Get Your Computer Back Up to Speed
Windows 10 Computers

Before We Begin

- Feel free to interrupt and ask questions
- The only dumb question is the one you don't ask
- All the links in my talk are available at:
- https://tinyurl.com/3q8xgvfp
- Link to everything about our class https://bit.ly/2EXzohI

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Before We Begin - A Caveat

- On our web site, I state this class is for intermediate users, and recommend you take our quiz. This is my only intermediate class
- I personally use all of the tips I will teach you today
- In 35+ years of work on computers I have never had a major problem I couldn't fix
- But, I have been doing this a long time and I am careful
- These tools in the wrong hands can be disastrous
- These tools implemented incorrectly can be disastrous
- If it aint broke, don't fix it

Course Outline Broadly

- The suggestions I will make for computer maintenance fall into one of two broad categories
  - First half of course--Suggestions for speeding up your computer
  - Second half of course--Suggestions for maintaining your computer
- There are 100+ reasons why your computer may run slowly. We will only cover 10 of them
- Computers behave like us as we age
- Depending on what is slowing down your computer, you may implement every one of these suggestions and still see little speed improvement

Course Outline Specifically

- Part 1—Speeding up your computer
  1. Solid State Drive
  2. Automatic method
  3. Task Manager
     1. Processes tab (measures the scope of the problem each second)
     2. App History tab (measures the scope of the problem over a long period of time)
     3. Startup tab (ameliorates the problem, as do all other items below)
  4. Notification Area
  5. Startup Folder
  6. Turning off your computer nightly
  7. Adding memory
  8. Defragment
  9. Diskcleanup
  10. Reinstall windows
- Part 2—Maintaining your computer
  1. Backup
  2. Updating your computer
  3. Restore Points
  4. Recovery Drive
  5. Testing your internet connection speed

How Often?

- Some of these tips need to be done only once
- Other tips should be done periodically, based on your usage of your computer
- Timing recommendations are based on my computer usage which is heavy (4-6 hours/day). You will probably need to perform these tips less frequently

Buy a SSD Method 1

- My favorite method—Consider replacing your existing hard drive with an SSD
- 3-5 times as fast as your current hard drive
  - My old boot time ≈ 4 minutes; New boot time 35 seconds
  - Old shut down time ≈ 50 seconds; New shut down time 11 seconds
- No moving parts vs HD that has a disk that spins 120 X/second
- Works best if you reinstall Windows 10
  - Requires a lot of work (See next slide for a way to greatly reduce the amount of work, but it doesn't reinstall Windows)
    - Reinstall Windows
    - Reinstall all your programs (do you have the CD/DVD that contain software programs?)
    - Reinstall all your data

Solid State Drives

- Some SSDs e.g. Samsung, come with a utility that moves the entire contents of your old hard drive to the new SSD, which makes the move relatively painless
- Samsung 870 EVO is an excellent model 1 TB for $110 See https://www.pcmag.com/reviews/samsung-ssd-870-evo and other recommended SSD models at https://www.pcworld.com/article/3234838/best-ssds.html#tk.rss_software
- Disadvantages to SSDs
  - SSDs do not last forever; based on the TBW rating (Terabytes written) mine should last about 120 years
  - Expensive; Both 240 GB SSD and 1000 GB HD cost ≈ $50
  - Probably have to take computer to a store to have it installed
  - Backup your computer before beginning the process

M.2 vs SATA SSD

- Two types of form factors, M.2 and SATA
  - Not all computers can take M.2 drive
  - M.2 come in different lengths (80,60,42 mm). Some laptops limit how much space they provide for an M.2 drive
- M.2 drives are designed for either SATA bus or PCI Express bus. Latter is much faster
- An NVMe M.2 uses PCI Express bus and is even faster
- An NVMe M.2 PCI Express drive can be 2-7 times faster and 50-100% more expensive than SATA, but most people don't need that kind of speed
- NVMe drives will not work in all computers
- For more about SSD https://www.pcworld.com/article/3234838/best-ssds.html
- https://www.pcmag.com/picks/the-best-m2-solid-state-drives

