

You Can Do I.T.!

Basic Hardware & Software Skills for Libraries



Included in this resource guide:

- Workshop Slides
- Glossary of I.T. Terms
- Computer Ports and Parts
- AM Quiz
- Purchasing Evaluation Guide
- Cleaning Your Computer
- BIOS Set-up Handout
- Computer Update Guide
- Installing Network Printers
- 3-2-1 Rule Guide
- PM Quiz
- Take-Home Checklist

<https://www.tsl.texas.gov/youcandoit>



You Can Do I.T.!

BASIC HARDWARE & SOFTWARE SKILLS FOR LIBRARIES

<https://www.tsl.texas.gov/youcandoit>

Carson Block, Carson Block Consulting



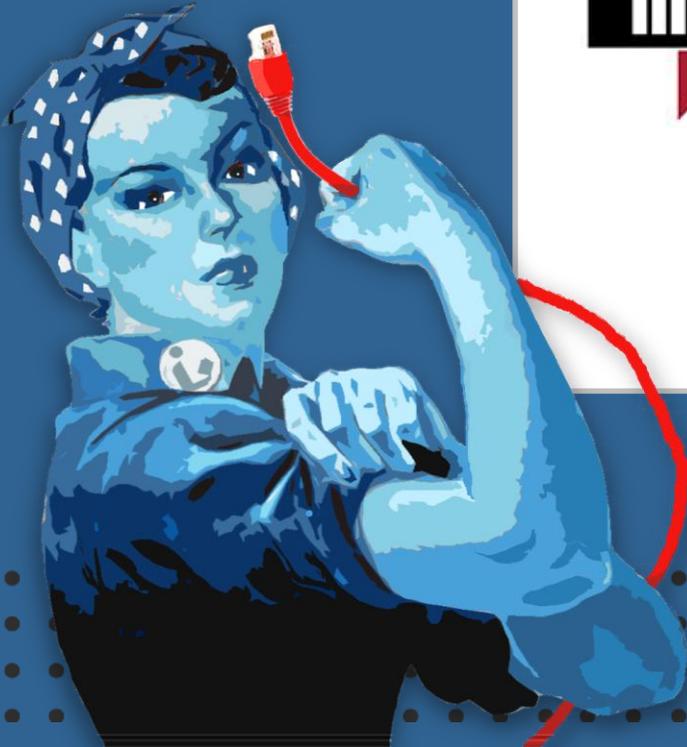
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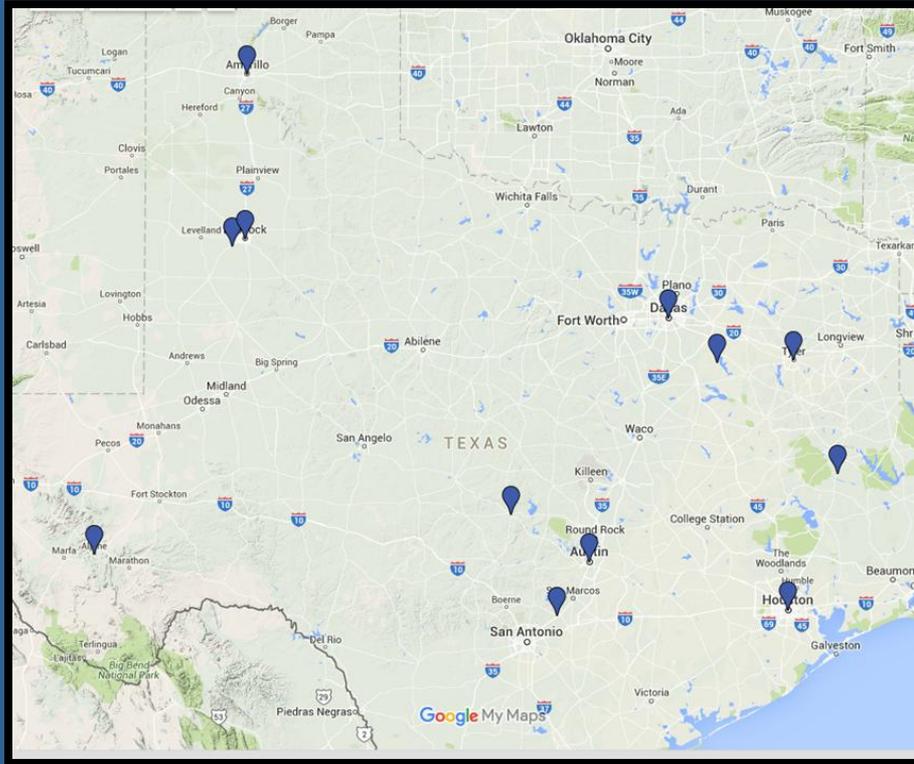
TEXAS STATE LIBRARY
AND
ARCHIVES COMMISSION



INSTITUTE *of*
Museum and Library
SERVICES



What is Basic Hardware and Software Technology for Libraries?



12 sites, Spring and Fall

Course Objectives:

- Learn about computer hardware
- Hands on!
- Learn about essential computer software
- And more!



Today's Topics include:

- External parts of desktop and laptop computers
- Computer ports and cables
- Internal parts of desktop and laptop computers
- Computer specifications
- Important hardware terms
- Basic computer hardware maintenance
- How to evaluate hardware or software before purchasing
- Basics of BIOS security (i.e., settings and passwords)
- Understanding the function of the operating system and device drivers
- Installing new or connecting to printers
- Updating your operating system, printer drivers, etc.
- Important security software
- Public access computer systems and system restoration software
- Backup and restoration basics



Meet Your Instructor: Carson Block



Who I am

What I believe

What I do





Icebreaker

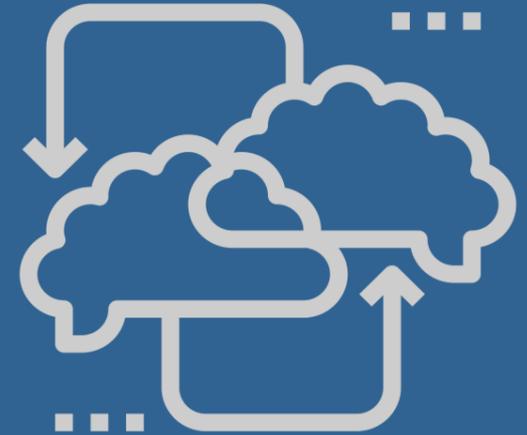


Tell us **who you are**, **where you are from**, and a little about **your library job**.

Tell us about your **worst** and **best** experience with technology.

If you took my class last year, you can **share your technology achievements** instead!

Why Are We Taking This Class?



We Want You To Be
Successful!



Get Ready to Engage!

Show & Tell

Conversational

Hands on

Interactive

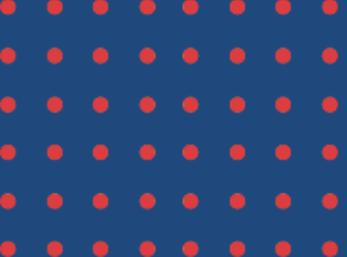
Safe to explore

Collaborative



Your Thought Collector





Workshop Schedule

9:00 AM -Noon

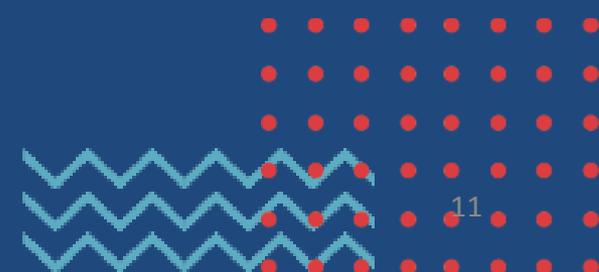
Section I: Computer Hardware

Noon -1:15 PM

Lunch Break (On Own)

1:15 – 4:30 PM

**Section I: Basic Hardware ,
Maintenance and Review Sources
Section II: Software and Security**



Handouts



- Glossary of Common I.T. Terms
- Computer Ports and Parts
- Morning Quiz (First Quiz)
- BIOS Set-up
- Computer Cleaning
- Computer Update guide
- Purchasing Evaluation guide
- Printer and Peripheral Set-up
- Afternoon Quiz (Second Quiz)
- Take-Home Checklist



Alphabet Soup technology edition

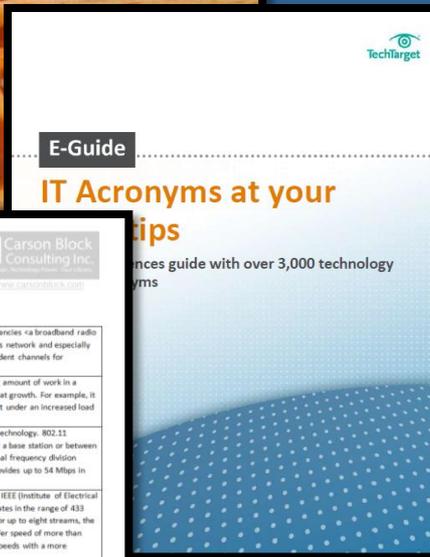


You Can Do I.T.
Glossary
Texas State Library and Archives Commission
DRAFT date: 2015

Carson Block Consulting Inc.
Technology and Consulting Services
http://www.carsonblock.com

Glossary

Broadband	Operating at, responsive to, or comprising a wide band of frequencies - a broadband radio antenna - of, relating to, or being a high-speed communications network and especially one in which a frequency range is divided into multiple independent channels for simultaneous transmission of signals (as voice, data, or video)
Scalability	The ability of a system, network, or process to handle a growing amount of work in a capable manner or its ability to be enlarged to accommodate that growth. For example, it can refer to the capability of a system to increase its total output under an increased load when resources (typically hardware) are added.
802.11a	A specification developed by the IEEE for wireless LAN (WLAN) technology. 802.11 specifies an over-the-air interface between a wireless client and a base station or between two wireless clients. The 802.11a specification uses an orthogonal frequency division multiplexing encoding scheme rather than FHSS or DSSS and provides up to 54 Mbps in the 5GHz band.
802.11ac	A wireless LAN (WLAN) specification under development by the IEEE (Institute of Electrical and Electronics Engineers) that delivers wireless data transfer rates in the range of 433 Mbps (Megabits per second) per spatial stream. With support for up to eight streams, the 802.11ac specification offers a theoretical maximum data transfer speed of more than 3Gbps (Gigabits per second), and can deliver 1.3Gbps transfer speeds with a more common three-antenna (three streams) design.
802.11b	Also referred to as 802.11 High Rate or Wi-Fi, it is an extension to 802.11 specification



Two glossaries:

1. Handout: terms used in this class
2. Linked PDF: [“phone book” of IT acronyms](#) for future reference

All workshop materials at:

<https://www.tsl.texas.gov/youcandoit>





Glossary Discussion



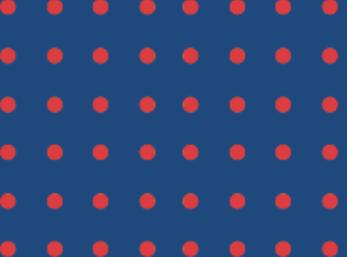
Please take a look at the I.T. Glossary.
Hint: take a moment to skim through it.

- What terms are you familiar with?
- What terms are brand new?

Section 1:

Computer Hardware

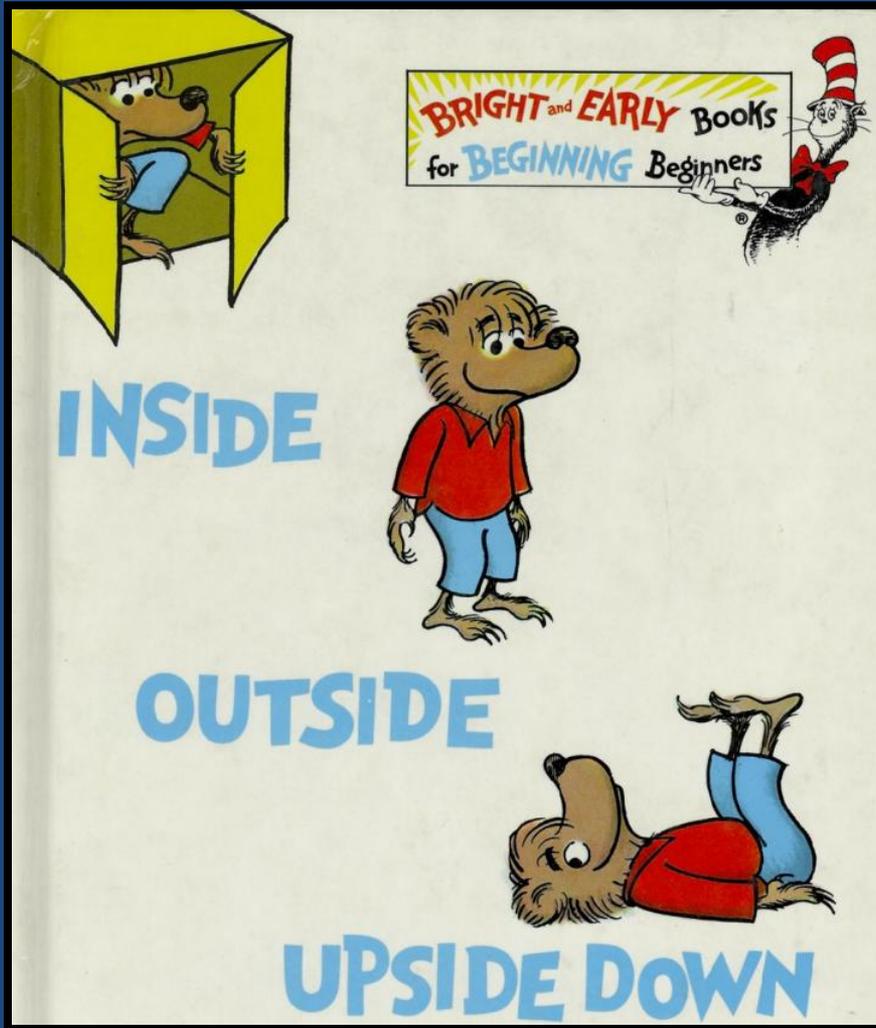




Section I Outline

- External parts of desktop and laptop computers
- Computer ports and cables
- Internal parts of desktop and laptop computers
- Understanding computer specifications
- Important hardware terms
- Basic computer hardware maintenance
- How to evaluate hardware or software before purchasing
- Section 1 quiz
- Lunch (on your own)

Time To Roll Up Our Sleeves!

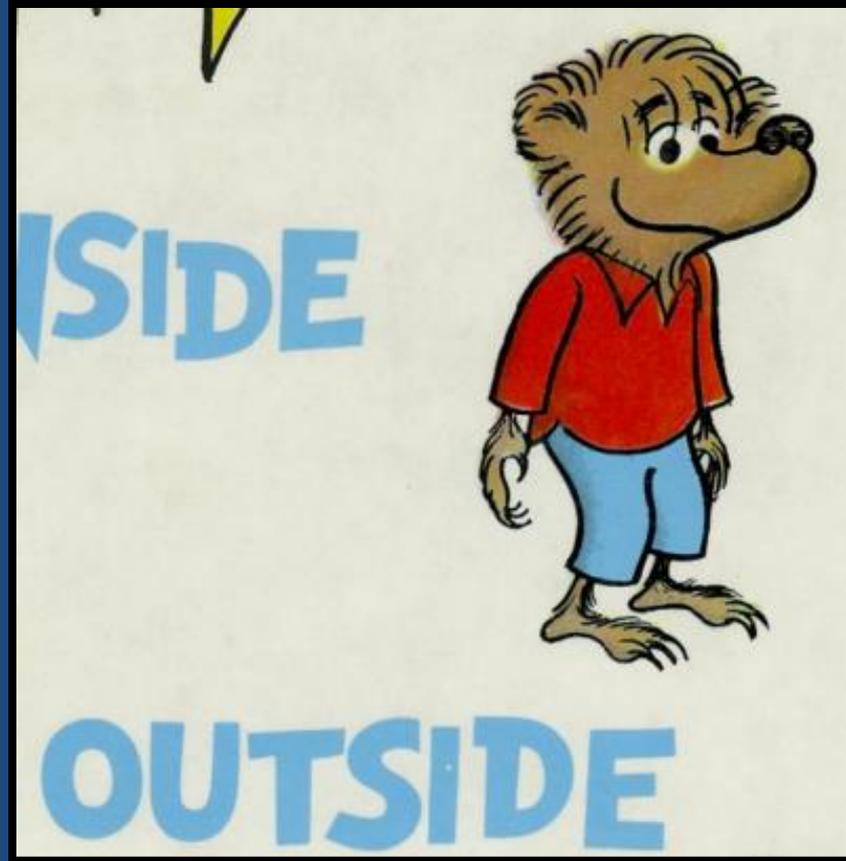


Inside: internal components aka software

Outside: external components aka hardware

Upside down: hands-on learning!

External parts of desktop + laptop computers



Hand-out Time!

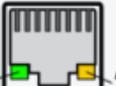


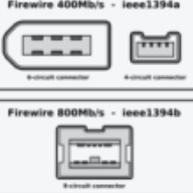
Computer Ports and Parts

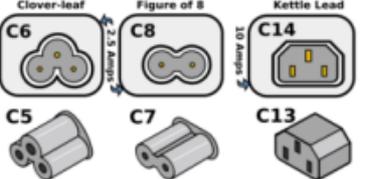
Computer ports and cables

Serial Port Used for PDAs and serial devices. 	PS/2 Port Mouse Keyboard 	VGA Port For External Monitor 	S-Video For Video in/out 	HDMI For High End TVs 
Parallel Port Used for printers and data. 	Games Port Joysticks and Midi Input 	Digital Video Interface DVI Mini-DVI Micro-DVI 		

All Replaced by USB!

Ethernet / RJ45 10Mb/s, 100Mb/s and 1Gb/s 	Modem / RJ14 56Kb/s 	 Universal Serial Bus (USB) USB 1.1 - 12Mb/s USB 2.0 - 480Mb/s USB 3.0 - 5Gb/s 
--	--	---

Audio Mini-Jacks Sockets 	 Firewire / i.Link IEEE1394 Video Cameras (DV) and Hard Drives 
---	---

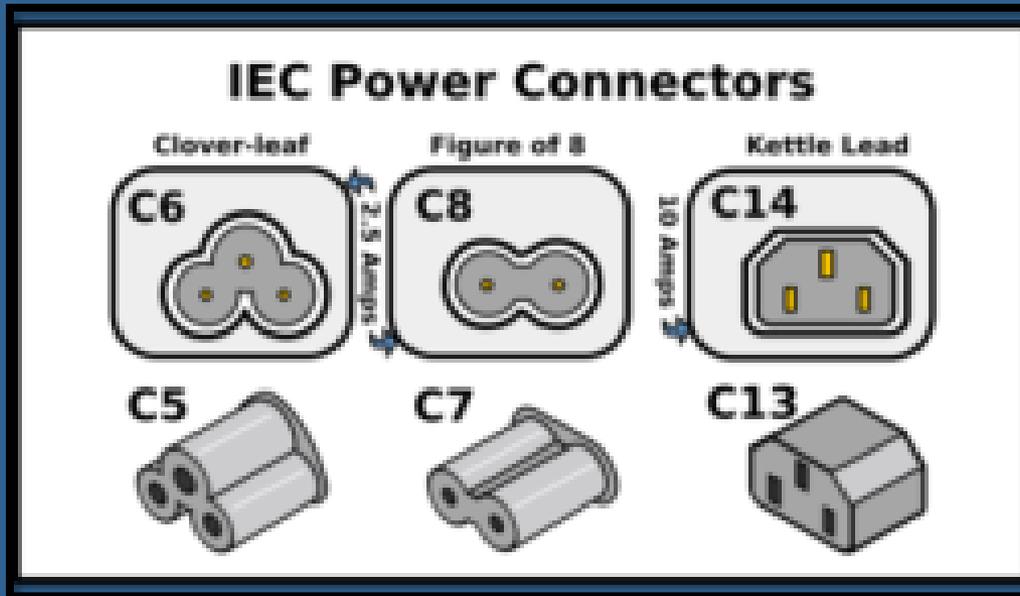
IEC Power Connectors Clover-leaf C6, Figure 8 C8, Kettle Lead C14, C5, C7, C13 	eSata External Hard Drive Port 	DisplayPort Video and Audio Port for Home Theater Systems 
	PCMCIA / Cardbus WIFI, Networking and Expansion Cards 	

Ports

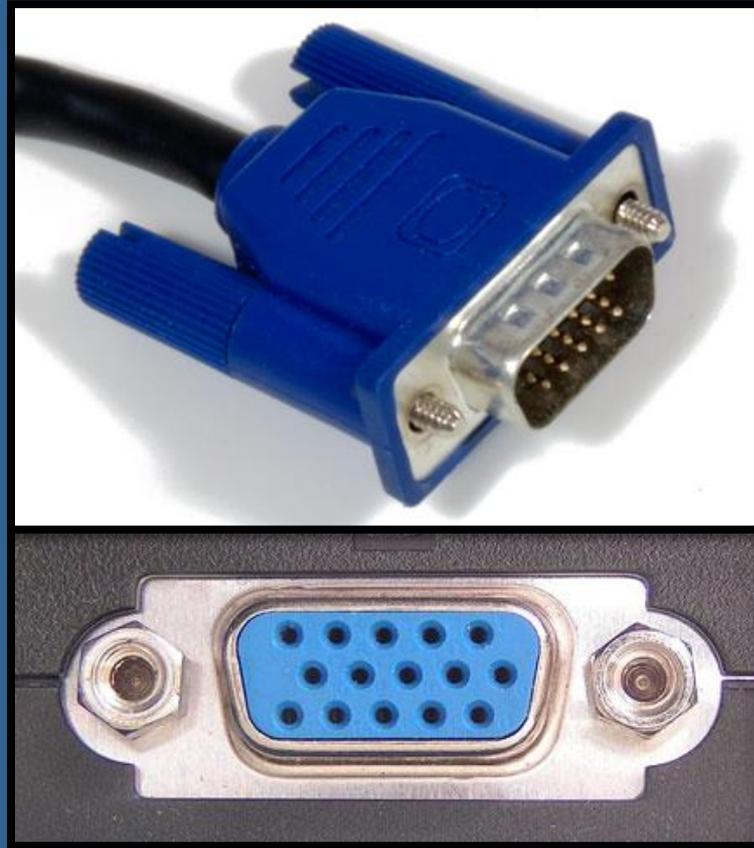
								
Optical Audio "Toslink"	USB A 1.0/1.1/2.0	Firewire 4 pin iLink	Firewire 400 1394a	Firewire 800/3200 1394b/c	Ethernet 8P8C common:RJ-45	Modem RJ-11	Apple Desktop Bus - ADB	Mac Serial
								
PS/2	USB A 3.0	DE-9F	DB-25	Serial/Com Port	DE-9 Serial RS232	e-SATA		
								
Centronics Parallel 36pin		Centronics SCSI 50pin		AT Keyboard				
								
50 pin SCSI 2	Surround sound	stereo/Headphones	Line In	Mic	Digital Audio RCA plug style			
								
AAUI	Composite Audio/Video	S-Video	Component Video	F-Connector RF/COAX				
								
Parallel Port/SCSI 1/DB-25F	Mac Video/MIDI /gameport/AUI/DA-15	Mini DisplayPort	Mini-DVI	Mini-VGA				
								
Apple Hi-Density Video HDI-45	Apple Display Connector - ADC	LFH60 (dual DVI-D)	DMS59 (dual DVI-D)					
								
HDMI	Micro-DVI	DisplayPort	DVI Video	DE-15/HD-15 VGA/SVGA				



Common ports: Power



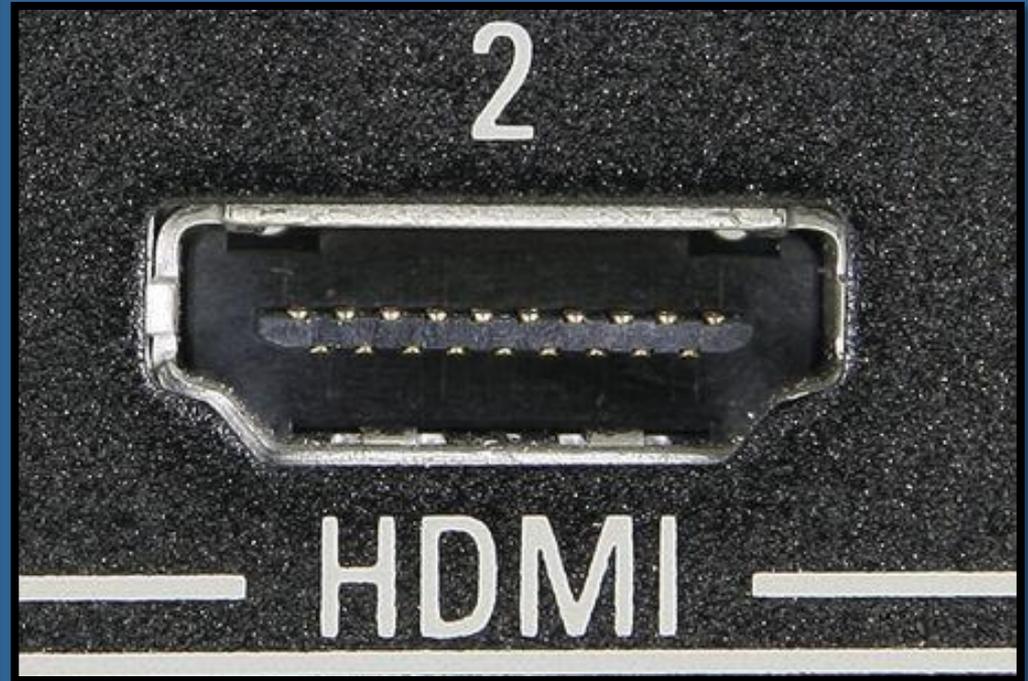
Common ports: VGA (video)



