

Implementing Ubuntu and FLOSS in Albanian Public Schools

Introduction

Recently, Ministry of Education and Science in Albania installed scholastic computer laboratories for elementary and high schools in order for the students to learn Informatics. The idea is that the students should be introduced with the Operating Systems (in this case MS Windows), Office software, Internet and Email and a little Images design and manipulation.

We were waiting forward to seeing the computers and they finally arrived. Everything was in its own place and we got ready to test them. I switched the electricity power button and turned on the first computer. It took me 83 seconds to boot. I forgot to tell you they came with MS Windows Vista Starter preinstalled. All of them were so slow. Every computer was a P IV 3.00 GHz CPU, 389 MB of RAM and 80 GB HDD. From the first day up to the end of the school they became slower and slower. So, a beautiful day I thought, they would be better if I install Ubuntu. The next day I went to the school where I teach English language and Informatics, equipped with the Ubuntu CD I received from Canonical and dual-booted the teacher's computer. It booted like a charm in Ubuntu. It took me a little to install all the necessary software and Edubuntu package and everything was ready. I demonstrated it to my colleagues and they got surprised by the time it took to boot and the flexibility during usage. With a little training I managed to make most of the teachers' staff to use Ubuntu for their daily usage and browsing the Internet and sending email. Another thing that surprised them was the price they had to pay for this system, IT WAS FREE, the lack of the viruses and the community support.

So, this September we are going to propose to the local Teachers Administration in Kucove to ask for permission to the Ministry of Education and Science to test Ubuntu in our school with a booklet of lessons I am preparing for my students with their parents permission.

The Project: Why Ubuntu - Expectations

Some people may ask why Ubuntu when at the same time there are many other Distros out there.

Ubuntu is a strong candidate

The simpler the approach one takes the less maintenance is required later. I intend the flow of operation for sharing consistency between school and home computers to be similar to:

1. Install Ubuntu with a given version.
2. Install all the educational free software that you can via apt-get or a package manager.
3. Add a user account per student and hence a clean desktop.
4. The mentor sits with the student and agrees which software is useful for a given period and places shortcuts on the student's desktop for the given piece of software.
5. If the parents wish for a mirror on their home computer then the relevant mentor sends desktop shortcuts with a list of apt-get commands via email. Notice that the standard environment enables this approach.
6. The parents downloads the shortcuts to the students desktop at home and then run the enclosed apt-get commands to install the software.

Another good point is that school tutors can prepare a list with all the necessary applications in a .txt file and have the parents install at students' home computers.

Sending an install script by email is straightforward; simply add the installation line to a text file. Send the file as an attachment to the interested parents and let the parent run the command.

The parent will then need to fill their administrative password and the software will auto-magically be installed.

Therefore, because of the simplicity of it all, the school should also send a remove script at the same time as the add script. This gives the parent/student fine-tuned control. Synchronized installation via email is a powerful learning enabler.

The best thing Ubuntu offers for the schools is Edubuntu. Edubuntu is a Linux distribution that provides a software platform that allows educators to spend more time teaching with computers and less time managing them. In addition to Linux and the typical productivity software, Edubuntu provides educational programs for children between preschool and high school, with three age groups within this demographic, each with their own relevant settings. The Edubuntu Linux Server Solution is the result of several years of experience in the critical server applications field.

- `ubuntu-edu-preschool` - Preschool (< 5 years old) educational application bundle
- `ubuntu-edu-primary` - Primary (ages 6-12) educational application bundle
- `ubuntu-edu-secondary` - Secondary (ages 13-18) educational application bundle
- `ubuntu-edu-tertiary` - Tertiary (university level) educational application bundle

The Edubuntu Linux Difference

- **Compatible** - Most educational computer networks are some mix of Microsoft Windows, Apple OS X and Linux. In this setting, you need an operating system that plays well with others. Edubuntu does that. Edubuntu servers can happily coexist on the same network as other operating systems, OpenOffice.org can open and save Microsoft Office formats, such as Powerpoint, Word and Excel documents and you can even install Edubuntu and another operating system on the same machine.
- **Secure** - Security has become a key challenge for educators and the team behind Edubuntu recognize this. Often schools lack the specialized IT staff or time to lock and cleanup computers. Edubuntu, being a Linux-based operating system, enjoys the security advantages of its Unix-like and open source heritages. This translates into higher quality code and less spyware and viruses that plague other operating systems. In addition, Edubuntu has a strict, proactive security policy, meaning many common problems such as open ports or misconfigured software, are much less of an issue. Finally, Edubuntu is a true multiuser operating system, making it easy to allow users to complete their tasks without compromising the system.
- **Manageable** - With teachers and school IT departments deploying and administering an increasingly large number of computers, time spent managing individual computers is scarce to non-existent. Edubuntu, by using LTSP thin client technology, makes deployment and management simple and easy. A single server is all that is needed to setup, manage and administrate over 50 workstations. The Edubuntu team also recognizes that not every school's setup is the same. As such, Edubuntu is easy to customize for your unique needs, whether it be a simple rebranding, or the addition or removal of programs. Hence Edubuntu can reduce the amount of time you spend administrating your computers.

