

## What's an Operating System?

### Installing an Operating System

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- Video: Choosing an Operating System 2:00
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- Video: 7 Tips, Tricks, & How to Access macOS 1:11
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### Graded Assessments

## Module 3 Glossary

### New terms and their definitions: Course 3 Week 3

**Android:** A mobile operating system based on Linux.

**Applications:** A computer program designed for a specific use.

**BitLocker:** A low-level software that initializes our computer's hardware to make sure everything is good to go.

**Block storage:** It represents better handling of data because the data isn't stored in one long piece but in blocks, so it can be accessed more quickly.

**Boot:** To start up a computer.

**Bootloader:** A small program that loads the operating system.

**Chrome OS:** A cloud-based operating system designed by Google.

**Command-Line Interface (CLI):** A shell that uses text commands to interact with the operating system.

**Computer file:** Data that we store and a file can be anything, a word document, a picture, a song, literally anything.

**Data blocks:** Data that can be broken down into many pieces and written to different parts of the hard disk.

**Distributions:** Some common Linux distributions are Ubuntu, Debian, and Red Hat.

**Drivers:** A tool you use to install an install image onto your USB device and make it bootable.

**File metadata:** The additional part of a file known for who or what type of file it is in a certain operating system.

**File handling:** A process of storing data using a program.

**File system:** A system used to manage files.

**Finder:** The file manager for all Macs.

**Folder/Directory:** Used to organize files.

**Hardware resource efficiency:** It refers to the lack of system resources like memory, hard drive space, etc. when

**Hyper-OS:** Hyper-OS is a operating system developed by Apple Inc. and Android is another but more encrypted Apple operating system.

**Hardware:** Used to identify the computer when it needs to talk to other computers.

**Input/Output device:** A device that performs input and output, including monitors, keyboards, mice, hard disk drives, speakers, Bluetooth headsets, webcams, and network adapters.

**Install image:** A downloadable operating system image used to install an operating system on a device.

**ISO management:** Anything that can open a file or that we can use for output of data.

**Linux:** A mobile operating system developed by Apple Inc.

**Kernel:** The main core of an operating system that creates processes, efficiently schedules them, and manages how processes are terminated.

**Logs:** This has record system events on our computer.

**Mac OS:** Apple's operating system.

**Memory management:** One of the functions that a kernel performs, it optimizes memory usage and make sure our applications have enough memory to run.

**Metadata:** Tells us everything we need to know about a file, including who created it, when it was last modified, who has access to it, and what type of file it is.

**Microsoft Terminal Services Client:** A client program used to create RDP connections to remote computers.

**Open SSH:** The most popular program to use SSH within Linux.

**Operating system:** The whole package that manages our computer resources and lets us interact with it.

**PC hardware resources:** which include things like memory, hard drive space, etc.

**Plug (PuTTY Link):** A built into the command line after PuTTY is installed that is used to make remote SSH connections.

**PowerShell:** A shell program that interprets text commands for Windows.

**Power user:** Users manage computer users.

**Process management:** The capacity to manage the many programs in a system when to run them, the order they run in, how many resources they take up, how long they run, etc.

**Queryable:** An active platform which provides tracing in cloud services.

**Remote connection:** The ability to connect as a authorized person to a computer or network remotely, allows us to manage multiple machines from anywhere in the world.

**Remote Desktop Protocol (RDP):** A secure network communication protocol developed by Microsoft that allows a user to connect to another device remotely.

**Scalability:** The measure of a system's ability to increase or decrease in performance and cost in response to varying loads in system processing demands.

**Shell:** A program that interprets text commands and sends them to the OS to execute.

**SSH (Secure Shell):** A protocol implemented by other programs to securely access one computer from another.

**SSH authentication key:** A secure authentication method for accessing a computer from another device.

**SSH client:** A program you must have installed on your device in order to establish an SSH connection with another device.

**SSH server:** Software installed on a machine that allows for that device to accept an SSH connection.

**Standardization:** A systematic way of naming hosts.

**Swap space:** The allocated space where the virtual memory is stored on the hard drive when the amount of physical memory is used up or full.

**System:** A group of hardware components and software components that work together to run the programs or processes in the computer.