Common ports: DVI (video)



Common ports: HDMI (video)



Common ports: USB

Type-A



Type-B



Type-C

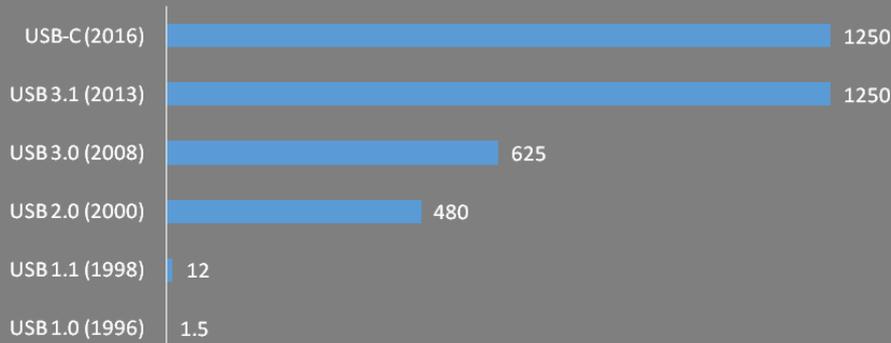


Common ports: USB

Over time, with new versions, the speed and power of USB has increased significantly

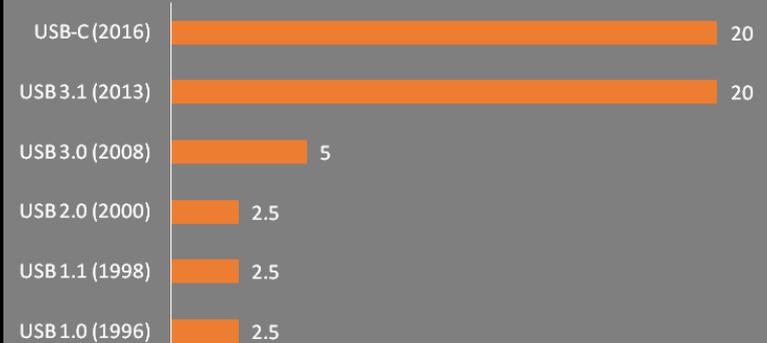
Speed (Mbit/s)

■ Speed (Mbit/s)

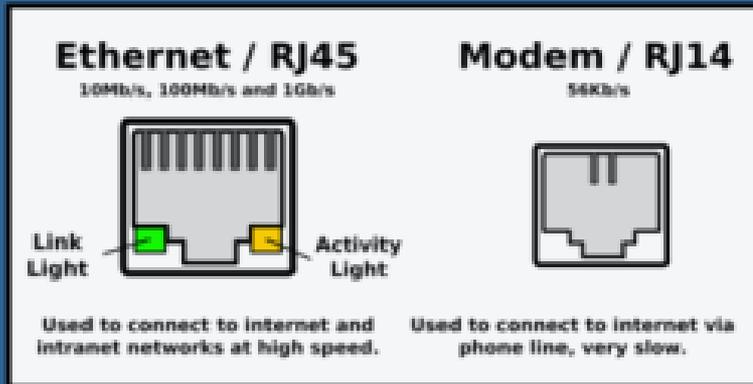


Power (Volts)

■ Power (Volts)



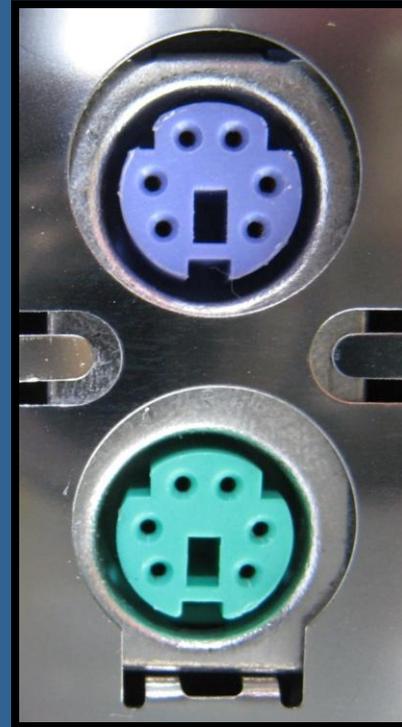
Common ports: Ethernet



Common ports: Audio



Common ports: PS/2



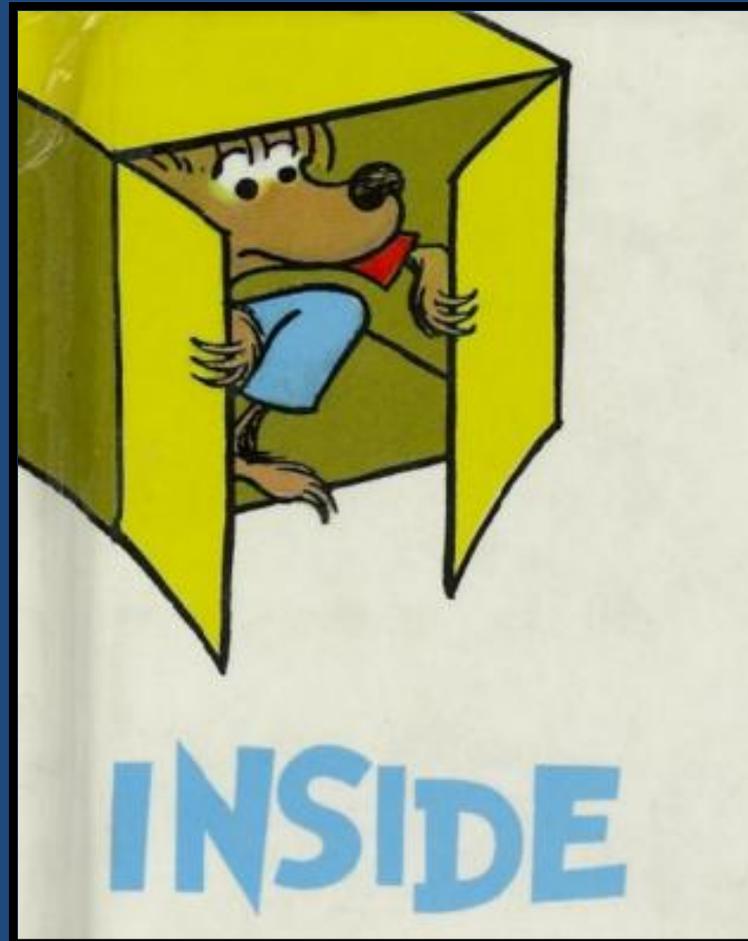
New ports: USB-C & Lightning



Break time!



Internal parts of desktop + laptop computers

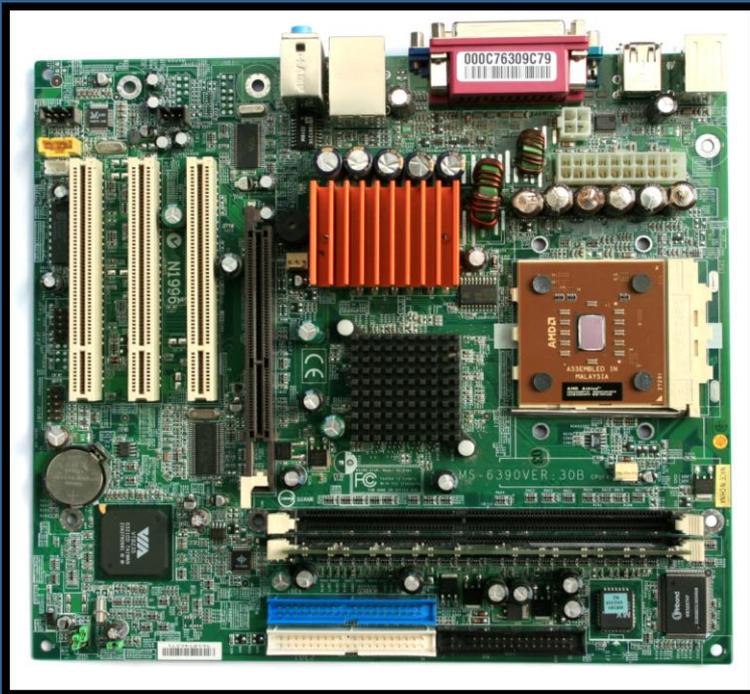


Internal parts of desktop + laptop computers



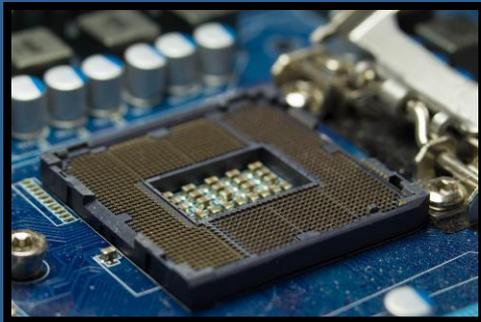
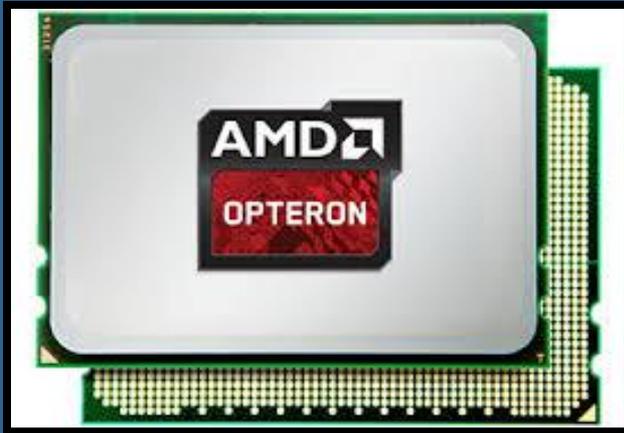
Motherboard

Definition: printed circuit board containing the principal components of a computer or other device, with connectors into which other circuit boards can be slotted.



- Top manufacturers: ASUS, Lenovo, HP
- Chosen by manufacturer unless building your own
- If building your own, ensure it supports current standards for the rest of the hardware components

Processor or CPU (the brain)



Characteristics:

- “Clock speed”, measured in MHz
- Number of cores
- “Cache” or chip memory
- Design
- Is it 32-bit vs 64 bit?
- Can it handle hyperthreading?

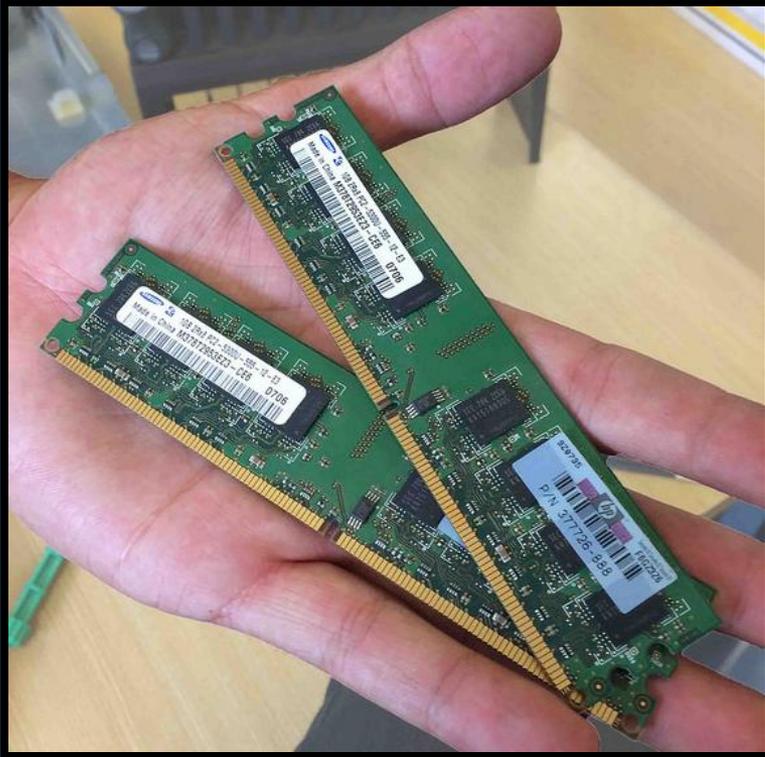
Top manufacturers: Intel, AMD

Processor or CPU (the brain)



Processor rankings are even **confusing** for geeks!

RAM



- Stands for **R**andom **A**ccess **M**emory
- Higher speeds (expressed in MHz) = higher performance
- Higher capacity (expressed in GB) = higher performance

Two sizes:

- DIMM (Dual In-Line Memory Module);
“Bigger” – Desktop PCs
- SO-DIMM (Small Outline DIMM);
“Smaller” – Laptops and All-in-One PCs

Hard Drive

Definition: a high-capacity, self-contained storage device containing a read-write mechanism plus one or more hard disks, inside a sealed unit; also called hard disk drive.

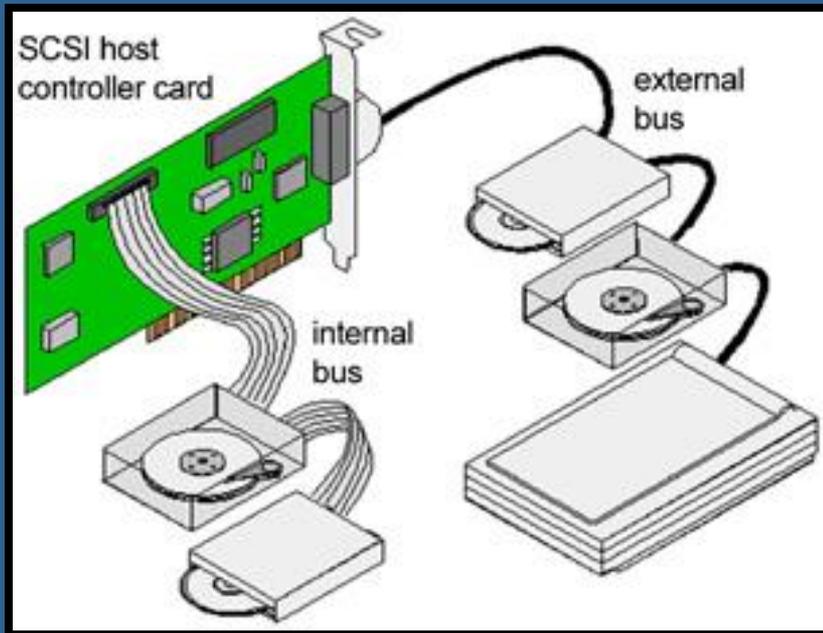


Old School: spinning disk



New school: Solid State (SSD)

Hard Drive Bus



Definition:

Component through which the computer's internal components communicate with one another

Old School:

IDE
SCSI

New School:

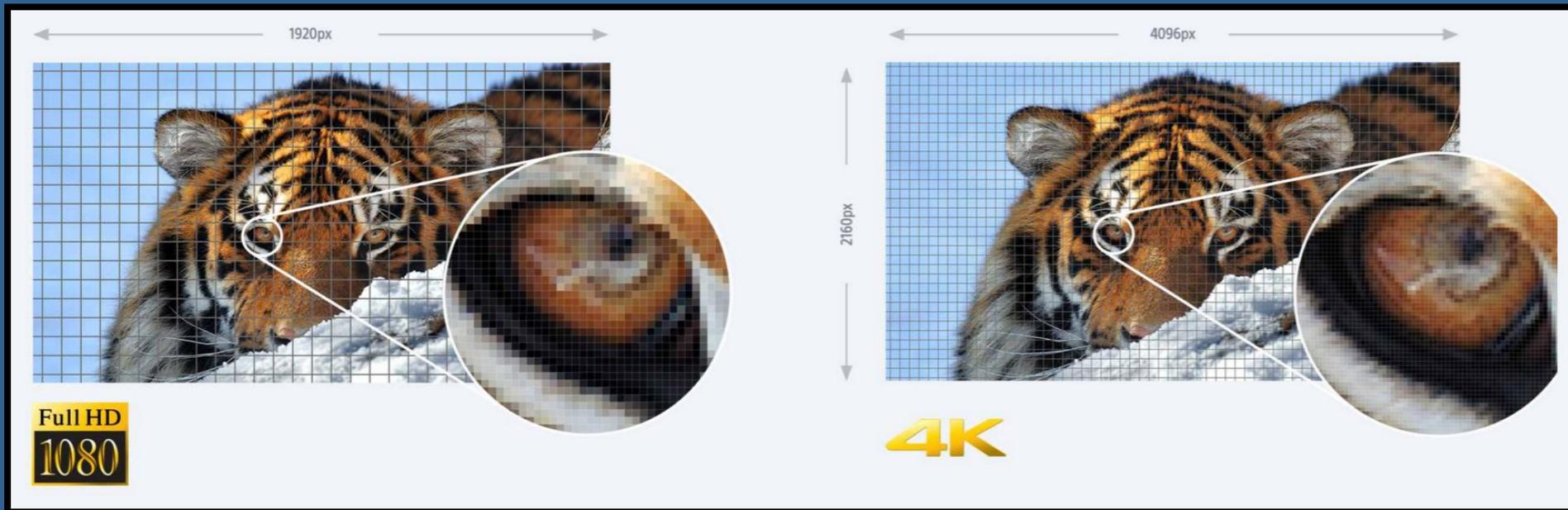
SATA
eSATA

Video / Video Card



- Either part of motherboard or attached separately
- Increased importance as video has become integral to computing for gaming and digital media creation

Example of 4K video

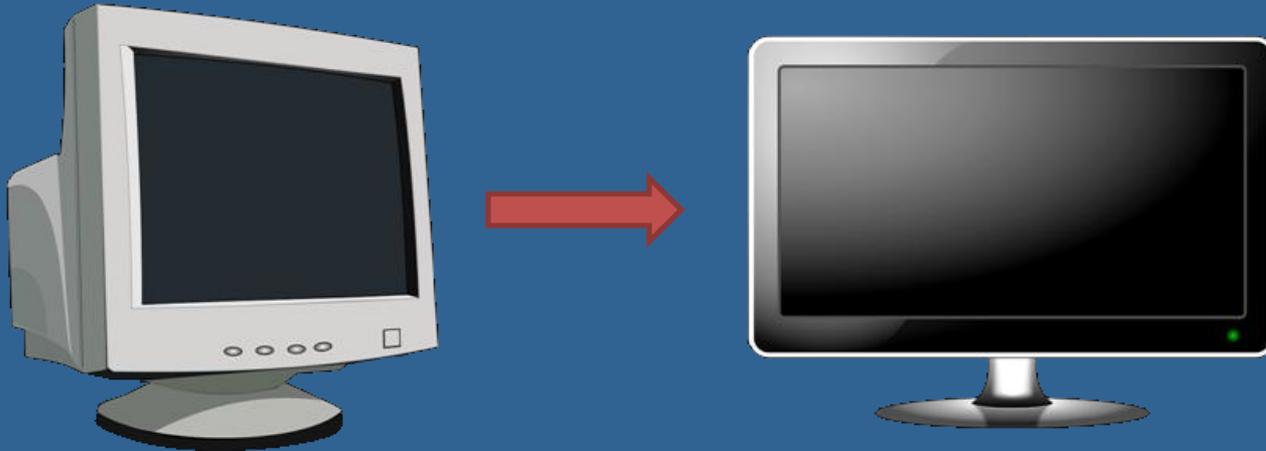


The higher the resolution, sharper the picture even when screen size is the same

Example of 4K video

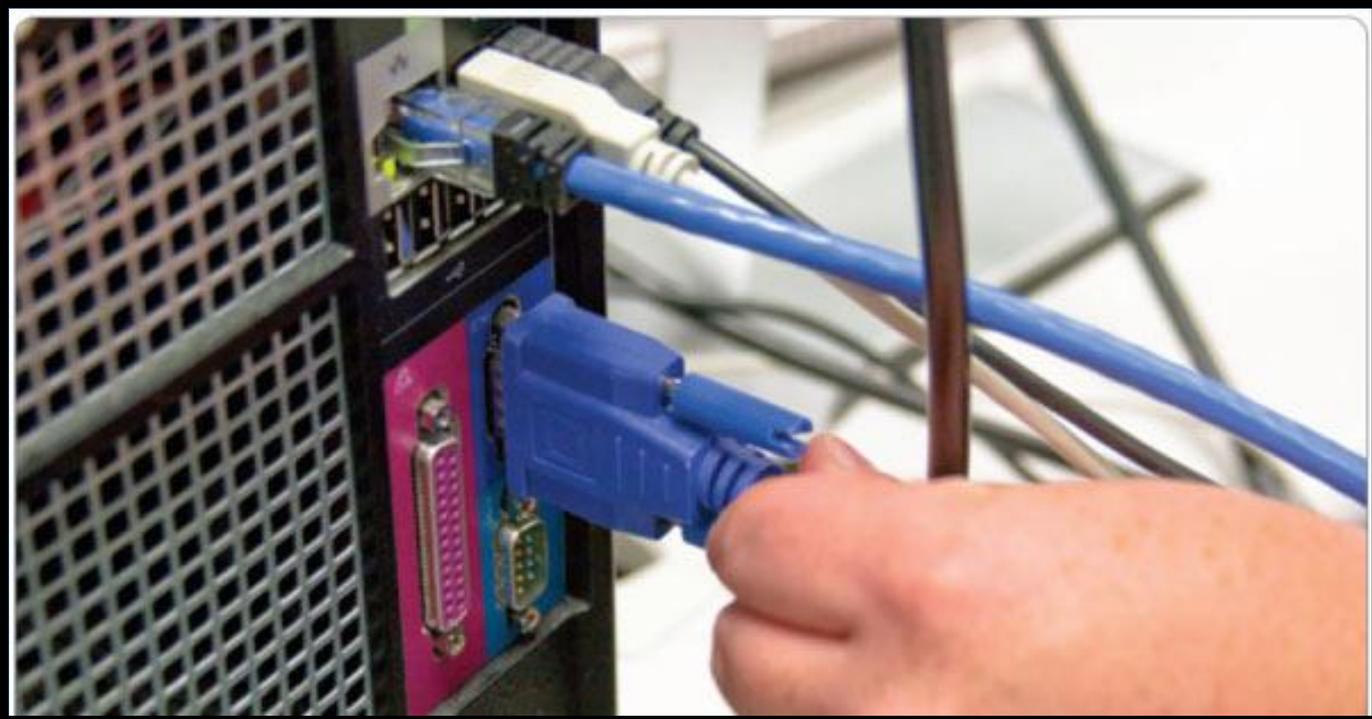


Monitors

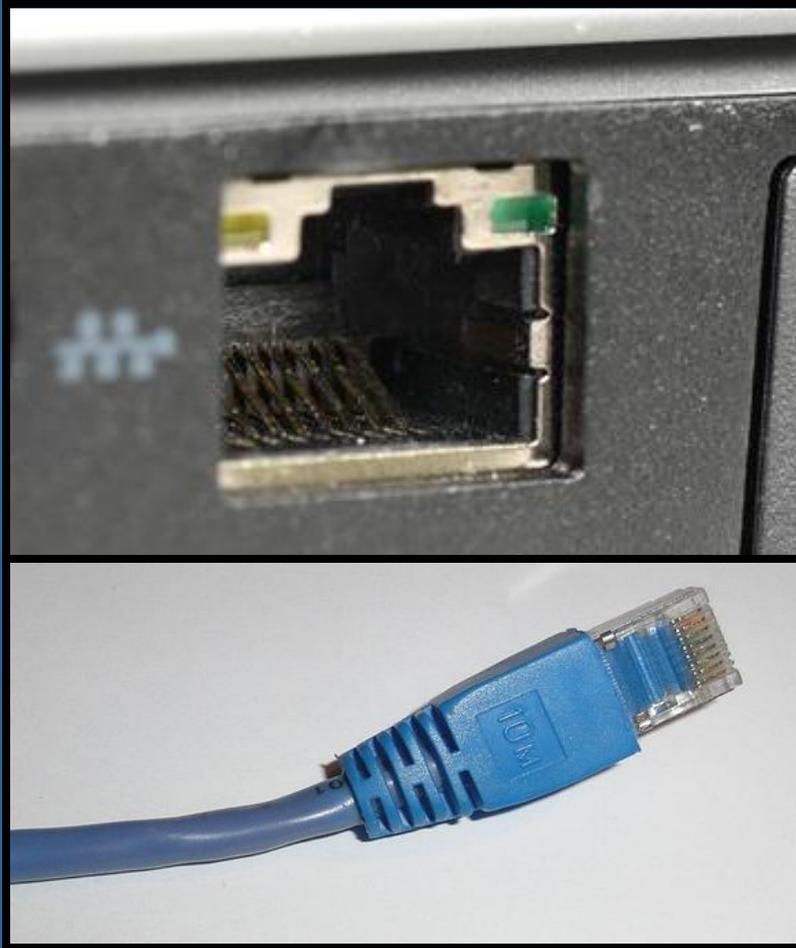


- Monitor needs to support appropriate level of **resolution**
- Shift from 4:3 ratio to 16:9 (“**square**” screen to “**wide screen**”)
- LCD = **Liquid Crystal Display** (display technology)
- LED = the way modern LCD screens are illuminated

Internal/External Connection



Wired Network



Characteristics:

- Ethernet connection
- Fast - 1 gigabyte/sec
- Secure data connection
- Connection range:
100 meters or 300 feet

Wired Network

Think Capacity. Think Capability.

