TRIAGE UNIT
TOPIC 4 – WORKSHEET 4
LINUX TRIAGE COMMANDS – DISK STORAGE

Finding the Computer's Hard Disk Drive (or SSD)

Personal computers and larger networked computers, called servers, are really useful when they can store data. A computer is a great place to keep our school work and personal information all in one place. The computer's hard disk drive (HDD) is the place where your data is usually stored.

Hard disks are devices with magnetized aluminum plates that can store magnetic impulse data. Hard drives can store trillions of impulses of magnetic data or the equivalent of millions of books.

[According to "Answers.com, "approximately 4.5 million 200 page books can be stored on one terabyte." (https://www.answers.com/Q/How_many_books_will_a_terabyte_store)]

Hard disk drives are now being replaced with solid state drives (SSDs) that use the same technology as USB flash drives. SSDs are faster and last longer than the older HDD technology.

To see the disk drives on your computer you can simply issue an "fdisk" command with the "-l" flag (that is a lower case "L") and don't forget to add the "sudo" command. The -l flag tells fdisk to list the disk drives. Each disk will appear as a paragraph of information that looks something like this:

user@host:~$ sudo fdisk -l

Disk /dev/sda: 931.53 GiB, 1000204886016 bytes, 1953525168 sectors
Disk model: WDC WD10JPVX-00J
*Units: sectors of 1 * 512 = 512 bytes*
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disklabel type: dos
Disk identifier: 0x07c84b96

The first line after the command says the disk is device "sda" (/dev/sda). The first hard disk in a computer will be assigned sda, the second disk will be sdb, the third sdc . . . and so on. Continuing on the first line, the disk's size is the next piece of information, in this case 931 gigabytes (GiB). The second line give the manufacturer, and model number and this one is a Western Digital (just do a web search on the model number). The rest of the information will require several lessons in hard drive architecture.

Be careful with the fdisk command. It can be used to format disks. Formatting completely erases disks of all information. So only use the -l flag.

Another way to see disk information is with our old friend "lshw," this time looking at the "disk class" of hardware . Again, don't forget to use run the command as the computer's administrator with the sudo command so it shows all disks.

user@host:~$ sudo lshw -c disk

QUESTIONS:
Explain the difference between the “lshw -c disks” command with the sudo command and without.

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Which command did you find easier to understand fdisk or lshw? _____

Why? _____

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if you plug in a USB drive or SD card, does it show up with these commands? _____