

Portable Devices vs Desktops

Portables

- _____ and lighter
- Run on _____ power
- Built to withstand more wear _____ tear
- Built to save power, to save _____ life
- Less _____ (sometimes _____ at all)

Desktops

- More _____
- Run on _____
- Use _____ power
- More _____

Types of Portable Devices

- Laptops
- Netbooks
 - Meant to be used on _____ network
 - No _____ drive
 - _____ hard drive
 - Often _____
- Tablet Device
 - Like a _____ with a touch screen or
 - _____ or other _____ device meant to do one thing at a time
- PDA— _____ Digital Assistant
 - More and more are being integrated directly into _____

Parts of the Notebook

- Processor
 - _____ power consumption
 - Can be configured to run even _____ when on _____
 - Usually has a subset of the _____ that a full CPU has
- Memory
 - _____ aka _____
 - SDRAM
 - DDR/DDR2/DDR3
 - RAMBUS

- Keyboard
 - Notebooks and Mac Netbooks (_____) have full sized _____
 - Netbooks have _____ keyboards (one of the _____)

Parts of the Notebook

- Pointing Devices
 - _____—Use your finger
 - Pointing “ _____ ”
 - _____ pads—Use a _____
 - External mice (USB, bluetooth— _____ not standard on all devices)
- Video
 - _____—Standard 4:3 aspect ratio
 - _____—Widescreen
 - Most video is _____ on mobo
 - Some have separate _____ that allow you to upgrade video
 - Most have an _____ port for attaching to a monitor or projector.

Parts of a Notebook

- Networking
 - Most have _____ built in (802.11g or n)
 - If a “card” is used, it is connected through _____-pci
 - Many have _____ ports
 - If you don’t have built in, or the wireless dies, you can get a _____ card for networking
- Internal hard disks
 - 2.5 inch _____, SATA (more _____), or SSD
 - _____ most common interface
- Docking Station
 - To dock device to a full size _____, keyboard, _____, and external _____ with ease
- Other stuff
 - _____ ports
 - IEEE _____ ports
 - Removable _____ bays (floppy, optical drive)
 - _____ and _____ Card slots

SODIMMs

- Small Outline Dual _____ Module
- Available in different sizes
 - 32 bit transfer rate (old)

- 72 Pin
- 100 pin
- 64 bit transfer rate
 - _____ pin
 - _____ pin
 - _____ pin
- Just a different form of SDRAM. It is not different from _____ in function, just size.

Replacing a SODIMM

Get proper tools—usually very small _____ head screwdriver, sometimes a specialty tool

Ground _____

Open Case

Remove _____

Lay upside down on a soft _____, unscrew all screws in access door.

Remove the screws and put them in a _____ PLACE

Open access door

Set aside door. You'll see the _____ under the door.

Each laptop can handle one or two modules (_____ usually one, _____ two)

Make sure your RAM is compatible

Big bummer if it is not.

Remove old SODIMM by releasing _____ on either side.

Install New RAM

Hold RAM by _____ (do not touch the leads)

Insert at an _____ and snap down into place

Restart and check for New RAM

Right click on my computer and select _____

Shown above in XP

Test RAM

Shown above in Windows 7

Expansion Cards

- A PC Card is a _____ card sized expansion bus that conforms to _____ standards. PC Cards come in a number of configurations with varying characteristics and functions. You should know the following facts about PC Cards:
- PC Cards can be used by devices like _____, network cards for _____ or wireless networks, CD-ROMs, _____ cards, _____ host adapters, IEEE 1394 controllers, USB controllers, and others.
- PC Cards connect to the 16-bit or 32-bit card host I/O bus on the laptop motherboard.

Expansion Cards

- PC Cards can also be categorized by _____ standard, as is illustrated below: Card Type Description Type I Now obsolete, were typically used for memory (such as SRAM and Flash). Type II Typically used for I/O (such as modem and LAN). Type III Typically used for rotating mass storage (hard drives and optical drives).
- PCMCIA dimensions, excluding thickness, are the _____ for each type of

card and each card type has a 68-pin connector. Thinner cards fit into the thicker ports, but not vice versa. For example, a Type I card will fit into Type II and III ports while a Type III card requires two Type II ports.

Expansion Cards

- PC Card Types

- Type I

- _____
 - Were used for expanding _____

- Type II

- _____ used for I/O
 - _____, _____,
 - _____

- Type III

- Usually used for _____ storage
 - _____ drive
 - _____ drives

- You can put Type I, II, or III into a Type _____ slot.