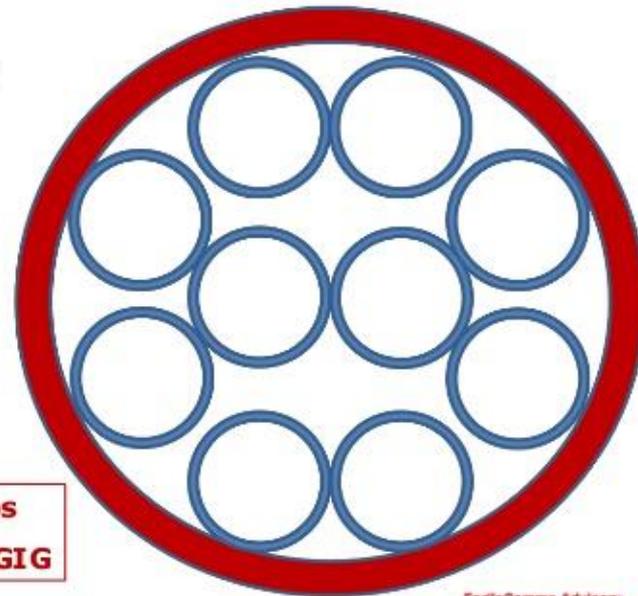
'Access Pipes'



10 Mbps



100 Mbps



**1,000 Mbps
1 Gbps or 1 GIG**

Source: Nguyen Duc, Oct 2013

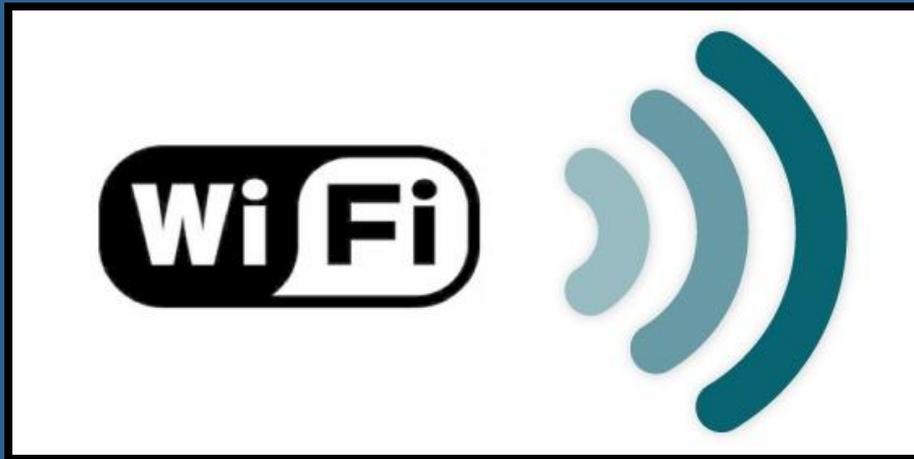
EagleComms Advisory

25 February 2014

© 2014 Dr Nguyen Duc - EagleComms Advisory

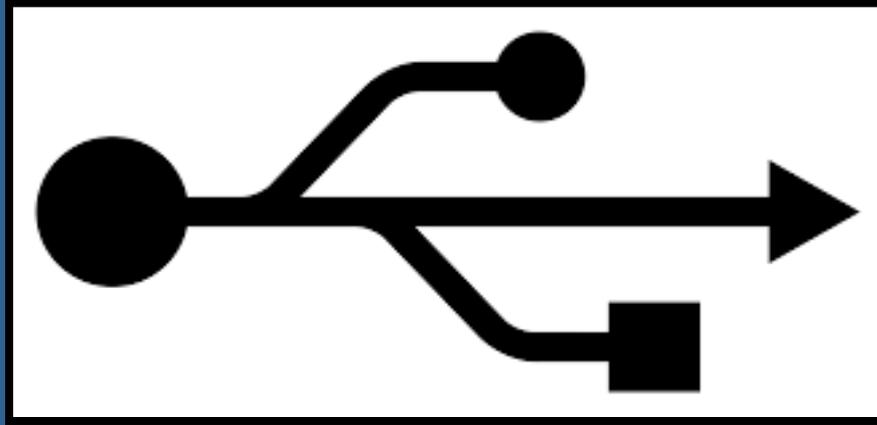
5

802.11x Network (WiFi)



- Wireless LAN (WLAN) technology has been assigned numbers: 802.11 and 802.11x
- WiFi uses tiny radios to send and receive information.

USB (Universal Serial Bus)



Current standard wired method for keyboards, mice, printers, external hard drives, and many other peripherals

Types: USB, USB2, USB3, USB-C (A new animal)

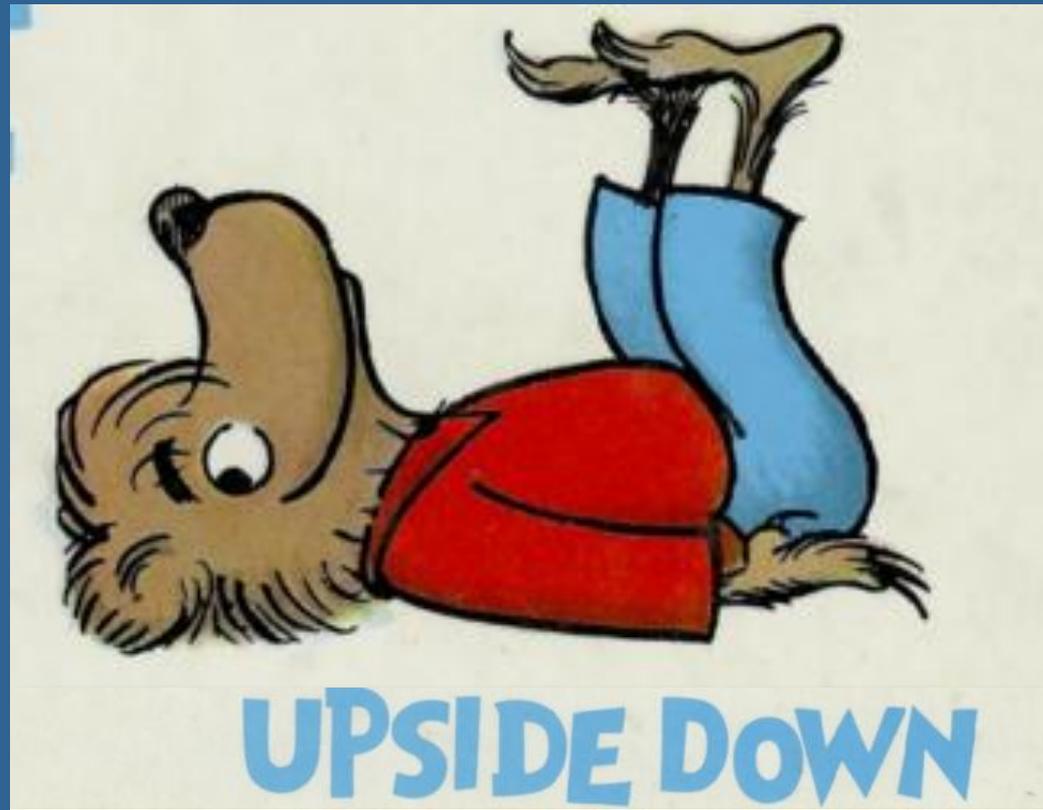
Caution! This bus can get jammed...

Bluetooth



- Near-field wireless data communication
- Connects computer to wireless keyboards, mice, speakers, and other peripherals
- Currently on version 4.2
- Range is up to 100 meters, but usually > 30 meters

Hands-on Time!



Best Practices Alert!



Before working on your computer, wear an **anti-static wristband** to ground yourself.

It prevents frying your computer with static electricity.

Hands-on Time!

with Commons Desktop Parts



Let's Tear 'em Down!

Buying Public Computers



Concepts to consider...

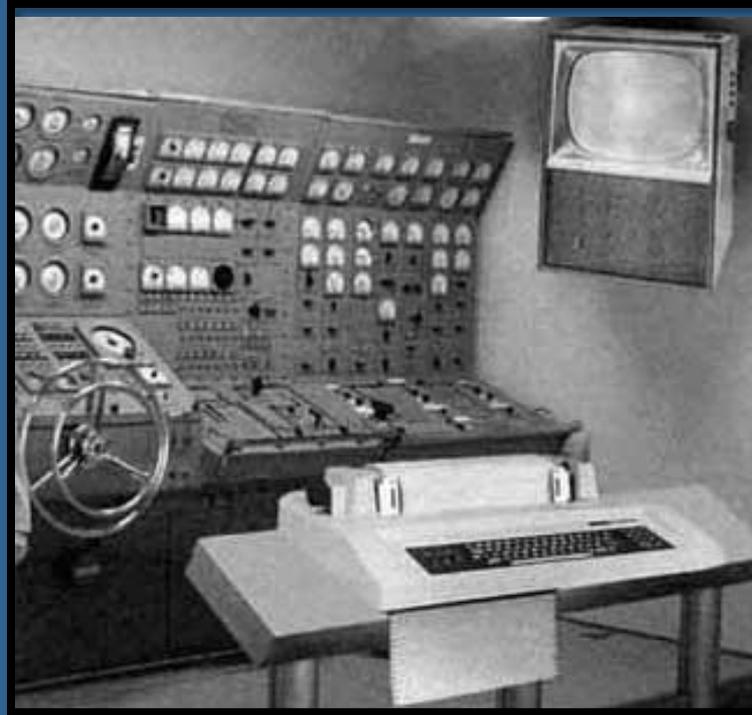
Buying New vs. Refurbished



You never really “buy” a computer, but only lease it’s capabilities for a short time.

Computers are not like guitars!

Can I save money buying older/used computers?



Yes, but it's a **low value** proposition.

If parts are parts, why not build my own computer?

Pros

- Can buy “best in class” components
- Cool cases and flashy components

Cons

- Will everything work in harmony?
- Warranties on individual parts, but not the whole system



What Makes a Computer Fast?



- Fast quality parts
- Software
- Watch out for “bloatware” which could slow you down



Key Questions When Buying a Computer

- What is the purpose of the computer?
- What software applications will you run – standard, specialized, gaming, etc.? Do they have special hardware requirements?
- What sort of peripherals do you need (includes stuff that plugs into your computer or network).



Good News!



Many off-the-shelf computers already have what you need!

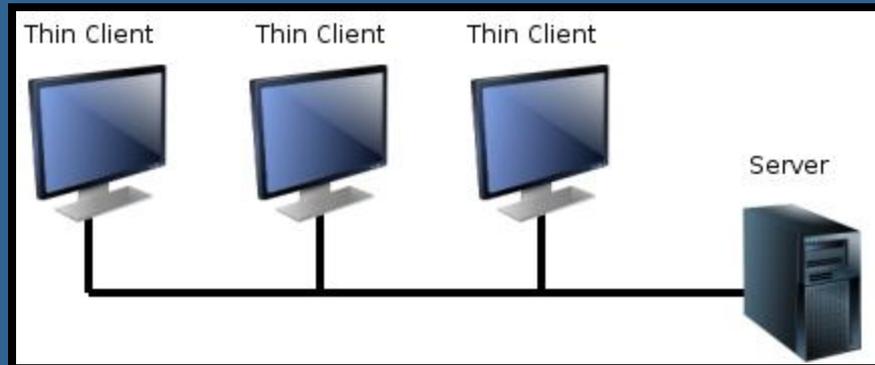
What's the difference between...



a standard PC...

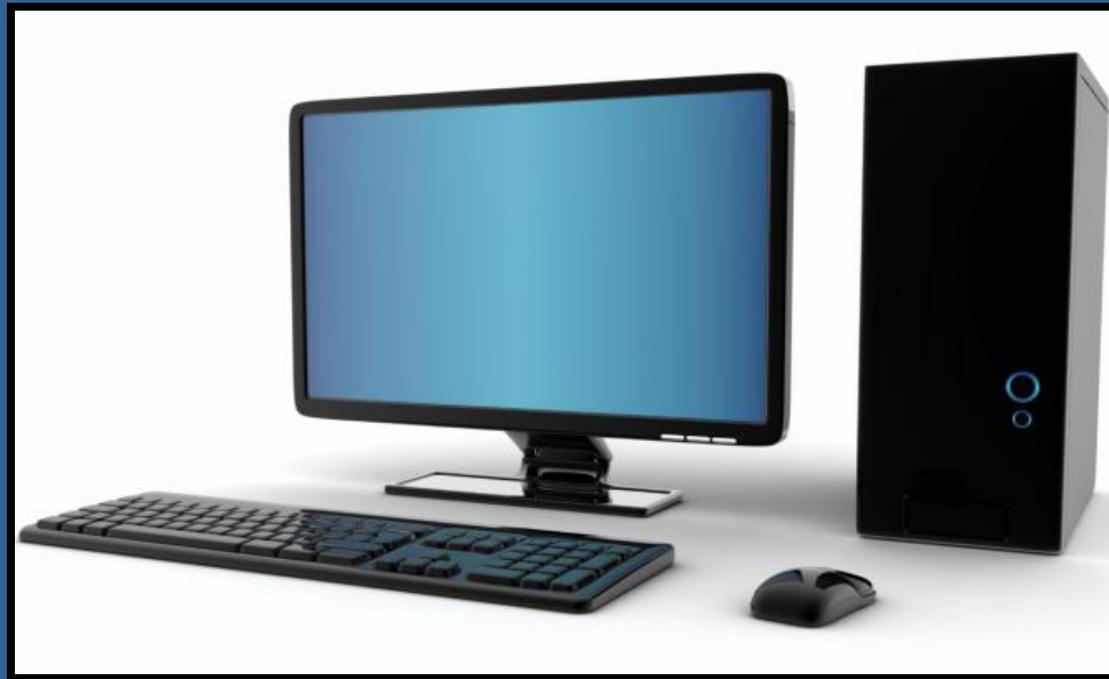


an all-in-one...



.. and a thin client?

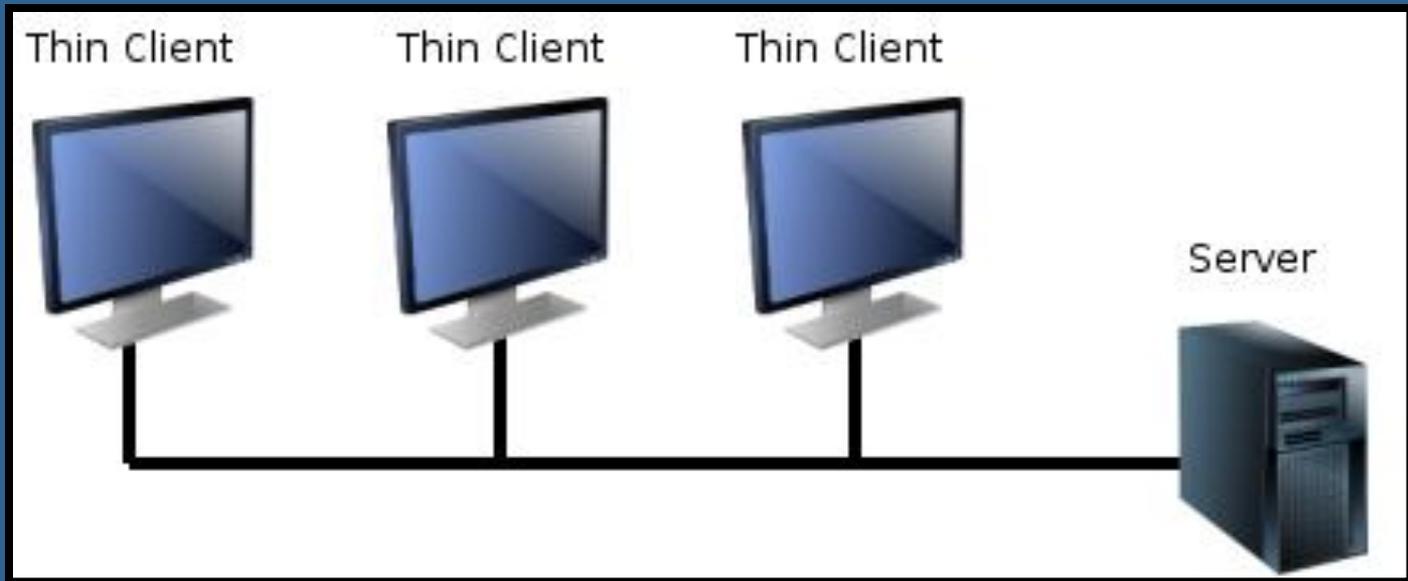
Standard PC



All-in-one



Thin client

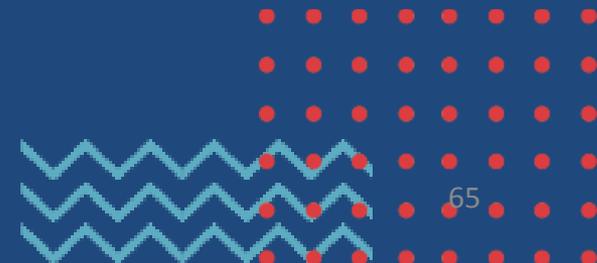


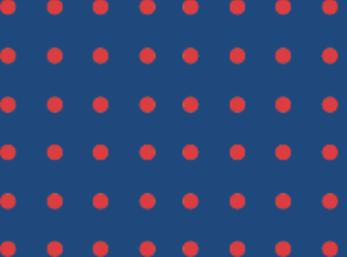
Quiz Time!



Lunch Time

See you @ 1:15pm!

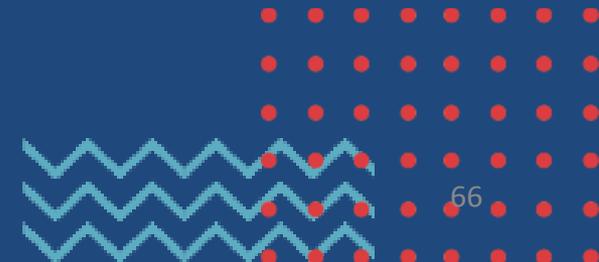




Section 1 Continued: Computer Hardware

Outline

- Basic computer hardware maintenance
- How to evaluate hardware or software before purchasing



Hand-out Time!



Cleaning Your Computer

Basic computer hardware maintenance



Cleaning:

- computers, general tips
- keyboards and mice
- monitors
- the PC exterior
- connections and ports



Cleaning computers, general tips

Useful tools:

- Compressed (“canned”) air
- Soft cloth lightly dampened with water or rubbing alcohol
- Cotton or foam swabs

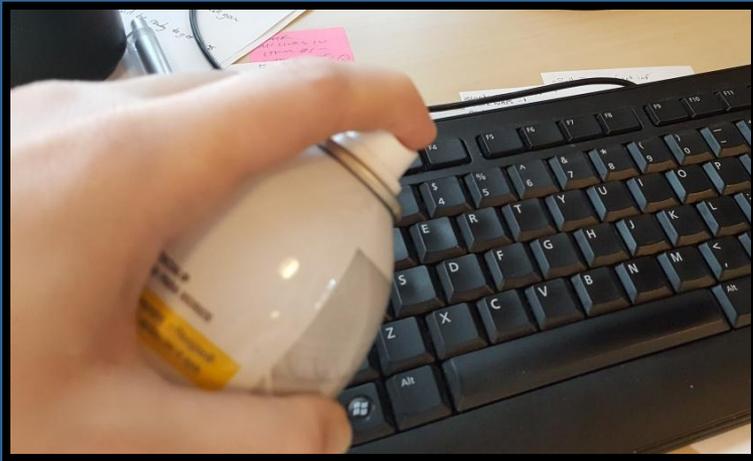
Avoid:

- Vacuum cleaners (static danger)
- Oils and solvents
- Excessive moisture
- Touching any internal parts (risk of static charge)



Cleaning keyboards and mice

Always the first step: **unplug** and/or **turn off** keyboard and mouse



Keyboards

- Inspect for loose keys, then turn upside down and shake gently
- Use compressed air
- Wipe the keys surface with moist cloth or sanitizing wipe.

Mice

- Use same procedures and tools as keyboards, but avoiding “cleanser” residue on track balls or optical sensors.

Cleaning LCD/LED monitors

Always the first step: **unplug** and/or **turn off** keyboard and mouse



- **Do not** spray anything directly onto monitor.
- Use **dry** and **lint-free soft cloth** or disposable duster to remove dust
- Use **gentle cleansers**
- Use cloth dampened with **rubbing alcohol** to remove difficult or oily spots

Cleaning Outside the Computer

Always the first step: **unplug** and/or **turn off** keyboard and mouse



- Clean the plastic housing with a lightly damp lint-free cloth or pre-moistened wipe
- Crevices and vents can be blown clean with compressed air.

Cleaning Connections and Ports

Always the first step: **unplug** and/or **turn off** keyboard and mouse



- DeOxit is one product that can be used to clean dirty or poorly functioning ports.
- Useful for headphone jacks or USB plugs.

Hand-out Time!



Purchasing Evaluation Guide

Considerations When Purchasing Technology

Hitting the virtual-reality sweet spot
By: Dan Ackerman / Reviewed: April 18, 2016

Autoplay: ON

\$1,984.00
MSRP: \$1,999.99

Lenovo IdeaCentre Y900
(Part #: 90DD000SUS)
1 Related Model

Amazon.com	\$1,984.00
Adorama	\$1,999.99

See all prices >

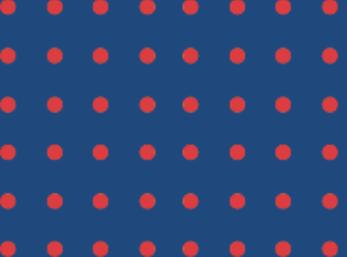
COMPARE THESE

★★★★☆
CNET EDITORS' RATING

★★★★★
1 USER REVIEW

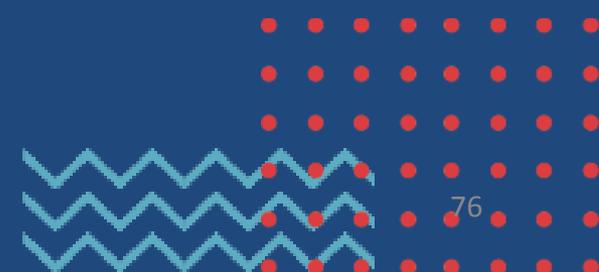
THE GOOD / The Lenovo Y900 includes the right processor/graphics card combo for virtual reality, offers easy access to its spacious interior and includes a premium keyboard and mouse.