An Automatic Approach to Speeding Up Your Computer Method 2

- Rather than relying on the remainder of this course, buy or obtain a free software program that attempts to speed up your computer
- SlimCleaner Free or SlimCleaner Plus
  Review at
  http://www.pcmag.com/article2/0,2817,2388692,00.asp
- Download at
  https://www.slimwareutilities.com/index.php
- Iolo System Mechanic Review available at
  https://www.pcmag.com/reviews/iolo-system-mechanic
- Download at http://www.iolo.com/

My 2nd Favorite Recommendation for Speeding Up Your Computer
Method 3 in General

- Your computer has a fixed amount of memory which it uses to perform the tasks you give it
- If other programs are using some of this memory, your computer will perform tasks more slowly
- The solution---Reduce the number of programs you are running **unintentionally**
- Method 3A and 3 B do not solve the problem; They just define the scope of the problem
- Methods 3C, 4 and 5 solve the problem

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Programs vs Processes

- Our Goal-To reduce the number of **programs** we run unintentionally
- When a program starts, the computer starts between 1 and many processes
- However, Windows doesn't show us how many programs we are running, but rather the number of processes we are running
- Determine scope of problem by counting number of processes

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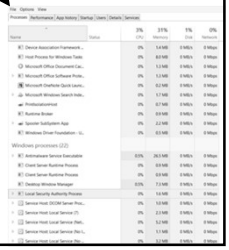
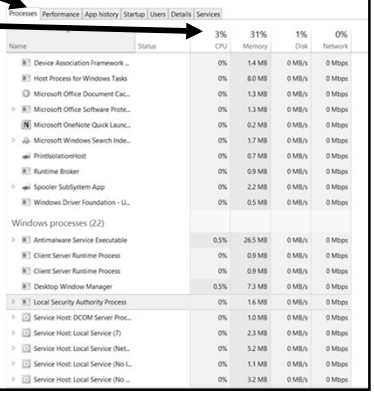
Task Manager-Processes Tab Method 3A

- Close **all** programs before starting this
- Right click the Start menu and Choose: Task Manager
- Doing this will bring up the Task Manager
- At the bottom left corner choose: More Details
- The Processes tab at the top of the page shows the programs and processes that you are running



Task Manager Processes Tab

- The processes tab at the top of the page shows what is running, (some of which you have not chosen to run) all of which are using up memory
- Whenever CPU usage > 10%-15% your computer may slow
- When Disk usage is high, computer may slow
- The darker the color, the more memory that is being used



Your Goal

- Your goal is to minimize the number of processes/programs that run
- Eliminating unnecessary processes/programs will:
  - Reduce boot-up time
  - Reduce shut down time
  - Increase amount of memory available to other programs that need it
  - Generally make your computer run quicker

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Task Manager Processes Tab

- With Task Manager open, as you watch your computer boot up, you will see 3-4 numbers fluctuating at the top of the screen
- Your computer has finished booting when the Disk % and the CPU % stabilize at $< \approx$ 10-15%
- The Memory % at the top will probably remain above 25%, and perhaps much higher
- The total number of processes should also stabilize, once your computer has finished booting
- **Homework: Time how long it takes your computer to finish booting**

Task Manager

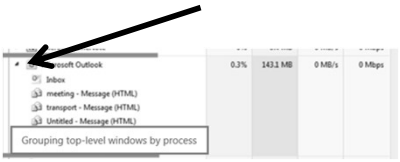
- After being turned on, your computer goes through 2 phases of opening programs
  - Immediate start (most programs loaded)
  - Delayed start (a few more programs may load)
- There is pause between the 2 phases
- You may see 100% CPU and/or Disk usage, then a slow reduction, ultimately going to < 10-15%, and then another spike up, followed by a final decline to < 10-15%

Task Manager

- The list of items running on your computer (1st column) is divided into 3 helpful sections:
  - Apps
  - Background processes
  - Windows processes
- You can often reduce Apps and/or Background processes
- It is difficult or impossible to eliminate windows processes

Task Manager

- Most of the items listed have a small triangle to the left of the listing
- Click the triangle to see more information



- The additional information may or may not be helpful, but often is useful for the 10-30 items listed as Service Host, some of which are very obscure

