HP Compaq Laptop/Notebook Upgrade FAQ

I decided to share this information with any and all forum members who find themselves a bit lost in

understanding what upgrades are possible. I will try to update this FAQ periodically. I also detailed the difficulty level on a few specific upgrade projects. Kudos to forum members CherylG, Bob_Headrick, RasterBlaster, Huffer , CharlesHP and WendyM for their thoughtful suggestions and input on this project.

This information is generic. That is simply because of the great number of HP laptop models available and the range of laptop motherboard generations owned by forum members.

Any upgrades you decide to attempt are done at your own risk.

<u>Table of Contents</u>

1. Can I upgrade the processor in my laptop

2. Can I upgrade the memory in my laptop?

3. Can I upgrade the video card in my laptop?

4. Can I upgrade the network card in my laptop?

5. Can I upgrade the LCD display in my laptop to a larger one?

6. Can I upgrade the 2.5" hard disk in my laptop?

7. Will the HP recovery disc set work after I upgrade my hard disk?

8. Can I upgrade the on-board Wireless card in my laptop?

9. Can I upgrade/replace the motherboard in my laptop?

10. Can I add a TV Tuner card to my laptop?

11. Can I add more USB ports to my laptop?

12. Where can I find detailed specification information and replacement procedures for my HP Laptop/Notebook?

13. Can I find guides and videos that cover the repair/replacement steps involved in what I want to upgrade or replace?

14. The onboard network port or onboard wireless adapter no longer works. My laptop is out of warranty. What can I do about it?

1. Can I upgrade the processor in my laptop?

For notebooks the answer is perhaps.

Some notebooks have embedded processors. They are not plug and play. They are soldered onto the system board. An update would require swapping out the system board for one in your series with a better processor.

For most laptops the answer is yes.

The limitation is that the replacement processor must be of the same socket type and within the range of listed processors the laptop is sold with by HP. If the processor is not within the CPU option list, it is quite likely that the BIOS has no support for it. It will probably not be recognized by the motherboard as valid during the BIOS POST. That means that if installed you might see the dreaded "Incompatible Processor installed" error message from the BIOS on any startup attempts.

FYI... doing this will void your warranty.

Tools and materials required.

Laptop manual (HP laptop support web page)

Laptop assembly guide(HP laptop support web page)

New (or used. The choice is yours) Laptop CPU (see above limitation)

Small Phillips screwdriver(Jeweler's)

Thermal compound (use a high quality brand)

Anti-Static wristband

Small container for the screws (they are very small and easy to lose)

Lots of patience.

1. Turn off the laptop and unplug it. Remove the battery, CD/DVD optical drivesand the hard drive. The hard drive is usually located in a slot on one side of the laptop. Remove the screw that holds the cover in place, then pull out the hard drive caddy.

2. Turn the laptop over and remove the screws on the bottom that hold the keyboard in place. Flip the laptop over, open it, then lift the keyboard up and out. Carefully unplug the flexible ribbon cable that connects the keyboard to the motherboard.

3. Remove the screws that hold the keyboard bezel and palm rest in place. Some of the screws may be covered with round stickers or rubber plugs. Carefully lift the bezel and palm rest up and out.

4. Unplug the heat-sink fan. Remove the screws that hold the heat-sink in place, then carefully remove it from the laptop. Release or unscrew the mechanism that holds the original processor in place, then remove it from the laptop. Thoroughly clean the base of the heatsink with alcohol (70%) and a paper towel.

5. Install the new processor. CPUs are static voltage sensitive components, so use an anti-static wristband. Handle the CPU only by its edges. Make sure it is securely attached and properly aligned in the CPU housing. Apply a thin layer of thermal compound(Arctic Silver / Ceramique or better) on the processor, then replace the heat-sink and fan. Replace the screws, then plug the fan back in.

6. Test the new processor. Connect the keyboard to the motherboard temporarily. Plug the laptop back in, (battery uninstalled) restart it, then follow the instructions in your owner's manual to enter your system's BIOS (usually F10).

The new CPU should now be recognized by the BIOS. Turn off the laptop, unplug it, then remove the keyboard.

7. Reassemble the laptop by following your diagrams and the HP assembly guide found in your laptop's support web page. Replace the round stickers or rubber plugs to complete the upgrade.