- Model numbers mean a lot, even if they are similar
- Use a diversity of review sources
- Evaluate the authority of the review source



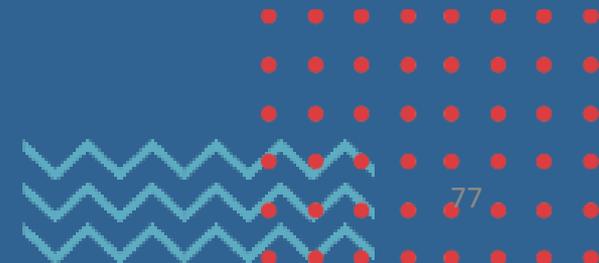
Section II Outline

- Basics of BIOS security (i.e., settings and passwords)
- Operating system
- Device drivers
- Installing new or connecting to printers
- Updating your operating system, printer drivers, etc.
- Important security software
- Public access computer systems and system restoration software
- Backup and restoration basics
- Take-Home Checklist
- Recap, farewell and final questions
- Final quiz



Section 2:

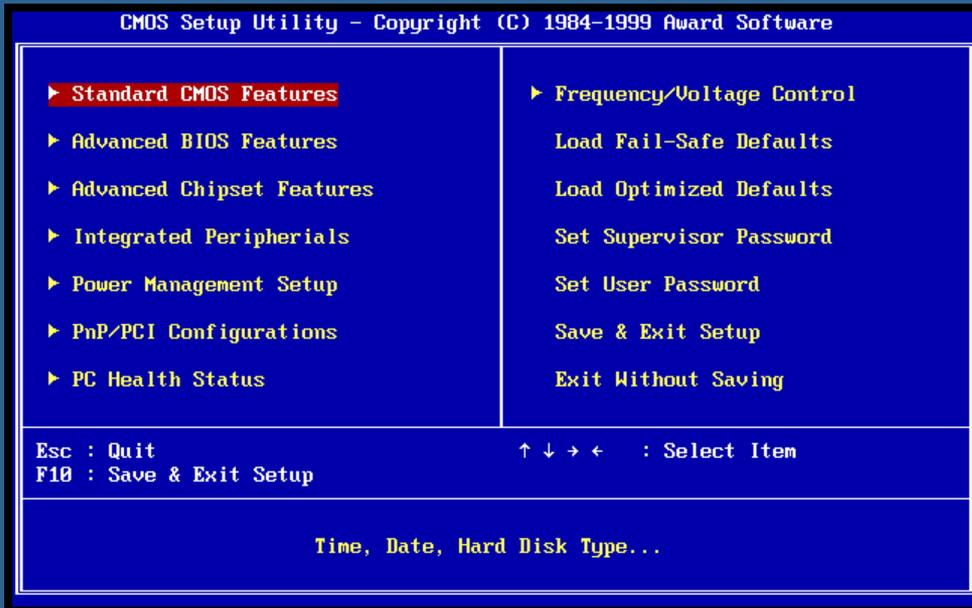
Software & Security



Teens React to Windows 95



BIOS



BIOS =
Basic Input Output System

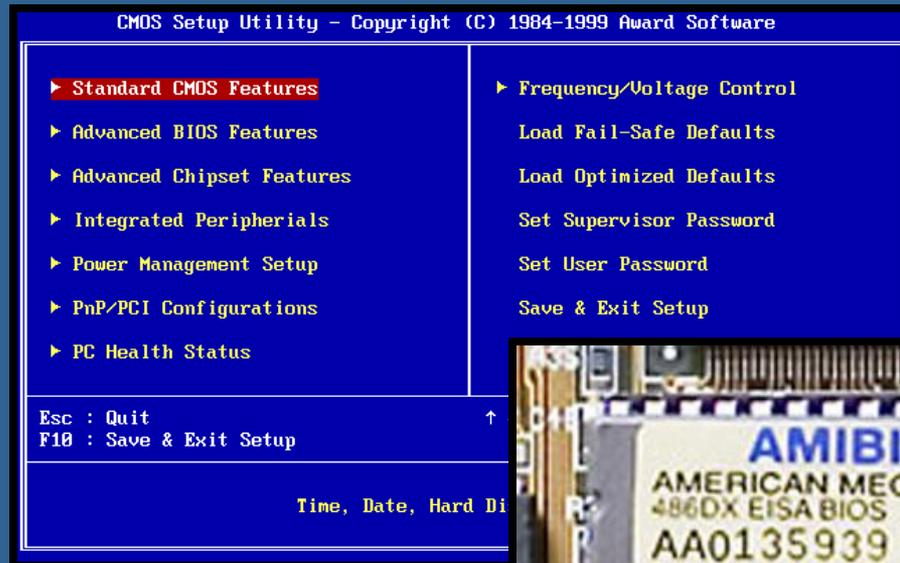
- First thing you see when you boot a computer
- Shows your computer how to operate
- It is a chip, a system manager, and a data flow manager

BIOS

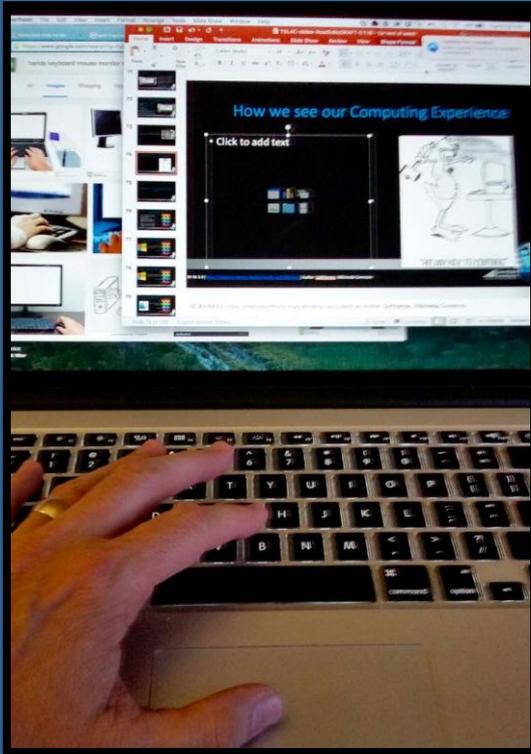


- Can be a **backdoor** into your computer
- On your public machines it should be password protected
- Two passwords:
 - BIOS access on boot-up
 - Change BIOS settings
- BIOS has firmware that has the capability to be updated (special process)
- Take care with other BIOS settings – it's possible to accidentally scramble things!

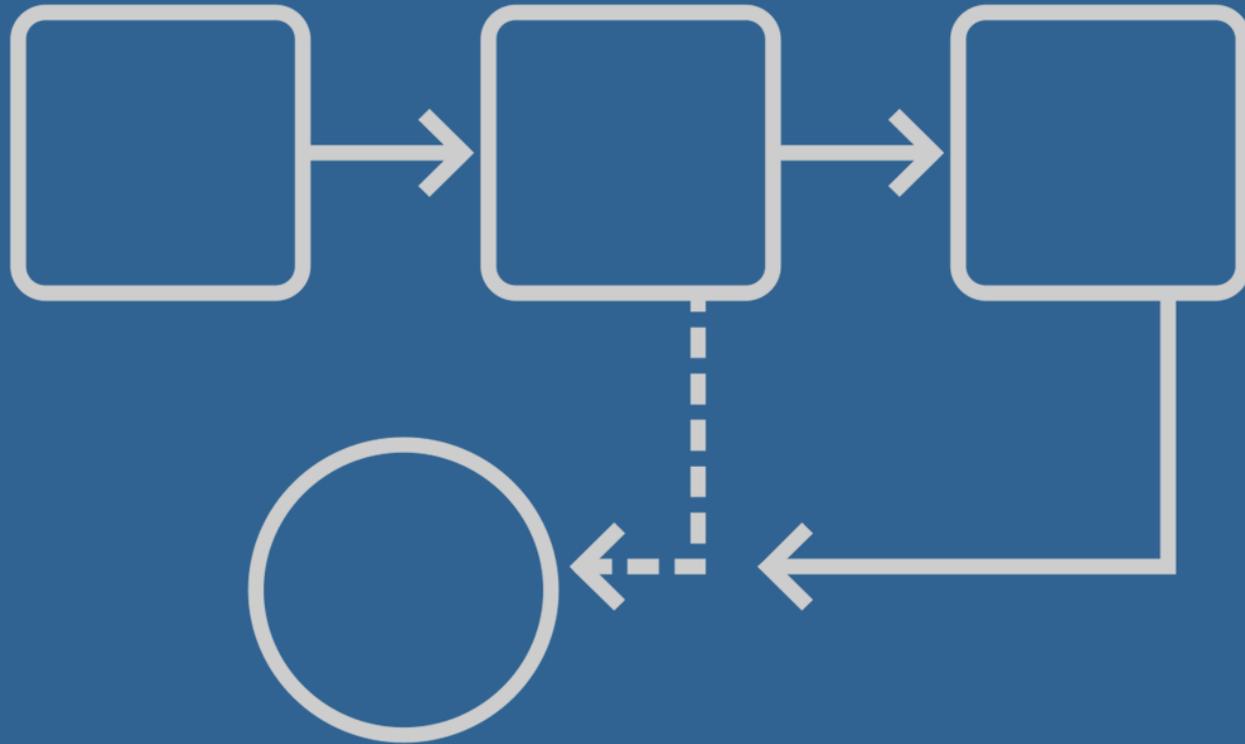
Let's Explore the BIOS together



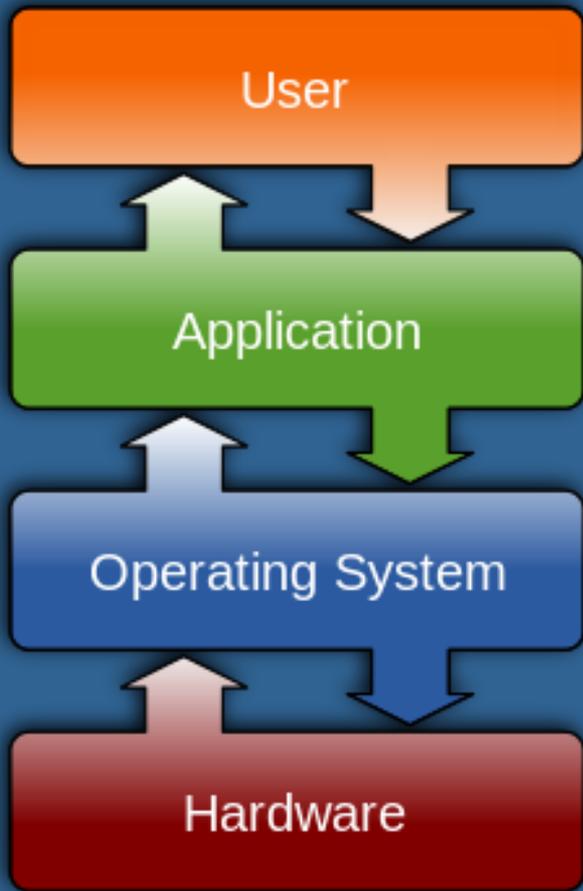
How We See Our Computing Experience



The Computer's Perspective

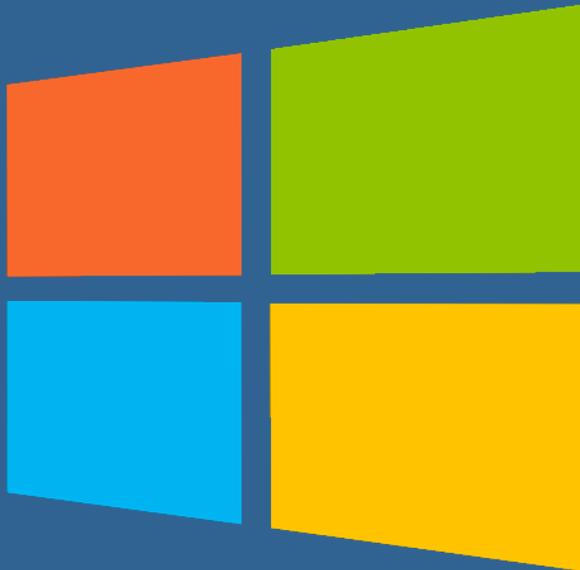


Operating System



- The computer program that manages all the other programs in a computer.
- The other programs are called *applications* or “apps.”
- The application programs make use of the operating system by making requests for services through a defined **application program interface (API)**.
- In addition, users can interact directly with the operating system through a user interface such as a command language or a **graphical user interface (GUI)**.

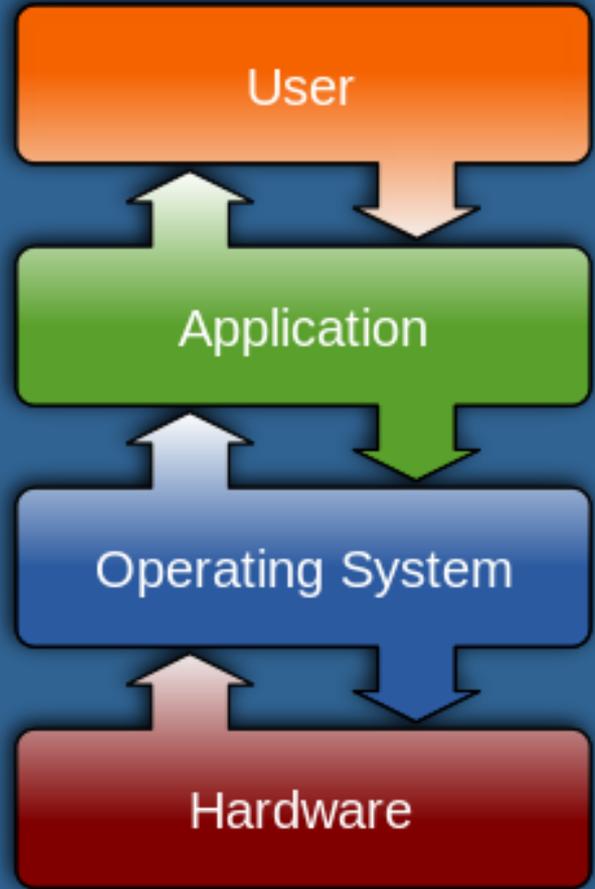
Operating System



Microsoft Word,
Google Chrome,
Norton Internet
Security, etc

Windows 7 or 10

You



PC



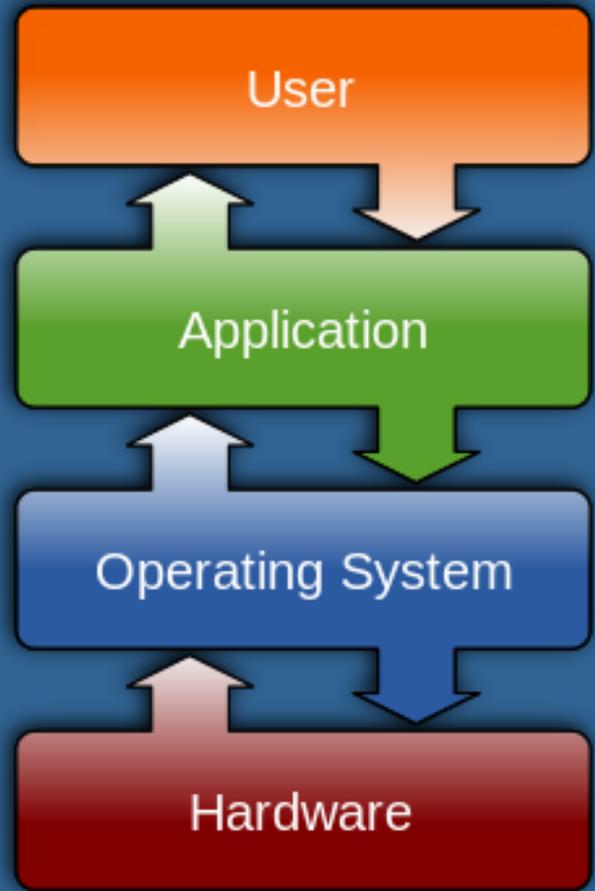
Operating System



Microsoft Word,
Google Chrome,
etc

Mac OSX

iMac

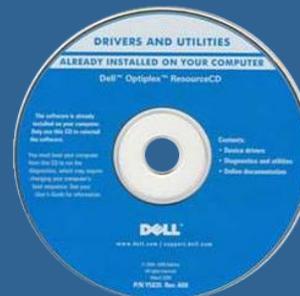


Device drivers



- A device driver is a **program** that controls a device attached to your computer.
- Printers, monitors, CD-ROM readers, etc all contain drivers to **communicate** with your computer's operating system.
- Many **operating systems** have device drivers **pre-installed!**

CD-ROMs are an obsolete way to get drivers, but sometimes the only choice!



Device drivers

FIRE SALE!



That's right, if we don't sell a bunch of our BASIC SOFTWARE VOLUME 1 albums quick, we'll get fired! Included are lots 'n' lots of your favorite Basic programs such as LUNAR LANDER and BLASTOFF!, plus new ones like MAILING LIST, FOURIER FIT and AMPLE ANNIE. Plays through your *Tarbell*, *Kansas City* or *Altair* cassette interface (we coded all three ways). Or make cassette copies. Only 6 bucks. Don't be a dummy, order today! Satisfaction guaranteed or money back.

\$6 to: **SOFTWARE RECORDS**
PO BOX 8401-B
UNIVERSAL CITY, CA 91508

(CALIFORNIA RESIDENTS: PLEASE ADD 6% SALES TAX)

This is a very obsolete way to download software!

Evaluating Software Before Purchase

Key Questions:

- What do you need to **accomplish**?
 - Is there a **standard** or a “**standard**?” If yes – use it!
 - Is it unique or special?
 - What about **open source software**?
 - Do vendors offer **discounts**?
- For example: TechSoup, governmental & educational





Evaluating software discussion

Types of software:

- ILS
- Operating Systems
- Web Browsers
- Word Processors
- Others?

1. What do you need to accomplish?
2. Is there a standard or a “standard?” If yes – use it!
3. Is it unique or special?
4. What about open source software?
5. Do vendors offer discounts?

Why Are Updates Necessary?

- Security
- Bug fixes
- Performance improvements
- Strategic considerations from the software vendor
- New business models from the software vendor
- Updates are mostly good, though sometimes controversial



Update models – a shift

Old

Pay to upgrade each operating system



New

Free OS upgrade

Software purchased once and stuck with that version



Annual subscription or stand-alone w/ periodic updates

Anti-virus/anti-malware had user-managed fee to stay current



Subscription enables most current virus definitions



Will It Ever End?

It's not your imagination: software updates are a consistent part of our computing life...



Alvin Toffler on Change

“The illiterate of the 21st Century will not be those who cannot read or write, but those who cannot **learn, unlearn, and relearn.**”



Alvin & Heidi Toffler
authors of *Future Shock* (1970)

Yoda on Change

“You must **unlearn** what you have **learned**.”



Yoda

Updates and Installations



- Most computers - including Windows PCs, Macs, mobile devices and more – require updates.
- This includes updates to both software and firmware.
- The Internet is the distribution platform for most updates and assumes/requires robust connectivity.

Hand-out Time!



Updates and installations

Hand-out Time!



Installing & connecting printers

Setting Up a Network Printer!



Let's explore the process of setting up a network printer!

Let's Reassemble Our Computers



Break time!



Computer Security

101



Malware



Malware started as an amusement or a nuisance...



... and evolved into a business!

Basic PC Security



Demo:

- A look at your basic settings:
Control Panel > System & Security
- A look at Symantec

Anti-virus/Anti-malware options



Security is best applied in layers



...like a haystack!

Security is best applied in layers



Each strand does something
to protect

Our haystack covers:



Workstations are secured by:

- BIOS password
- User accounts
- Anti-virus/anti-malware
- Hidden partition (deep freeze)
- Backups and restoration



Network router are secured by:

- Firewall
- NAT

Managing Library PCs



Managing Public PCs

Things to consider:

- Access
- Functionality
- Scalability
- Security
- Ease of management

Considerations for **staff PCs** are the same, but generally need **fewer security layers**

Patron Print Management

What does it do?

- Enables **queuing** of print jobs from **multiple computers** to one printer

How does it work?

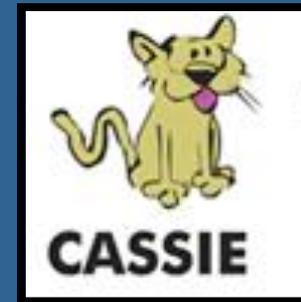
- Software **integrates** with computer **network** and **payment system**
- Release from queue can be managed by **staff manually** or by **automatic payment**



Patron Time Management

What does it do?

- Creates a **queue** for users waiting to reserve a computer
- Ensures that only **registered users** (e.g. library card holders) may log in to computers
- Manages the **time** a user may spend on a computer



How does it do it?

- Users can make **reservations** from a designated reservation **station** or from their **own devices**.

Management via Virtualization

AKA Thin Client

What does it do?

- Provides a “Virtual Desktop” via a server—a secure way to provide an individual computing experience while avoiding issues with malware, etc. from content downloaded on a hard drive, etc

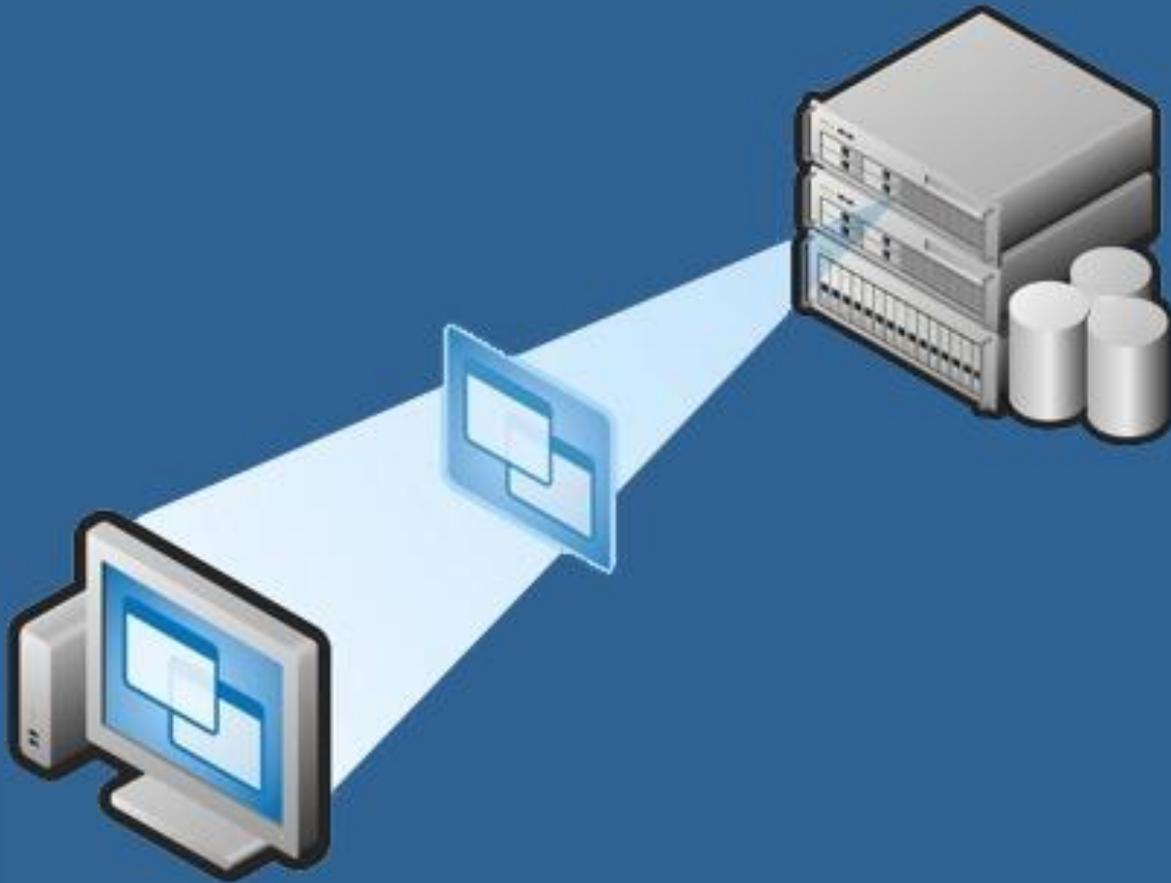


How does it do it?

- Provides a “Virtual Desktop” via a server—each terminal is a very bare-bones machine running a projected image from the server

Management via Virtualization

AKA Thin Client



Important Security Software



Symantec Security Suite (and others)

What does it do?

- Prevents, detects and removes malicious software
- Provides other services (including a firewall and backups)

How does it do it?

- Background Scanning
- Full System Scans
- Virus Definitions
- Automatic or manual updates



Deep Freeze & Clean Slate

What does it do?

- Preserves the desired configuration of a computer and protects against unwanted changes to those settings



How does it do it?

- Captures a snapshot of a computer's "desired" configuration
- Upon rebooting, any changes made to this configuration are reset



I've set up my security —
am I safe now?

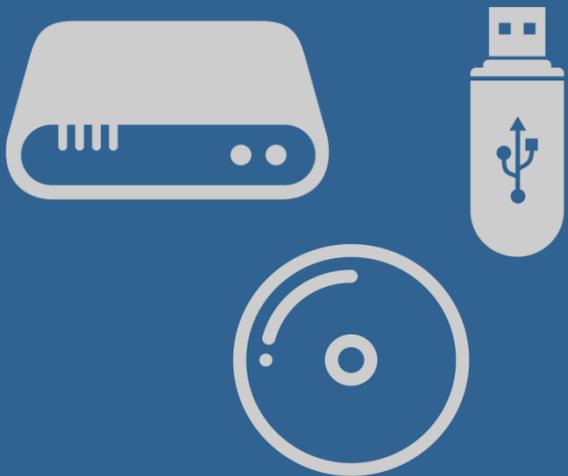


What is a backup?

Simply, it's a **copy** of your **data**!

