# Introduction

To efficiently manage a Linux system, administrators often need to gather information about the hardware components. Several command-line tools help display details about the system’s hardware, including connected USB devices, CPU, memory, storage, and more.

# Tools for Displaying Hardware Information

## Displaying USB Devices

To list all connected USB devices:

lsusb

This command provides details about connected USB devices, such as flash drives, keyboards, and external hard drives.

To get detailed information about a specific USB device:

lsusb -v

## Displaying PCI Devices

To list PCI devices such as network cards and GPUs:

lspci

For more detailed information:

lspci -v

## Checking CPU Information

To display detailed CPU specifications:

lscpu

To get raw details from the /proc filesystem:

cat /proc/cpuinfo

## Checking Memory Information

To display system memory usage:

free -h

For detailed memory specifications:

cat /proc/meminfo

## Checking Storage Devices

To list available block devices (disks and partitions):

lsblk

To view detailed information about disk partitions:

fdisk -l

## Checking Hard Drive Health (SMART Status)

To check hard drive health status:

sudo smartctl -a /dev/sda

(Requires smartmontools package.)

## Displaying Network Interfaces

To list all network interfaces:

ip link show

To display network interface details:

ifconfig -a # (Deprecated, use 'ip' command instead)  
ip addr show

## Checking Battery Status (Laptops)

To check battery status on a laptop:

upower -i /org/freedesktop/UPower/devices/battery\_BAT0

## Listing Mounted Filesystems

To view mounted file systems:

mount | column -t

To display filesystem usage:

df -h

## Displaying Kernel and System Information

To get Linux kernel version:

uname -r

To get detailed system information:

uname -a

# Additional Notes

* Some commands require root privileges (sudo), especially those interacting with hardware components.
* USB devices may not always be listed if not properly detected by the system.
* smartctl requires the smartmontools package to be installed.