Task Manager

- Some of the processes listed have very obscure names
- If you don't know what a process is, you can right click it and Choose: Search online

Task Manager-App History Method 3B

- Unlike the Processes tab, which just shows you data since you booted your computer, the App History Tab shows you data since you last reset the “counter”
- Many Apps are not shown in this list. See next slide
- Date is listed in the line at the top of the screen “Resource usage since XX/XX/XXXX”
- You can reset this by Choosing: Delete Usage History

App History

- Click on CPU Time (or any of the other labels at the top of the column) to sort the table from highest to lowest
- By default, App History only shows Microsoft processes
- At the very top of the page choose: Options, Show History for All Processes to add additional non-Microsoft processes, e.g. Chrome, Firefox, Antivirus, etc.
- Right click any of the labels to add additional columns. Downloads can be useful

How to Use App History

- Any process that is using excessive CPU time or Network Data, i.e. bandwidth is a candidate for further examination
- For example, if your default browser is Chrome, but Firefox is using as much CPU time as Chrome is, there is a likely problem with Firefox. Even if there isn't a "problem" with Firefox, you should try to figure out why Firefox is using so much CPU time

More About App History

- Learn more about App History http://www.ghacks.net/2015/12/25/windows-10-list-network-activity/

Summary of Processes Before We Learn How to Reduce Them

- Many programs you install on your computer install additional startup programs or processes that start as soon as your computer boots
- These processes usually run all day, (sapping memory) even though you probably don't need them, and didn't ask them to run.
- They also delay your computer from booting because they have to load and delay shutdown, because they have to close
- Solution: Minimize number of processes running
- A caveat--Your computer needs processes to run itself. A new Windows 10 computer has 50+ processes running. Laptops usually have more.
- Each time you install a new program, check processes to see if they have increased. Consider removing the process that was just installed. See next slide.

Task Manager-Startup Items Method 3C

- You can prevent some of these processes from running. These start when you turn your computer on
- After launching Task Manager, Go to the startup tab
- Right click one of the processes, and choose: "search online" or "properties" for more info
- The 4th column (startup impact) gives you a rough sense of how much boot time you will save, when you disable that item

- To disable an item, right click it and choose "disable
- There is no long-term downside to disabling an item, because it can always be enabled

Homework

- Before making changes to Startup, write down the total number of startup items that are enabled on your computer

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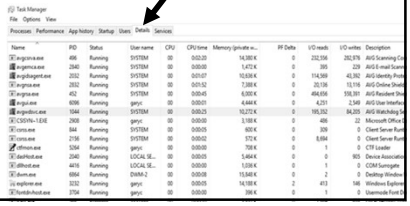
Task Manager Details Tab

- The Details tab is similar to the Processes tab, but it offers more information
- To add additional columns to the 7 you are given, right click the title of any column and Choose: Select columns. Check any columns you wish to add



What Startup Programs Don't You Need

- The short answer: "Many of them"
- Intel items are usually needed. Be leery of disabling those
- Antivirus items are usually needed too
- The long answer: Use can use one of the websites below to learn what the startup program does and whether you need it
  http://www.pacs-portal.co.uk/startup_search.php
  http://www.systemlookup.com/
  https://www.processlibrary.com/en/
  http://www.shouldiblockit.com/

Disabling Items in Startup

- You can probably safely disable many of the startup programs you see
- If disabling a process breaks something, you can always go back into startup and enable the process. Disabling startup programs does not remove the item from your computer
- If you have a lot of items listed in startup, you may want to disable a few of them, and use your computer for a few days to make sure it works well. If your computer works fine, disable a few more items and repeat the process
- If you disable all of them at once, and a problem occurs, you won't know what caused the problem

Task Manager—How Often?

