**Budget for computers**

**Two systems for the software developers**

* Cpu: i5 4690k = €207.38 euro x 2 = €414.76

<http://www.amazon.co.uk/Intel-i5-4690K-Processor-Graphics-LGA-1150/dp/B00KPRWB9G/ref=sr_1_2?ie=UTF8&qid=1414702945&sr=8-2&keywords=i5>

* Motherboard: Asus Z97I-PLUS Motherboard = €143.41x2 = €286.82

<http://www.amazon.co.uk/Z97I-PLUS-Motherboard-Express-DVI-D-Socket/dp/B00K80MS0C/ref=sr_1_1?ie=UTF8&qid=1414703234&sr=8-1&keywords=Asus+Z97I-PLUS>

* Ram: Corsair Vengeance 8GB (2x4GB) DDR3 1600 Mhz CL9 = €84.03x2 = €162.06

<http://www.amazon.co.uk/Corsair-CMZ8GX3M1A1600C9-Vengeance-Performance-Desktop/dp/B0085IZRSO/ref=sr_1_2?ie=UTF8&qid=1414703292&sr=8-2&keywords=Corsair+Vengeance+8GB>

* Hard-drive: WD 500gb 3.5-inch Internal Hard Drive – Black =50.72x2= €101.44

<http://www.amazon.co.uk/500GB-inch-SATA-Internal-Drive/dp/B00DSUTWMQ/ref=sr_1_7?ie=UTF8&qid=1414703363&sr=8-7&keywords=wd+black>

* Computer case: BitFenix BFC-PRO-300-KKXSK-RP - Prodigy = €87.29x2= €174.58

<http://www.amazon.co.uk/BitFenix-BFC-PRO-300-KKXSK-RP-Prodigy-Mini-ITX-Midnight/dp/B008BZVTX8/ref=sr_1_1?ie=UTF8&qid=1414703398&sr=8-1&keywords=BitFenix+BFC-PRO-300-KKXSK-RP+-+Prodigy>

* Psu: Corsair Builder Series CX 430 Watt = €41.99x2 = €83.98

<http://www.amazon.co.uk/Corsair-Builder-Series-Bronze-Supply/dp/B009RMP14M/ref=sr_1_1?ie=UTF8&qid=1414703437&sr=8-1&keywords=Corsair+Builder+Series+CX+430+Watt>

* CPU cooler: Noctua NH-U14S = €77.30x2 = €154.60

<http://www.amazon.co.uk/Noctua-NH-U14S-Ultra-Quiet-Cooler-NF-A15/dp/B00C76WV3O/ref=sr_1_1?ie=UTF8&qid=1414703469&sr=8-1&keywords=Noctua+NH-U14S>

* Operating System: Ubuntu

**Total = €1378.24 euro**

**My reasoning behind my choices in computer parts**

**Overview**

The reason I have chosen these parts for the two software developer’s computers is they need a good responsive system that is not going to freeze, slow down or crash because of lack of hardware capability. This computer was put together with longevity in mind rather than upgradability. I expect these computers to last many years and still be quite fast especially with intel’s new turbo boost technology that essentially automatically over-clocks the CPU(central processing unit) based on the current CPU usage and CPU temperature. You may notice I did not include a GPU (graphics processing unit) this is because the I5 has already got an integrated GPU core and as we are not creating anything that is graphically intensive I do not see the need for a dedicated GPU. The I5 GPU core should be more than power full enough to suit our developer’s needs.

**CPU (Central Processing Unit)**

For the CPU I have chosen the latest version of Intel’s I5 4690k quad-core processer (unlocked). I chose this CPU because I believe the software developers will need a fast and responsive system and will probably be doing a lot of multi-tasking while bug fixing like researching answers to their problems. This CPU should also be fast enough and last a long enough before needing to be replaced. To complement the I5’s turbo boost technology I have also included an after-market CPU cooler too keep the CPU cool in such a small case while still being able to hit close to maximum turbo boost frequency (3.4 GHz -3.9 GHz).

**Motherboard**

I chose the Asus Z97I-PLUS motherboard because it is small with high quality parts that include everything our developers will need nothing more, nothing less. Unfortunately I could not find the non plus version to save a little on costs as we do not need Wi-Fi for our desktops because as they will be connected via Ethernet cable to the network.

