GUIDE TO BUYING A "WINDOWS 10" PC ©©

I suggest you print out this GUIDE along with its companion SHOPPING COMPARISON CHART and take them to the store with you.

This guide identifies the many topics you should consider when shopping for a new "Windows 10" Desktop or Laptop PC. You can fill out the SHOPPING COMPARISON CHART as you shop to help compare desired features.

My suggested minimum specifications are for a "Power User", and are high to help ensure that your new PC will comfortably meet your current expectations as well as your future needs.

IN A NUTSHELL: For the average user, who just does simple tasks like word processing, Internet browsing, e-mail, and watching online videos, almost any PC will work great as long as it includes an Intel i5 or i7 CPU @ 2.5 GHz or faster, at least 16 GB RAM, and a fast 500 GB Hard-Drive (Preferably an SSD). My personal preference for Laptops is the Lenovo Thinkpad series and for Desktops the Dell XPS series or Dell Optiplex series for Desktops. I continue to advise buyers to STAY AWAY FROM HEWLETT PACKARD BRAND.

WARNING: If the PC comes with an M.2 (NVME) SSD installed, it is possible that the Drive will not be recognized by currently available Image Backup Software or Drive Health monitoring utilities like Crystal Disk Info.

1. OS (OPERATING SYSTEM):
   a. WINDOWS 10 HOME vs WINDOWS 10 PRO. The Home version of Windows 10 is fine for almost all home users.

   b. Look for the 64-bit version of Windows 10 because it runs faster and recognizes more RAM than the 32-bit version. Since almost every new PC comes with a 64-bit Processor, they also usually come with the 64-bit version of Windows 10 pre-installed.

   c. Be aware that not all of your printer and other peripheral devices will have Drivers written for Windows 10. Make sure all your current devices have Drivers available for Windows 10. If not, then plan to buy a new printer or other devices.

2. CPU (CENTRAL PROCESSING UNIT). *See **Note 2 for many more details.*
   • I prefer INTEL brand Processors. Personally, I stay away from AMD Processors and INTEL "CELERON" Processors.

   • Desktops = I personally recommend the Intel i5 @ 2.7 GHz or higher as the best choice for price/performance.

   • Laptops = Intel i3 or i5 @ 2.6 GHz speed or higher.

3. RAM = 16 GB or more. See ***Note 3. *(The more the better, as Windows 10 takes some of the available RAM to support the needs of the video graphics processor).*

4. TOUCHSCREENS: Not recommended for standalone Monitors and not worth the extra money on laptops unless it converts into a Tablet.

5. HARD DRIVE: See my comments in the section below on HARD-DRIVES & SSD's. Best is a 500 GB or larger SSD in any new PC or Laptop.

6. DVD DRIVE = Dual Layer Blue-Ray or DVD writer. *WARNING: Many new PC's come without any DVD Drive, especially the new thin Ultrabooks. You will have to purchase an External USB DVD Drive to use with the PC.*

7. CARD READER = 5-in-1 or better. *(This is for camera type memory cards)*

8. NETWORK (Ethernet) ADAPTER = 1 GB speed *(Also called 10/100/1000 MB speed)*

9. USB 3.x PORTS = 4 or more ports; more are better. Having at least one USB 3.0+ port is preferred.

10. USB-C port = 1 or more ports.

11. WIRELESS: Mandatory for a Laptop. Optional for a Desktop but Standard on some. *Note: Top-of-the-line Lenovo Thinkpads offer wireless with 3 internal antennas for better connectivity*.

12. BLUETOOTH = Standard on most PC's. Nice, especially if you want to connect to a Bluetooth keyboard, mouse, camera, cell phone or other portable device*.*

13. MICROSOFT OFFICE = If you plan to buy Office 2007-2016 or 365, make sure it is included in your PC purchase. It is cheaper than buying it later. NOTE: I recommend the "LIBRE OFFICE" Suite. It is a FREE download.

14. RE-INSTALLATION DVD's: If at all possible, make sure that Windows 10 Installation DVD's or Recovery DVD's are included with the PC purchase. *(See *Note 1 below for details).*

*Note 1 - Re-Install/Recovery DVD Issues.

- If you buy a PC at a place like Best Buy or similar store, you pretty much have no hope of getting a Recovery CD/DVD set as part of the deal.

