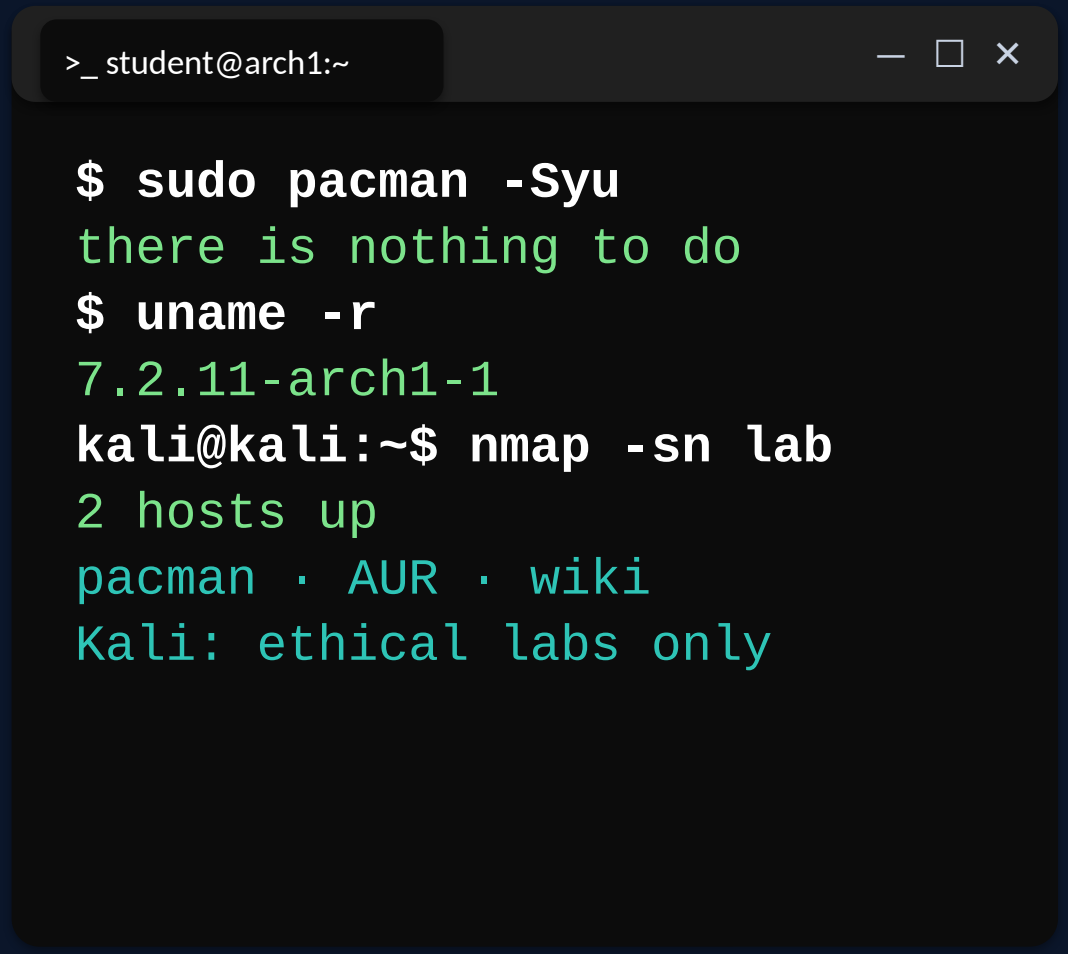


LESSON 2 OF 12

Arch & Kali Linux

Rolling · pacman · AUR · Security Lab

Installing Arch Linux with archinstall (and What It Does)

Full Course · Arch 2026.11 · Kali 2026.3 (Nov 2026)

What You Will Learn in Lesson 2

- Download and verify the monthly ISO
- Boot the live environment: network, time, keyboard
- archinstall: disks, Btrfs, bootloader, users, profile
- Choosing kernels, audio, network and extra packages
- First boot: update, services, microcode, AUR prep
- The manual install: pacstrap, genfstab, arch-chroot
- When to choose manual vs archinstall

Download and Verify the ISO

```
# From archlinux.org/download (or a mirror close to you)
$ ls
archlinux-2026.11.01-x86_64.iso  archlinux-2026.11.01-x86_64.iso.sig  sha256sums.txt
$ sha256sum -c sha256sums.txt --ignore-missing
archlinux-2026.11.01-x86_64.iso: OK
$ gpg --auto-key-locate clear,wkd -v --locate-external-key pierre@archlinux.org
$ gpg --verify archlinux-2026.11.01-x86_64.iso.sig
gpg: Good signature from "Pierre Schmitz <pierre@archlinux.org>"
# On an existing Arch system: pacman-key -v archlinux-...iso.sig
# Write to USB: dd bs=4M if=archlinux-...iso of=/dev/sdX status=progress oflag=sync
```

