9.1.2 Device Types Facts

This lesson covers the types of Linux devices:

Device Types

Linux systems have the capability of using many types of devices. The table below lists many of these devices and outline their basic features and purpose.

Device Type	Description
Bluetooth	A short-range wireless communication technology, able to operate without needing a direct line of sight between devices. For example, Bluetooth can function though some obstructions, such as thin walls. Bluetooth devices communicate using what's called a personal area network or PAN. Which is similar to an ad hoc wireless network. However, with a PAN, you have a single device called the master device that all other devices, called slaves, connect to. Slaves communicate through the master device and set up directly with each other.
WiFi (Wi-Fi)	WiFi (wireless fidelity) is a technology that uses radio waves to provide network connectivity. A WiFi connection is established using a wireless adapter to create hotspots - areas in the vicinity of a wireless router that are connected to the network and allow users to access internet services.
USB	The Universal Serial Bus (USB), is the most commonly used connection interface for peripheral devices. Keyboards, mice, external hard drives, printers, scanners are all peripheral devices that connect to a computer using a USB connection. USB devices typically have a higher throughput than Bluetooth.
Monitors	A computer's primary output device is its display or monitor. Videos, photos, emails, web pages, practically everything the computer processes is eventually output on the monitor.
GPIO	GPIO (General Purpose Input Output) is a type of pin found on an integrated circuit that does not have a specific function. The pins on most integrated circuits have a dedicated purpose, such as sending a signal to a certain component, however, the function of a GPIO pin is customizable and can be controlled by software. Linux developers are familiar with GPIOs and use them when working with embedded and custom hardware.
Network adapters	A network adapter (also called a network interface card or NIC) connects a host to the network medium. The network adapter is responsible for converting binary data into a format to be sent on the network medium.
PCI	PCI stands for Peripheral Component Interconnect. A PCI device is any piece of computer hardware that plugs directly into a PCI slot on a computer's motherboard. A computer bus is a channel or path between the components in a computer. The PCI bus is not as fast as the

	system bus. Its primary purpose is to facilitate communication of hardware devices of all types, such as audio, video, network or graphics with the microprocessor.
HBA	A Host bus adapter (HBA) is a hardware device, such as a circuit board or integrated circuit adapter, that provides I/O processing and physical connectivity between a host system, such as a server, and a storage device.
SATA	Serial ATA (SATA) is a computer bus interface that connects host bus adapters to mass storage devices such as hard disk drives, optical drives, and solid-state drives. Serial ATA succeeded the earlier Parallel ATA (PATA) standard to become the predominant interface for storage devices.
SCSI	Small Computer System Interface (SCSI), is a set of standards for physically connecting and transferring data between computers and peripheral devices. SCSI is most commonly used for hard disk drives and tape drives, but it can connect a wide range of other devices, including scanners and CD drives, although not all controllers can handle all devices.
Printers	A printer is a peripheral device which accept text and graphic output from a computer and transfer that onto a piece of paper.
Video	Video is an electronic medium for the recording, copying, playback, broadcasting, and display of moving visual media. A video device is anything that accomplishes this task, such as a camera. To capture and display video normally requires having some type of video card/device designed for this purpose installed in the computer.
Audio	Audio is another name for sound. Audio devices let you capture, save, and play back sound. A soundcard is an example of an audio device. Advanced Linux Sound Architecture (ALSA) is a software framework and part of the Linux kernel that provides an application programming interface (API) for sound card device drivers.
Client devices	A client is a computer or a program that, as part of its operation, relies on sending a request to another program or a computer hardware or software that accesses a service made available by a server (which may or may not be located on another computer). For example, web browsers are clients that connect to web servers and retrieve web pages for display.