**RAM (Random Access Memory)**

I chose this ram (Corsair Vengeance) based on its quality, speed and price. In reality 8Gb of ram is more than our developers will need (4Gb is more than likely all they would need) but because longevity was in mind when creating this system I decided the minimum should be around 6Gb because we don’t know how resource heavy software will become in the future. Upon shopping for ram I realised there was little to no price difference between 6Gb and 8Gb so I decided to go for 8Gb.

**PSU (Power Supply Unit)**

I chose the Corsair Builder Series PSU because it has good protection against Over-voltage and over-power protection, under-voltage protection, and short circuit protection. This power supply only has a bronze 80 plus efficiency rating but for a power supply with this low wattage you don’t tend to find much higher. 420 watts is again a little more than needed but it allows for a small bit of leg room for upgradeability plus finding a high quality PSU with lower wattage is not easy. While most believe the PSU is one place a person can save money on a computer I strongly disagree as a bad power supply could ruin all the components in a computer and if a PSU cannot protect your pc from outside faults as well this could render your computer useless or worse cause a fire.

**OS (Operating system)**

I have chosen Ubuntu as the operating system for all the computers because not only is it free it is the most user friendly OS out of all the Linux based operating systems. It also has a lot of great software for developers, network admins and the helpdesk staff.

**Hard drive disk**

I have chosen the WD 500gb black hard drive because it is designed to have excellent read and write times, which will be great in making the system more responsive. The reason behind only choosing 500Gb of hard drive space is because everything is going to be backed up on the server so there is no need for a large hard drive. In theory 500Gb should be a lot more than needed to accommodate software and some files the staff may not want on the server. My first initial thought was to just implement a 250Gb ssd(solid state drive) but because of costs and in case we might need more space which is unlikely but possible I decided to go with a high performance hard drive.

**Two systems for the helpdesk staff**

* Cpu: i3 4360 = €140.31x2= €280.62
* Motherboard: Asus Z97I-PLUS Motherboard = €143.41x2 = €286.82
* Ram: Corsair Vengeance 4GB DDR3 1600 Mhz CL9 = €41.84x2= €83.68
* Computer case: BitFenix BFC-PRO-300-KKXSK-RP - Prodigy = €87.29x2 = €174.58
* Psu: Corsair Builder Series CX 430 Watt = €41.99x2 = €83.98
* Operating System: Ubuntu

**Total=909.68 euro**

**My reasoning behind my choices in computer parts**

**Overview**

The reason I have chosen these parts for the two helpdesk staff computers is they need a good responsive system that is great for everyday use which I believe the helpdesk staff will not need anything more powerful as they will only be answering questions on the forums section online and documenting any reported bugs customers mention. I will only mention any changes in hardware below rather than repeating my reasons.

**CPU**

For the helpdesk staffs computers I have chosen to go with Intel’s I3 4360 dual-core processer mainly because this CPU should be more than capable of dealing with the helpdesks usage as I suspect they will only be using a browser with one or two tabs open and a document editor. I also believe this CPU should last a long time without needing to be replaced as it is fast and designed for everyday usage. I decided to use the stock CPU cooler supplied with the CPU as the I3 does not have turbo boost technology so there should not be much heat generated from the CPU as it is only running at stock clocks.

**Network administrator workstation**

* Cpu: i3 4360 = 140.31euro
* Motherboard: Asus Z97I-PLUS Motherboard = 143.41 euro
* Ram: Corsair CMZ4GX3M2A1600C9 Vengeance 4GB DDR3 1600 Mhz CL9 = 41.84euro
* Computer case: BitFenix BFC-PRO-300-KKXSK-RP - Prodigy =87.29euro
* Psu: Corsair Builder Series CX 430 Watt = 41.99euro
* Operating System: Ubuntu

**Total = €454.84 euro**

**Peripheral devices**

Monitors for all 5 computers= Asus VS228DE 21.5 inch Widescreen 1080p = €100.89x5= €504.45

Keyboard for all 5 computers = Logitech K120 Keyboard = €15.19x5= €75.95

Mouse for all 5 = TeckNet® High Precision Gaming Mouse = €12.65x5= €63.2

I had no real reason for my choices in peripheral devices other than quality vs price.

**Total = €643.65**

All of the above components were found on [www.amazon.co.uk](http://www.amazon.co.uk) and prices are subject to change.