2. Can I upgrade the memory in my laptop?

Yes, but only within the limitations of your notebook's motherboard chipset and tables in the ROM file for your BIOS. HP custom Notebook BIOS does not allow modification of the primary and secondary

memory timings or memory module voltage setting. That puts a severe limit on which particular memory modules will operate in your laptop. Go to a major memory manufacturer website and use their utility (PNY memory configurator, Crucial's Memory Scanner and Kingston's Memory Configurator) to find out which memory is guaranteed to work in your laptop. Corsair and OCZ are other top memory makers.

If your desire is for the upgrade to work on the first start after you install the new memory modules, there are a few rules of thumb you should follow.

1) The bus speed of the new modules should be the highest speed that the specifications of your notebook state. Mixing modules of different bus speeds is not recommended. Mixing bus speeds results in the system board's memory bus defaulting to lowest memory module's speed. Download and run CPU-z (a free utility) to find out what the SPD settings are for your OEM memory module(s). CPU-z will also give you specification information that you might not be able to find at the HP support website. The highest speed in the timings table of the memory slot section that is listed is the highest speed memory that your BIOS has support for.

2) Don't mix memory modules from different manufacturers. The module memory chips, timings, bus speed and voltage requirements must be identical for optimal results.

3) The memory modules must be configured the same. (either all single sided or all double sided)

4) The memory modules must be the same size (256 MB / 512 MB /1 GB or 2 GB) for optimal results. 2

and 4GB modules will not operate in all laptops. Check HP's stated maximum memory in the specifications for your product in the HP laptop specific supportpage. There are exceptions for this rule of thumb. Laptops with AMD chip sets are sold with different size modules installed. (1 x 1GB and one 2GB memory stick)

5) On some older laptops it will be required that you go in to the BIOS on start up (normally it is the F10 key) and set the amount of newly installed memory to the new actual value. Newer laptops will generally auto configure the installed RAM.

It is highly recommended that you purchase memory only from a major memory maker

(HP,Kingston,Crucial,Corsair,OCZ,Geil...etc) that is guaranteed by them to work in your laptop.

Generic no-name brands are a bit of a gamble. You could roll a seven or snake eyes.

3. Can I upgrade the video card in my laptop?

Generally speaking,no.

it is not possible due to the platform design of the majority of consumer laptop motherboards. That means you are generally stuck with the video chip integrated into your notebook's motherboard chip-set. So that means that most laptops do not have a video card.

There are a few notable exceptions in the premium notebook price range. Some laptops that use Mobile PCI module (MXM) for a video output solution do allow that flexibility. Technically adept super users have the ability and knowledge to take advantage of it. Some MXM Type II or higher modules are

upgradeable. MXM is an open standard for laptop graphics that was developed by NVIDIA. ATI was acquired by AMD a few years ago. ATI brand Radeon MXM modules are available.

Affordable external Gaming graphics solutions are still a mythical beast. There have been demos of the XG station as far back as 2008 at CES. ASUS XG station seems to have vanished into thin air.

HP HDX Entertainment Series notebooks and some DV9500T notebooks use MXM and can be upgraded. This is not a novice task. It requires a bit of research on your part to ensure compatibility!

Be forewarned that there does exist a problem with the MXM standard. There is not exactly a single standard. Laptop makers have in some instances modified the standard dimensions of MXM modules to ensure that they will fit into their laptop enclosures. They are used in some laptops, but are specifically

physically configured for a specific laptop. This is a rather expensive and very difficult upgrade project for most people to tackle.

There is a product that has recently been placed on the market that provides another option. USB external VGA video (cards) adapters. This is a link to a video demo of the device.

4. Can I upgrade the internal network card in my laptop?

No. The internal network is an integral part of the motherboard. External

network cards can be purchased with strict regard to the external interfaces

present in your laptop.

5. Can I upgrade the LCD display screen in my laptop to a larger one?

No. The LCD display is specific to the laptop case. It cannot be changed without

changing the case.

6. Can I upgrade the 2.5" hard disk in my laptop?

Yes.

An **SSD hard drive is a great option for laptops** with SATA2 hard drive interfaces.

Using an SSD disk as your system will provide amazingly short boot times, shutdown times and read/write accesses.

When enough of these are on the market the price will make them an attractive option to anyone wishing to upgrade their laptop. OCZ and Intel are currently the top brands.