It can be on a variety of **media**:

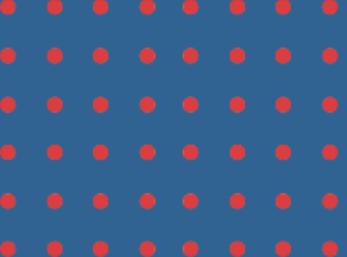
- External hard drive
- Thumb drive
- CD-R or DVD-R



It can be in a variety of **places**:

- Your computer
- Your network
- The internet (cloud)





The Rule of 3-2-1 or “Rule of 3”

- Always have 3 digital copies of anything you really care about
- Use 2 types of backup media
- At least 1 Copy should be stored offsite

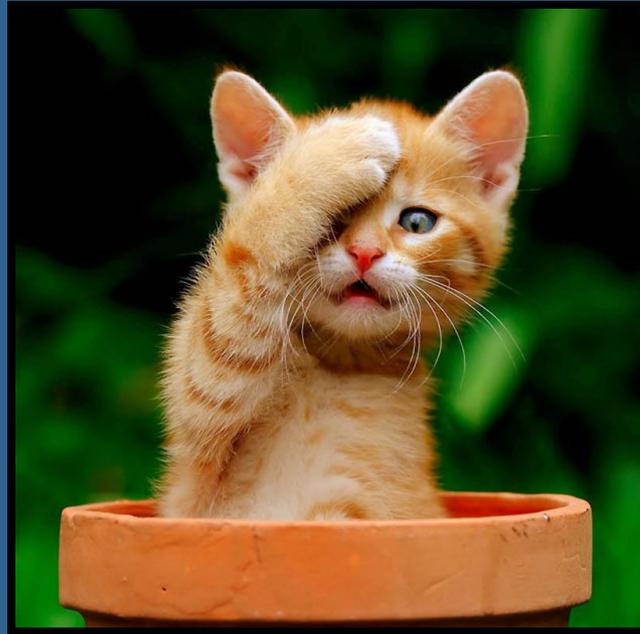


Handout & Activity 3-2-1

Let's sketch
some scenarios
together to see
if they follow the
3-2-1 rule!

- Always have 3 digital copies of anything you really care about
- Use 2 types of backup media
 - Hard Drive
 - Tape
- At least 1 Copy should be stored offsite
- Do NOT rely on CD-R or DVD-R
- At least 1 Copy should be stored offsite

Test recovery of your backups



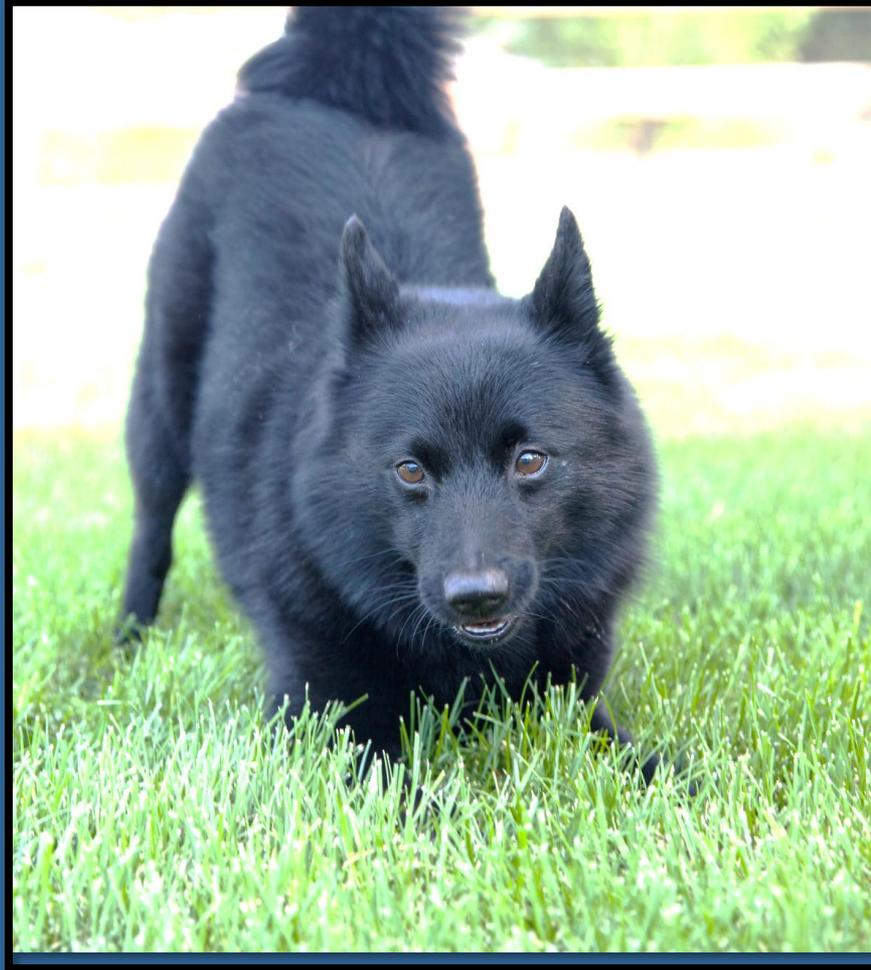
This is something even the professionals
forget to do sometimes...

Hand-out Time!



Take-home checklist

The tail end



Quiz Time!



This workshop is made possible by a grant from the Institute of Museum and Library Services to the Texas State Library and Archives Commission under the provisions of the Library Services and Technology Act. (2015)



INSTITUTE *of*
Museum and Library
SERVICES

Program credits

- Carson Block for content



- Monica Grimm-Berg and TSLAC for graphics and assembly of learning materials

These materials and more at:

<https://www.tsl.texas.gov/youcandoit>



Hardware/Software Glossary

Antivirus Software	Computer software used to prevent, detect and remove malicious software
Audio Jacks	A socket for connecting audio equipment to a receiver or computer.
BIOS	Basic Input Output System (BIOS) is the term used to describe an important chip on the computer's motherboard, which contains a firmware program that governs the startup of all other components (including hardware such as the drives, keyboard, and monitor) and software (including the operating system). The BIOS prepares the computer to run the operating system and other software when the computer "boots up." The BIOS can also play a role in computer security. Most BIOS software versions have the option to password-protect the boot process, which means that you must enter a password before any BIOS activity can take place. With the BIOS performing virtually all of its functions during startup, this effectively password-protects the operation of the whole computer. However, resetting a lost BIOS password can be time-consuming and involve working on some of the computer's most sensitive components.
"Bloatware"	Unwanted software, often pre-installed on new computers or devices from the manufacturer. Sometimes "bloatware" uses excessive memory or other resources, slowing down the computer or device's performance.
Bluetooth	A telecom standard for computers and mobile devices sharing information wirelessly across short distances.
Broadband	Broadband is the word used to, generally speaking, describe high-speed telecommunications and, more specifically, high-speed internet. Operating at, responsive to, or comprising a wide band of frequencies <a broadband radio antenna> ; of, relating to, or being a high-speed communications network and especially one in which a frequency range is divided into multiple independent channels for simultaneous transmission of signals (as voice, data, or video)
Category 5 Cable	Cat 5 is a twisted pair cable for carrying signals. This type of cable is used in structured cabling for computer networks such as Ethernet. The cable standard provides performance of up to 100 MHz and is suitable for 10BASE-T, 100BASE-TX (Fast Ethernet), and 1000BASE-T (Gigabit Ethernet). Cat 5 is also used to carry other signals such as telephony and video.
Category 5e Cable	The category 5e specification improves upon the category 5 specification by tightening some crosstalk specifications and introducing new crosstalk specifications that were not present in the original category 5 specification. The bandwidth of category 5 and 5e is the same – 100 MHz. The differences between category 5 and

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	category 5e are in their transmission performance. Category 5e components are most suitable for a high-speed Gigabit Ethernet. While category 5 components may function to some degree in a Gigabit Ethernet, they perform below standard during high-data transfer scenarios.
Category 6 Cable	A standardized cable for Gigabit Ethernet and other network physical layers that is backward compatible with the Category 5/5e and Category 3 cable standards. Compared with Cat 5 and Cat 5e, Cat 6 features more stringent specifications for crosstalk and system noise. The cable standard provides performance of up to 250 MHz and is suitable for 10BASE-T, 100BASE-TX (Fast Ethernet), 1000BASE-T/1000BASE-TX (Gigabit Ethernet) and 10GBASE-T (10-Gigabit Ethernet).[
Desktop Computer	A computer intended to be stationary that is generally plugged into an external power source (wall outlet). The traditional or “Stand-Alone” desktop consists of a “tower,” which is the computer and all its internal components, connected to a monitor, keyboard, mouse and other peripherals. An “All-in-One” computer generally has the computer’s internal components integrated into a single unit with the monitor, although the keyboard and mouse remain peripheral.
Device Driver	In computing, a device driver (commonly referred to as a driver) is a computer program that operates or controls a particular type of device that is attached to a computer. A driver provides a software interface to hardware devices, enabling operating systems and other computer programs to access hardware functions without needing to know precise details of the hardware being used. (Wikipedia)
Display	A monitor or screen on a computer or mobile device.
DVI Port	D igital V ideo Interface connectors are used to deliver high-quality video signal. The technology uses TMDS (Transition Minimized Differential Signaling) to send digital information from a computer to a digital display, such as a flat-panel LCD monitor.
Endpoint	Anything that attached to the network, including PC, laptop, tablet, phone, iPod, etc.
Ethernet	A computer network architecture consisting of various specified local-area network protocols, devices, and connection methods
Ethernet Port	An Ethernet port is an opening on computer network equipment that Ethernet cables plug into. Ethernet ports accept cables with RJ-45 connectors
Firmware	Permanent software programmed into a read-only memory
Hard drive	A high-capacity, self-contained storage device containing a read-write mechanism plus one or more hard disks, inside a sealed unit.
Hardware	Physical components of a computer or computing device.
HDMI	HDMI stands for High Definition Multimedia Interface. This technology carries the same video information as DVI but adds the capacity for digital audio and control signals as well.
Heat Sink	A device for absorbing or dissipating excessive or unwanted heat inside a computer.
IEC Connector	A desktop computer’s power cord. The IEC 320 C13/C14 connectors are based on standards created by the International Electrotechnical Commission, an international

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	standards body. The C13 line socket is very common in the PC and A/V industry. The mating connector for the C13 socket is the C14 plug, which is often mounted into a recessed panel.
Internet Service Provider (ISP)	An organization that provides services for accessing, using, or participating in the Internet. Internet service providers may be organized in various forms, such as commercial, community-owned, non-profit, or otherwise privately owned.
Laptop Computer	A laptop computer is intended to be portable, and generally includes a rechargeable battery as an internal power source. All of the computer's internal components are integrated with a monitor, keyboard and touch pad (in lieu of a mouse).
Local Area Network (LAN)	A local area network (LAN) is a computer network that interconnects computers within a limited area such as a home, school, computer laboratory, or office building, using network media.
Motherboard	A printed circuit board containing the principal components of a computer or other device, with connectors into which other circuit boards can be slotted.
Operating System	An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs. The operating system is a component of the system software in a computer system. Application programs usually require an operating system to function. (Wikipedia)
Optical Drive	A disk drive that uses laser light or electromagnetic waves within or near the visible light spectrum as part of the process of reading or writing data to or from optical discs.
Parallel Port	A connector for a device that sends or receives several bits of data simultaneously by using more than one wire.
Processor or CPU	The part of a computer in which operations are controlled and executed.
PS/2 Port	Old school 6-pin port (replaced by USB for almost everything) but still exists in some areas. Used to connect keyboards and mice
RAM	R andom A ccess M emory, a type of computer memory that can be accessed randomly; that is, any byte of memory can be accessed without touching the preceding bytes. RAM is the most common type of memory found in computers and other devices, such as printers.
Router	A networking device that forwards data packets between computer networks. A router is connected to two or more data lines from different networks.
Software	A set of instructions for a computer to perform specific operations, written in a specific code that is read as part of the computer's function.
USB	Universal Serial Bus (What's a bus? In technology, a "bus" —derived from Latin omnibus "all-encompassing"—is a communication system that transfers data between components inside a computer, between computers, or between a hardware component (printer, external drive, etc.) and a computer. USB was created

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	by a forum of staff from major technology companies in the early 1990s to replace older connections such as serial ports. Unlike its predecessors, USB provides both data transfer and power—eliminating the need for individual device power supplies for some peripheral devices.
VGA Port	A Video Graphics Array (VGA) connector has 15-pins arranged in three rows. It is found on many video cards, computer monitors, and high definition television sets. On laptop computers or other small devices, a mini-VGA port is sometimes used in place of the full-sized VGA connector.
Video Card	Also “graphics card;” a printed circuit board controlling output to a display screen.
WiFi 802.11x	802.11 and 802.11x refers to a family of specifications developed by the IEEE for wireless LAN (WLAN) technology. 802.11 specifies an over-the-air interface between a wireless client and a base station or between two wireless clients. The IEEE accepted the specification in 1997. WiFi uses tiny radios to send and receive information.
WiFi Card	A wireless adapter inside of a computer enabling wireless internet access.
Wireless Access Point (AP)	is a device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. The AP usually connects to a router (via a wired network) as a standalone device, but it can also be an integral component of the router itself.

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Morning Hardware/Software Quiz

Your Name and Library: _____

Show us what you've learned so far!

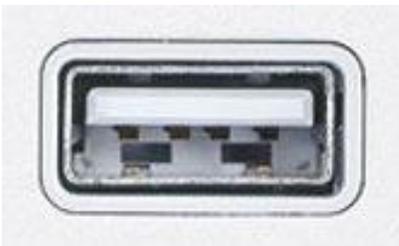
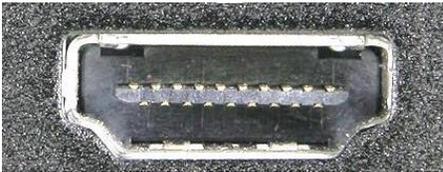
1. What does VGA stand for?
 - a. Vulcan Geometry Academy
 - b. Video Graphics Array
 - c. V'Ger: a mysterious and immensely powerful alien cloud approaching Earth, destroying everything in its path.
 - d. A Scottish record label
2. Of the following, which cable would you use to connect your computer to hard-wired (not Wi-Fi) internet?
 - a. USB cable
 - b. HDMI cable
 - c. Ethernet cable
 - d. VGA cable
3. What is a main difference between USB and USB-C?
 - a. USB-C uses a fancy-looking cable and USB uses a plain-looking cable
 - b. One can carry power and the other cannot
 - c. USB-C is a strategy to converge physical ports
 - d. No difference



You Can Do I.T. / Morning Hardware/Software Quiz

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4. Matching (please draw a line between each port and its corresponding cable)



5. Remember our “Inside, Outside, Upside Down” slides? What computer parts do you typically see **Inside** a computer?

- a. CPU and RAM
- b. Printer and scanner
- c. Monitor and mouse
- d. HDMI and USB ports

6. What are the possible ways to **physically** connect a computer to a monitor (circle all that apply)?

You Can Do I.T. / Morning Hardware/Software Quiz

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- a. VGA connector and cable
 - b. DVI connector and cable
 - c. HDMI connector and cable
 - d. Bluetooth wireless
7. Which question below is **not** necessary to ask when first considering the purchase of a new computer?
- a. What is the purpose of the computer?
 - b. What software applications do I plan to run?
 - c. How many watts does the power supply provide?
 - d. How long do I plan to use/own this computer?
8. What is an all-in-one computer?
- a. Typically, a large-screen computer that contains all of the computer components in a space not too much bigger than the screen itself.
 - b. The only computer you will ever need to buy. Ever!
 - c. A computer that includes a smartphone, a smart watch, and a smart pen.
 - d. A computer that can do anything.
9. What is the main difference between parts & components of a standard desktop computer (not an all-in-one computer) and a laptop computer?
- a. Desktop computers have unusually and comically enormously-sized components.
 - b. Desktop computers are designed to be heavier and larger to help act as doorstops when they are no longer suitable for computing duties.
 - c. Laptop computers are designed to provide warmth to your lap and hands during cold winter months.
 - d. Laptop computers have smaller components – and they are tending to get smaller over time.
10. When it comes to wireless technologies, which statement below is false?
- a. Bluetooth is named for the blue beam that it emits on user's teeth to perform its functions.
 - b. Bluetooth and Wi-Fi are different wireless technologies.
 - c. Bluetooth is often used to connect keyboards, mice and speakers wirelessly.
 - d. Wi-Fi is used to connect a computer or laptop to the network.



You Can Do I.T. / Morning Hardware/Software Quiz

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Technology Purchase - Evaluation Guide

It pays to do your research before making a purchase. A little online research should yield a wealth of information about the product in which you're interested. Here are a few tips for researching product reviews:

- Model numbers mean *a lot* even if they are similar—be sure the review you're reading corresponds to the correct product
- Use a diversity of review sources—don't look to a single site or review before purchasing, read a few different pages, and skim through user-comments in addition to formal reviews.
- Use your best powers of discernment (does the review source have a dog in the fight?)

A few popular review sources:

- <http://www.tomsguide.com/>
- <http://www.engadget.com/reviews/>
- <http://www.pcmag.com/reviews>
- <http://www.cnet.com/reviews/>
- <http://www.digitaltrends.com/product-reviews/>
- <http://www.pcadvisor.co.uk/review/pcs/>
- <http://www.techradar.com/us/reviews/pc-mac/pc-mac-desktops>

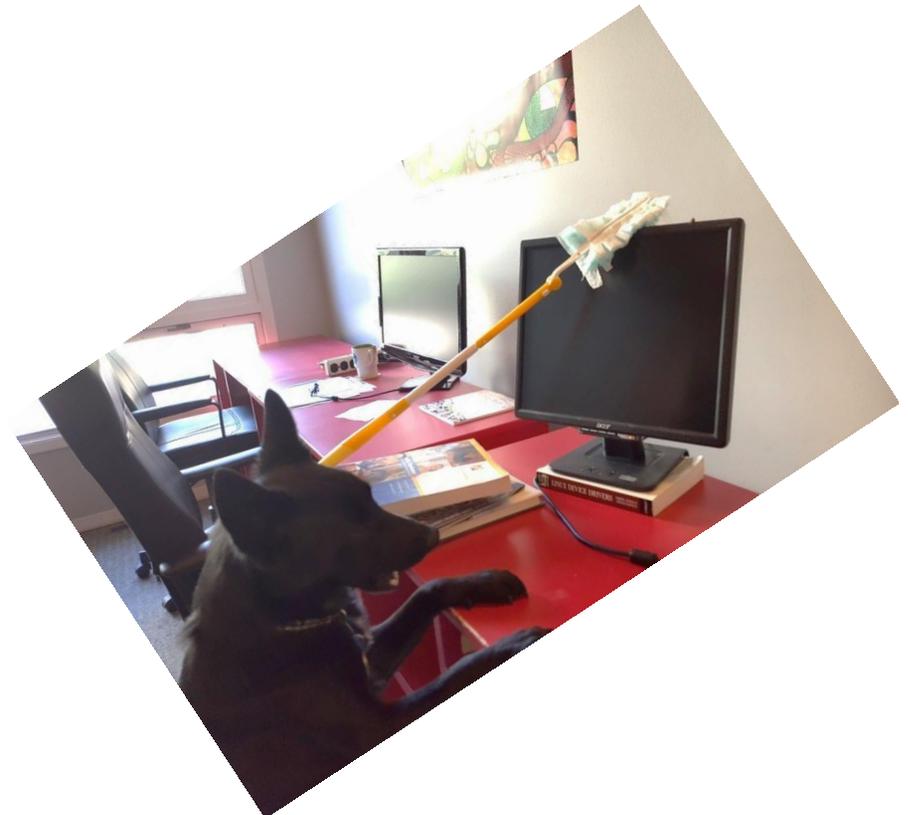
Additional resources for making purchase decisions:

- <http://www.techsoup.org/hardware> (this is a great place to start when making any purchase decisions)
- Not a review site, but useful as an example list of criteria for tech-purchases at a university:
<https://it.ouhsc.edu/forms/productreview.asp>

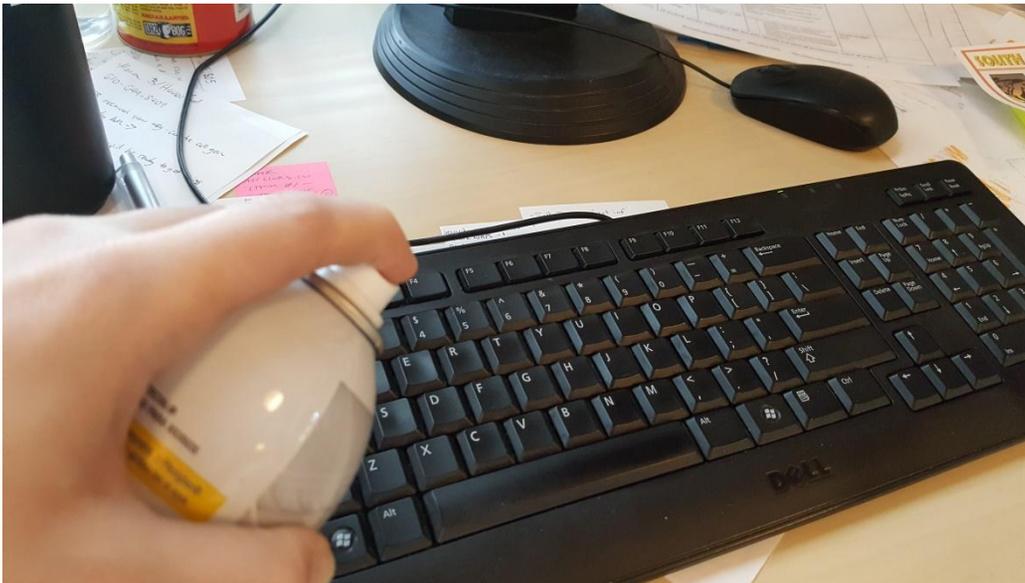
Cleaning Your Computer

The following link is a wonderful, in-depth resource for specific cleaning procedures, and includes a simple quiz to help you determine how frequently you should clean your computers: <http://www.computerhope.com/cleaning.htm>

- **What should I use to clean a computer?** Here are a few suggestions:
 - Compressed (“canned”) air
 - Soft cloth lightly dampened with water or rubbing alcohol
 - Cotton or foam swabs
- **What should I avoid** when cleaning a computer?
 - Solvents and oils—these can damage the plastics
 - Applying liquid directly to any computer component
 - Static—a cloth with a buildup of static, a vacuum cleaner plugged into the wall, or a metal tool could all cause damage to the computer
 - Touching internal components such as the motherboard with any cleaning tool.
 - Putting a dog in charge of any cleaning procedures.



Keyboard and Mouse



- Begin by turning your computer off and unplugging the keyboard and mouse (or simply by turning them off and removing any batteries if they are wireless)
- First check the keyboard for any loose keys. If there are none, the keyboard can be turned upside down and gently shaken over a waste bin to remove some large dirt and dust particles, food crumbs, etc.
- Use compressed air to blow remaining dust and dirt out from under the keys.
- Gently wipe the keyboard with a cloth moistened* with water or rubbing alcohol (*do not use anything that will drip excess moisture onto the keyboard, which could cause permanent damage). You can also use certain disinfecting wipes, such as those branded specifically for keyboard cleaning, or Lysol or Clorox brand wipes (again, as long as the wipes do not drip moisture).
- Mice can be cleaned with a cloth or wipes as well, but do not wipe the trac-ball or optical sensor (on the underside of the mouse) as disinfectant may damage these components.

Monitors

- Why? Dirt, dust, and fingerprints can cause the computer screen to be difficult to read.
- Procedure: Unlike a CRT computer monitor, the LCD or LED monitor is not glass and requires special cleaning procedures.
- DO NOT Spray any cleaners or water directly onto a flat-screen monitor
- Use a dry and lint-free, soft cloth (cotton or microfiber) or a disposable duster (such as Swiffer brand) to remove dust
- If the screen is spotted or soiled, it can be gently wiped with a cloth lightly moistened with rubbing alcohol.
- CRT monitors (glass screens) can be easily scratched, so similar rules for using a clean, lint-free cloth apply, however CRT monitors can be wiped with glass cleaner if needed.



Outside of the Computer



- The plastic housing of the PC components can be cleaned with a slightly damp lint-free cloth or pre-moistened wipe.
- Crevices and vents can be blown clean with canned air, vacuumed with a battery-operate vacuum, or wiped clean with cotton swabs

Inside of the Computer

- This is the no-touching zone! Any static charge could do permanent damage to the motherboard or chips, so when cleaning it is best to use compressed air to blow away dust.



