

Linux lshw Command Tutorial, With Examples.

Examples in this article have been tested on an Ubuntu 16.04 LTS machine.

Linux lshw command

The lshw command allows you to fetch hardware info.

Here's how the man page explains the tool:

```
lshw is a small tool to extract detailed information on the hardware configuration of the machine. It can report exact memory configuration, firmware version, mainboard configuration, CPU version and speed, cache configuration, bus speed, etc. on DMI-capable x86 or IA-64 systems and on some PowerPC machines (PowerMac G4 is known to work). It currently supports DMI (x86 and IA-64 only), OpenFirmware device tree (PowerPC only), PCI/AGP, CPUID (x86), IDE/ATA/ATAPI, PCMCIA (only tested on x86), SCSI and USB.
```

lshw must be run as super user or it will only report partial information.

Here's the syntax of the command:

```
lshw [options]
```

How to use the lshw command

For default usage, simply execute the lshw command with root privileges without any options.

```
lshw
```

How to have device tree output showing hardware paths

Lists hardware in a compact format. For this, use the **-short** command line option.

```
lshw -short
```

How make lshw fetch SCSI, USB, IDE and PCI device info

```
lshw -businfo
```

You can use **-numeric** option if you want the tool to also display numeric IDs for PCI and USB devices.

```
lshw -businfo -numeric
```

How to make lshw display information in HTML format.

```
lshw -html
```

How to make display information in XML format

```
lshw -xml
```

Similarly, you can use the **-json** command line option to display the device tree as a JSON object.

json (JavaScript Object Notation) is a lightweight data-interchange format.

How to make lshw not show sensitive info in output?

If you don't want the tool to show potentially sensitive information use the **-sanitize** option.

This way, you can avoid *lshw* displaying information like IP addresses, serial numbers, and more.

lshw -sanitize

Other Examples

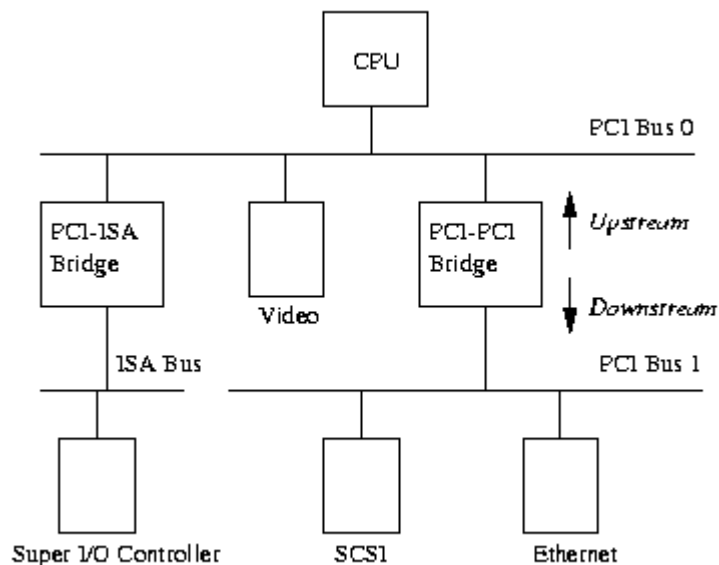
`lshw -class disk -class storage` Lists all disks and storage controllers in the system.

`lshw -html -class network` Lists all network interfaces in HTML.

`lshw -disable dmi` Don't use DMI to detect hardware.

lspci is a command on Linux operating systems that lists detailed information about all PCI buses and devices in the system.

PCI (Peripheral Component Interface/Interconnect), is a standard that describes how the peripheral components of a system are connected together in a structured and controlled way.



Example PCI Based System

BIOS Information.

Linux systems include two native commands that tell you almost everything you need to know about the BIOS:

dmidecode and *biosdecode*. These two utilities live in the */usr/sbin* directory.

Terms.

SMBIOS – System Management BIOS
DMI – Desktop Management Interface
ACPI – Advanced Configuration and Power Interface

Commands

```
sudo dmidecode
sudo dmidecode |grep BIOS
sudo biosdecode
sudo vpddecode prints the "vital product data" information that can be found
in almost all IBM and Lenovo computers.
```

Conclusion

We've discussed basic usage of the tool here - for more info, head to the command's [man page](#).

/bin \$

```
ls: /bin/ls /usr/share/man/man1/ls.1.gz
lsblk: /bin/lsblk /usr/share/man/man8/lsblk.8.gz
lsmod: /bin/lsmod /sbin/lsmod /usr/share/man/man8/lsmod.8.gz
```

/usr/bin

```
lsattr: /usr/bin/lsattr
lsb_release: /usr/bin/lsb_release
lscpu: /usr/bin/lscpu
lsdiff: /usr/bin/lsdiff
lshw: /usr/bin/lshw
lsinitramfs: /usr/bin/lsinitramfs
lsipc: /usr/bin/lsipc
lslocks: /usr/bin/lslocks
lslogins: /usr/bin/lslogins
lsof: /usr/bin/lsof
lspci: /usr/bin/lspci
lspgpot: /usr/bin/lspgpot
lss16toppm: /usr/bin/lss16toppm
lsusb: /usr/bin/lsusb
```