

## **Technology Team Update**

**Subject:** Virtual Worlds – Second Life

### **IT Perspective**

#### **General Perspective:**

Second Life is by itself only a tool that we can take advantage of. The tool itself, with proper time and resources can be used to create an environment with never before imagined interactivity and engaging experiences. However, while the potential in Second Life is limitless there are boundaries that should be weighed. These boundaries would be, but not limited to:

- Resource allocation
  - The resource allocation would only be realized by having not only IT developers in Second Life but also trained Support personnel, and training programs for ID/IDA/IT/Instructors who may involved in Second Life at some level. Without proper training and support the ID&D IT(s) would be overwhelmed. With all current course content there are many people that need to understand what is going on and their role in the delivery and support process.
- Uptime
  - Second Life, in my opinion, often has bugs, fits, crashes, etc. This constant instability has even tested my patience levels. I have lost countless hours assuming I was doing something wrong only to find out it was a glitch in the system. My concern is how we best approach this new environment so our students will not endure such frustration and associate that frustration with the World Campus.
- Support levels
  - The support levels happen on the variety of fronts and need to operate much like we do for other course content. We need the helpdesk brought up to speed, which should be easy since SS is buying an island. We also need the ID in question to know how to operate and diagnose SL problems. While they need not know all things, they are often the front line to the professor who may become easily agitated with SL problems. Then of course, all IT personnel need trained in all new SL developments and steps to diagnose and correct buggy behaviors.
- Hardware requirements
  - See Below for the technical specifications. On another note, I am concerned on how our development will impact student's view of Second Life. More advanced 'flashy' SL appearances will 'bog' down the student's experience. While other students will receive the 'flashy' experience and gain the intended benefit. This will all relate to the hardware the student is able to afford.

#### **Recommendation (From Jin and Adam):**

As a leading provider in online education we cannot ignore Second Life and its potential in the educational environment. There are three approaches to Second Life each having unique challenges.

The first would be group collaboration and the second investigative learning. With group collaboration the only requirement would be a place for the students and faculty to meet. The overhead would be low and this type of Second Life pilot would be quick and easy to implement.

The second would be an interactive and media rich environment that students would be encouraged to explore. This would be the most resource intense approach to a Second Life pilot. For this approach we would need to develop the interactive objects based on ID/Instructor input. These objects, once created, will be reusable and should behave consistently (assuming Second Life is operational).

The last approach would be to use Second Life as a staging environment. The environment can be shaped with little overhead compared to real life. The stage can be videoed and used later to enhance learning objectives (See basejumping on our blog for an example). By taking this approach we eliminate most of the stability issues Second Life constantly faces. This would also remove the requirements for Second Life because the student would simply be watching a video.

In the end, a successful pilot of Second Life would be dependent on instructor's and ID's enthusiastic participation. We would suggest the 'because we can' approach will fail. We need the pilot to have a purpose, and outcome, if nothing more then to simply bring students together to enhance communication and community.

### **Hardware:**

#### **Windows Minimum System Requirements:**

- Internet Connection\*: Cable or DSL
- Operating System: 2000, XP, or Vista
- Computer Processor: 800 MHz Pentium III or Athlon, or better
- Computer Memory: 512 MB or more
- Video/Graphics Card for XP/2000\*\*:
- nVidia GeForce 2, GeForce 4 MX or better
- OR ATI Radeon 8500, 9250 or better
- OR 945 chipset
- Video/Graphics Card for Vista (requires latest drivers)\*\*:
- nVidia GeForce 6600 or better
- OR ATI Radeon 9500 or better
- OR 945 chipset
- Video Card

#### **Windows Recommended System Requirements**

- Internet Connection\*: Cable or DSL
- Operating System: XP or Vista
- Computer Processor: 1.5 GHz (XP), 2-GHz (Vista) 32-bit (x86) or better
- Computer Memory: 1 GB or more
- Video/Graphics Card\*\*:
- Nvidia Graphics cards (6000 series: 6700, 6800; 7000 series: 7600, 7800, 7900; 8000 series: 8400, 8500, 8600, 8800; GeForce Go: 7400, 7600, 7800, 7900)
- ATI Graphics Cards (X800, X900; X1400, X1500, X1600, X1700, X1800, X1900)

### **Mac Minimum System Requirements**

- Internet Connection\*: Cable or DSL
- Operating System: Mac OS X 10.3.9 or better
- Computer Processor: 1 GHz G4 or better
- Computer Memory: 512 MB or more
- Video/Graphics Card\*\*:
- nVidia GeForce 2, GeForce 4 MX, or better
- OR ATI Radeon 8500, 9250, or better

