trixie main contrib non-free non-free-
firmware                                    #
# deb-src http://ftp.pl.debian.org/debian trixie main contrib non-free non-free-
```

```
firmware                                #
#
#
## trixie-backports
#
# deb http://ftp.pl.debian.org/debian trixie-backports main contrib non-free
non-free-firmware                       #
# deb http://ftp.pl.debian.org/debian trixie-backports main contrib non-free
non-free-firmware                       #
#
#
## trixie-security
#
deb https://security.debian.org/debian-security trixie-security main contrib
non-free non-free-firmware              #
# deb https://security.debian.org/debian-security trixie-security main contrib
non-free non-free-firmware              #
#
#
## trixie-updates
#
deb http://ftp.pl.debian.org/debian trixie-updates main contrib non-free non-
free-firmware                           #
# deb-src http://ftp.pl.debian.org/debian trixie-updates main contrib non-free
non-free-firmware                       #
#
#
## trixie-proposed
#
# deb http://ftp.pl.debian.org/debian trixie-proposed main contrib non-free non-
free-firmware                           #
# deb-src http://ftp.pl.debian.org/debian trixie-proposed main contrib non-free
non-free-firmware                       #
##
#
################################################################################
#######################################
```

7. **Chroot**

```
# mounting additional filesystems
mount --make-rslave --rbind /proc /target/proc
mount --make-rslave --rbind /sys /target/sys
```

```
mount --make-rslave --rbind /dev /target/dev
mount --make-rslave --rbind /run /target/run
mount --make-rslave --rbind /sys/firmware/efi/efivars
/target/sys/firmware/efi/efivars
# chroot
chroot /target /bin/bash -l
# commands in chroot
export PS1="|chroot| ${PS1}"
```

8. **Update new system**

```
# update package database
apt update
# install ca-certificate and bash-completion
apt install ca-certificates bash-completion
#
source /etc/profile
export PS1="|chroot| ${PS1}"
```

9. **Configure locale,keyboard,timezone,language**

```
# Install packages
apt install tzdata locales keyboard-configuration console-setup
# configure locales
dpkg-reconfigure locales
# configure keyboard
dpkg-reconfigure keyboard-configuration
# configure console-setup
dpkg-reconfigure console-setup
# configure timezone
dpkg-reconfigure tzdata
#
source /etc/profile
export PS1="|chroot| ${PS1}"
#
```

10. **Kernel and required tools**

```
apt install linux-image-amd64 linux-headers-amd64 dkms firmware-linux firmware-
linux-nonfree initramfs-tools cryptsetup cryptsetup-initramfs lvm2 man-db
manpages manpages-pl
```

11. **Set hostname and configure hosts file**

```
vim.tiny /etc/hostname
vim.tiny /etc/hosts
```

---

12. **Configure user**

```
# create new user
useradd -m -G users,sudo -s /bin/bash -c "Charlie" charlie
# set password for new user
passwd charlie
# lock root account

#
```

---

13. **Configure fstab**

```
# comand for getting UUID of partition
blkid -s UUID -o value $DEV
#
################################################################################
################################################
##
#
#<file system>                                 <mount point>   <type>
<options>                       <dump>  <pass>          #
## root
#
UUID=effba5dc-1da7-4e19-8b36-ffbc033c6ed4       /               ext4
errors=remount-ro               0       1               #
#
#
## boot
#
UUID=7794c5c6-570e-4ea9-b2fd-f218cd7fe678       /boot           ext2    defaults
0       2               #
#
#
## efi
#
UUID=25A5-03B2                                  /boot/efi       vfat
umask=0077                      0       1               #
#
#
## home
```

```
#
UUID=0bfc47ff-8ab8-4286-9551-80e1b7d7eaa7       /home           ext4    defaults
0       2               #
#
#
## swap
#
UUID=56ece0ce-fe20-4628-a736-5e55ba784f30       none            swap    sw
0       0               #
#
#
##
#
################################################################################
################################################
```

---

14. **configure cryptab**

```
# get UUID for lukscrypt partition
blkid -s UUID -o value /dev/sda3
#
# Example crypttab file
# <target name> <source device>                                 <key file>
<options>
xyz-unlocked   UUID=7f1bcc62-a1c2-4567-93d5-d8183e2da7c1      none
luks,discard
#
```

---

15. **Configure network**

```
# install network-manager
apt install network-manager
# check network interfaces
ip addr
# add following configuration to /etc/network/interfaces file
vim
```

---

16. **Install grub bootloader**

```
# install packages
apt install grub-efi-amd64 efibootmgr os-prober
# install grub bootloader
grub-install --target=x86_64-efi --efi-directory=/boot/efi
```

```
# update grub config and recreate initramfs

#
```

17. **finish thing**

```
# exit from chroot
exit
# umount all filesystems mounted at /target
umount -R /target
# deactivate swap partition
swapoff /dev/dm-2
#
reboot
#
```

18. **Install basic packages after restart to newly installed system.**

```
 apt install neovim htop tmux iftop iotop build-essential gdb git cmake wget
wget2 curl rsync tcpdump net-tools xclip xsel cryfs age mc fzf aptitude gdisk
dosfstools mtools ntfs-3g btrfs-progs xfsprogs jfsutils exfatprogs squashfs-
tools
```