- Most manufacturers will sell you a Recovery DVD set for from $5.00 to $20.00 or so, but you have to phone them and possibly hassle with the Customer Service Rep.

- If you shop online at places like dell.com, lenovo.com or acer.com, you can customize your order to include a Recovery DVD set with your PC for a small additional charge. In some cases you can actually order a real Windows 10 Install DVD with your PC. This is the most desirable way to go.

- Most if not all new Windows 10 PC's come with a Utility Program that allows you to burn your own set of Recovery DVD's (from a hidden or second partition on the hard-drive). *(You are only allowed to use the Utility once, so if it fails to complete successfully, you have to call the manufacturer) .*

- Windows 10 also includes utility that allows you to burn a "Windows 10 Repair CD". This is a bootable CD that makes certain repairs that may make an unbootable system boot again. You can also download the CD image (ISO) from Microsoft. Be sure to specify 32-bit or 64-bit.

- WARNING: Most Recovery DVD's restore your PC to the way it was when you bought it and cannot be used for a Windows "Repair" install. Plus, Recovery DVD's destroy all your personal data during the recovery process. *I recommend making regular image backups so you can restore your PC back the way it was before a critical problem arises, including all your currently installed programs, settings, customizations, and data. See my tip sheet called "BACKING UP AN IMAGE OF YOUR HARD-DRIVE" for details.*

**Note 2 - CPU's:
- INTEL i5 vs i7: Although some Intel i7's are better than i5's, they are not as cost effective. An i5 CPU with a higher clock speed will actually run faster than an i7 with a slower clock speed, but the i7 Processor can do more multitasking for video editing, etc. *NOTE: I do NOT recommend INTEL'S CELERON Processor. It is their slowest and poorest performing CPU.*

- AMD: If you insist on the AMD brand, get one in the "Phenom" family or better. In my experience, the speed of AMD CPU's varies dramatically among similar models and their performance is poorly documented. ***Get Intel......***

- 64 BIT vs 32 BIT: I absolutely recommend getting a 64-Bit CPU so you can use the 64-Bit version of Windows 10 either now or later. You will find that most PC's for sale not only have a 64-bit CPU, but they also come with the 64-bit version of Windows 10 pre-installed. In the future, more and more 64-Bit Software will be available that can take advantage of the increased performance of the 64-bit CPU. Not to worry; Your 32-Bit applications will run just fine under Windows 10 (64-Bit).

- VIRTUAL XP MODE: Windows 10 does not support VIRTUAL XP MODE.

- SPEED CHARTS comparing the speed of various CPU's, see: http://www.cpubenchmark.net/

***Note 3 - RAM:
- More is better. If you use memory intensive programs like Photoshop, Paintshop Pro, or do video editing, I suggest you get 16 GB or even more of RAM or more.

- WARNING: The 32 bit versions of Windows 10 can only recognize a maximum of about 3.2 GB of RAM, so having 4GB or more is wasted. This is one big reason to choose 64-Bit Windows 10.

LCD MONITORS & DISPLAYS:
- **GLOSSY or MATTE?** LCD screens come in either a glossy or matte face. The best style for you is a matter of taste. Personally, I hate the sharp reflections and glare found on a glossy screen and prefer a non-reflective anti-glare (matte) screen. Many people will argue just the opposite because they like the "more vivid" colors and clarity found with glossy screens. They claim they are not bothered by the reflections or they plan to use the PC in a darkened area. Consider these ideas when shopping. *Note: Anti-glare films are available to put over glossy screens if needed.*

- **MONITOR SIZE:** LCD Displays are measured by the diagonal "corner-to-corner" distance of the screen.

- **LED BACKLIGHTING**: LED backlighting is how standard in all LCD Monitors and laptops.

- **TOUCHSCREENS:** Having a touchscreen that is in front of you, where you can get tired while holding your arm up, makes no sense to me. They do make sense in a convertable Laptop so you can convert it into a tablet.

VIDEO OUTPUT:

- Unless you are doing gaming or video editing, the built-in video is fine.

- The main thing is to make sure the video output connector on the PC is a match to the video input connector on your monitor. There are many new ways to connect a monitor. Some of the video connectors you will find are: VGA (HD15), HDMI, HDMI Micro, HDMI Mini, DVI, DVI-D, DVI-I, DVI-A, and Displayport. Http://en.wikipedia.org/wiki/List_of_video_connectors.

