

1. UEFI & Keyboard & Locale

`ls /sys/firmware/efi/efivars <->` if any error change to MBR+BIOS Legacy
`efibootmgr <->` should list "Linux Boot Manager"

`loadkeys br-abnt2`

`nano /etc/locale.gen <->` unmark `LANG=pt_BR.UTF-8`

`locale-gen`

`nano /etc/locale.conf <->` set `LANG=pt_BR.UTF-8`

2. Network & Connectivity by Wi-Fi

`ip link`

`iwctl`

`device list`

`station wlan0 scan`

`station wlan0 get-networks`

`station wlan0 connect`

`exit`

`ping archlinux.org`

`timedatectl <->` Time Zone Setting

`ls /usr/share/kbd/consolefonts/ | grep ter-124b`

if yes: `setfont ter-124b`

if not: `pacman -Sy terminus-font`

if ok: `setfont ter-124b <->` for best readability

3. Partitioning & Formatting NVMe

`parted /dev/nvme0n1 mklabel gpt`

`parted /dev/nvme0n1 mkpart ESP fat32 1MiB 1025MiB`

`parted /dev/nvme0n1 set 1 esp on`

`parted /dev/nvme0n1 mkpart primary linux-swap 1025MiB 9217MiB`

`parted /dev/nvme0n1 mkpart primary btrfs 9217MiB 100%`

`mkfs.fat -F32 /dev/nvme0n1p1`

`mkswap /dev/nvme0n1p2`

`swapon /dev/nvme0n1p2`

`mkfs.btrfs -L ROOT /dev/nvme0n1p3`

4. Mounting btrfs Subvolumes

`mount /dev/nvme0n1p3 /mnt`

`btrfs subvolume create /mnt/@`

`btrfs subvolume create /mnt/@home`

`btrfs subvolume create /mnt/@log`

`btrfs subvolume create /mnt/@cache`

`btrfs subvolume create /mnt/@snapshots`

`umount /mnt`

```
mount -o subvol=@ /dev/nvme0n1p3 /mnt
mkdir -p /mnt/{home,var/log,var/cache,var/snapshots}
mount -o subvol=@home /dev/nvme0n1p3 /mnt/home
mount -o subvol=@log /dev/nvme0n1p3 /mnt/var/log
mount -o subvol=@cache /dev/nvme0n1p3 /mnt/var/cache
mount -o subvol=@snapshots /dev/nvme0n1p3 /mnt/var/snapshots
mkdir -p /mnt/boot
mount /dev/nvme0n1p1 /mnt/boot
```

5. Base System Installation for Intel Chipset

```
reflector --latest 20 --sort rate --save /etc/pacman.d/mirrorlist

pacstrap -K /mnt base linux-firmware linux-zen linux-zen-headers dkms dracut
intel-ucode vulkan-intel vulkan-mesa-device-select vulkan-tools apparmor
btrfs-progs efibootmgr iwd nano networkmanager sudo

genfstab -U /mnt > /mnt/etc/fstab <-> disk partition mount table
```

6. Chroot Configuration

```
arch-chroot /mnt <-> entering to chroot environment

ln -sf /usr/share/zoneinfo/America/Araguaina /etc/localtime
hwclock --systohc
nano /etc/locale.gen <-> check if LANG=pt_BR.UTF-8 is enabled
locale-gen
nano /etc/locale.conf <-> set LANG=pt_BR.UTF-8
nano /etc/vconsole.conf <-> set KEYMAP=br-abnt2
nano /etc/hostname <-> set book (choose a preferred name)

passwd <-> setting "root" admin password
useradd -m -g users -G wheel -s /bin/bash arch (choose a preferred name)
passwd arch <-> setting "arch" sudo password
EDITOR=nano visudo
%wheel ALL=(ALL:ALL) ALL <-> uncomment for enabling sudo for "arch" user
```

7. Bootloader (systemd-boot)

```
bootctl install

blkid /dev/nvme0n1p3 <-> catch the UUID in PARTUUID field

nano /boot/loader/entries/arch.conf

title Arch Linux Zen
linux /vmlinuz-linux-zen
initrd /intel-ucode.img
initrd /initramfs-linux-zen.img
options root=PARTUUID=<UUID caught> rw
rootflags=subvol=@,compress=zstd,ssd,discard=async,space_cache=v2 apparmor=1
security=apparmor quiet loglevel=3
```

```
nano /boot/loader/entries/arch-fallback.conf
```

```
title    Arch Linux Fallback
linux    /vmlinuz-linux-zen
initrd   /intel-ucode.img
initrd   /initramfs-linux-zen-fallback.img
options  root=PARTUUID=<UUID caught> rw
rootflags=subvol=@,compress=zstd,ssd,discard=async,space_cache=v2 apparmor=1
security=apparmor quiet loglevel=3
```

```
nano /boot/loader/loader.conf
```

```
default arch.conf
timeout 2
console-mode max
editor no
```

```
ls /sys/firmware/efi/efivars <-> check if UEFI remain active
efibootmgr <-> should list "Linux Boot Manager"
```

```
systemctl enable NetworkManager.service <-> enable network access options
```

```
dracut -f -H -v /boot/initramfs-linux-zen.img
dracut -f -v /boot/initramfs-linux-zen-fallback.img
```

```
exit <-> exiting from chroot environment
```

```
umount -R /mnt
swapoff -a
```

```
shutdown
```

```
remove the USB drive before "initiate"
```