**System settings:** Settings like display resolution, user accounts, network, devices, etc.

**Task bar:** It gives us quick options and shows us information like network connectivity, the date, system notifications, etc.

**Terminal:** A text-based interface to the computer.

**Time share:** Every year instead of time that gets divided to a process for CPU execution.

**Ubuntu:** The most popular Linux consumer distribution.

**User name:** A unique identifier for a user account.

**User space:** The aspect of an operating system that humans interact with directly like programs, such as text editors, music players, system settings, user interfaces, etc.

**Virtual Box:** An application you can use to install Linux and have it completely isolated from your machine.

**Virtual machine (VM):** An application that uses physical resources like memory, CPU and storage, but they offer the added benefit of running multiple operating systems at once.

**Virtual memory:** A combination of hard drive space and RAM that acts like memory which our processes can use.

**VPN (Virtual private network):** A secure method of connecting a device to a private network over the internet.

### Terms and their definitions from previous weeks

A

**Abstraction:** To take a relatively complex system and simplify it for our use.

**Address bus:** Connects the CPU to the RAM and sends over the location of the data, but not the data itself.

**Algorithms:** A series of steps that solves specific problems.

**ASCII:** The oldest character encoding standard used in ASCII. It represents the English alphabet, digits, and punctuation marks.

**BIOS:** The most common interface that hard drives use to connect to our system.

**ATA (Advanced Technology Attachment):** The most common form factor for motherboards.

B

**Backward compatible:** It means older hardware works with newer hardware.

**Binary system:** The communication that a computer uses is referred to as binary system, also known as base-2 communication.

**BIOS (Basic Input/Output Services):** The BIOS is software that helps initialize the hardware in our computer and gets our operating system up and running.

**BIOS (Basic Input/Output Services):** Refers to the practice of allowing people to use their own personal devices for work.

**Byte:** A group of 8 bits.

C

**Caching:** The assigned storage location for frequently accessed data, on a mobile app it is where anything that isn't changed is stored with that app is stored.

**Character encoding:** is used to assign our binary values to characters so that we as humans can read them.

**Charge cycle:** One full charge and discharge of a battery.

**Computer:** A device that stores and processes data by performing calculations.

**Clipboard:** It holds how components talk to each other on our machine.

**Clock cycle:** When you send a voltage to the clock wire.

**Clock speed:** The maximum number of clock cycles that it can handle in a certain time period.

**Clock wire:** When you send or receive data, it sends a voltage to that clock wire to let the CPU know it can start doing calculations.

**CMOS:** Complementary metal-oxide semiconductor.

**CPU socket:** A CPU socket is a series of pins that connect a CPU's processor to the PCB's motherboard.

**Cryptography:** The overarching discipline that covers the practice of coding and hiding messages from third parties.

D

**Data sizes:** Metrics that refer to data sizes including bit, byte, kilobyte, megabyte, and gigabyte.

**Disk (Solid State Drive Data Bus (SSDAB)):** A type of data bus that is faster, takes up less power, and has a larger capacity than older SATA drives.

**Decimal form - base 10 system:** In the decimal system, there are 10 possible numbers you can use ranging from zero to nine.

**Desktop:** The main screen where we can navigate our files, folders, and applications.

**Digital divide:** The growing skills gap between people with and without digital literacy skills.

**DMX:** Dual in-line Memory Module.

**Display port:** Port which also outputs audio and video.

**DRAM:** Dynamic Random Access Memory.

**Drivers:** The drivers contain the instructions our CPU needs to understand external devices like keyboards, webcams, printers.

**DVI:** DVI carries generally just output video.

E

**Electrostatic discharge:** Electrostatic discharge is a sudden and momentary flow of electric current between two electrostatically charged objects caused by contact, an electrical short or dielectric breakdown.

**External Data Bus (EDAB):** It's a row of wires that interconnect the parts of our computer.

F

**Factory reset:** Restoring a device to the settings it came with from the factory.

**Form factor:** An architectural way to compensate for irregularities in the shape of an object by using a ratio between its volume and height.

G

**Hard drive:** It is a long-term memory component that holds all of our data, which can include music, pictures, applications.

