

Installing Linux (& VMs)

RITlug eBoard

So you want to install Linux

- How much do you want to commit?
 - Are just you trying it out?
 - Installing in a virtual machine is easy and unintrusive
 - Do you need to use Windows or macOS for some programs?
 - Consider a dual boot configuration
 - Are you going to switch completely?
 - Just wipe your drive and install

Installing on a Virtual Machine

What's a virtual machine?

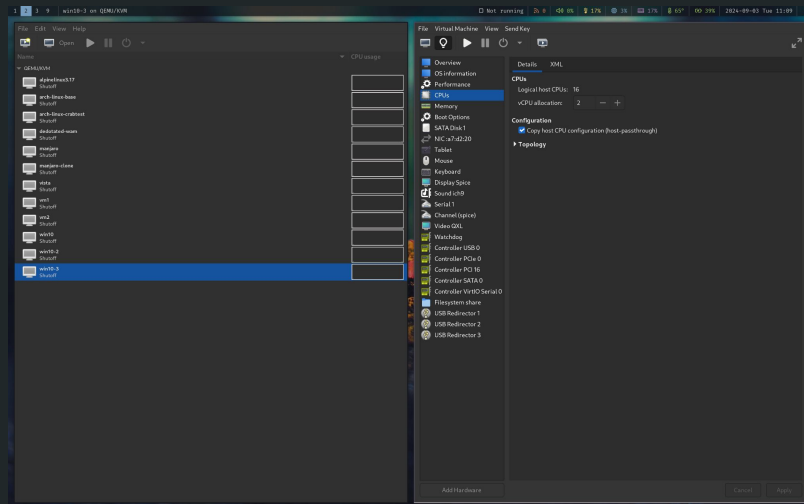
- Software pretending to be an entire computer
- Completely isolated from the rest of your system

Uses

- Sandboxing untrusted software (eg. virus testing)
- Running programs that require different systems in parallel
- Providing VPSs
- Easy migration to new hardware
- Emulating hard-to-access hardware
- Testing operating systems without reinstalling

QEMU and libvirt

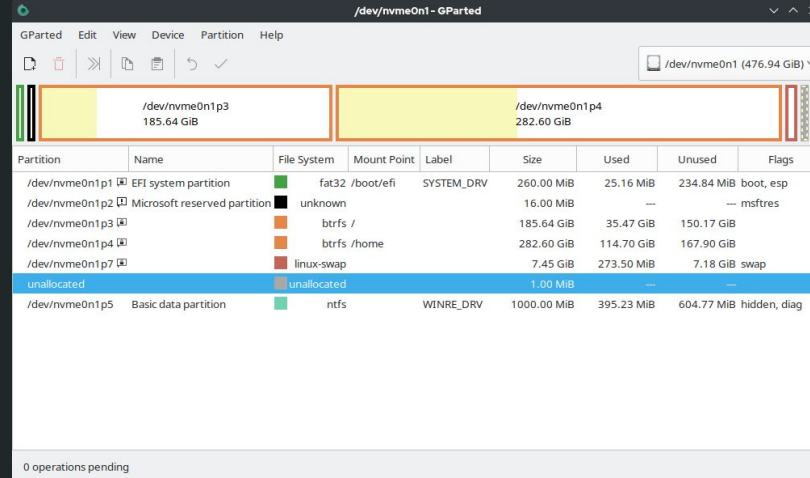
- Quick EMUlator
- FOSS and cross-platform emulator and virtual machine
- Often used with libvirt (VM management library) and virt-manager (GUI for libvirt)



Dual Booting

What is dual booting?

- Install multiple operating systems on the same computer
- Typically have boot manager to choose OS at startup
- Each operating system must have own storage space
 - Separate drive into "partitions"



Partition	Name	File System	Mount Point	Label	Size	Used	Unused	Flags
/dev/nvme0n1p1	EFI system partition	fat32	/boot/efi	SYSTEM_DRV	260.00 MIB	25.16 MIB	234.84 MIB	boot, esp
/dev/nvme0n1p2	Microsoft reserved partition	unknown			16.00 MIB	---	---	msftres
/dev/nvme0n1p3		btrfs	/		185.64 GiB	35.47 GiB	150.17 GiB	
/dev/nvme0n1p4		btrfs	/home		282.60 GiB	114.70 GiB	167.90 GiB	
/dev/nvme0n1p7		linux-swap			7.45 GiB	273.50 MIB	7.18 GiB	swap
unallocated		unallocated			1.00 MIB	---	---	
/dev/nvme0n1p5	Basic data partition	ntfs		WINRE_DRV	1000.00 MIB	395.23 MIB	604.77 MIB	hidden, diag

0 operations pending

What's a bootloader

- Small (ish) program that loads the kernel on boot
- Popular options:
 - GRUB
 - systemd
 - The Linux kernel itself
 - rEFInd
- Unpopular options:
 - Windows Boot Manager



Live Demo 1: Linux Mint

Live Demo 2: Arch Linux
