CPADS HW Activity IV

“Enjoy the Ride!”

Now that we have assembled our computer and installed the OS, the next *very important* step is to install the drivers necessary for optimum hardware performance. We will also benchmark the video cards to compare the performance of different cards in different systems.

**1. Driver Installation**

Once you know the manufacturer and model of the motherboard, (verified using the Internet, e.g Google) you can go to the **manufacturer's website** (usually *vendor*.com or *vendor*.com.tw), locate the drivers section (usually under Support or Downloads), find your motherboard model, *choose the appropriate operating system*, and get the most recent drivers. You can also get a more recent BIOS should one be available to provide added support for newer hardware.

The manufacturer’s website will have a variety of driver types that you can download. Typically, there will at minimum the following driver categories: chipset, audio, video, and LAN. Oftentimes, there will be additional categories as well. First, identify the motherboard manufacturer and model.

Manufacturer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Model \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Using the **manufacturer's website**, identify the version number of the most recent drivers for each category below (**NOTE: DO NOT DOWNLOAD THEM** as you will be given a flash drive containing the drivers). If a particular category is not available, give a brief explanation as to why.

Chipset \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Video (VGA) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Audio \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LAN \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* What is the most recent BIOS version (or BIOS file)?

BIOS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Obtain a flash drive from the instructor for your machine and install the drivers *in the following order:* Chipset, Video, Audio, LAN.

**2. Identify the Video Card Make/Model**

Now, what you have all been waiting for, testing the graphics card. Typically it is best to obtain drivers for the graphics card from the *graphics* *chipset manufacturer* (e.g. Nvidia, AMD), **not** the graphics card manufacturer. These are *different* than the graphics drivers that you found on the motherboard manufacturer’s website. The video drivers on the motherboard manufacturer’s website are for the integrated graphics that a commonly included on your CPU. The graphics drivers that you *really* want to install are for the fancy discrete graphics card that you have installed in your computer. To get the appropriate graphics drivers, you will need to identify the make and model of the graphics card inside your computer.  
  
Identify the following information for the graphics card you installed in your system.

Video Card Interface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graphics Card Vendor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graphics Chipset \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Video Memory Size/Type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Current Graphics Chipset Driver \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Install the graphics driver - again to save time, the driver is on the flash drive.

**3. Benchmarks**

Now we will benchmark the graphics cards using 3DMark2006. The benchmark program and product key are in the 3DMark 2006 folder on the flashdrive.

**BE SURE TO ENTER THE PRODUCT KEY DURING INSTALLATION AND BEFORE RUNNING THE PROGRAM!**

Run the benchmark (using the default options) and write down your results in the first column below. In the second column, write down the results gathered by another group that has the same CPU as your machine, but a different GPU. In the third column, write down the results gathered by another group that has the same GPU as your machine, but a different CPU.

**3DMark2006 \_\_\_\_\_\_\_\_\_\_\_\_** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(same CPU) (same GPU)

**SM2.0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(same CPU) (same GPU)

**HDR/SM3.0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(same CPU) (same GPU)

Based on the results discuss which component is the bottleneck in your system – CPU or GPU? That is, if you kept the same CPU, but installed a different graphics card, would performance increase or decrease? If you kept the same GPU, but installed a different CPU, would performance increase or decrease? Briefly explain.