Connections and Ports

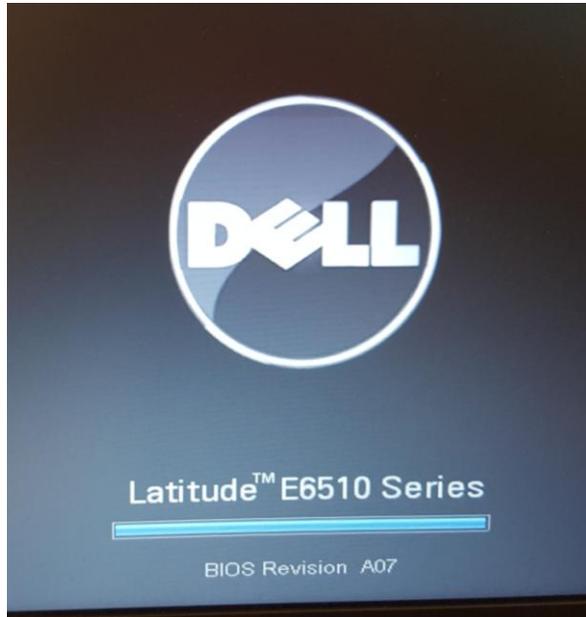
- A specific product called DeOxIT is available for multiple applications if you are having issues with the connections and ports looking dirty or not functioning well. The company website details the use of specific products for specific applications, but in a library setting the most useful product for applications such as cleaning dirty headphone jacks and plugs or USB ports. More information is available here:

<http://store.caig.com/>

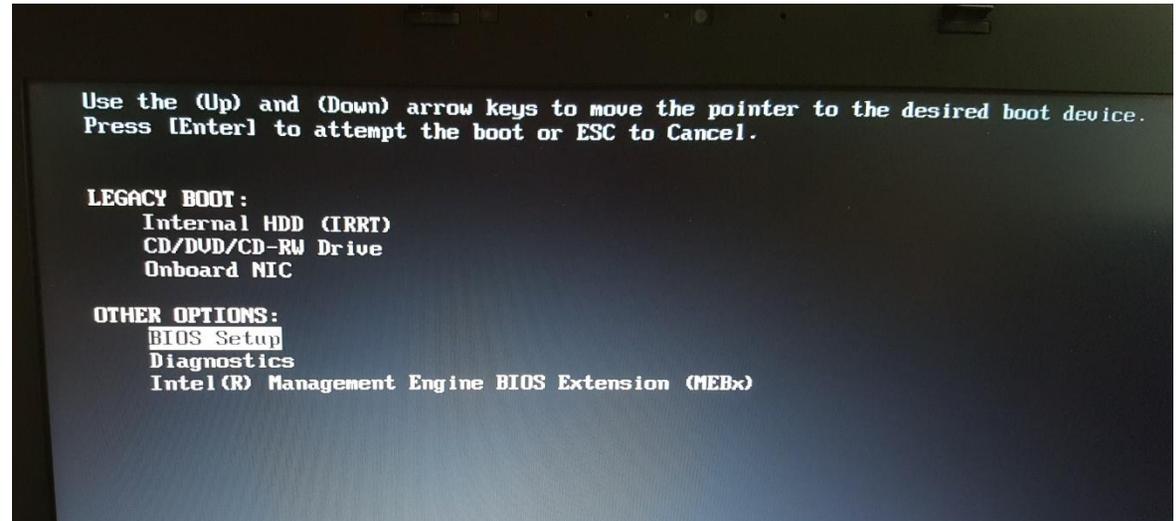


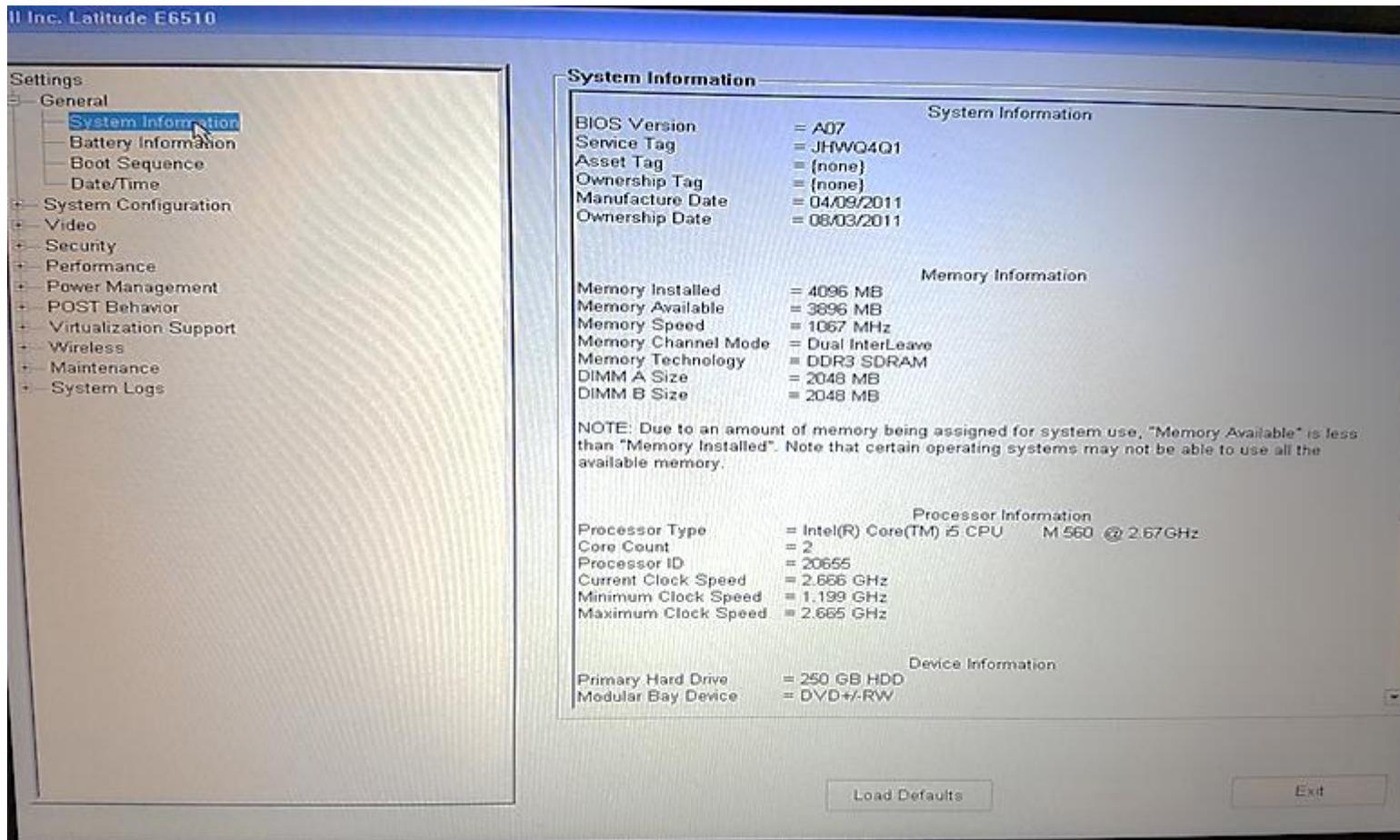
BIOS Basics

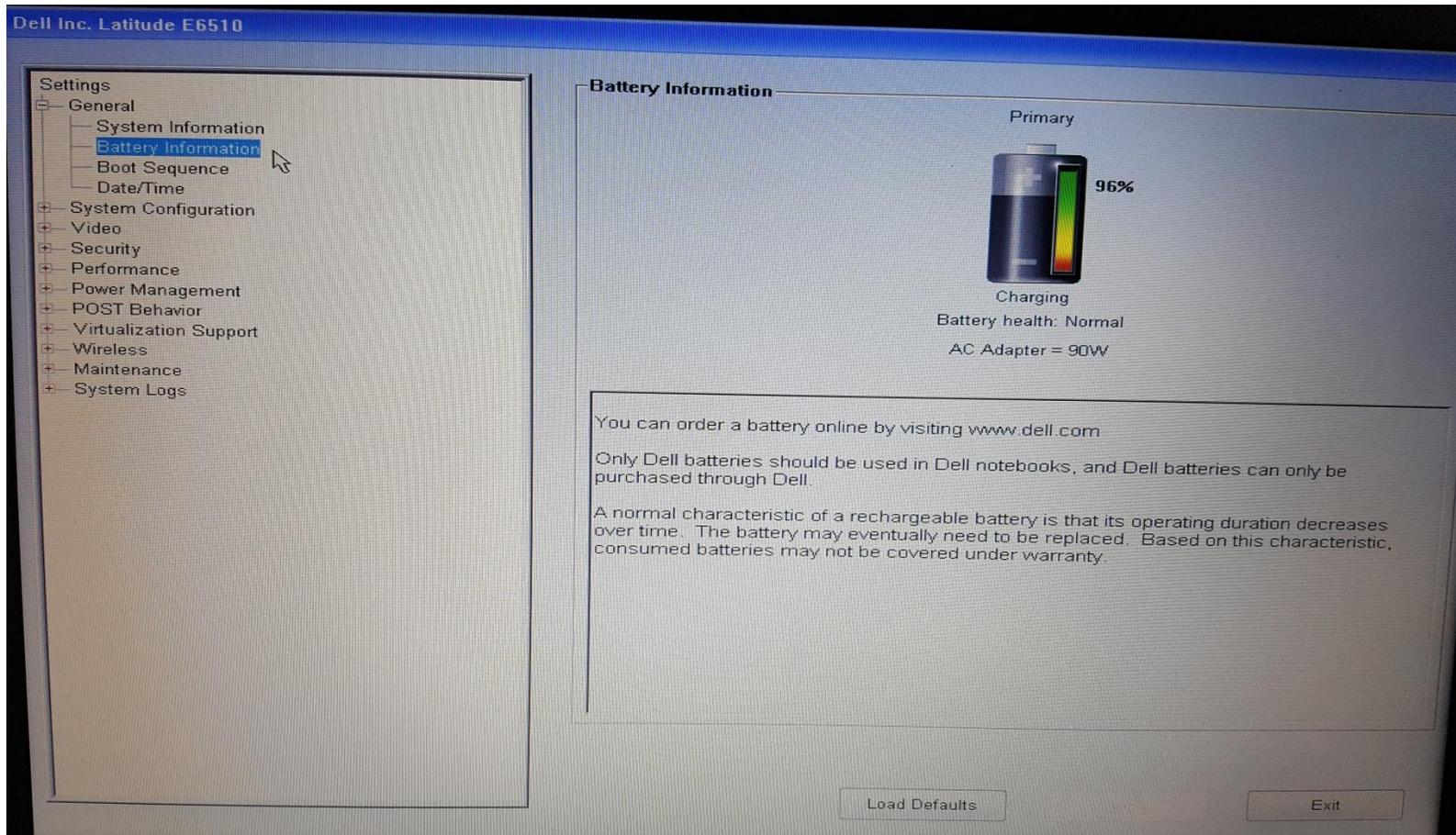
1. Upon booting, press the F12 key

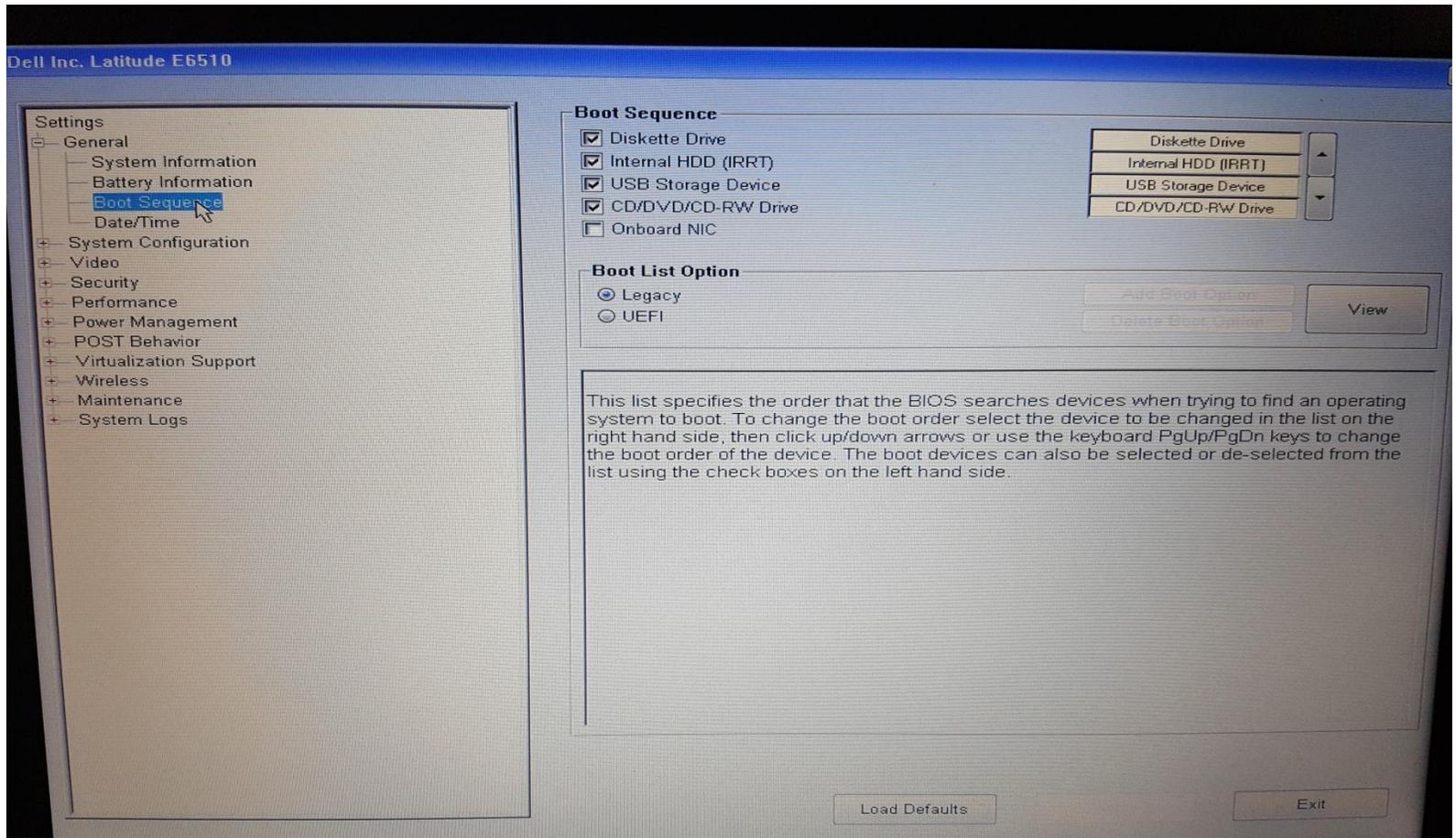


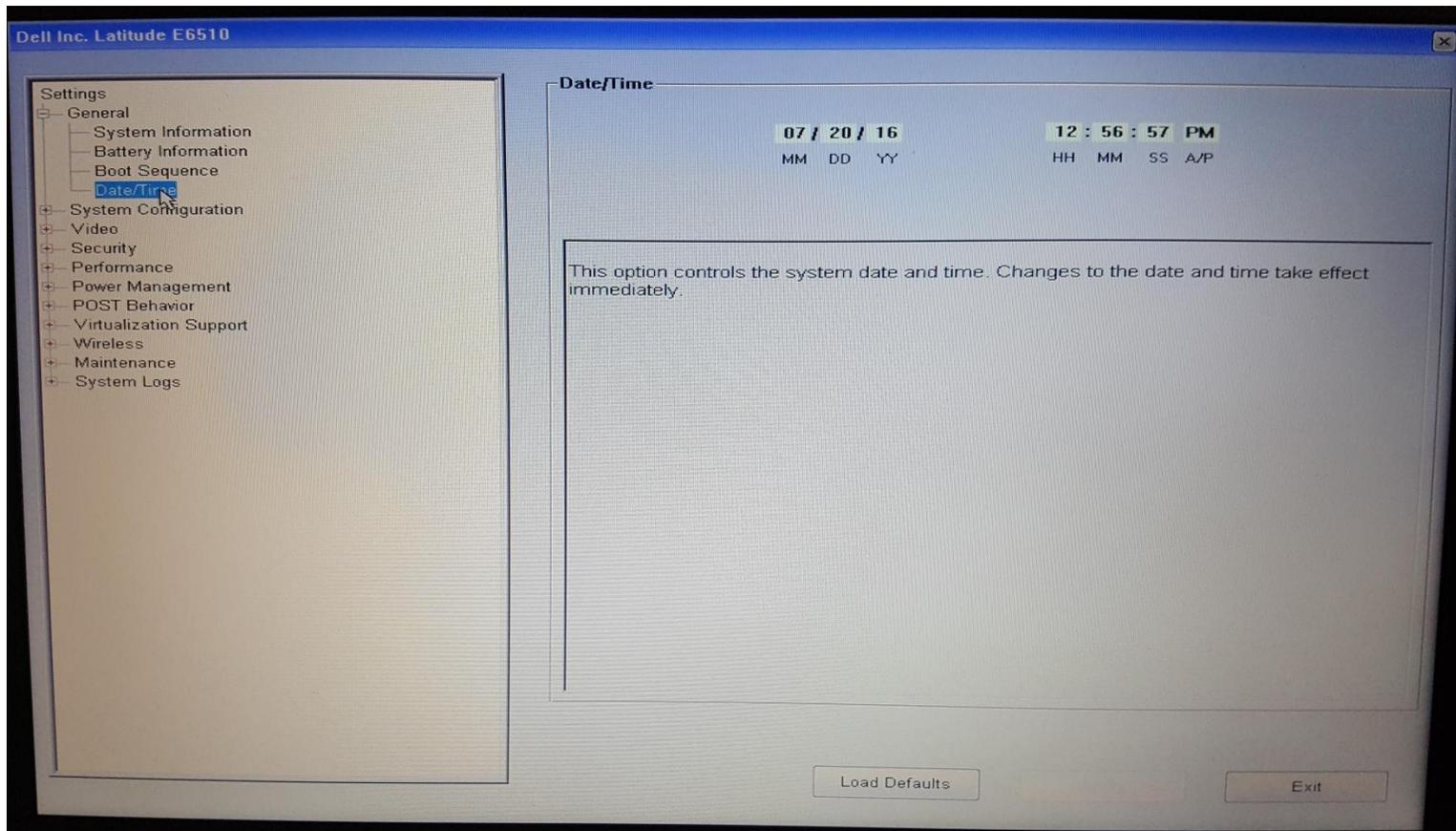
2. The following screen will appear. Use the arrow keys to select "BIOS Setup"





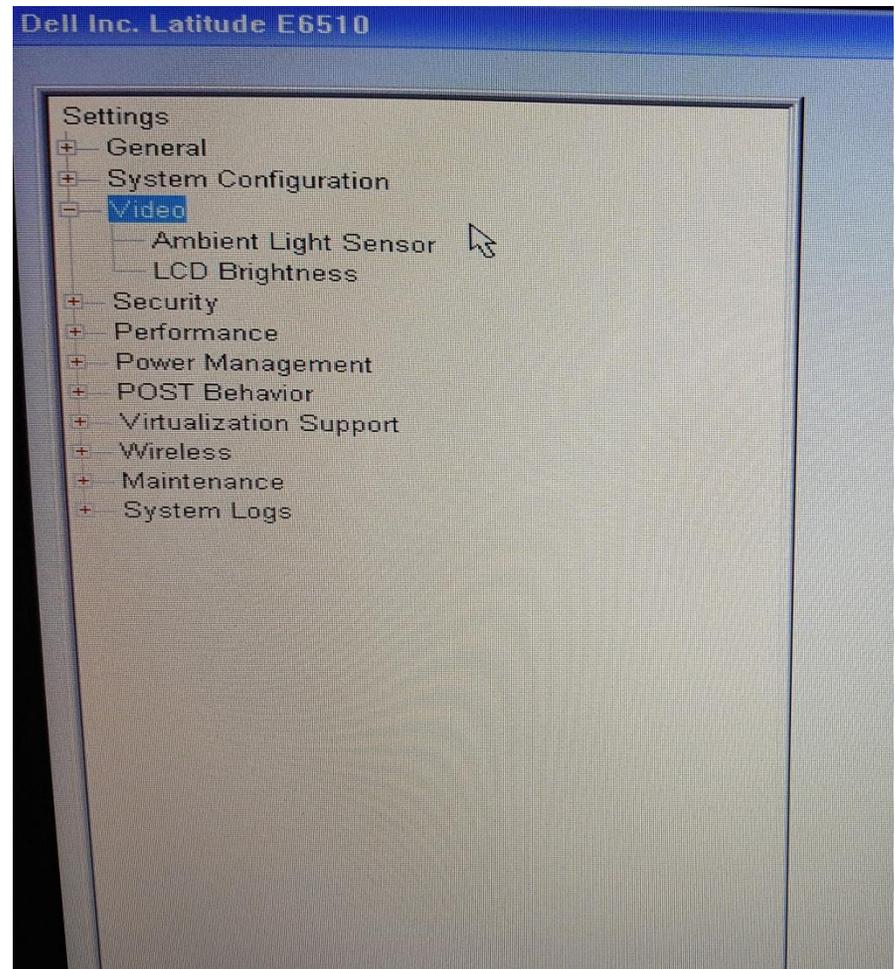
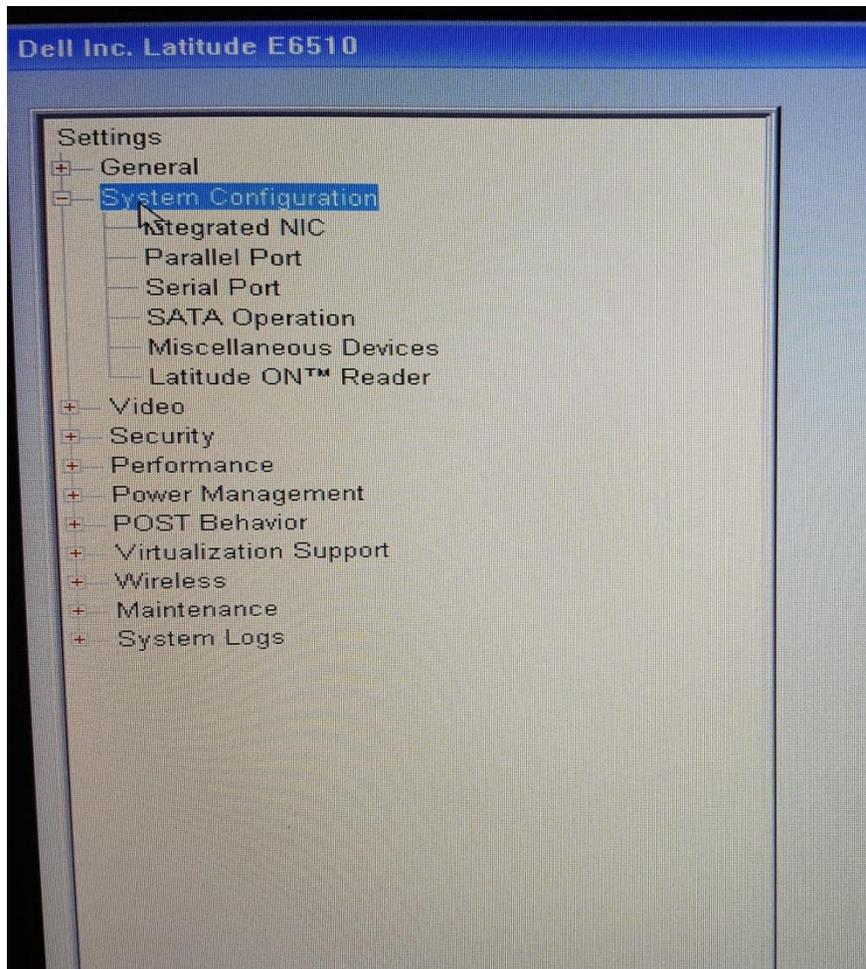


