THE UNIVERSITY OF TEXAS AT AUSTIN

Lab #0

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1 Setup

1.1 Hardware

Guest Processor: 64 bit 8 core Intel(R) Xeon(R) CPU E3-1270 V2 @ 3.50GHz
Guest Memory: 16GB
VM guests run with single 64-bit virtual CPU and 114.54MB of memory (obtained using /proc/meminfo)

1.2 Software

Host Operating System: Ubuntu with 3.13.0-34-generic 64 bit kernel.
Guest Operating System: Ubuntu with 3.16.1 64 bit kernel.

Qemu-kvm is used to run guest operating system.

2 Qemu command

```
qemu-system-x86_64 -drive file=tmpPKS3JS.qcow2 --snapshot \
      -net nic,model=virtio -net user -redir tcp:2222::22 \
      -kernel ~/workspace/kernel/kbuild/arch/x86_64/boot/bzImage \
      -boot c -append "root=/dev/sda1 console=ttyS0,115200n8 console=ttyS0" -s
```

3 dmesg output

A standard PC console screen being detected.

```
[    0.000000] Console: colour VGA+ 80x25
[    0.000000] console [ttyS0] enabled
```

Registering the USB interface.

```
[    0.590510] ACPI: bus type USB registered
[    0.591061] usbcore: registered new interface driver usbfs
[    0.591538] usbcore: registered new interface driver hub
[    0.592148] usbcore: registered new device driver usb
```

Detecting plug and play device interfaces. I don't believe these are actual devices, since I don't have Wacom Penabled attached.

PNP0b00	CMOS/real time clock
PNP0303	Keyboard
PNP0f13	Alps Pointing-device
PNP0700	floppy disk controller.
PNP0400	printer
PNP0501	Wacom Penabled HID

```
[    0.698814] pnp: PnP ACPI init
[    0.699139] ACPI: bus type PNP registered
[    0.701140] pnp 00:00: Plug and Play ACPI device, IDs PNP0b00 (active)
[    0.701586] pnp 00:01: Plug and Play ACPI device, IDs PNP0303 (active)
[    0.701930] pnp 00:02: Plug and Play ACPI device, IDs PNP0f13 (active)
[    0.702334] pnp 00:03: [dma 2]
[    0.702549] pnp 00:03: Plug and Play ACPI device, IDs PNP0700 (active)
[    0.703010] pnp 00:04: Plug and Play ACPI device, IDs PNP0400 (active)
[    0.703427] pnp 00:05: Plug and Play ACPI device, IDs PNP0501 (active)
[    0.705823] pnp: PnP ACPI: found 6 devices
```

Keyboard and mouse actually getting detected

```
[    0.904011] uhci_hcd: USB Universal Host Controller Interface driver
[    0.905559] i8042: PNP: PS/2 Controller [PNP0303:KBD,PNP0f13:MOU] \
                   at 0x60,0x64 irq 1,12
```

Detecting ATA devices - Discovered two ATA devices.

```
[    0.885403] ata1: PATA max MWDMA2 cmd 0x1f0 ctl 0x3f6 bmdma 0xc020 irq 14
[    0.885740] ata2: PATA max MWDMA2 cmd 0x170 ctl 0x376 bmdma 0xc028 irq 15
```

ATA devices identified as DVD-ROM and HARDDISK

```
[    1.050827] ata2.01: NODEV after polling detection
[    1.053424] ata2.00: ATAPI: QEMU DVD-ROM, 2.0.0, max UDMA/100
[    1.055532] ata1.01: NODEV after polling detection
```

```
[    1.056661] ata1.00: ATA-7: QEMU HARDDISK, 2.0.0, max UDMA/100
[    1.057076] ata1.00: 10485760 sectors, multi 16: LBA48
[    1.058028] ata2.00: configured for MWDMA2
[    1.058844] ata1.00: configured for MWDMA2
```

A SCSI interface to ATA devices is emulated.

```
[    1.065295] scsi 0:0:0:0: Direct-Access   ATA   QEMU HARDDISK 0 PQ: 0 ANSI: 5
[    1.075428] scsi 1:0:0:0: CD-ROM QEMU   QEMU DVD-ROM   2.0. PQ: 0 ANSI: 5
[    1.087248] sr 1:0:0:0: Attached scsi CD-ROM sr0
[    1.088424] sr 1:0:0:0: Attached scsi generic sg1 type 5
[    1.095130] sd 0:0:0:0: [sda] Attached SCSI disk
```

Detecting RAID devices and no devices were found.

```
[    1.098346] md: Autodetecting RAID arrays.
[    1.098541] md: Scanned 0 and added 0 devices.
```

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4 Lists

4.1 Example of list (3*itemize)

- First item in a list
  - First item in a list
    * First item in a list
    * Second item in a list
  - Second item in a list
- Second item in a list

4.2 Example of list (enumerate)

1. First item in a list
2. Second item in a list
3. Third item in a list