Use brands such as Fujitsu,Hitachi, Toshiba, Samsung and Western Digital for best results. Seagate hard disks have been known to be on problematic. (that is from my own experience and also reported in many posts here in the forum)

Generally speaking, a replacement IDE/EIDE hard disk can't be larger than 120 GB.

Laptops with the SATA hard drive interface often have issues with drives larger than 320GB.

500GB and 1TB SATA hard disks have been reported as working here in forum posts.

If your IDE/EIDE hard drive is 5400 rpm and you are considering upgrading to a7200 hard disk, your new hard drive will generate more heat. 7200rpm hard disks have been found to be sometimes incompatible replacements for a 5400rpm hard drives.

SATA hard disks are generally more easily upgraded compared to installing IDE/EIDE hard disks. Do not use a SATA to IDE connector converter to attempt to install a SATA disk where an IDE/EIDE was intended to be used. Use only what the laptop's chip set and on board connectors are capable of.

The simplest method of installing when upgrading to a larger drive is through the use of partition cloning software. Acronis True Image Home software is a good example. The newest version of Acronis is reported to be the best but is no longer a free product. Macrium Reflect Free and other cloning software at the freecountry,com are free software.

Kudos to Huffer for links to   freeware disk cloning utilities.

7. Will my HP recovery cds work after I upgrade the hard disk?

Generally speaking, Yes.

8. Can I upgrade the on-board Wireless card in my laptop?

With some laptops this is a possibility. It depends on whether a daughtercard or

mini-PCIe adapter is part of the OEM optional configuration. Upgrading to a type

listed as an option in the parts list for your specific laptop is viable, as it is known
to be compatible with your laptop.

9. Can I upgrade/replace the systemboard in my laptop?

The only upgrade possible without major case modifications is with a motherboard that was designed by HP for the laptop series that your laptop part number/ model number falls within. Replacing the motherboard can be done, but requires a motherboard designed specifically for your laptop housing. On the Support page for your laptop on the left side you will find a link to HP parts to obtain the correct part number. This job requires a high level of technical competence and steady hands. For most consumers, this is best left to an HP approved repair shop or HP Repair Center.

10. Can I add a TV Tuner card to my laptop?

If your laptop has Vista Premium or Windows 7 as an OS then you should be able to add a compatible external TV Tuner card.

There are different interface types available. (Notebook Expresscard/54, USB) Read reviews on the product and search the web to find out how other notebook owners have or have not had success with particular brands or models.

11. Can I add more USB ports to my laptop?

Yes.

Use a powered hub if you want to extend the number of usb ports via an existing usb port. Your laptop southbridge chipset is designed to only supply a specific amount of current to each port (in µA). Exceeding the specification is not a great idea in terms of your motherboard's southbridge chip's longevity. There are different USB adapter interface types available. (Expresscard/54, Expresscard/34, Cardbus, PCMIA)

12. Where can I find detailed specification information and replacement procedures for my HP Laptop/Notebook?

For most HP models in the product support page for your product there is a link to an HP Official maintenance and Service manual. For example, for dv6500/dv6600/dv6700, the Maintenance and Service Manual is here: http://h10032.www1.hp.com/ctg/Manual/c01295877.pdf. This guide include topics like "illustrated part catalog",

"removal and replacement procedures" plus topics like "backup and recovery".

Once you are at the support page for your laptop check the manuals section. Look for a Maintenence and Service guide.

13. Can I find guides and videos that cover the repair/replacement steps involved in what I want to upgrade or replace?

HP provides repair videos called "Customer Self-Repair Steps (videos/animations)" for some models, which show the

repair/replacement steps visually, for many seeing is much easier than reading. For example, repair videos for 2730p are [here](#)

More videos and guides can be found by searching for them on the web. YouTube or Insidemylaptop.com are also good sources for visual and written information.

14. The onboard network port or onboard wireless adapter no longer works. My laptop is out of warranty. What can I do about it?

You will often find posts here in the forum about the very same problem. Any problem you are having might have already been documented and solved. Use the forum search function with your laptop as the keyword. Read through the solutions that have worked for other members and try them yourself.

If the solutions don't work in your case there are other options.

You can purchase an external wired or wireless network card that plugs in to an available interface port on your laptop.

Each laptop type has different interfaces so check your notebook's specifications to see what you can use. There are different types available (USB ,PCMIA, ExpressCard/54, ExpressCard/34). Be certain that you purchase cards that are compatible to the OS that you have installed in your laptop.