

[illegible]

2. Memory Capacity:

- `$ free -h`
 - Shows information about system memory usage and capacity in a human-readable format.

```
desd@desd-OptiPlex-5050:/$ free -h
desd@desd-OptiPlex-5050:/$ free -h
total used/proc/cp free shared buff/cache available
Mem: 15Gi 3.5Gi 308Mi 603Mi 11Gi 11Gi
Swap: 2.0Gi 1.0Mi 2.0Gi
```

3. Memory Map:

- `$ cat /proc/iomem`
 - Provides a list of current memory ranges used by different devices, showing the memory map of the system.

```
00000000-00000fff : reserved
00001000-0009fbff : System RAM
0009fc00-0009ffff : reserved
000a0000-000bffff : PCI Bus 0000:00
000c0000-000c3fff : reserved
000c4000-000c7fff : pnp 00:08
000c8000-000cbfff : pnp 00:08
000cc000-000cffff : pnp 00:08
000f0000-000fffff : reserved
```

4. I/O Map:

- \$ lspci

- Lists all PCI buses and devices connected to them, providing information about I/O devices and their addresses.

```
desd@desd-OptiPlex-5050:/$ lspci
00:00.0 Host bridge: Intel Corporation Xeon E3-1200 v6/7th Gen Core Processor Host Bridge/DRAM Registers (rev 05)
00:02.0 VGA compatible controller: Intel Corporation HD Graphics 630 (rev 04)
00:14.0 USB controller: Intel Corporation 200 Series/Z370 Chipset Family USB 3.0 xHCI Controller
00:14.2 Signal processing controller: Intel Corporation 200 Series PCH Thermal Subsystem
00:16.0 Communication controller: Intel Corporation 200 Series PCH CSME HECI #1
00:17.0 SATA controller: Intel Corporation 200 Series PCH SATA controller [AHCI mode]
00:1d.0 PCI bridge: Intel Corporation 200 Series PCH PCI Express Root Port #9 (rev f0)
00:1f.0 ISA bridge: Intel Corporation 200 Series PCH LPC Controller (Q270)
00:1f.2 Memory controller: Intel Corporation 200 Series/Z370 Chipset Family Power Management Controller
00:1f.3 Audio device: Intel Corporation 200 Series PCH HD Audio
00:1f.4 SMBus: Intel Corporation 200 Series/Z370 Chipset Family SMBus Controller
00:1f.6 Ethernet controller: Intel Corporation Ethernet Connection (5) I219-V
01:00.0 Network controller: Intel Corporation Wireless 8265 / 8275 (rev 78)
desd@desd-OptiPlex-5050:/$
```

5. Persistent Storage Details:

- \$ df -h

- Displays information about disk space usage, including details about mounted filesystems and their capacities.

```
desd@desd-OptiPlex-5050:/$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            7.8G     0  7.8G   0% /dev
tmpfs           1.6G  2.1M  1.6G   1% /run
/dev/sda5       252G   33G  200G  14% /
tmpfs           7.8G     0  7.8G   0% /dev/shm
tmpfs           5.0M   4.0K  5.0M   1% /run/lock
tmpfs           7.8G     0  7.8G   0% /sys/fs/cgroup
/dev/loop0      128K  128K   0 100% /snap/bare/5
/dev/loop1     100M  100M   0 100% /snap/core/16202
/dev/loop11     350M  350M   0 100% /snap/gnome-3-38-2004/140
/dev/loop17     113M  113M   0 100% /snap/gnome-3-38-2004/140
/dev/loop4       64M   64M   0 100% /snap/core20/1974
/dev/loop5       64M   64M   0 100% /snap/core20/2015
/dev/loop3       58M   58M   0 100% /snap/core18/2796
/dev/loop7      165M  165M   0 100% /snap/gnome-3-28-1804/198
/dev/loop15     256K  256K   0 100% /snap/gtk2-common-themes/13
/dev/loop11     350M  350M   0 100% /snap/gnome-3-38-2004/140
/dev/loop17     113M  113M   0 100% /snap/gnome-3-38-2004/140
/dev/loop9      219M  219M   0 100% /snap/gnome-3-34-1804/93
/dev/loop16     102M  102M   0 100% /snap/p7zip-desktop/220
/dev/loop6       74M   74M   0 100% /snap/core22/858
/dev/loop20     92M   92M   0 100% /snap/gtk-common-themes/1535
/dev/loop19     65M   65M   0 100% /snap/gtk-common-themes/1514
/dev/loop18     46M   46M   0 100% /snap/snap-store/638
/dev/loop8       74M   74M   0 100% /snap/core22/864
/dev/loop12     350M  350M   0 100% /snap/gnome-3-38-2004/143
/dev/loop14     497M  497M   0 100% /snap/gnome-42-2204/141
/dev/loop13     497M  497M   0 100% /snap/gnome-42-2204/132
/dev/loop21     13M   13M   0 100% /snap/snap-store/259
/dev/loop22     41M   41M   0 100% /snap/snapd/20092
/dev/loop23     41M   41M   0 100% /snap/snapd/20290
tmpfs           1.6G  100K  1.6G   1% /run/user/1000
```

- **\$ lsblk**

- Lists information about block devices, including disks and partitions, providing details about their sizes and mount points.

```
desd@desd-OptiPlex-5050:/$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0        7:0      0    4K  1 loop /snap/bare/5
loop1        7:1      0 105.8M  1 loop /snap/core/16202
loop2        7:2      0  55.7M  1 loop /snap/core18/2790
loop3        7:3      0  55.7M  1 loop /snap/core18/2796
loop4        7:4      0  63.5M  1 loop /snap/core20/1974
loop5        7:5      0  63.5M  1 loop /snap/core20/2015
loop6        7:6      0  73.9M  1 loop /snap/core22/858
loop7        7:7      0 164.8M  1 loop /snap/gnome-3-28-1804/198
loop8        7:8      0  73.9M  1 loop /snap/core22/864
loop9        7:9      0 218.4M  1 loop /snap/gnome-3-34-1804/90
loop10       7:10     0 218.4M  1 loop /snap/gnome-3-34-1804/93
loop11       7:11     0 349.7M  1 loop /snap/gnome-3-38-2004/140
loop12       7:12     0 349.7M  1 loop /snap/gnome-3-38-2004/143
loop13       7:13     0 496.9M  1 loop /snap/gnome-42-2204/132
loop14       7:14     0 497M    1 loop /snap/gnome-42-2204/141
loop15       7:15     0   140K  1 loop /snap/gtk2-common-themes/13
loop16       7:16     0 101.5M  1 loop /snap/p7zip-desktop/220
loop17       7:17     0 112.5M  1 loop /snap/guvcview/81
loop18       7:18     0   46M    1 loop /snap/snap-store/638
loop19       7:19     0  64.8M  1 loop /snap/gtk-common-themes/1514
loop20       7:20     0  91.7M  1 loop /snap/gtk-common-themes/1535
loop21       7:21     0  12.3M  1 loop /snap/snap-store/959
loop22       7:22     0  40.9M  1 loop /snap/snapd/20092
loop23       7:23     0  40.9M  1 loop /snap/snapd/20290
sda          8:0      0 931.5G  0 disk
├─sda1       8:1      0 627.5M  0 part
├─sda2       8:2      0 488.1G  0 part
├─sda3       8:3      0    1K    0 part
├─sda4       8:4      0 186.3G  0 part
└─sda5       8:5      0 256.6G  0 part /
```