Express Cards

- slots connected directly to the PCIe or USB bus. _____ offers up to 2.5 Gbps on the _____ bus, or 480 Mbps on the USB bus.
- ExpressCard slots are either _____ or _____ wide.
- There are two card form factors:
 - ExpressCard/34 are _____ cards that are _____ wide. These cards fit into either 34mm or 54mm slots.
 - ExpressCard/54 are L shaped cards that are _____ wide at the connector end, but 54mm wide on the outside edge. These cards fit only into _____ slots.
- Cards use either PCI Express or USB 2.0 standards (the slot supports both).
- ExpressCards can be used for all types of devices, similar to PCMCIA. An ExpressCard can even be used for a graphics card to attach an external monitor.
- Many newer laptops have ExpressCard slots but not _____ slots. Some laptops have both, while some have neither (assuming that all external devices will connect through the USB ports).

Cards Cards and More Cards

POWER!!!!!!!!!!

- Notebooks are designed to save power by
 - Turning off _____ that aren't in use
 - Going into sleep or _____ mode after a period of time
 - Stepping down the _____ bus
 - Turning off the _____ after a period of time
 - Shutting off _____ (if designated) after a period of time.
- Connect to wall power using a cord with a "brick"

- Power from the wall _____ the battery
- Power powers the _____
- The "brick" is responsible for _____ DC to AC
 - Also provides DC to the backlight on an LCD monitor

Batteries

- Ni-Cad
 - Nickel _____ Batteries
 - Stores _____ power as it goes through _____ cycles (called developing a memory)—completely discharge before recharging to expand life
 - Takes up more _____ than lithium
 - Very _____ to heat
 - No longer used in new _____
 - Very _____
- NiMH
 - Nickel _____ Hybrid
 - Does not _____ a memory
 - Lasts 40% _____ than Ni-Cad
 - More expensive than Ni-Cad
 - Less _____

Batteries

- Li-Ion
 - _____ Ion
 - Does not develop a _____
 - Twice the capacity of _____ -Cad
 - Shorter lifespan than _____
 - Smaller—good for _____ and tablets
 - Used in _____ and MP3 players as well
- Fuel Cell
 - Not really a _____, but being used more
 - Offers instant power
 - Rather than being recharged, the fuel is _____
 - Uses _____ crystals and a flux capacitor
 - No...not _____

Disposing of Batteries

- It is _____ for a company to _____ of toxic waste in the garbage
- Most _____ and some stores have repositories for batteries
- You _____ throw away any battery in the trash
- Take to _____ Waste dump, or stores like Staples or Best Buy
- Toxins leach into _____, poisoning the ground and the water we drink and fish live in.

Power Management

- On a _____ many things keep running, even when they are not being used.
- This is a battery _____ on a laptop
- Used to use APM (_____ Power Management) to manage power on a laptop
 - Integrated into _____
 - Will turn off devices after a _____ amount of time when it hasn't been used
 - Problems
 - OS and BIOS don't _____ communicate (BIOS may turn off HD and OS tries to write to it)
 - Every BIOS manufacturer implements it differently...some you can configure, some not
 - Didn't _____ PnP

Power Management

- ACPI (_____ Configuration _____ Interface) is a better solution
 - Created by _____, _____, and Toshiba to replace _____
 - _____ and _____ and Devices all work together
 - Supports _____
 - Requires both OS and BIOS to be _____
 - Windows 98 on
 - Linux
 - Mac
 - BIOS gathers _____ about how much power is being used by devices and sends that to the OS
 - OS determines how to use that _____
 - _____ down CPU
 - Shut off _____
 - _____ monitor
 - Based on how user defines specs.

ACPI States

- On
 - Everything is on and running at _____ power—no _____ management
- Enabled
 - _____ management on
 - All devices running at _____ power
- Standby
 - _____ shut down
 - _____ On (storing data)
 - _____ shut down
 - Restores the computer quickly, more quickly than _____
- Suspend
 - Everything off except _____ (holds data)
 - Restores the computer _____, more quickly than hibernation
- Hibernate
 - Before system shuts off, contents of Ram is stored to _____ drive in a _____
 - All devices _____ off (no power)
 - Restores desktop _____ as it was
Important Things
- BIOS must support _____
- If you do not see the _____ tab, either:
 - BIOS does NOT _____ it, or
 - It is turned _____ in BIOS
- You can edit a device in _____ manager to NOT include it in ACPI
- You can allow devices to WAKE the computer using Wake on LAN
(_____)

Configuring Power Options

- Saves _____ life on laptop
- Get to it by right _____ on the battery icon
- Or Control panel → _____ options
- Balance between _____ and performance

- On battery—more _____

- On AC—more _____

On AC vs On Battery

On AC vs On Battery

Advanced Power Settings

Advanced Power Settings

- You can choose other options as well, such as what happens when you close the lid

- You can set what happens in sleep, whether USB devices are still powered, etc.