- RESOLUTION: Newer large monitors can have resolutions of 2560x2048 and more. Make sure you get a PC with video that can support the best resolution of your Monitor.

- MULTIPLE MONITORS: Some video cards support multiple Monitors. Don't pay extra for those unless you plan to use multiple monitors now or in the future.

HARD-DRIVES:

- **DRIVE RPM**: (Rotational Speed in revolutions per minute) Especially for laptops, if you don't ask the seller, you will probably end up with a 4200 RPM or 5400 RPM hard-drive inside because they are cheaper. Be sure to specify a 7200 RPM hard-drive. They make the whole PC run much faster and responsive. SSD's are even better.

- **SSD's** (Solid State Drives):
    - ✓ Available drives are now large enough to use as your main Drive (C:), so I now only recommend SSD's for your main Drive. Prices are WAY DOWN, so go for a 500 GB or larger SSD as your main drive. *I recommend you buy the largest SSD you can afford.*

    - ✓ If you do choose an SSD: Beware that they can fail suddenly and catastrophically without warning. Therefore when using SSD's, it is even more important to do regular image backups to an external hard-drive. You should be doing this anyway.

- **SECOND Hard-Drive:**
    - ✓ **LAPTOPS:** Some larger Laptops offer space for two hard-drives. In this case, you can make the main drive SSD and the second drive a regular drive. You can then automate regular image backups to the second drive.

    - ✓ **DESKTOPS**: Make sure the prospective PC has room for a second Hard-drive (for future expansion). *Many desktops do not*

- **DRIVE CAPACITY**: A Hard-Drive minimum size drive should be 500 GB or larger. Believe it or not, one or two 500GB SATA Drives are adequate unless you edit video or have a large library of photos, video, or music. *(Note: Per Steve Gibson, the bigger the drive, the less reliable the drive, especially drives over 2 TB in size).*

LAPTOP/NOTEBOOK PC's:

IN A NUTSHELL: My preference for a laptop is Lenovo Brand Thinkpads with an Intel i5 Processor at around 3.0 GHz speed, 4 to 8 GB RAM and a 500 GB SSD.

When shopping for a Laptop PC, in addition to the issues discussed above, you should think carefully about the following items:

1. **CONVERTABLES?** Some new touchscreen laptops pivot into a position that turns it into a Tablet. This feature as well as the touchscreen itself both cost more. Don't spend the money on this idea unless you want the tablet functions.

2. **CASE RUGGEDNESS: A Laptop case should NEVER flex.** Lift the left or right front corner of the laptop. Both corners should lift exactly the same without flexing. If it flexes at all, pick a better quality laptop**.**

3. **SCREEN:**
   a. GLOSSY or MATTE? Read the discussion above under MONITORS & DISPLAYS (LCD).
   b. SIZE: Laptop screen size typically varies from 12" to 17". Personal preference, but you must consider that larger screens mean a thicker heavier PC, and a shorter battery life.
   c. RESOLUTION AND FONT/CHARACTER SIZE: Be warned that higher resolution screens have smaller characters that are harder to read. You can lower the resolution with Windows software, but that degrades the quality of the text. A better solution is to buy a laptop with "LOWER" resolution screen, especially if it has a smaller 12-13" screen. *Note that more expensive laptops mean higher resolution screens so cheaper may be better!*
   d. LED Backlighting for laptop screens is now standard.
   e. TOUCHSCREEN: If you have a laptop that can convert into a tablet then a touchscreen may be a good idea for you. Otherwise, having a touchscreen that is in front of you where you can get tired holding your arm up, makes no sense to me.

4. **KEYBOARD:**
   a. Keyboard size is important if you plan to use the laptop's built-in keyboard most of the time. Laptops with smaller screens have undersize keyboards that can be difficult to use if you are used to touch typing on a standard-size keyboard. For me, undersize keyboards tire out my hands. If the keyboard feels scrunched up to you, try a larger screen Laptop. They will have larger keyboards and possibly even a full size keyboard.
   b. Keyboard feel is also important. The keys should provide a clear physical tactile feedback each time a key-button is pressed. Not too firm and not too soft.
   c. KEYTOPS: The surface of the tops of the Keys should all be concave (not flat).
   d. BACKLIT KEYBOARDS: Many new Laptops offer keyboards that are backlit. This is a very nice option.
   e. Remember that External full-size Keyboards can solve any Laptop keyboard issues.
   f. There is no question that the LENOVO THINKPAD Series of laptops have the best keyboards.