- In Task Manager, I check Startup once every 3 months, as well as after I have added any new program to my computer to see if processes have increased
- I know that my Windows 10 computer should normally run 110 processes after booting up fully
- If Processes shows > 110 processes I compare the alphabetical listing to a permanent paper listing I keep near my computer to determine what has been added
- Some processes come back each time a new version of a program is installed, e.g. Adobe reader, Quicktime, etc.
- For more about Task manager see http://www.digitaltrends.com/computing/how-to-use-windows-task-manager/

We Have a Problem, Houston

- When we turn on our computer, programs can launch not just from Startup tab, but from two other places as well:
- Notification Area
- Startup Folder (unrelated to Startup tab in task manager)

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Notification Area
Method 4

- Click the up facing arrow in the notification area in the bottom right corner of your screen. It shows **some** of the programs that start when you boot your computer. All of these use memory and are tied to 1 or more processes that are displayed when you launch the task manager.
- These are programs that start on boot-up. Some may overlap with the items shown on Startup tab in Task Manager, but most are unique

Removing items from the Notification Area

- Uninstall items in the Notification Area that you don't need. This will remove processes. Removing these processes via Startup tab in Task Manager may not result in a permanent fix because the notification area is controlling the process.
- Sometimes, only by removing the item from the notification area can you permanently eliminate the process.
- **Don't uninstall your antivirus or antispyware programs which are often shown in the Notification Area**
- **Don't disable these in Startup tab either**

Removing Items from Notification Area continued

- Not every program in the notification area can be easily uninstalled
- Those that can be uninstalled are removed in one of a variety of ways:
  - First click on the up facing arrow.
  - Right click on each icon one at a time. Look for words like "properties" or "startup" or "uninstall" or "options" or "shutdown." Click on these and see whether there is an option to permanently prevent the item from starting at bootup. When in the Notification area, "Disable" generally doesn't work permanently. Shutdown generally doesn't work permanently, but may offer an option you can choose that will make it work permanently.
  - If right clicking on the icon fails, try left clicking on it and look for the same words as above

Startup Folder Method 5

- Windows 10 launches some programs from the Startup folder on your hard drive, but it is difficult to find this folder, because by default the folder is hidden. The Startup folder is unrelated to the Startup tab in Task Manager
- Step 1-- unhide folder (Next slide)
- Step 2-- Navigate to folder to see if programs are listed, and delete if desired (In Two Slides)

Unhide Startup Folder

- Launch File Explorer (yellow folder at bottom of screen)
- On the left side, Choose: This PC
- Choose: Local Disk C
- On the ribbon at the top, Choose: View
- Click on the down facing arrow, just below the "Options" icon Choose: Change folder and search options
- Choose: View tab (at top)
- Find the line that says "Hidden files and folders"
- Click the bullet that says, "Show hidden files folders and drives"
- Choose: Apply, OK

Deleting Programs Launched from Startup Folder

- Programs can be launched from 2 different Startup Folders. To delete these programs:
- Launch File Explorer (yellow folder at bottom of screen)
- Navigate to the two folders
  - C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Startup
  - C:\Users\<username>\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup
- To stop a program from starting automatically, right click the program, Choose: Cut. Go to the desktop, right click and Choose: Paste. Once the program has been removed from the startup folder, it won't start up once you turn on the computer. Because it is on your desktop, this allows you to return the program to the startup folder if you decide you need it later
- Alternatively, if you are sure you want to get rid of the program from your computer, select the program and Choose: Delete

Homework Summary

1. Time how long it takes your computer to boot-up. Begin your timing when you turn your computer on and stop timing when CPU usage is permanently < ≈10-15 %
2. How many items are enabled in the TaskManager Startup tab?
3. How many items are in the Notification Area?
4. How many items are in the 2 startup folders?

Turn Off Your Computer Daily Method 6

- Half the articles you read on this subject say "turn off your computer daily." Half the articles say "Leave your computer running"
- My recommendation: Turn off your computer, at least periodically. I turn mine off each night, but once every week is better than nothing
- Your computer leaks memory during the day
- Turning off your computer restores its memory to 100%
- This method will not result in a large speed improvement

More Ways to Speedup Your Computer

- Here's an article that offers 9 more ways to speed up your computer https://www.pcworld.com/article/3217684/windows/speed-up-windows-tips-for-a-faster-pc.html#tk.rss_howto
- We've already discussed methods 1,4. 5 on the above list, so you can ignore those
- Also see https://www.pcmag.com/how-to/12-tips-to-speed-up-windows-10?utm_source=email&utm_campaign=whatsnewnow&utm_medium=title
- We've already discussed items 3 and 6 on the this list and will discuss items 4 and 5 soon