**Hardware:** External or internal devices and equipment that help you perform major functions.

**Hard disk drive (HDD):** Hard disk drives, or HDDs, use a spinning platter and a mechanical arm to read and write information.

**HDMI:** A type of cable that outputs both video and audio.

**HeatSink:** It is used to dissipate heat from our CPU.

H

**Information technology:** The use of digital technology, like computers and the internet, to store and process data into useful information.

**Instruction set:** A list of instructions that our CPU is able to run.

**IT (Information Technology Attachment):** A form factor for motherboards that is much smaller than ATA boards.

L

**Lead Grid Array (LGA):** It is a type of CPU socket that sticks out of the motherboard.

**Lightning adapter:** One of the standard power, data and display connector types used in mobile devices.

**Linux:** Linux is one of the largest open source operating systems used heavily in business infrastructure and in the consumer space.

**Logic gates:** Allow transitions to do more complex tasks, like decide when to send electrical signals depending on logical conditions.

M

**Mbps:** Megabits per second, which is a unit of data transfer rate.

**Memory controller chip (MCC):** A bridge between the CPU and the RAM.

**Micro display port:** One of the standard power, data and display connector types used in mobile devices.

**Micro HDMI:** One of the standard power, data and display connector types used in mobile devices.

**Mini HDMI:** One of the standard power, data and display connector types used in mobile devices.

**Mini USB:** One of the standard power, data and display connector types used in mobile devices.

**Motherboard:** The body or circulatory system of the computer that connects all the pieces together.

N

**Northbridge:** Interconnects stuff like RAM and video cards.

O

**Open source:** This means the developers will let other developers share, modify, and distribute their software for free.

**Overclocking:** It increases the rate of your CPU clock cycles in order to perform more tasks.

P

**PCI Express:** Peripheral Component Interconnect Express.

**PCIe (Peripheral Digital Assistant):** Allows computing to go mobile.

**Peripherals:** An external device which we connect to our computer that add functionality, like a mouse, a keyboard, and a monitor.

**Pin Grid Array (PGA):** CPU socket where the pins are located on the processor itself.

**Pin-to-pin:** Connects points that we can connect devices to that extend the functionality of our computer.

**Power button:** A button that is used to turn on and off the computer.

**Power supply:** Converts electricity from our wall outlet into a thermal that our computer can use.

**Programs:** Basic instructions that tell the computer what to do.

**Push cards:** A sequence of cards with holes in them to automatically perform calculations instead of manually entering them by hand.

R

**RAM:** Random Access Memory.

**Registers:** An accessible location for storing the data that our CPU works with.

**Reimaging:** The process of reimaging involves wiping and reinstalling an operating system using a disk image which is a copy of an operating system.

**Return merchandise authorization (RMA):** The process of returning unwanted merchandise and authorizing a refund.

**RGB modes:** RGB or red, green, and blue modes is the basic model of representing colors.

**ROM chip (Read Only Memory):** A read-only memory chip where the BIOS is stored.

**RPM:** Revolutions per minute.

S

**Safe operating temperature:** The temperature range in which rechargeable batteries must be kept in order to avoid damage.

**SATA:** The most popular serial ATA drive, which was once called for data transfer.

**SATAIII:** It stands for SATA version III, this type of SATA is synchronized to our system's clock speed allowing faster processing of data.

**SATA Controller or Chip:** Controls the CPU, RAM, and sometimes even the storage onto a single chip.

**SerialPort:** It maintains our I/O or input/output controllers, like hard drives and USB devices that input and output data.

**SSD:** Solid State Drive.

**Standoffs:** Used to raise and attach your motherboard to the case.

**Thermal paste:** A substance used to better connect our CPU and heat sink, so the heat transfer from the CPU to the heat sink is better.

**Type-C connector:** A type of USB connector meant to replace many peripheral connectors.

U

**UEFI:** Unified Extensible Firmware Interface.

**USB (Universal Serial Bus):** A connection standard for connecting peripherals to devices such as computers.

**USB adapter:** One of the standard power, data and display connector types used in mobile devices.

**UTP:** The most prevalent encoding standard used today.

### Work as completed

👤 Use 📄 Outline 🔄 Repeat as soon