5. **MOUSE/TOUCHPAD/TRACKPAD**. Be sure to test the feel and action of the touchpad. Make sure that the Left and Right click buttons are separate from the Trackpad. Note that Lenovo and some other Manufacturers provide a Trackpoint Stick in addition to the touchpad. I like the trackpoint feature a lot, but it takes a little getting used to. If you do not like the touchpad on a laptop, don't let that be the show stopper. You can simply plug in an external mouse or trackball into the USB port or via Bluetooth. Many users do this routinely.

6. **EXTERNAL VIDEO OUTPUT:** Most new laptops come with only an HDMI connector. If you need the old blue VGA connector you can buy an HDMI-to-VGA adapter (cheaply).

7. **DOCKING STATION (PORT REPLICATOR)**: A docking station allows you to plop your laptop down and automatically connect it to an external monitor, full-size keyboard, mouse, Network, and various USB devices via a hidden connector on the bottom of the laptop. Most brands offer this feature, but only on certain specific models. **Personally, I would never buy a laptop without this feature.** *Note: There are several 3rd party "Universal" docking stations available that connect to the PC via a single USB plug. I do not recommend them.*

8. **SPEAKERS**. Unfortunately just about all Laptop built-in speakers are awful. Plan on using earphones or external speakers for your multimedia.

9. **BATTERY ACCESS:** One of the first things to fail on a Laptop is the battery. Be aware that many new thin ultrabooks have the battery inside and it takes a technician to replace it.

10. **NETWORK CONNECTOR**: Many new thin Ultrabooks do not have a Network Connector and are wireless only. Be aware of this if a wired connection is important to you. I prefer to have a wired network connection available in case there is an issue with the wireless. An alternative is a "USB to Ethernet" adapter.

11. **BRANDS**: I prefer and recommend LENOVO and DELL brands for both Desktops and Laptops; for too many reasons to mention here. THE BEST OF WHICH IS THE LENOVO THINKPAD line.

LAPTOP or DESKTOP? Basically many newer Laptops have all the power of a Desktop plus the portability that Desktops do not offer. The disadvantages of a laptop are numerous though; smaller screen, cramped keyboard, poor sitting position. If you choose a laptop for portability needs, I suggest you consider choosing one that supports the Docking Station / Port Replicator option so you can use a full size display and keyboard most of the time.

ALL-IN-ONE DESKTOPS: Basically All-in-One Desktops save a lot of desk space, but in my opinion that advantage is outweighed by the fact that they leave no room for expansion (same as a laptop, everything is jammed into one case). For example, you cannot install a better Video card, or add a USB 3 adapter, or add internal hard-drives, or add internal DVD players. So make sure the PC has everything you want when you buy it, as you have no room for growth. Stay away from HP brand.

CONVERTABLE LAPTOPS: These designs are great as you can use Windows 10 as a regular PC or as a TABLETt. They cost more, but come with a touchscreen. *Having a touchscreen on a regular on non-convertible laptop is useless. For me personally, my arm would get tired holding my hand up to the screen all the time.*

PRINTERS & OTHER EXTERNAL DEVICES:
PRINTER DRIVERS: Windows 10 drivers for older printer models are frequently NOT available. Search the Printer Manufacturer's website (Not Microsoft.com) to see if a Windows 10 driver is available for your model printer. If not, there is a possibility that Windows 10 may have a "built-in" generic driver that will work with your printer. *WARNING: The Generic Windows 10 Printer Drivers frequently have limited functionality. You really need a Driver provided by the Printer Manufacturer for full functionality.* See if your old Printer works with Windows 10 before you go out and buy a new one. *NOTE: All-In-One printers complicate the printer driver issue even more.*

OTHER EXTERNAL DEVICES: All my comments about printers applies to all external devices.

SPEAKERS:
The quality of speakers included in a Desktop PC purchase should not be a concern. If you do not like the speakers included, good speakers are cheap and easy to find. Never expect good speakers inside a Laptop PC.

*__**Always check for the latest version of this guide at: www.jimopi.net**__*