### **Mac Recommended System Requirements**

- Internet Connection\*: Cable or DSL
- Operating System: Mac OS X 10.4.3 or better
- Computer Processor: 1.25 GHz G4 or better
- Computer Memory: 768 MB or more
- Video/Graphics Card\*\*:
- Nvidia Graphics cards (6000 series: 6700, 6800; 7000 series: 7600, 7800, 7900; 8000 series: 8400, 8500, 8600, 8800; GeForce Go: 7400, 7600, 7800, 7900)
- ATI Graphics Cards (X800, X900; X1400, X1500, X1600, X1700, X1800, X1900)

**Current Tech Specs:** [https://courses.worldcampus.psu.edu/public/diagnostics/tech\\_spec/general.html](https://courses.worldcampus.psu.edu/public/diagnostics/tech_spec/general.html)

**Opinion:** The minimum hardware requirements for Second Life are slightly above our current Technical Specifications. The following upgrades will need to be put into our technical specifications:

- Mac Upgrade to 10.3.9
- Memory Upgrade from 256MB to 512MB

There may be discrepancies along video cards, as our technical specifications do not specify exactly what cards will need to be used. Also the following disclaimers should be taking into account:

- \*
- *Second Life is not compatible with dial-up internet, satellite internet, and some wireless internet services.*
- \*\*
- *Second Life may not run on graphics/video cards other than the ones listed above. Unfortunately, if your graphics card includes any of the following words, it's NOT compatible with Second Life:*
- *nVidia cards that report as a RIVA TNT or TNT2*
- *ATI cards that report as RAGE or RAGE PRO*
- *ATI cards that report as RADEON 320M, 340M, 345M, or similar model numbers*
- *Intel chipsets less than a 945*
- *Intel Extreme*
- *3DFX*
- *RIVA*
- *TNT*
- *SiS*

- *S3*
- *S3TC*
- *Savage*
- *Twister*
- *Rage*
- *Kyro*
- *MILENNIA*
- most cards by MATROX

The most important from the above would be the discrepancy with the incompatibility with Satellite and wireless internet services as I, (acs18), currently use wireless technology in my home. I am, however, able to use Second Life successfully despite the disclaimer.

### **Software Development Tools**

The only software development tools that have reached production level would be for sculpting 3d models to be imported into Second Life. The subject is best covered here:

[http://wiki.secondlife.com/wiki/Sculpted\\_Prim:\\_3d\\_Software\\_Guide](http://wiki.secondlife.com/wiki/Sculpted_Prim:_3d_Software_Guide)

Second Life is itself a 3<sup>rd</sup> authoring environment and can be used for most things. However, to get the most graphically appealing results other external programs dedicated to 3d authoring would be required.

On the “radar” are some scripting software tools that allow LSL – Linden Scripting Language to be compiled outside of Second Life. It is this scripting language that creates the interactivity in objects within Second Life.

### **Resources Required at ID&D to actively develop in SL**

#### **Human Resource Skills**

The skill set for someone working in Second Life can be split into two areas. While we may try to find all these skills in one person it will not be necessary.

- **Object Designer:** The object designer creates objects in authoring software to be imported into Second Life. By creating these objects outside Second Life, they will have the potential to be used elsewhere.
  - **Object Designer Skill Set:**
    - **3d modeling experience** – Blender, Google SketchUp, 3d Studio Max, etc.
    - **Texture creation** – Photoshop, etc.
- **Object Programmer:** The object programmer may not create the objects but instead create the LSL scripts to control their movement and other related interactive features.
  - **Object Programmer Skill Set:**

- Spatial Programming – 3d rotations, vectors, and movement
- Basic AI(?) – Basic decision making code.
- Ajax(?) – Remote communication programming. This will allow communication from Second Life to ID&D servers.

### **Hardware:**

- **Support:** Given the hardware specifications, I would recommend exceeding those recommendations by at least 25%. For example, if the memory requirements are 1 GB ID&D should have 1.25 GB of memory. Second Life can be very graphically challenging for a computer and the purchase of a computer for Second Life purposes should be purchased with that idea in mind. Note: All current MAC Pro purchases would exceed Second Life requirements by at least 25%.
- **Object Designer:** The use of 3d modeling software can be intense. I would recommend a high-end machine at the time of purchase. Processing power AND graphical capabilities should be considered.
- **Object Programmer:** This requirement would basically be the same as the Support. Current MAC Pro products would suffice.

### **Software:**

- **Support & Object Programmer:** Currently, the only requirement would be the Second Life application
- **Object Designer:**
  - **3d Authoring Tool – Blender, 3d Studio Max, etc**
  - **Image Manipulation Software – Photoshop, etc.**