Adding Memory Method 7

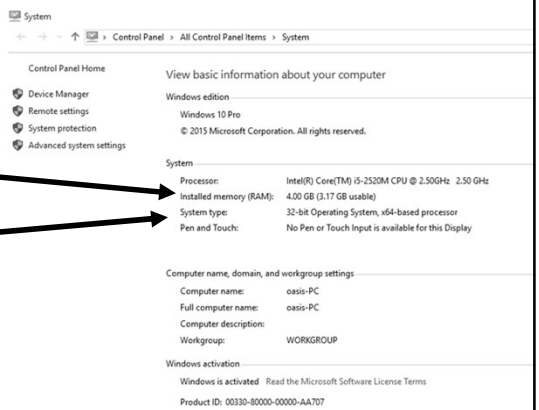
- Another way to speed your computer is to add memory
- How much memory your computer needs is a function of how many programs are running simultaneously and what types of programs are running, e.g. Video editing and Photoshop are two programs that require lots of memory, but very few if any of you use these programs
- Adding memory can be very beneficial, but there is a law of diminishing returns

Adding Memory Continued

- My minimum and optimal memory recommendations:
- Windows 10 32 bit -- 2 gigabyte - 4 gig
- Windows 10 64 bit 4 gig – 8 gig
  To determine whether you have Windows 10 32 or 64 bit see upcoming slide

Determining Your Existing Memory Amount

- Click the  + Pause



Amount of memory

32 or 64 bit

Adding Memory

- Two methods to add memory
  - Take your computer to a computer store
  - Do it yourself (5-10 minutes of installation time.) Very easy to do, but only recommended for people who are comfortable disconnecting the cables on their computer, opening it up, installing memory, and reconnecting cables
  - This assumes you have a desktop. Some laptops allow you to access the memory, but others require the factory to install additional memory
  - Adding memory only needs to be done once

Adding Memory

- There are more than 20 types of memory and those 20 types come in different sizes, e.g. 1GB, 2 GB, 4 GB, etc.
- Your computer can only use one type of memory and it has a maximum amount of memory it can use
- It also has a maximum number of slots for memory (generally 2-4) although the one on right has 6 slots

Adding Memory Continued

- Sometimes all your memory slots will be filled with small chips, e.g. 2 slots with 512 mb each = 1 GB. For Win 10 you should have 2-8 GB. Must discard both chips in this case
- Some memory must be installed in matched pairs, meaning you can't mix a 2 GB with a 1 GB

Determining Your Memory Type

- Read your computer manual or go to the website for your computer
- Alternatively, use https://www.crucial.com/products/memory and click on scan computer
- Crucial will always recommend that you install the maximum amount of memory your computer can take. This may be more than you really need
- See next slide

Crucial Recommendation

Scroll down the page to find the type of memory your computer takes, and buy the amount you need

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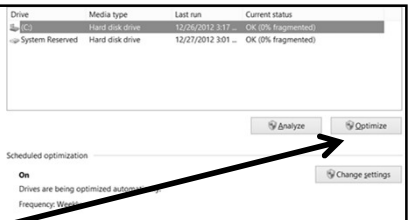
Disk Defragmenter Method 8

- Do NOT do this with Solid State Drives
- Running the disk defragmenter program that comes with your computer can speed it up a bit, but this program is over-rated and the improvement will be very modest at best
- I do not defrag because I have a SSD
- Windows 10 is generally set to defrag automatically once a week, except for SSD
- In the "type here to search" box at the bottom of your screen, type Defrag, and then click on "Defragment and optimize drives"
- Check to see whether "Drives are being optimized automatically"
  If they are, you do not need to defrag, since Windows 10 will do it for you

Disk Defragmenter



- If you wish to defrag manually, choose: Optimize
- Defragmenting can take several hours and you can't do much else on your computer while the defrag program is running because your computer will be so slow
- New type of hard drive, discussed earlier, called SSD will turn disk defragmenter off. **Do not turn it on. Do not manually defrag an SSD**