- Important if you plug in things that _____ overnight.

Advanced Power Setting

- Can also set what to do with _____ buttons, depending on AC or _____

Power issues with a laptop

- Laptop requires what kind of power, AC or DC? _____

- The DC has to be _____ as it comes out of the wall. In a desktop the power supply does that. The transformer or “brick” that comes on the power cord converts the power.

- Components that require _____ get that directly from power cable

- _____

- Drives

- Won't turn on

- Check the obvious

- 70% of problems are with the _____

- Make sure it's _____ in (a light will indicate if it is)

- Make sure the _____ aren't broken

- Battery

- Drained

- _____ too fast

- If it's less than 3 years old, _____ the battery sensor using the utility that came with the laptop.

- Rarely the _____ Adapter

Video issues

- Dead pixels

- There will _____ be a few

- If more than a few, the LCD _____ must be replaced

- Depending on the system, it might be cheaper to get a new laptop, or purchase a system with other dead _____ but a good screen

- Flicker

- _____ going bad
- _____ going bad
- No picture
 - Connect _____ source
 - Check your _____ key
 - Restart without _____ monitor plugged in
 - If you restart and still can only get a picture on an external monitor, check to make sure nothing is depressing the LCD _____ switch
 - Check cable _____ between the screen and body.

Other Troubleshooting

- Keyboard
 - Plug in _____ keyboard. If it works, the _____ may be bad or the controller card.
- Numbers showing up when you hit letter keys with right hand
 - Check that you haven't turned on the _____ key that enables the 10key
- Mouse or touchpad
 - Check _____
 - _____ (should be a utility that comes with laptop)
- No wireless
 - Did the _____ switch get turned off?

Maintenance

- Keep food and drink AWAY!
 - If drink _____ on it
 - Remove _____
 - Remove _____
 - Turn upside down and _____
 - Use _____ alcohol to clean off keyboard if sticky
 - DO NOT USE for at least two weeks.
- Clean screen with _____ alcohol sprayed on lint free rag
- Do not leave in a _____ or cold _____
- Remove _____ Cards from laptop before transporting
- Keep cool!

Smart Phones

- The _____ revolution really started with PDAs.
- _____, Sony, and _____ made some of the first PDAs

- Palm Pilot caught on
- Clie and Newton not so much
- The first smartphone was called _____ and was released in _____ for \$899 and included a calendar, pager, phone, and PDA
- Blackberry (RIM) integrated the phone and the PDA to create the first one that caught on. Aka "crackberry"
- Then came _____. The iPhone blew the _____ out of the water for regular users. Blackberry was more for _____.

IBM Simon

What would a Tech do with a smartphone

- Configure it to work with the _____ server
- Program them for specific _____
- _____ out features
- Install apps used in _____
- Transfer _____ books and mailboxes

Tablets

- Works much like a _____, but has a touch screen
- Most tablets use a _____
- Most can _____ to be used either like a notebook or like a tablet.
- Requires a tablet OS to be able to decipher the handwriting and touch

New Tablets

- iPad was the first tablet without an external keyboard
- Includes:
 - _____
 - _____
 - _____ storage
 - _____ (on 3g version)
- New tablets
 - _____ processor
 - _____ battery life
 - Larger _____
 - Higher screen _____
 - _____ devices can connect to them
- Used less for business, although that is definitely changing.

Cloud Computing

- Cloud computing is the act of having things hosted _____ and accessible through the Internet.
- A business may have their own “cloud” or may _____ space from another business (usually considered an B2B solution; business 2 business).
- A central server _____ the traffic from your business to the “cloud” and back.
- Your business may still have their own _____ on site, but some servers will be “cloud servers” and accessed through the Internet. (You can even manage those servers from the Internet.)
- The cloud server uses a type of software called “_____” that handles the interaction between the front end and the back end.

Front end and back end of cloud computing

Front End

- _____ computer
- Application required to _____ the cloud
- May use your _____ (email is usually done that way)
- May use a _____ client program

Back End

- Servers at _____ site
- _____ systems
- _____ (think Google Apps—just pay a subscription for your company rather than buying licenses for everyone)

Cloud Computing

Benefits

- Can use a netbook or ultra-light _____ with an SSD and save data in the cloud.
- Can have _____ from the company accessible from anywhere there is Internet.

- Company doesn't have to invest in lots of _____ and hardware.
- Saves money on _____ support.

Problems

- If no _____, you may not have your data accessible.
- Have to weigh the ongoing _____ cost with the cost of hardware over time.
- _____ concerns with data
- What happens if the _____ company goes out of business?