

Lab - Research a Hardware Upgrade

Introduction

Use the Internet, a newspaper, or a local store to gather information about hardware components. Your customer's computer currently has one module of 2 GB of RAM, a 500 GB hard disk drive, and a PCIe video adapter card with 256 MB of RAM. Your customer wants to be able to play advanced video games.

Instructions

Step 1: Research memory options.

Shop around, and in the table below list the brand, model number, features, and cost for two different 8 GB modules of DDR3.

Brand and Model Number	Features	Cost
<i>Kingston KVR16N11/8</i>	<i>Dimensions: 133.35mm x 30mm x 3mm</i> <i>Memory Bus: DDR3</i> <i>Freq.: 1600mhz</i> <i>Size: 8192mb</i>	<i>₱2,100.00</i>
<i>Kingston HyperX HX318C10F/8</i>	<i>Dimensions: 133.35mm x 32.8mm x 7.08mm</i> <i>Memory Bus: DDR3</i> <i>Freq.: 1866mhz</i> <i>Size: 8192mb</i> <i>Asymmetrical Heat Spreader</i>	<i>₱2,879.00</i>

Question:

Based on your research, which RAM would you select? Be prepared to discuss your decisions regarding the RAM you select.

Based on the features above, the Kingston HyperX HX318C10F/8 is the best choice for gaming due to the significantly faster memory size and speed, which is viable for more memory-hungry applications and games.

Step 2: Research hard disk drive options.

Shop around, and in the table below list the brand, model number, features, and cost for a 3 TB 7200 rpm SATA 3 hard disk drive and a 500GB or 1TB solid state drive (SSD).

Brand and Model Number	Features	Cost
------------------------	----------	------

Seagate Barracuda 3TB ST3000DM001	Form Factor: 3.5" Capacity: 3TB Interface: SATA 3 Dimensions: 146.99mm x 101.6mm x 26.1mm Speed: 7200 RPM Cache: 64mb Transfer rate: 210mb/s S.M.A.R.T Support: Supported	P4,999.00
Samsung 1TB SSD 870 QVO MZ-77Q1T0BW	Form Factor: 2.5" Capacity: 1TB Interface: SATA 3 Dimensions: 100mm x 69mm x 7mm Cache: 1GB Transfer rate: 560mb/s TRIM Support: Supported S.M.A.R.T Support: Supported	P5,499.00

Question:

Based on your research, which hard disk drive would you select? Be prepared to discuss your decisions regarding the hard disk drive you select.

From the features above, the Samsung 870 QVO would be the one to select for because of its data transfer speed. Since the customer wants to play advanced video games, an SSD would be the perfect choice for games as load times are often shorter than on hard drives.

Step 3: Research video adapter card options.

Shop around, and in the table below list the brand, model number, features, and cost for two different PCIe video adapter cards with at least 1 GB of RAM.

Brand and Model Number	Features	Cost
------------------------	----------	------

<p><i>Zotac GeForce® GTX 750 2GB ZT-70704-10M</i></p>	<p><i>Dimensions: 144.78 mm x 111.15 mm x 37 mm</i> <i>Base Clock: 1033 MHz</i> <i>Boost Clock: 1111 MHz</i> <i>Memory Bus: 128-bit</i> <i>Video Memory: 2GB GDDR5</i> <i>Memory Clock: 5000 MHz</i> <i>PCI Express: 3</i> <i>PCIe Power: None</i> <i>DirectX: 12</i> <i>OpenGL: 4.4</i></p>	<p><i>₱6,872.40</i></p>
<p><i>Gigabyte GeForce® GT 730 2 GB GDDR5 GV-N730D5-2GI</i></p>	<p><i>Dimensions: 164 mm x 111 mm x 23 mm</i> <i>Base Clock: 902 MHz</i> <i>Video Memory: 2GB GDDR5</i> <i>Memory Clock: 5000 MHz</i> <i>Memory Bus: 64-bit</i> <i>PCI Express: 2</i> <i>PCIe Power: None</i> <i>DirectX: 12</i> <i>OpenGL: 4.4</i></p>	<p><i>₱3,320.50</i></p>

Question:

Based on your research, which video adapter card would you select? Be prepared to discuss your decisions regarding the video adapter card you select.

From the features above, specifically the base clock speed and memory bandwidth, the GTX 750 2GB is the best choice for heavier games over the GT 730. If the customer's motherboard supports PCIe Version 3 and higher, then more processing power of this GPU can be utilized such as more consistent frametimes.