Disk Cleanup Method 9

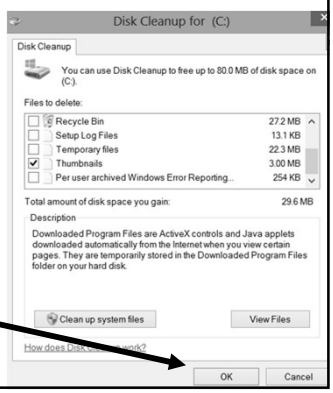
- Your computer fills up with temporary files, some of which can slow it down. Removing these files using Diskcleanup can result in a minor speed increase, but this is temporary, because the temp files come back
- I run this once every six months

Disk Cleanup

- In the "type here to search" box at the bottom of your screen, type: Clean, and choose: Disk Cleanup and follow the directions
- If the Cleanup program doesn't open automatically, look on your taskbar and click it to open it
- Your computer will pause while it does some calculations
- Click the items you wish to have cleaned up (See next slide)

Disk Cleanup Continued

- This page shows how much space will be saved by cleaning up certain areas
- Avoid cleaning "office setup files" and "compress old files"
- After checking the boxes, choose "OK"



Disk Cleanup Continued

- Consider manually deleting files in c:\windows\temp
- Do not erase today's files
- Be cautious about erasing files in sub-directories of c:\windows\temp

Reinstalling Windows Method 10

- If you really want your computer to be as fast as the day you bought it, you can achieve this, but it takes a medium amount to a lot of work—Reinstall windows. I do this every two-three years.
- This generally results in a large increase in speed, but it can be a lot of work depending on how many programs you need to reinstall
- Windows 10 makes this process easier than in the past
- See the next page

Reinstalling Win 10 by Resetting Your Computer

- If you are having problems with your computer, or if you wish to speed it up, Windows 10 allows you to reset your computer
- **Make a full backup of computer before doing this**
- Choose: Start button, Settings, Update + Security, Recovery.
- In the section labeled "Reset this PC" choose: Get started
  - Windows 10 gives you 2 options:
    - Keep my files does just that. It only resets your settings, but does not tamper with your data files. This generally is sufficient to speed up your computer.
    - Remove Everything. This is a more drastic step. Your computer will be completely wiped, and Win 10 will be reinstalled. This is guaranteed to speed up your computer, but you will need to reinstall your data from a backup you have made prior to Removing Everything.

10 Methods Ranked by Biggest Improvement in Computer Speed

Solid State Drive	10
Reinstall windows	2 points/year since it was last done. Max 8
Startup tab	4 (max, but depends on how many)
Notification area	4 (max but depends on how many)
Startup Folder	4 (max but depends on how many)
Adding Memory	0-4 depending on how much memory you already have
Defragment	1
Diskcleanup	0-1
Turning off your computer nightly	0-1 depending on when it was last done
Automatic method #2	Not tested

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Part 2 – Maintaining Your Computer

1. Backup
2. Updating your computer
3. Restore Points
4. Recovery Drive
5. Testing your internet connection speed

Backing Up Your Computer Part 1

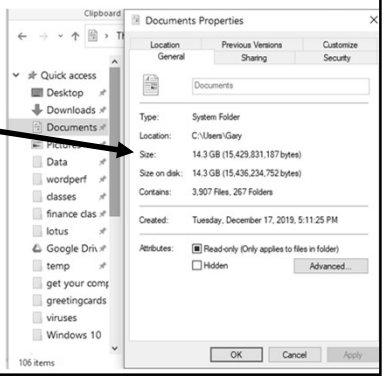
- Backing up your computer can be a very simple or complex process
- At an absolute minimum, everyone should backup the directory “Documents” to a flash drive
- This does not constitute a complete backup, but it is better than nothing, and it is easy to do
- See next slide

Backup Your Documents Folder to a Flash Drive

- Insert flash drive in USB socket
- Launch File Explorer
- Navigate to your Documents Folder
- Right click Documents and choose Copy
- Navigate to your Flash Drive
- Right click your flash drive and choose Paste
- You will see the files being copied from Documents to your flash drive

Determining How Big a Flash Drive to Purchase for Backup

- Launch File Explorer
- Navigate to the "Documents" folder
- Right click the Documents folder
- Choose: "Properties"
- Buy a flash drive bigger than the size shown, and leave some room for growth
- Microcenter has 16 GB flash drives for < $3



