Guide For ArchLinux Installation

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

```
ip link
iwctl
device list
station wlan0 scan
station wlan0 get-networks
station wlan0 connect
exit
ping archlinux.org

timedatectl

ls /usr/share/kbd/consolefonts/ | grep ter-128b
if yes: setfont ter-128b
if not: pacman -Sy terminus-font
if ok:  setfont ter-128b «=» for best readability
```

3. Partitioning & Formatting

```
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

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

pacstrap -K /mnt base linux-zen linux-firmware intel-ucode vulkan-intel
vulkan-mesa-device-select vulkan-tools apparmor btrfs-progs dhcpcd hwdetect
iproute2 iwd mkinitcpio mkinitcpio-busybox mkinitcpio-systemd-tool
mkinitcpio-utils net-tools netctl networkmanager sudo systemd systemd-
resolvconf util-linux wpa_supplicant «=» packs focused in the Intel chipset

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 selected
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 (choice a name as prefer)

passwd «=» setting “root” admin password
useradd -m -g users -G wheel -s /bin/bash archer (choice a name as prefer)
passwd archer «=» setting “archer” sudo password
EDITOR=nano visudo
%wheel ALL=(ALL:ALL) ALL «=» uncomment for enabling sudo for “archer” 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 catched> 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 catched> 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

mkinitcpio -P

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-128b
```

9. Installing GNOME and Essential Packages

```
[ 96 GUI Package ] pacman -S adwaita-icon-theme contrast decibels eog
eyedropper file-roller firefox firefox-i18n-pt-br foliate fragments gdm gedit
gedit-plugins gimp gimp-help-pt_br gnome gnome-applets gnome-backgrounds
gnome-bluetooth gnome-browser-connector gnome-calendar gnome-characters
gnome-clocks gnome-color-manager gnome-commander gnome-control-center gnome-
disk-utility gnome-firmware gnome-info-collect gnome-keyring gnome-logs
gnome-menus gnome-music gnome-nettool gnome-online-accounts gnome-packagekit
gnome-power-manager gnome-remote-desktop gnome-screenshot gnome-session
gnome-settings-daemon gnome-shell gnome-shell-extension-appindicator gnome-
shell-extension-arc-menu gnome-shell-extension-caffeine gnome-shell-
extension-dash-to-panel gnome-shell-extension-weather-oclock gnome-shell-
extensions gnome-system-monitor gnome-terminal gnome-text-editor gnome-
themes-extra gnome-tweaks gnome-usage gnome-user-docs gnome-user-share gnome-
weather gparted grilo-plugins gthumb gvfs gvfs-afc gvfs-dnssd gvfs-goa gvfs-
gphoto2 gvfs-mtp gvfs-nfs gvfs-smb gvfs-wsdd letterpress loupe morphosis mpv
mutter nautilus network-manager-applet orca 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

[ 89 CLI Package ] pacman -S alsa-utils aspell aspell-en aspell-pt at-spi2-
core avahi bat bind-tools bluez bluez-utils colord cronie cups cups-browsed
cups-filters cups-pdf curl ethtool fail2ban 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 imagemagick inxi
less libinput libssh libssh2 libvncserver libvoikko libwireplumber
localsearch lsd lsof man-db man-pages mesa-utils meson micro ninja nmap nss-
mdns nuspell p7zip parted pipewire pipewire-pulse powertop pwgen qt5-wayland
qt6-wayland ripgrep smartmontools 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 cups.service
systemctl enable cups-browsed.service
systemctl enable firewalld.service
systemctl enable timeshift.timer
systemctl enable tlp.service

reboot
```

Login: **user** «=» if fail → make login by CLI

CLI command: sudo systemctl start gdm.service

11. Services and Optimizations

sudo nano /etc/mkinitcpio.conf

HOOKS=(base udev autodetect microcode modconf kms keyboard keymap consolefont block filesystems fsck) «=» fields that must be verified

1. make setup in gnome-control-center
2. make setup in gnome-shell-extensions
3. make setup in gnome-tweaker
4. configure fstab: sudo nano /etc/fstab
5. configure timeshift
6. configure zram-generator
7. zsh «=» chsh -s /bin/zsh archer
8. install fonts :

sudo pacman -S gnu-free-fonts ttf-atkinson-hyperlegible ttf-bitstream-vera ttf-caladea ttf-carlito ttf-cascadia-code ttf-croscore ttf-dejavu ttf-droid ttf-fira-code ttf-fira-mono ttf-fira-sans ttf-firacode-nerd ttf-hack ttf-ibm-plex ttf-inconsolata ttf-input ttf-jetbrains-mono ttf-junicode ttf-junicode-variable ttf-liberation ttf-libertinus ttf-linux-libertine ttf-linux-libertine-g ttf-meslo-nerd ttf-mona-sans ttf-monaspace-frozen ttf-monaspace-variable ttf-opensans ttf-roboto ttf-roboto-mono

* * *