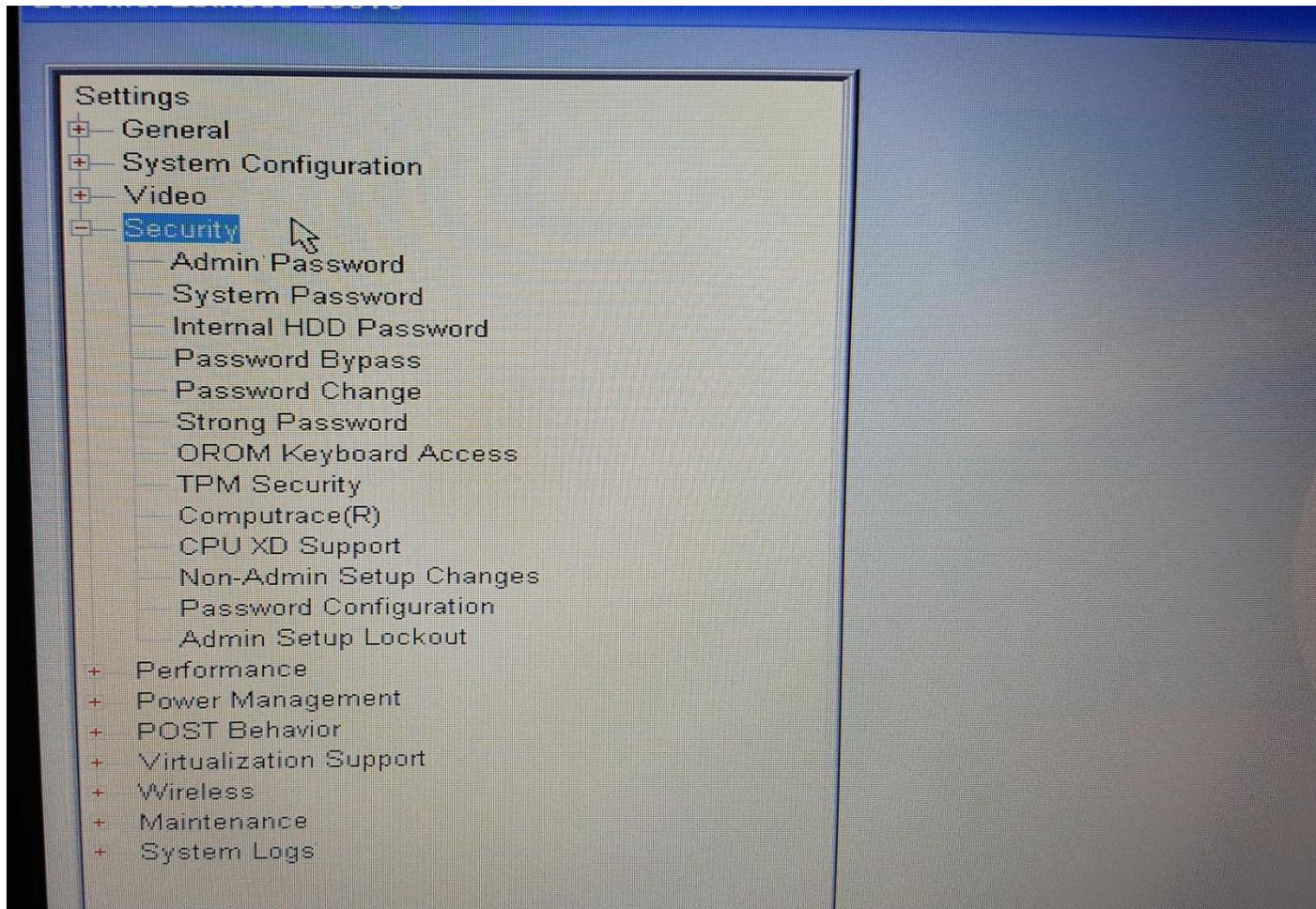




You Can Do I.T. / BIOS Basics

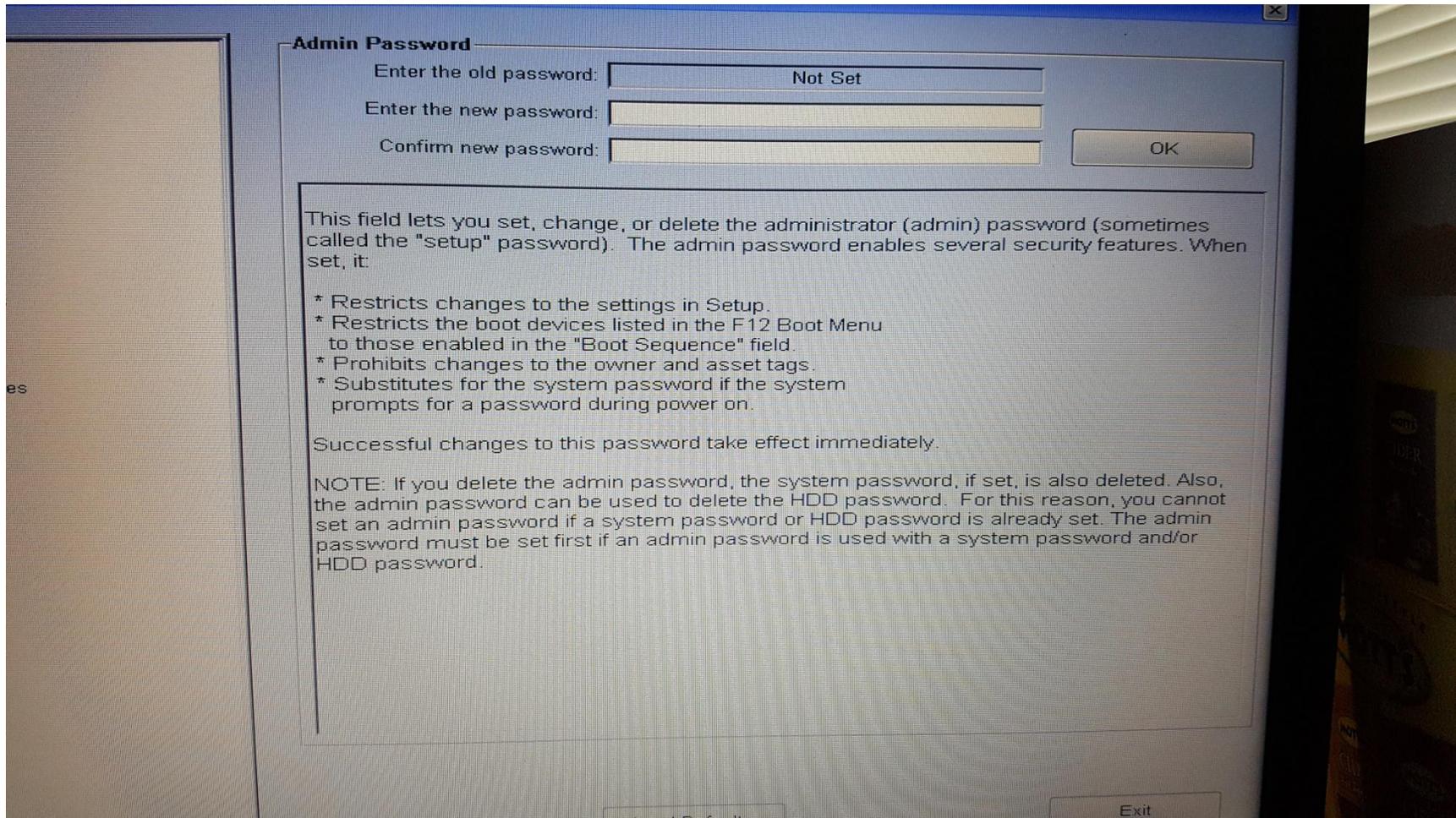
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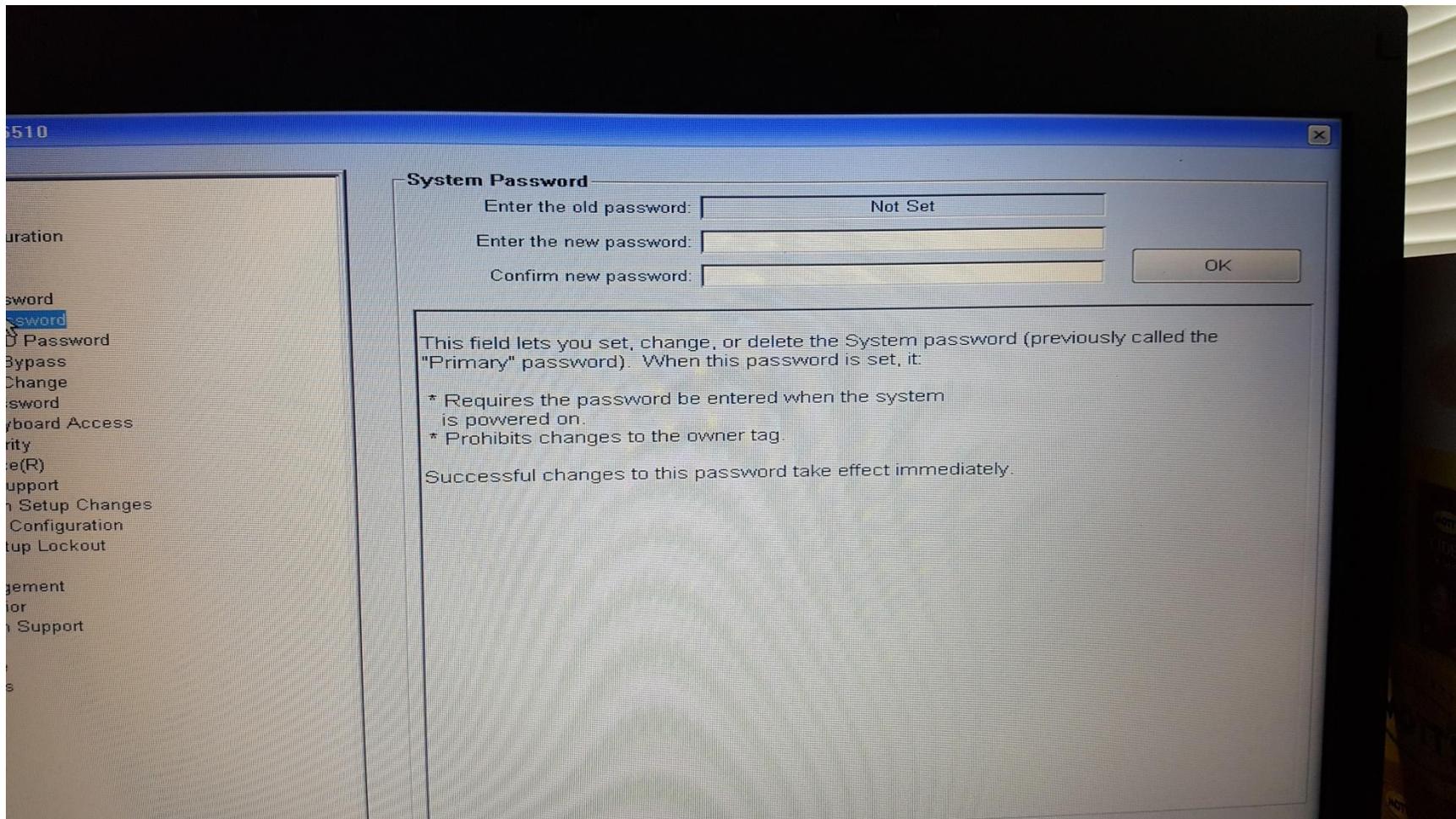




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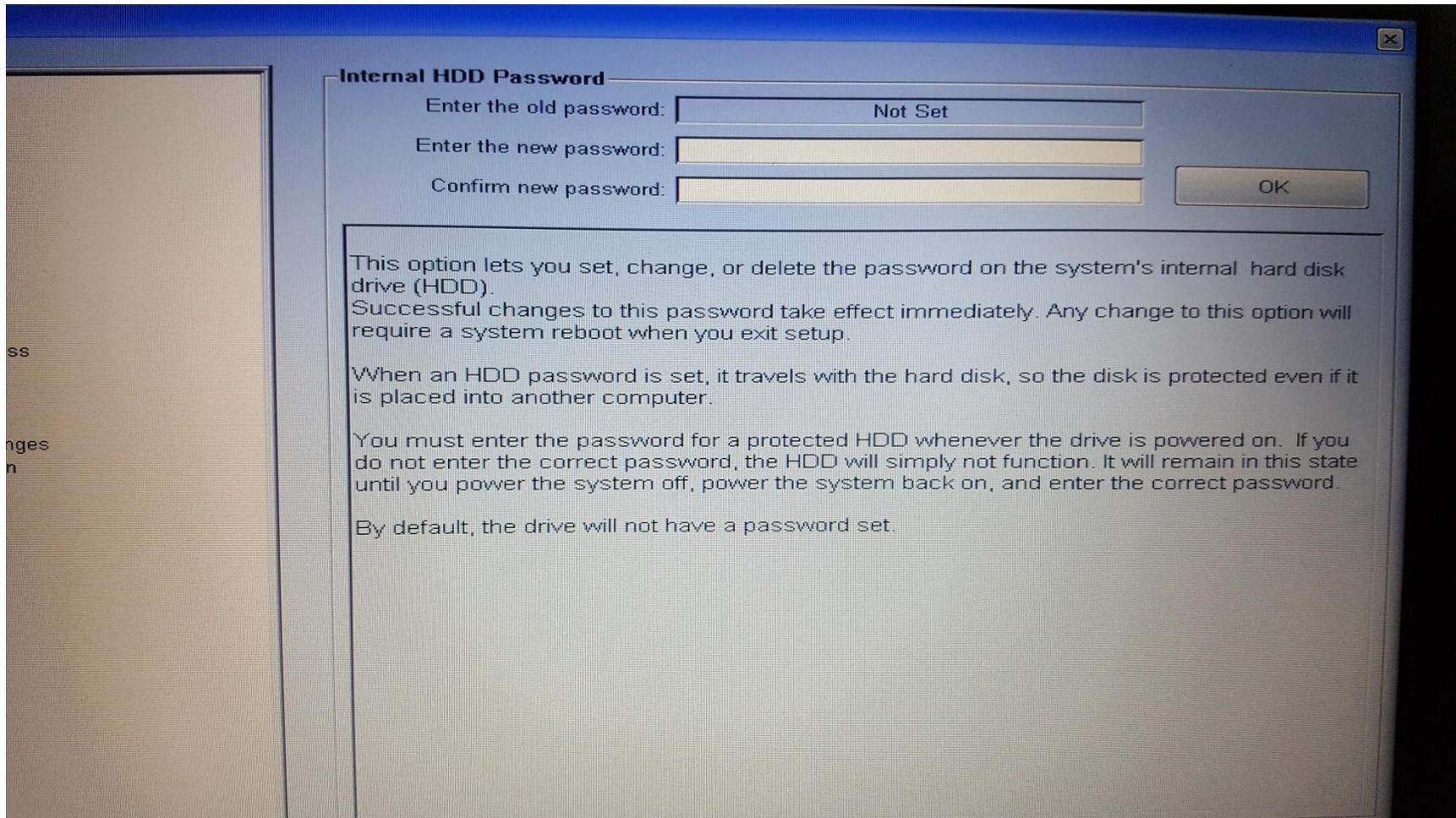
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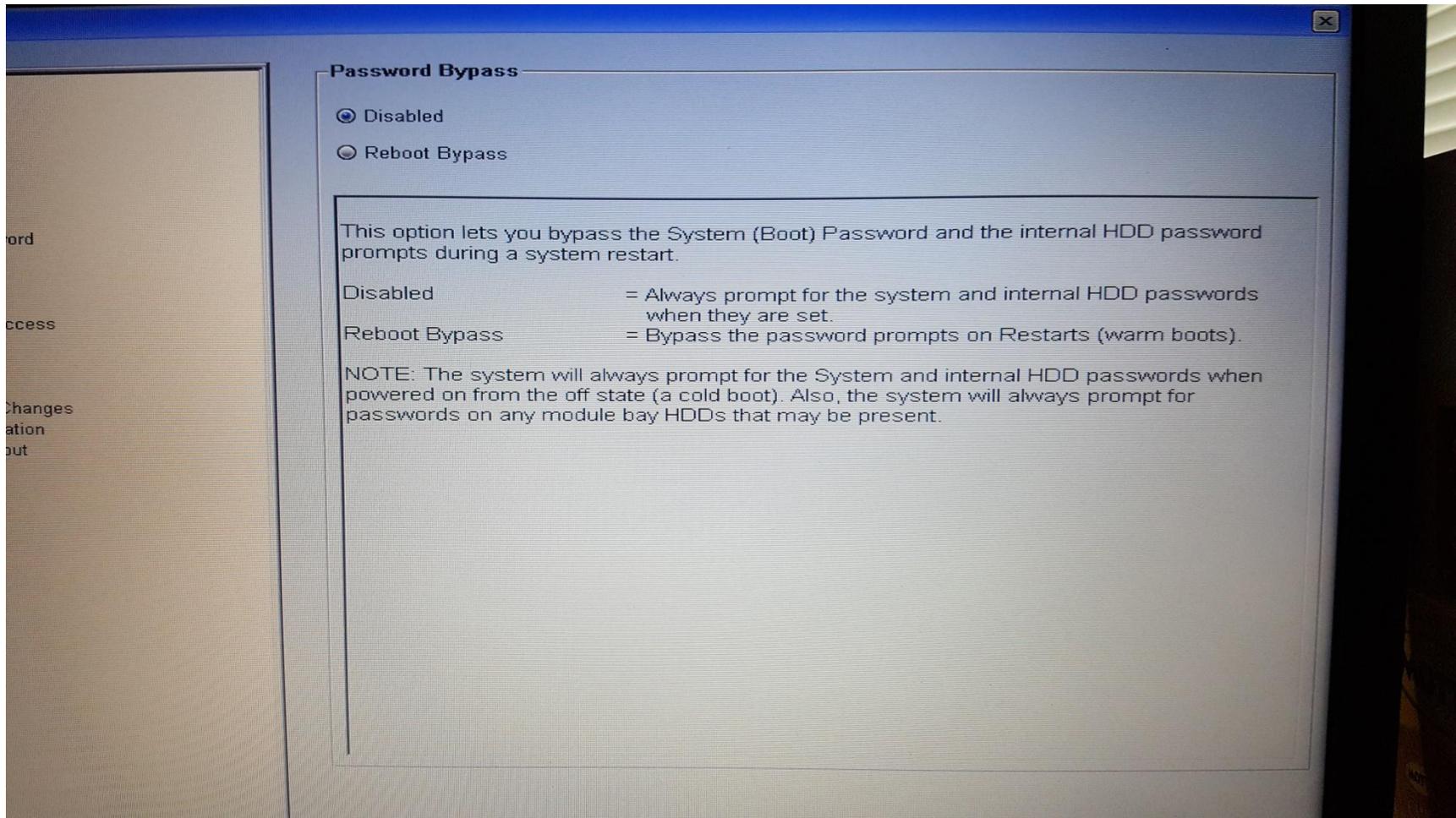
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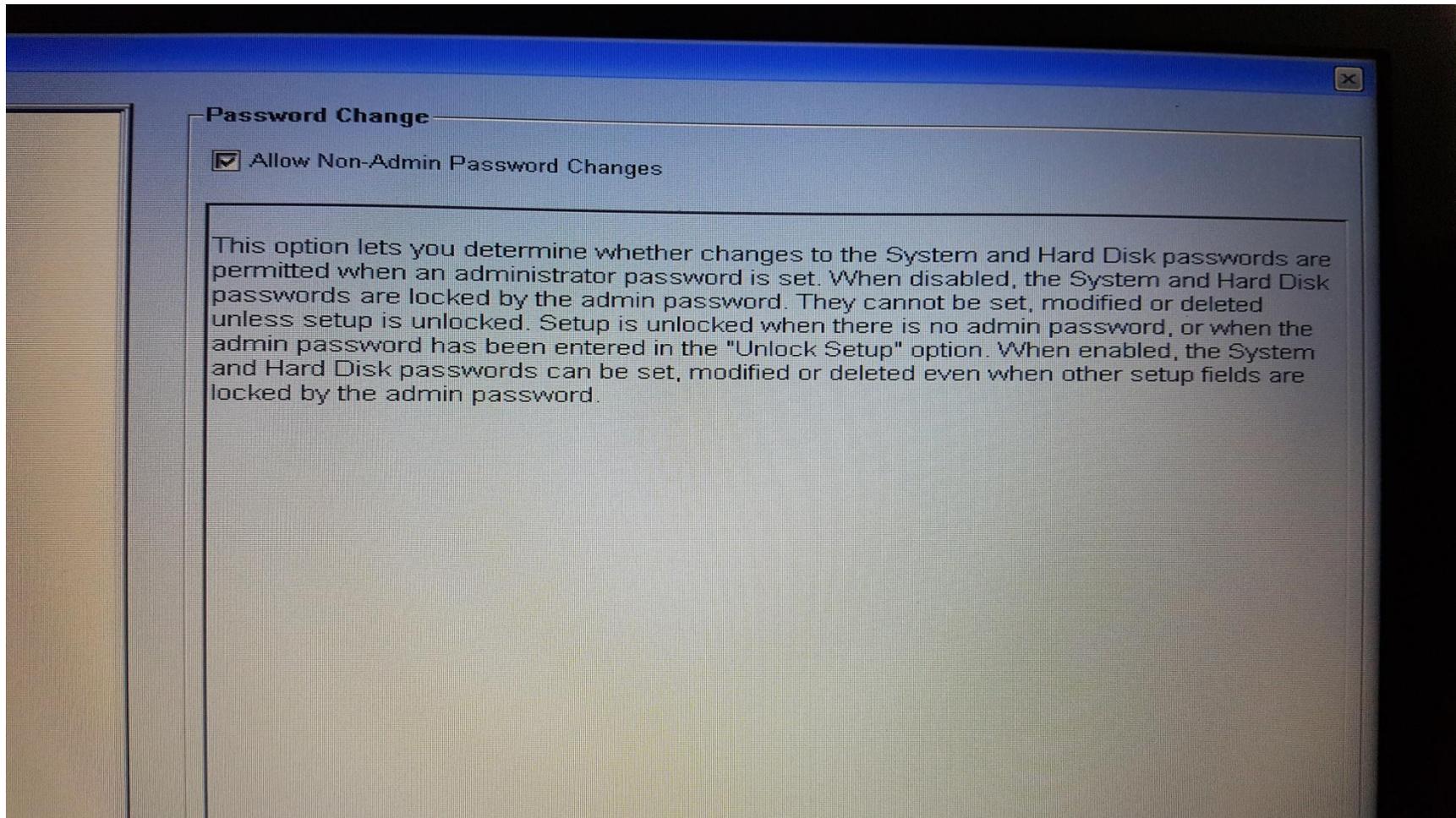
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Computer Update Guide

Manual Updates – Operating Systems

Here is a great online resource for Windows and Mac: <http://its.uiowa.edu/support/article/1418>

To update your Windows 7 and 8 Operating System:

1. Open Windows Update by clicking the Start button. In the search box, type Update, and then, in the list of results, click Windows Update.
2. Click Check for updates, and then wait while Windows looks for the latest updates for your computer.
3. If you see a message telling you that important updates are available, or telling you to review important updates, click the message to view and select the important updates to install.
4. In the list, click the important updates for more information. Select the check boxes for any updates that you want to install, and then click OK.
5. Click Install updates.
 - a. **Note: Windows 10 is set to automatically install updates by default**

Automatic Updates

Here is a great online resource for Windows users: <https://support.microsoft.com/en-us/kb/306525>

Windows 7 OS

1. Click Start, type Windows update in the search box, and then click Windows Update in the Programs list.
2. In the left pane, click Change settings.
3. Select the option that you want.
4. Under Recommended updates, select the Give me recommended updates the same way I receive important updates or Include recommended updates when downloading, installing, or notifying me about updates check box, and then click OK.

Note – you may or may not want Windows to update itself automatically:

- a. Auto updates can come at inopportune times
- b. Sometimes updates can “break” some software applications, requiring updates to the software

Important Note: Mainstream support for Windows 7 stopped on Jan 13, 2015.

- a. Security updates (extended support) will continue until Jan 14, 2020.
- b. More info: <https://support.microsoft.com/en-us/help/13853/windows-lifecycle-fact-sheet>



Installing a Network Printer Guide

Step 1: manually set the IP address on your printer to and IP within a safe range on your network. For instance, if your network is 192.168.0.x, reserve the range of .240-.250 for your printers.

