11 Things Most Builders Forget

Whether it's the first build or fiftieth, assembling a computer inevitably results in a few surprises. I have assembled here a list of items and details that most builders (even the pros) forget to address during one job or another. These points, while creating more work for you before you actually get to do the fun part of building a computer, will actually save you from grief and heartache later on.

Yes, I am as guilty of failing to do these as anyone else is… which is why I made the list. I have tried to list these items in a somewhat logical order, but many of these points interrelate to each other, and you would be best served to read the entire article first before going ahead with the steps.

Do your homework

Knowing *what* you want to build is always a good first step. This may sound like (and is) common sense, but oftentimes the builder has only a vague idea of what features are wanted in the build and assumes everything will fall into place at the right moment. Unfortunately, that right moment tends to occur after one or more components are returned because they are incompatible with the rest of the system. Common problems include:

- **Underpowered Power Supply Units (PSUs)**: the wattage is not as important as the current capacity of the individual voltage rails.
- **Wrong or mismatched interfaces**: a PCI-e video card will not work in an AGP slot and vice-versa. Similarly, a 939-pin motherboard (Athlon) can't be expected to accommodate a Pentium IV processor (427 pins).
- **One component too fast or slow**: why buy a memory designed for a 400MHz front-side bus if your motherboard can only go up to 333MHz? If you plan on overclocking something, then you need to know now, so that you can factor that into your purchases.

Write down all the known requirements for the build, filling in as many details as possible. Then look for parts that will meet those requirements. Make sure that all the components will work with each other before making any purchases.

Now is a good time to learn more about computers in general and the new build specifically. Additionally, knowing exactly what is needed will help preclude the inevitable last-minute addition. Finding out that you need a more robust or different style of heatsink for the processor as you are trying to assemble not only delays the build, it can also break the budget, which, conveniently enough, is my next point.

Budgeting

Everyone has a budget. Knowing the absolute limit on spending for the system is smart in several ways: you look for the best deals, you make realistic decisions on which components to buy and use, and knowing how much the custom build will be allows you to see if there's a pre-built that meets your specifications that would be cheaper (yes, that does happen, occasionally, especially if you are buying software, too).

When establishing the bottom line, make it solid. Don't budget for $800 and then up it to $850 later. If you can afford $850 then set that as the budget limit, if you can't, then stick to the $800 budget. Remember, you can always upgrade at a later date.

Keep the receipts

Everyone knows that you always get good parts from the dealer, especially online dealers, right? Hold on to the packaging and especially the receipts until you know all of the components are working properly. Those receipts are also handy when you have to prove to the spouse that you *didn't* go over budget.

Safety

How many times have you stood there with a utility knife in hand and told yourself, "I should turn this around so I don't cut myself" then promptly do just that?

Maintain awareness of the hazards involved in the operation you are about to perform and ensure you have the appropriate safeguards in place, whether it be unplugging the computer from source before crawling into it, wearing mechanic's gloves while working sheet-metal for that mod or backing up critical data before running partitioning software.

Safeguarding the computer

Think about protecting your computer. Do you have an adequate surge protector? Have you considered getting an Uninterruptible Power Supply (UPS)? If your area is prone to brownouts, then a UPS is the way to go. Use a UPS that powers the computer from the batteries all the time and recharges them while power is on. If you do go with a UPS, be sure it isn't underpowered, providing enough current to save your work and properly shut the computer down.

Have you considered where the computer will sit? Is there any chance of flooding where your computer will be? Is it secure from theft or unauthorized access? Placement may require additional cabling or a stand to put the computer on.

ESD

Be sure to use all reasonable Electrostatic Discharge (ESD) precautions when assembling your system. While today's electronics are better-armed against the ravages of ESD than their earlier counterparts, why take chances? Keep in mind that it is your money going into the system. Do you really want to risk damage and delays (awaiting replacement parts) by not using a cheap wrist strap?

Documentation

Do you know exactly what is in your computer right now? Do you know the model number and firmware revision of your sound card? Probably not. You probably don't know where the driver discs and manuals for all the components are, either.

Dutifully recording all the details of the system as you build it up, as well as placing all the documentation and software discs in a common binder will save you time and effort in the long run. Want to check for the latest drivers? Grab the binder and look up the part

number. That beats having to crack the case open and pull the card, which may or may not have the part number openly stamped on it. Want to put Linux on the computer? You have the part numbers handy so you can determine if and how the components will work with the OS.

Remember those receipts you're supposed to be holding onto? Now you know where they is when it's time to return something under warranty.

This goes for that software you have loaded, as well. You might need to put all those CDs into a case, but where are the registration keys and serial numbers? What are the settings you spent so much time perfecting?

Likewise any passwords you may have. Yes, you aren't supposed to write down your passwords, however, if you are like me, you have fifty billion passwords for stuff and I know *I* tend to forget, particularly if I don't use them on a regular basis. So I've compromised and placed all my passwords into a secure PDA file. With one master password, I can access the whole lot of them. What's more, since I have them recorded someplace secure, I feel no need to use simple, easy to remember (and thus easy to break) passwords for stuff. I can use the random password generator built into the app I use on the PDA, and I use a different password for everything.

The latest version

Do you have the most up-to-date drivers and firmware? How about the second most? You'll need them, so why not be ready beforehand? Have you slipstreamed your Win XP with the latest Service Pack and hotfixes? While you're at it, why not build an answer file and simplify your installation? Don't forget to print out the file and place it into the abovementioned binder.

Plan the install

What OS are you going to use? Are you planning on installing another at some time in the future? What are you going to use the machine for? How many partitions will you need and in what sizes? How should the partitions be ordered? Have you planned a backup scheme and how can you simplify that process from the beginning?

Write down what software you need to install and at what point you need to install it. You can use that list to build an unattended installation disc.

Backups

Who the heck needs backups? You do. You didn't think about archiving data when you began ordering all the components, did you? If you have a backup plan set up ahead of time, then you are likely going to use it, and it won't hurt quite as badly when that unexpected crash comes.

RTFM

Sure, you've been working on/with computers for years now (and/or you're male), you don't need no stinkin' documentation. That is, until you can't get the system to work correctly with both RAM sticks in. If you had read the manual beforehand, you would have

known that *this* particular board requires RAM in both slots 1 and 2, not 1 and 3 as is standard on many other boards. Also, since you have all your documentation assembled in one place, you know exactly where that manual is.

This isn't to be considered the end all, be all list of things to do when preparing to build a computer, but I believe it hits most of the key areas that lead into trouble while building.