Updating Your Computer Part 2

- 4 types of updates
  - Antimalware definitions
    - Updates occur automatically, generally daily, depending on your particular antimalware program
    - Updates protect you from new malware
  - Windows monthly updates
    - Updates occur automatically on the 2nd Tuesday of the month
    - Updates protect you from recently discovered security holes
    - These updates sometimes break things
    - May wish to pause updates until bugs are removed
  - Windows Feature updates
    - Updates occur twice per year, but not automatically unless you wait 12-18 months
    - Spring brings new features while fall fixes what broke
    - In January 2021, MS announced it was reversing this in 2021, but did not say whether this was temporary or permanent

Updating Your Computer

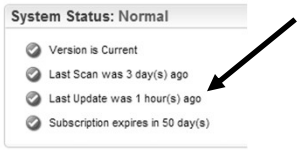
- 4th type of update
  - Non-Microsoft programs, e.g. Adobe reader, Google Chrome, Firefox, etc.
    - Updates occur automatically periodically as needed, Updates protect you from recently discovered security holes, and sometimes offer new features
- See more information about these 4 types of updates on succeeding slides

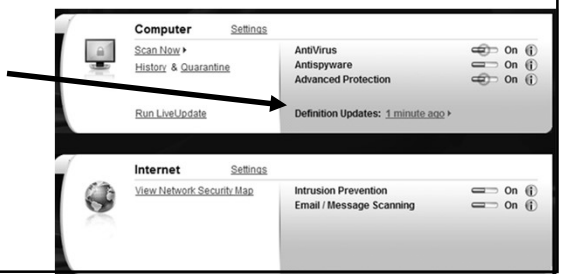
Updating Your Computer

- Most of these updates are supposed to happen automatically, although automatic update process sometimes stops working
- You should verify whether the automatic update process is working and update those programs manually that require it

Updating Antimalware Program Update Type 1

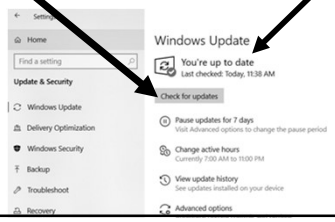
- Open your Antimalware program. Usually in system tray in bottom right corner
- Look for a last updated date or virus definition date. It should be < 1 week old





Updating Windows
Monthly Update Type 2

- Choose: Start, Settings, Update & Security
- On the left side of the page, Choose: Windows Update
- On the right side of the page, look for the words "You're up to date. Last checked (today's date)
- If you see a date older than 48 hours ago, click on "Check for updates"



Updating Microsoft Office
Part of Monthly Update Type 2

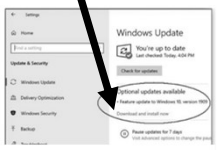
- By default, your computer does not update MS Office 2016, 2013, 2010 at all. (It does update Office 365 and most versions of Office 2019) To change this:
  - Choose: Start, Settings, Update & Security
  - On the left side of the page, Choose: Windows Update
  - In the middle of the page, at the bottom, Choose: Advanced options
  - At the top of the page, find the words "Receive updates for other MS products when you update windows" Just below those words, drag the slider so it turns blue and is on:
  - Return to the previous page, and Choose: Check for updates. Roughly 40 updates will be installed.

Feature Updates
Update Type 3

- Windows Feature updates occur twice a year in spring and fall
  - Spring update brings new features; Fall update brings few if any new features (See previous slide)
- Your computer may not have been updated yet for the latest Feature update, but will be in the future. See next slide
- Feature updates require .5 - 3 hours depending on your bandwidth
- To determine your version, in the "Type here to search" box type winver
  - 21H1 Spring 2021
  - 20H2 10/20/20
  - 2004 5/25/20
  - 1909 11/11/2019
  - 1903 5/21/19
  - 1809 October 2018 Update 10/2/18
  - 1803 April 2018 Update 5/12/18
  - 1709 Fall Creators Update 10/9/17
  - 1703 = Creators Update 4/11/17
  - 1607 = Anniversary update
  - 1511= Initial update
  - 1507= Original Win 10

Feature Updates

- Choose: Start, Settings, Update and Security, and then on the left side of the screen Choose: "Windows Update"
- You will see one of 2 messages or maybe nothing (see below)
- If you click "Download and install now" it will be installed. Wait ~4-5 months to do this
- If you don't download it for 13-18 months, the current newest version will be installed without your permission. This can be major problem



Feature update to Windows 10, version 2004

The Windows 10 May 2020 Update is on its way. Once it's ready for your device, you'll see the update available on this page.