The Live Environment

```
root@archiso ~ # ls /sys/firmware/efi/efivars >/dev/null && echo UEFI
UEFI
root@archiso ~ # loadkeys us                    # keyboard layout (e.g. de, fr)
root@archiso ~ # ip -br link                    # wired works automatically (DHCP)
root@archiso ~ # iwctl                          # Wi-Fi:
[iwd]# station wlan0 scan
[iwd]# station wlan0 connect "MyWiFi"
root@archiso ~ # ping -c3 archlinux.org
root@archiso ~ # timedatectl                     # NTP sync should be active
root@archiso ~ # archinstall
```

archinstall: Key Menu Choices

Menu item	Our choice for arch1
Archinstall language / Locales	English; keyboard us; locale en_US.UTF-8
Mirrors and repositories	Your country's mirrors; enable 'multilib' if you want Steam/Wine
Disk configuration	Best-effort layout on /dev/vda → Btrfs with subvolumes + compression
Disk encryption	Optional: LUKS with a passphrase (recommended on laptops)
Swap	zram (compressed swap in RAM) — default
Bootloader	systemd-boot (UEFI) — or GRUB if you need BIOS/advanced features
Hostname	arch1
Root password / User account	Leave root locked; user 'student' as superuser (sudo)

archinstall: Profile, Kernels and More

Menu item	Options
Profile	Desktop (GNOME, KDE Plasma, Xfce, Hyprland, COSMIC ...), Server, or Minimal
Graphics driver	Open-source (Intel/AMD/nouveau) or NVIDIA open kernel modules
Audio	PipeWire (recommended)
Kernels	linux (latest) + linux-lts as a fallback
Network configuration	NetworkManager (desktop) or systemd-networkd (server)
Additional packages	vim git base-devel openssh man-db
Timezone / NTP	Your timezone; automatic time sync on
Save configuration	Saves user_configuration.json for repeatable installs

First Boot

```
[student@arch1 ~]$ sudo pacman -Syu                # full system upgrade
[student@arch1 ~]$ systemctl --failed
[student@arch1 ~]$ sudo systemctl enable --now sshd   # Arch names it sshd
[student@arch1 ~]$ lscpu | grep 'Vendor ID'
[student@arch1 ~]$ pacman -Q intel-ucode amd-ucode 2>/dev/null   # CPU microcode
[student@arch1 ~]$ sudo pacman -S --needed base-devel git       # for the AUR (lesson 4)
[student@arch1 ~]$ sudo pacman -S pacman-contrib reflector man-db
[student@arch1 ~]$ sudo systemctl enable --now paccache.timer   # clean old packages
[student@arch1 ~]$ cat /etc/os-release | head -3
```

Underneath: The Manual Install

```
# What archinstall does, step by step (simplified)
# fdisk/parted: 1 GB EFI (vfat) + root
mkfs.fat -F32 /dev/vda1 ; mkfs.btrfs /dev/vda2
mount /dev/vda2 /mnt ; mount --mkdir /dev/vda1 /mnt/boot
pacstrap -K /mnt base linux linux-firmware intel-ucode vim networkmanager sudo
genfstab -U /mnt >> /mnt/etc/fstab
arch-chroot /mnt
  ln -sf /usr/share/zoneinfo/Asia/Kabul /etc/localtime ; hwclock --systohc
  sed -i 's/^#en_US.UTF-8/en_US.UTF-8/' /etc/locale.gen ; locale-gen
  echo arch1 > /etc/hostname ; mkinitcpio -P
  bootctl install    # + loader entries ;  useradd -m -G wheel student ; passwd student
  EDITOR=vim visudo  # uncomment: %wheel ALL=(ALL:ALL) ALL ; systemctl enable NetworkManager
```

Manual or archinstall?

Choose	When
archinstall	You want a working, standard Arch in 15 minutes; repeatable JSON configs
Manual	You want to learn every step, or need unusual layouts (custom LVM/RAID, Secure Boot keys)
Both	Same result: plain Arch, no installer leftovers — you own the system
Tip	Do the manual install once in a VM to learn, then use archinstall day to day
Reference	wiki.archlinux.org/title/Installation_guide

Summary and Homework

- Verify: sha256sum + gpg --verify (or pacman-key -v)
- Live ISO: loadkeys, iwctl for Wi-Fi, ping, timedatectl
- archinstall: Btrfs, systemd-boot, user with sudo, profile, linux + linux-lts
- First boot: pacman -Syu, sshd, microcode, base-devel, paccache.timer
- Manual: pacstrap → genfstab → arch-chroot → mkinitcpio → bootloader
- Homework: install arch1 with archinstall; save the JSON; try a manual install in a 2nd VM

Thank You! 🙏

Free videos & PDFs: www.MyWebUniversity.com

Slides for this lesson: MyWebUniversity.com/presentations

YouTube: @MyWebUniversity · @MyWebUniversity-Dari

Wahidullah Lutfy — Founder and Director of IT of MyWebUniversity, and CS teacher

Book: The Direct Path to Linux Ubuntu (Amazon · Barnes & Noble)

Learn it, then pass it on.