8. Post-Installation Network Configuration

```
Login: root
```

```
systemctl start NetworkManager.service
```

```
nmcli general status
nmcli device status
nmcli device wifi list
nmcli device wifi connect <wifi name> password <wifi password>
```

```
e.g.: nmcli device wifi connect "my-network" password "1234567890"
```

```
pacman -Sy terminus-font
setfont ter-124b
```

```
on the next page ...
```

9. Installing GNOME and Essential Packages

```
pacman -S adwaita-icon-theme contrast decibel eog evolution extension-  
manager eyedropper file-roller firefox firefox-18n-pt-br foliate font-  
manager fragments gdm gedit gedit-plugins gnome gnome-backgrounds gnome-  
bluetooth gnome-browser-connector gnome-calendar gnome-characters gnome-  
clocks gnome-color-manager gnome-control-center gnome-disk-utility gnome-  
firmware gnome-info-collect gnome-keyring gnome-logs gnome-menus gnome-music  
gnome-online-accounts gnome-power-manager gnome-session gnome-settings-daemon  
gnome-shell-extensions gnome-terminal gnome-text-editor gnome-themes-extra  
gnome-tweaks gnome-usage gnome-user-docs gnome-weather gparted grilo-plugins  
gthumb gvfs gvfs-afc gvfs-dnssd gvfs-goa gvfs-gphoto2 gvfs-mtp gvfs-nfs gvfs-  
smb gvfs-wsdd letterpress libreoffice-still libreoffice-still-pt-br loupe  
morphosis mpv mutter nautilus network-manager-applet papers pavucontrol  
qalculate-gtk rygel seahorse shotwell showtime simple-scan snapshot system-  
config-printer timeshift xdg-desktop-portal-gnome xdg-user-dirs-gtk  
xkeyboard-config xorg-server yelp yelp-tools yelp-xsl zed
```

```
pacman -S alsa-utils aspell aspell-en aspell-pt at-spi2-core avahi bashtop  
bat bind-tools bluez bluez-utils colord collision cronie cups cups-browsed  
cups-filters cups-pdf curl ethtool fail2ban fastfetch fd ffmpeg firewalld  
foomatic-db foomatic-db-engine foomatic-db-ppds fwupd fzf git glances grc  
gst-plugins-base gst-plugins-base-libs gutenprint hspell htop hunspell hwinf  
imagemagick intel-media-driver inxi iproute2 less libssh libssh2 libva-intel-  
driver libvncserver libvoikko libwireplumber localsearch lsd lsof man-db man-  
pages mesa-utils meson micro mission-center ninja nmap nss-mdns ntfs-3g  
nuspell p7zip pacman-contrib parted pipewire pipewire-pulse powertop ptyxis  
pwgen qt5-wayland qt6-wayland reflector ripgrep rpcbind smartmontools speech-  
dispatcher speedtest-cli tecla tinysparql tlp tree unzip upower v4l-utils  
v4l2loopback-utils wget wireless_tools wireplumber yt-dlp zip zram-generator  
zsh zsh-autocomplete zsh-autosuggestions zsh-completions zsh-history-  
substring-search zsh-lovers zsh-syntax-highlighting
```

```
systemctl enable gdm.service  
systemctl status gdm.service  
systemctl enable apparmor.service  
systemctl enable avahi-daemon.service  
systemctl enable bluetooth.service  
systemctl enable cronie.service  
systemctl enable cups.service  
systemctl enable cups-browsed.service  
systemctl enable firewalld.service  
systemctl enable tlp.service
```

reboot

Login: "user" & "password" <-> if fail → make login by CLI

CLI command: sudo systemctl start gdm.service

on the next page ...

11. Configurations and Optimizations

1. configure in gnome-control-center
2. configure in gnome-tweaker
3. configure in extension-manager
4. configure fstab: `sudo nano /etc/fstab`
5. configure timeshift
6. configure zram-generator
7. configure zsh: `chsh -s /bin/zsh "user"`
8. install fonts :

```
sudo pacman -S gnu-free-fonts ttf-anonymous-pro ttf-atkinson-hyperlegible
ttf-bitstream-vera ttf-caladea ttf-carlito ttf-cascadia-code ttf-crimson-pro
ttf-crimson-pro-variable ttf-croscore ttf-dejavu ttf-doulos-sil ttf-droid
ttf-eurof ttf-fantasque-sans-mono ttf-fira-code ttf-fira-mono ttf-fira-sans
ttf-hack ttf-ibm-plex ttf-inconsolata ttf-input ttf-jetbrains-mono ttf-
junicode ttf-junicode-variable ttf-khmer ttf-lato ttf-liberation ttf-
libertinus ttf-linux-libertine ttf-linux-libertine-g ttf-material-icons ttf-
material-symbols-variable ttf-meslo-nerd ttf-mona-sans ttf-monospace-frozen
ttf-monospace-variable ttf-monofur ttf-monoid ttf-montserrat ttf-nunito ttf-
opensans ttf-overpass ttf-roboto ttf-roboto-mono
```

recovery environment:

1. Arch Live USB
2. `mount /mnt`
3. `arch-chroot /mnt`
4. `dracut -f -H -v /boot/initramfs-linux-zen.img`
5. `exit`
6. `umount -R /mnt`
7. `swapoff -a`
8. `reboot`

* * *