Other Programs Update Type 4

- Other programs, e.g. Adobe Reader, QuickTime, Java, Google Chrome, Mozilla Firefox, etc. are supposed to update themselves automatically, to close security holes and/or offer new features. This process can break, which means you must check manually to verify you have the latest version

Updating Your Computer— How Often?

- Once a month I verify that virus definitions are updated. Every three months I verify that windows is updated and every six months that other programs are updated.

System Restore
Part 3

- System Restore allows you to use Restore Points to return your computer's settings to the way they were on an earlier date
- When you use System Restore, it only affects your computer's settings, not your data
- Learn more about System Restore here https://www.howtogeek.com/howto/windows-vista/using-windows-vista-system-restore/

  or here https://www.techrepublic.com/article/how-to-use-windows-10s-system-restore-as-a-recovery-tool/

Restore Points

- R.P are created automatically when you use your computer
- In addition, you can create R.P manually. See upcoming slide

Restore Points

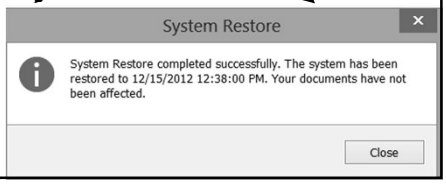
- Restore points (R.P.) give you a way to "fix" your computer when it "breaks"
- R.P. allow you to "roll-back" your computer to a date when it was working, in the event it breaks. R.P. are not a substitute for backup, and they do not backup data—only the "workings" of the computer
-

Using a Restore Point

- To access your Restore Points, right click the Start button and Choose: System
- On the right side of the page, Choose: System Protection
- On the next page, Choose: System Restore
- Choose: Next
- In the bottom left corner, check the box "Show more restore points" (You may not see this option)
- Choose one of the dates and choose "Next" at the bottom of the page

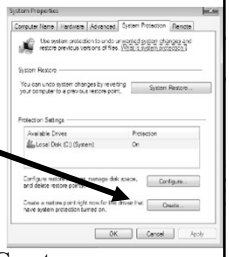
Using a Restore Point

- Your computer will reboot
- When it restarts, you will see a series of messages indicating that System Restore is working
- When the process is complete, you will see a message indicating that your computer has been returned to the date you chose



Creating a Restore Point

- Create a restore point before making changes to your computer such as installing a new program or new hardware
- To create a Restore Points, right click the Start button and Choose: System.
- On the right side of the page, Choose: System protection
- At the bottom of the screen, to the right of the words "Create a restore point now" click on "Create"



- On the next screen type a description for your R.P. and choose: Create
- Your computer will pause for a minute or so, and then you will be told that the R.P. has been created successfully

Create a Recovery Drive Part 4

- If your computer ever fails to startup properly, a Recovery Drive can be a lifesaver
- Recovery Drive allows you to access your data files or repair your computer
- Must create a Recovery Drive before you have a problem
- For directions to create and use a Recovery Drive, see https://support.microsoft.com/en-us/help/4026852/windows-create-a-recovery-drive
- Requires 4-16 GB flash drive depending on your computer. Does not work with a DVD

Create a Recovery Drive

- When you have finished creating your Recovery flash drive, label it, and put it in a safe place
- If you ever have a problem booting to Windows 10, insert your Recovery Drive and boot from it

Testing Your Internet Connection Speed Part 5

- Whenever I sense my internet connection is running slowly, I verify my speed by going to http://speakeasy.net/speedtest/
- Once you see a city, click on "Start Test" and then wait for your results. You will see download and upload speeds
- DSL/FIOS speeds should be relatively consistent from one test to the next. Cable speeds vary depending on the amount of internet traffic on your "street"
- Call your ISP if you are not receiving your advertised speed

Good luck with your computer