- To check your network setting, open your command prompt (on Windows 7, open “Run” on your start menu) by typing cmd in the search bar on the start menu. Next, type “ipconfig” in the black box and press enter.

```
C:\ Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\Monica>ipconfig_
```

```
C:\ Command Prompt

Ethernet adapter Local Area Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 3:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 4:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::88f9:ad2b:4494:4f70%12
    IPv4 Address. . . . . : 10.0.0.8
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.0.1

Tunnel adapter Teredo Tunneling Pseudo-Interface:

    Connection-specific DNS Suffix  . :
    IPv6 Address. . . . . : 2001:0:5ef5:79fb:14a5:25ab:b6a0:f95b
    Link-local IPv6 Address . . . . . : fe80::14a5:25ab:b6a0:f95b%10
    Default Gateway . . . . . : ::

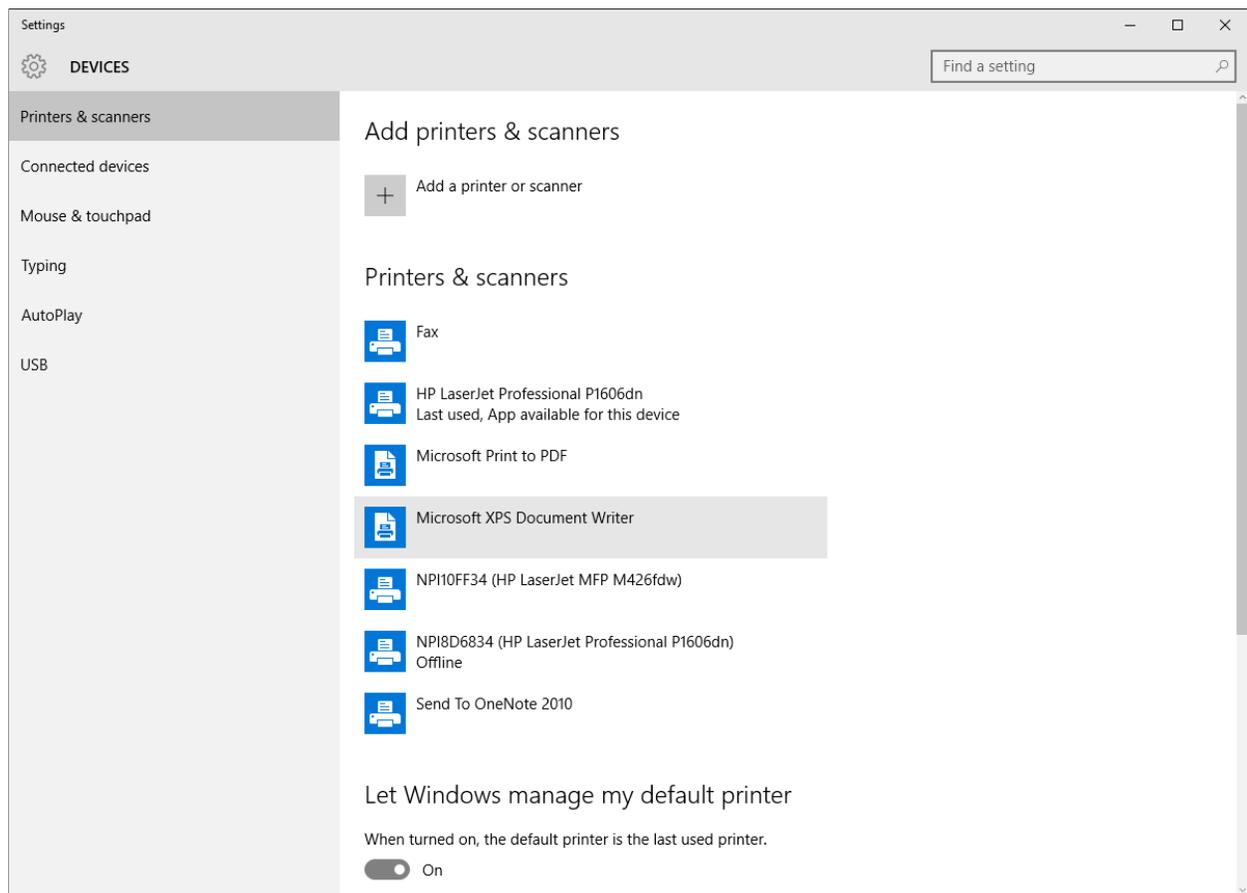
Tunnel adapter isatap.{FE75AC16-E860-42A3-A7B2-E9358B4039AF}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\Monica>
```



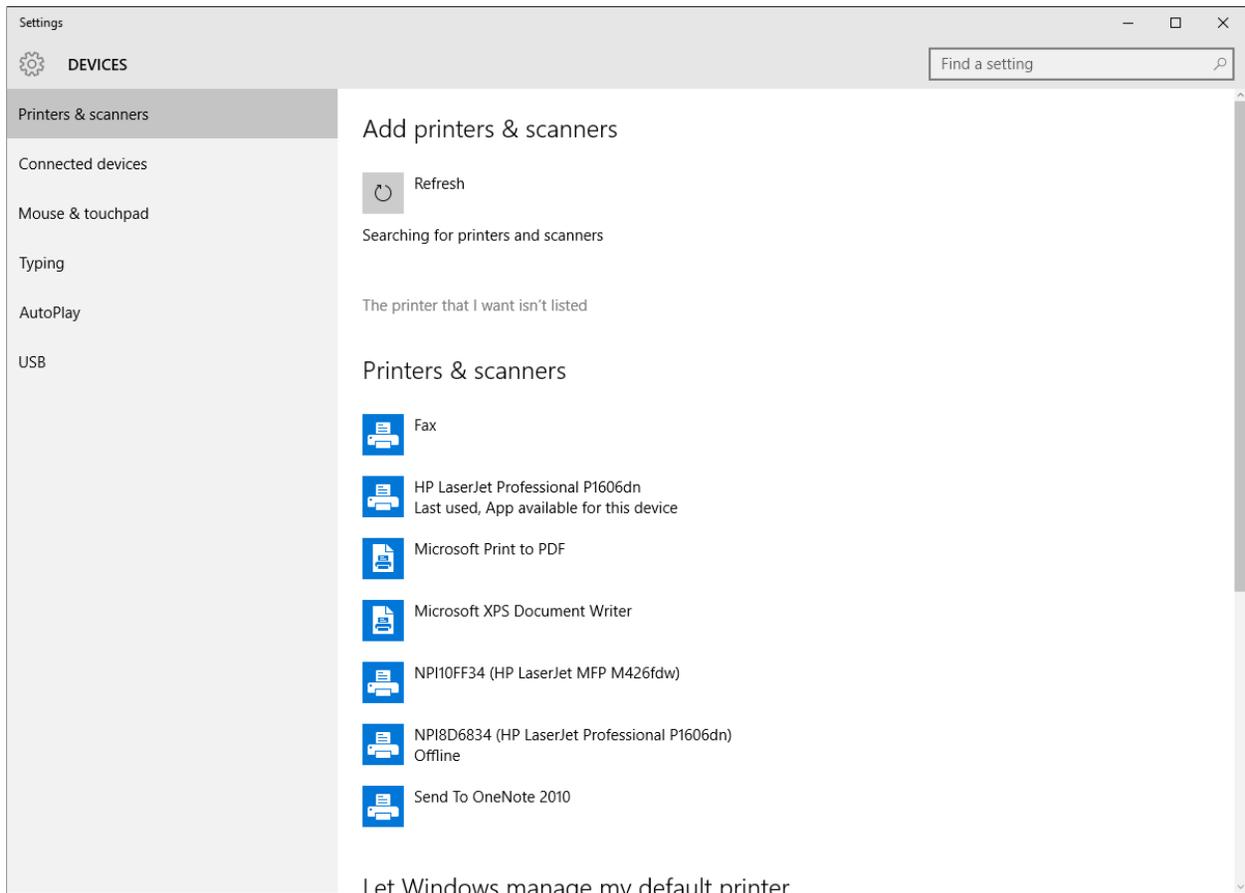
Step 2: Open Device/Printer settings (On Windows 7 machines this is part of Control Panel). Select “Add a Printer or Scanner”



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Step 3: Generally, the computer will be unable to find the printer. Follow the prompts (these will vary by operating system) to search manually for the printer. On Windows 10, click the gray text “the printer I want isn’t listed.”



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Step 4: Select the option to “add a printer using a TCP/IP address or hostname

← Add Printer

Find a printer by other options

My printer is a little older. Help me find it.

Select a shared printer by name

Browse...

Example: \\computername\printername or
http://computername/printers/printername/.printer

Add a printer using a TCP/IP address or hostname

Add a Bluetooth, wireless or network discoverable printer

Add a local printer or network printer with manual settings

Next Cancel

Step 5: Type in the static IP for the printer you wish to install.

← Add Printer

Type a printer hostname or IP address

Device type: Autodetect

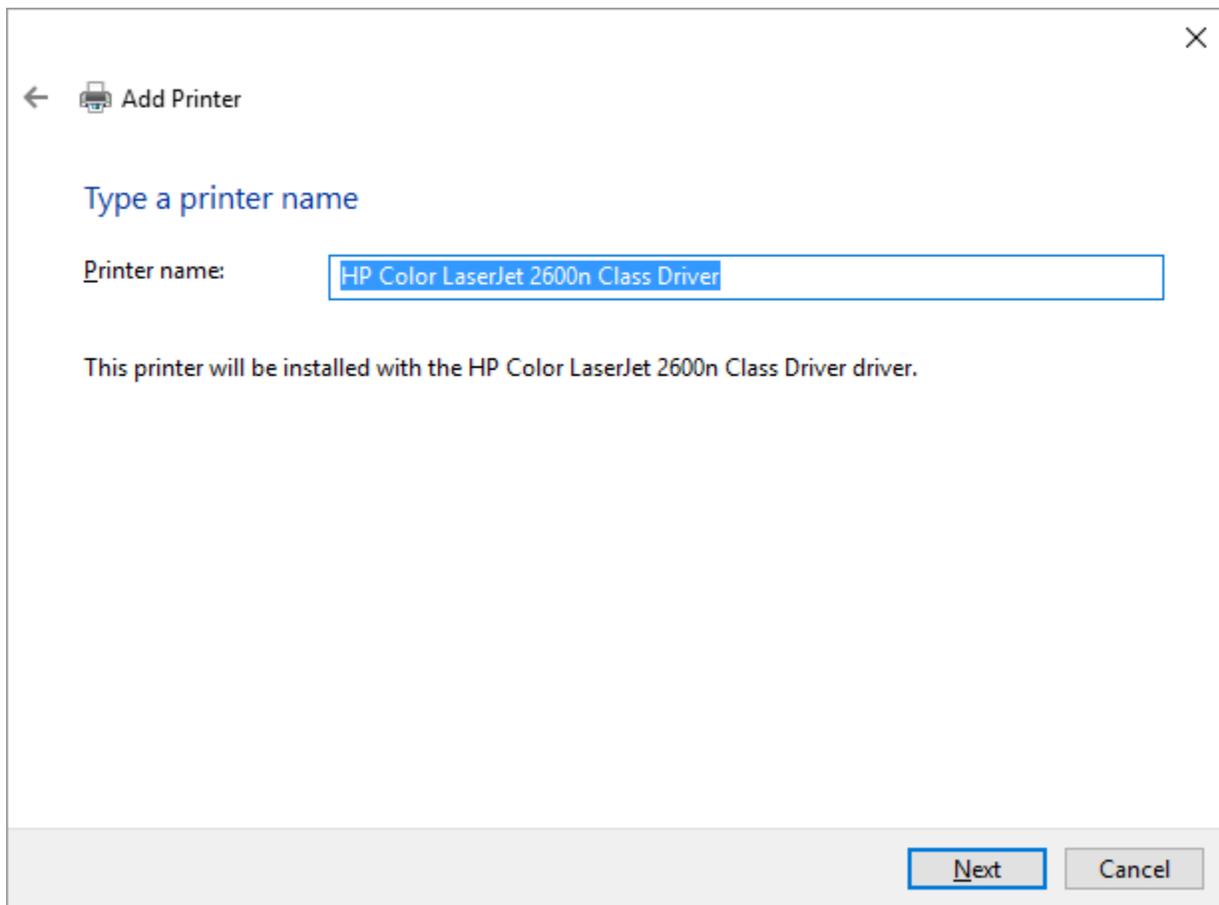
Hostname or IP address: 10.0.0.200

Port name: 10.0.0.200

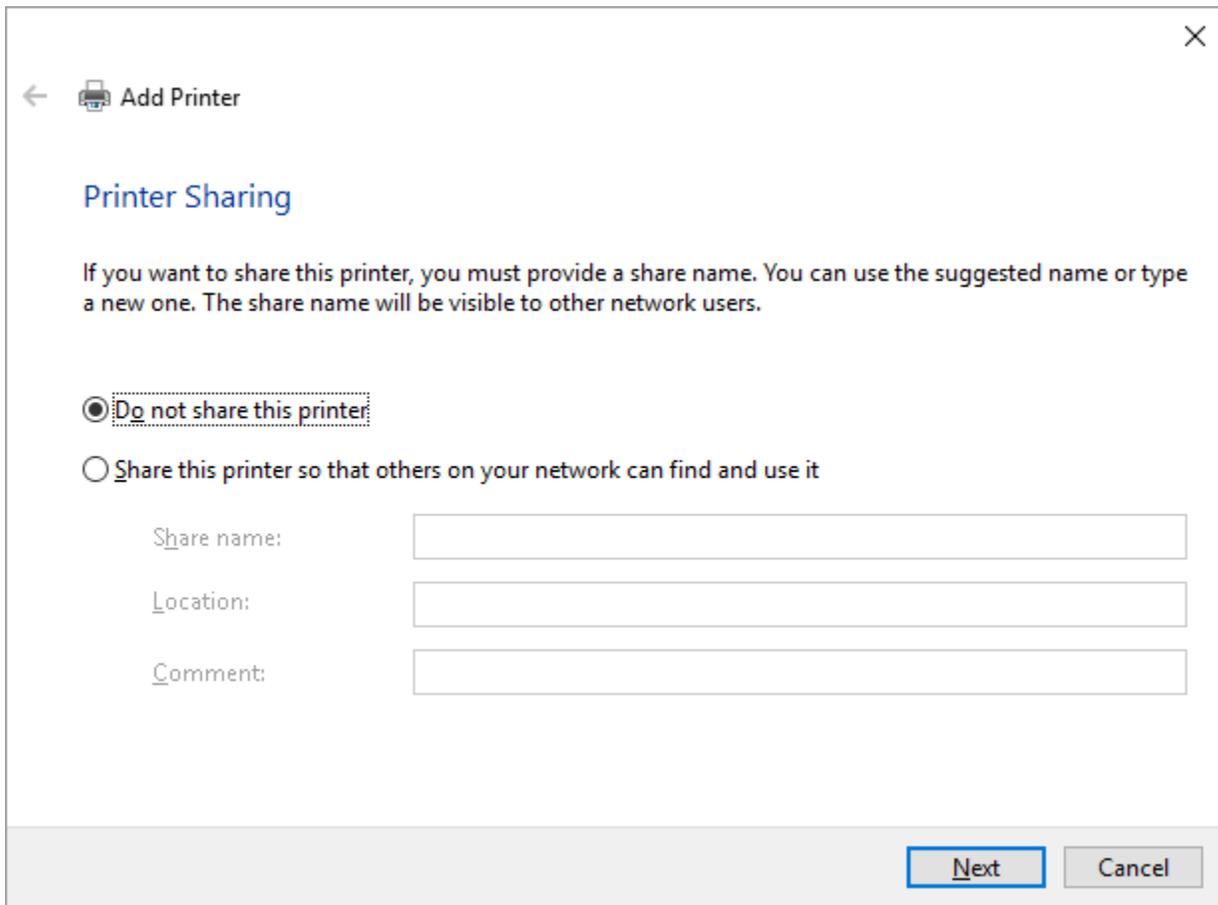
Query the printer and automatically select the driver to use

Next Cancel

Step 6: the correct printer name should appear in the next dialogue box.

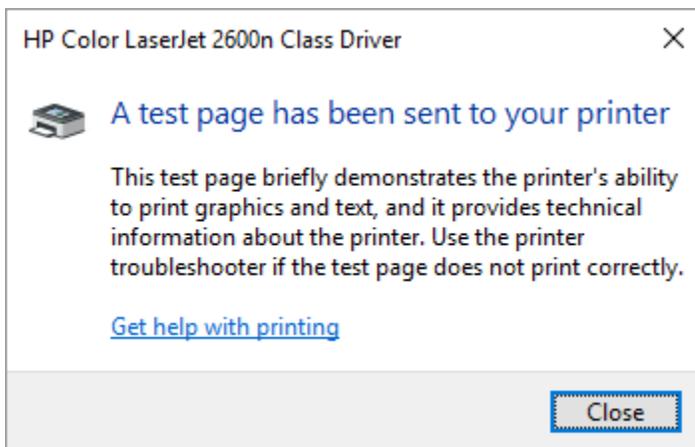
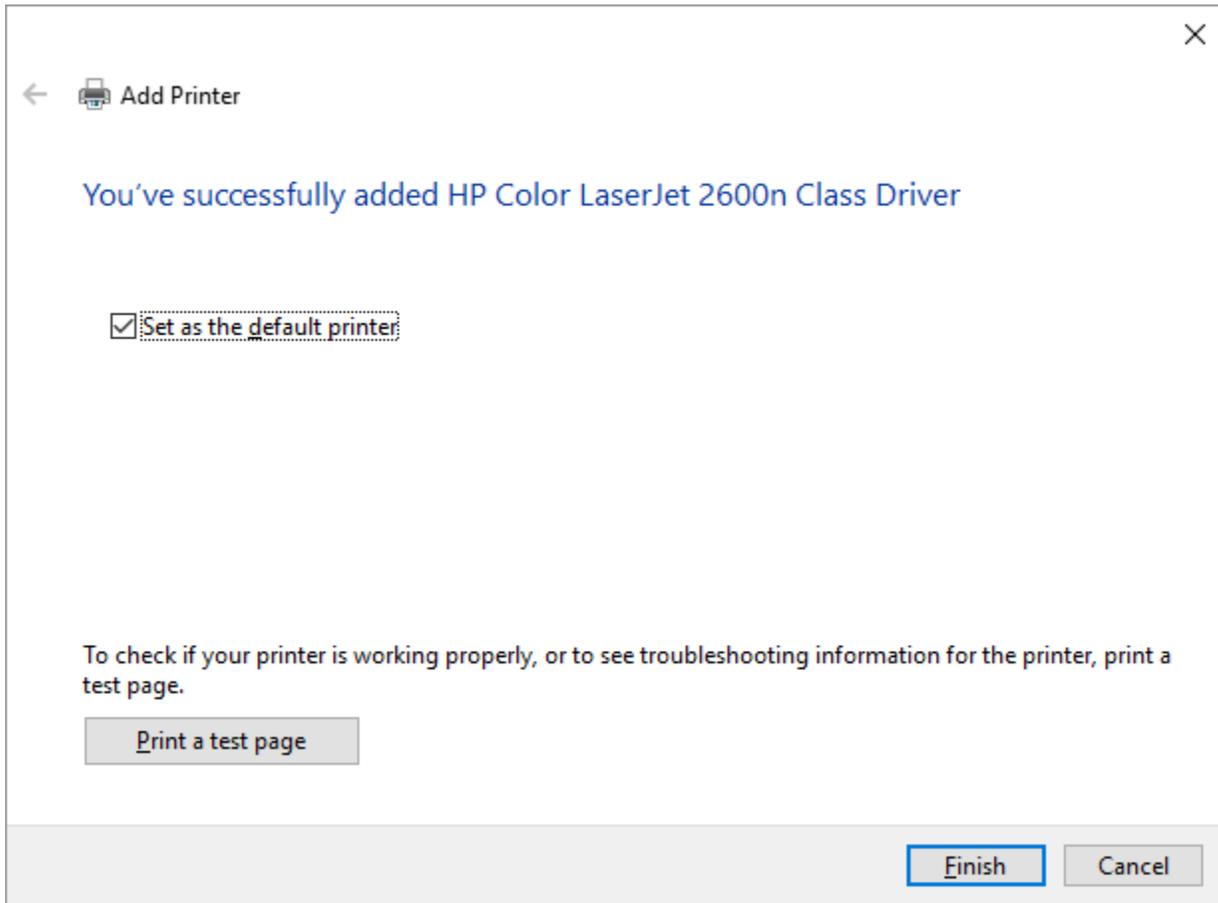


Step 7: assign printer sharing—in most cases you will select “do not share this printer.” If you choose the option of sharing the printer, that printer will only be available to others when the PC you are currently using is powered on.



The screenshot shows the 'Add Printer' dialog box in Windows. The title bar reads 'Add Printer' with a printer icon and a back arrow. The main heading is 'Printer Sharing'. Below the heading is a paragraph: 'If you want to share this printer, you must provide a share name. You can use the suggested name or type a new one. The share name will be visible to other network users.' There are two radio button options: the first is 'Do not share this printer:' which is selected, and the second is 'Share this printer so that others on your network can find and use it'. Below these options are three text input fields labeled 'Share name:', 'Location:', and 'Comment:'. At the bottom right, there are two buttons: 'Next' and 'Cancel'.

Step 8: check the “Set as default printer” option if you wish to use this printer as the computer’s default. Next, print a test page to ensure the installation was a success.



Congratulations! Your printer is ready to use!

Guide to the Rule of 3-2-1 (or “Rule of 3”)

The Rule:

- Always have **3 digital copies** of anything you really care about
- Use **2 types of backup media**
 - Hard drive
 - Tape
- **At least 1 Copy** should be stored offsite

What is Backup media?

- A hard drive (local, network, USB or thumb drive, or cloud)
- Tape
- DO NOT rely on CD-R or DVD-R as a backup

Catalog your library’s important data here:

Directory, File, or Group of Files	File types
<i>(Example) Library Strategic Plan</i>	<i>.pdf</i>

Directory, File, or Group of Files	File types



Directory, File, or Group of Files	File types	Directory, File, or Group of Files	File types



You Can Do I.T. / Guide to Rule of 3-2-1

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Choose one file to use as an example

File/Directory or Collection	Copy 1	Copy 2	Copy 3
<i>Example: Library founder's oral history interview recording—original 1978 cassette tape has been digitized and stored on CD-R</i>	Location: <i>Digital file on Director's laptop</i>	Location: <i>Digital file on Director's laptop; laptop is backed up to USB drive in office</i>	Location: <i>Digital file on Director's laptop; laptop is automatically backed up to crashplan</i>
	Media Type: <input checked="" type="checkbox"/> Local <input type="checkbox"/> Network <input type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape <i>*DO NOT rely on CD-R or DVD-R</i>	Media Type: <input type="checkbox"/> Local <input type="checkbox"/> Network <input type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input checked="" type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape <i>*DO NOT rely on CD-R or DVD-R</i>	Media Type: <input type="checkbox"/> Local <input type="checkbox"/> Network <input checked="" type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape <i>*DO NOT rely on CD-R or DVD-R</i>
	Local or Remote? <input checked="" type="checkbox"/> On-site Location(s): <u>laptop</u> <input type="checkbox"/> Off Site Location: _____	Local or Remote? <input checked="" type="checkbox"/> On-site Location(s): <u>Thumb drive</u> <input type="checkbox"/> Off Site Location: _____	Local or Remote? <input type="checkbox"/> On-site Location(s): _____ <input checked="" type="checkbox"/> Off Site Location: <u>Crashplan</u>
File/Directory or Collection	Copy 1	Copy 2	Copy 3

Try with your file:	Location:	Location:	Location:
	Media Type: <input type="checkbox"/> Local <input type="checkbox"/> Network <input type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape *DO NOT rely on CD-R or DVD-R	Media Type: <input type="checkbox"/> Local <input type="checkbox"/> Network <input type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape *DO NOT rely on CD-R or DVD-R	Media Type: <input type="checkbox"/> Local <input type="checkbox"/> Network <input type="checkbox"/> Cloud <input type="checkbox"/> USB drive (big) <input type="checkbox"/> USB drive (small) <input type="checkbox"/> Tape *DO NOT rely on CD-R or DVD-R
	Local or Remote? <input type="checkbox"/> On-site Locations: _____ <input type="checkbox"/> Off Site Location: _____	Local or Remote? <input type="checkbox"/> On-site Locations: _____ <input type="checkbox"/> Off Site Location: _____	Local or Remote? <input type="checkbox"/> On-site Locations: _____ <input type="checkbox"/> Off Site Location: _____

Do your file and it's back-ups fit the rule of 3? (Check each box)

- Always have 3 digital copies of anything you really care about
- Use 2 types of backup media
- At least 1 Copy should be stored offsite



You Can Do I.T. / Guide to Rule of 3-2-1

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Afternoon Hardware/Software Quiz

Your Name and Library: _____

Show us what you've learned so far!

1. If you want to clean your LCD screen, which product is most useful?
 - a. A soft, lint-free cloth moistened with rubbing alcohol
 - b. Soap and water solution
 - c. A caustic and abrasive cleanser such as Ajax and water
 - d. DeOxIT
2. What does BIOS stand for?
 - a. Battery Is On Standby
 - b. Button Integrity Operation Standard
 - c. Barbeque Is On Shirt
 - d. Basic Input Output System
3. Which item below is **not** an example of an Operating System (OS)?
 - a. Microsoft Windows
 - b. MacOS
 - c. Microsoft Word
 - d. MS-DOS
4. What is a device driver?
 - a. A TXDOT safety certification program.
 - b. An OTR (Over the Road) trucker who specialized in hauling computer peripherals.
 - c. A piece of computer hardware that controls another piece of computer hardware.
 - d. A software program that controls a particular type of device that is attached to your computer.
5. What method below is **not** typically used to connect a printer to a computer?
 - a. Wired Ethernet connection
 - b. Wired USB connection
 - c. WiFi connection
 - d. Duct tape and staples



You Can Do I.T. / Afternoon Hardware/Software Quiz

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6. Why are software updates necessary? (Please circle all that apply)
 - a. Security
 - b. Bug fixes
 - c. To help kill time between patrons
 - d. Performance improvements

7. True or False: Once an update is performed, you usually never have to worry about another update again.
 - a. True
 - b. False

8. Preferably, how often should “definition updates” be performed to your desktop security software?
 - a. Once per year
 - b. Once per month
 - c. Once per day
 - d. Updates?

9. What statement below is **not** part of the “Rule of 3”?
 - a. You need at least 3 people to perform backups properly
 - b. Always have 3 digital copies of anything you really care about
 - c. Use 2 types of backup media
 - d. At least 1 copy should be stored offsite

10. True or False: it’s important to test recovery of your backups.
 - a. True
 - b. False



You Can Do I.T. / Afternoon Hardware/Software Quiz

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