- **Cost Effective** - With ever increasing demands on budgets, it seems expensive technology is often last on the list. Edubuntu can help you offer what your students increasingly require from computer technology, without breaking the bank. Edubuntu is and always will be free to acquire, use and modify. Need to setup another machine? Or another 100? Just install them! No more expensive OS upgrades and licenses, or only having specific programs on some computers. By being built on Open Source software, schools are welcome to seek whomever they wish to help them support their computers and are not locked into getting help from the vendor. Edubuntu can also help you save hardware costs, by allowing you to redeploy older machines as thin clients using LTSP technology.
- **Well Supported** - Edubuntu support is available from both the Edubuntu, and larger Ubuntu, communities. Many of the authors of the software included in Edubuntu can be contacted directly via mailing lists and IRC channels, including the Edubuntu developers themselves. There are many forms of support available, on mailing lists, wiki websites, IRC channels and bug trackers. There is also a special support group for using Edubuntu in schools. Should you want paid support, Canonical, who funds Edubuntu and Ubuntu development, can offer assistance.
- **Built for Education** - Above all, what sets Edubuntu apart from other operating systems is its unwavering focus on the educational needs of children all over the world. Edubuntu's motto is "Linux for Young Human Beings" and every development decision and application has that goal in mind. Edubuntu comes with translations for many languages and localization features that allow people from all over the world enjoy their computing experience as well as accessibility features to help disabled users. Using the live CD means pupils are able to boot their home computer into Edubuntu and use exactly the same applications that they are using at school. The LTSP server software allows teachers and administrators to create a low cost computer lab so that students can have access to the educational opportunities that Edubuntu and the Internet can provide.

In the beginning I mentioned that the school computers came with Windows Vista preinstalled. Below I would like to mention some of the advantages Ubuntu and Edubuntu have over Vista.

Easy to Install Applications

Installing new programs in Ubuntu is far easier than in Windows, because there is one program called Synaptic that basically gives you access to most applications available to Ubuntu, simply click the program you want and it will install, you don't need to accept agreements because it's all open source so there is no need to click Next 20 times before the program is installed. Simply select the program and click OK, it's done. Ubuntu will download the installation files, install them and start the application on its own.

Secure

In Windows Vista, to change a setting requires a ridiculous amount of dialog boxes and passwords, in Ubuntu, you are never logged in as an administrator (root), you are logged in as a simple user, you can change options that are only applicable to your user area but for changing options that affect the system you are required to input the administrator password, one dialog and you're in, simple and secure. There is also the added bonus that there are very few viruses for Linux, I haven't ever come across one yet so you can feel safe, imagine not having any virus protection software installed in Windows, there is no need for it in Linux, freedom from the threat of losing all your data.

Easy to change options

Ubuntu comes with a control panel but also comes with a menu next to the Applications menu where you simply select the thing you want to change, be it the Desktop background or the network settings. Everything on the windows that appear is simple and there are just the options you need so it is easy to change the options.

Community

The community behind Linux, especially Ubuntu is what attracts many people to the operating system. People in the Linux community are mainly ex-Windows users so they know what it feels like to be new to an operating system, so they are happy to help. Whenever I had and have a problem with Ubuntu I simply post on the Ubuntu forum and within minutes there are answers to the problems. I never got put on hold or had to phone up customer service and wait for hours if I had any problems. In the Linux world the best community support is offered by Ubuntu. Ubuntu's parent company Canonical started offering free 30-days customer service for those who buy Ubuntu preinstalled PC for PC vendors. In response Microsoft started free customer support for all Vista customers. So, all those of you who have Vista you know whom to thank for the free gift.

Fast

Windows Vista is slow and takes up a lot of resources which means you need a pretty decent computer to run it, I know with my 1.5GHz computer with 512MB of RAM it was too slow to work with. Ubuntu is just fast, it doesn't slow down in performance when it has been on for a couple of hours, it just keeps on going and everything opens literally a second after you click the icon, and closes when you click the X, with Windows Vista you have to wait for like 30 seconds before a program starts and try shutting down a program like Word 2007 or Photoshop after using it for a couple of hours, it takes forever. Ubuntu 8.04 ran cool on my old PC with measly 256 MB RAM.

Updates

Ubuntu gets updated every 6 months, well as close as it can do, and whenever I turn my computer on there are updates for the programs installed. Compare that to Windows, how often does that get updated, well the 5 years between Windows XP and Vista sort of answers that question.

Free

Everything about Ubuntu is free, the operating system (you can even have them send you a free copy of the operating system, they even pay the postage charges), the software installed is free (including all the software you can download) any help and support is free. The whole experience is 100% free, because it is open source. Open source means that you can distribute and even edit the code behind the program.

Another thing I would like to share with you is that some of my students that use Ubuntu in their homes are enthusiast for Ubuntu. They managed to use Ubuntu 75% of their time in their dual-boot computers except of the Windows games.

The most important thing is that the Ministry of Education and Science wouldn't have to pay a lot of money for the scholastic computer laboratories, at least in Kucove.