Desktop Virtualization with NComputing

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As this is the time many of you are (or should be) planning for your computing needs for the next year, would you be interested in finding a way to provide more computer workstations for a minimal cost? Over a year ago, we discovered the NComputing "desktop virtualization solution." Being a bit sceptical about the ability to provide an additional 3 workstations for a price of under $1,000 (including the monitors, keyboards, mice and X300 kit), we got a hold of some evaluation units and conducted a trial. Finding that the claims were a reality, we have now deployed 10 of the X300 kits across campus and have been very pleased with the results.

So what are these NComputing devices all about? For around $200 US, you can purchase an X300 kit which contains one PCI card, and three desktop workstation boxes (along with cables to connect the workstations and the virtualization software). To this you will need to add a monitor, PS/2 mouse and keyboard which plug directly into the X300 box. This will then provide you with 4 student workstations, as the original host computer is still fully functional. After the provided software is installed and the X300 boxes registered, the four workstations function similar to stand-alone workstations without the users having to do anything different from their ordinary experience. It is possible to install 2 kits in one host, therefore giving the possibility of 7 workstations for each original host computer.

While there are a few limitations and things to be aware of (more on these to follow) I believe that anyone who already is maintaining a computer lab should be able to install and maintain these devices with only a minimum of time to get familiar with the device. Once the software is installed, all the programs and devices already installed on the host computer are available to any of the other users without further configuration. The X300 kit also has a headphone jack on it. We have also provided a USB port for each workstation using an extension cable from the host computer, and assigning that port to the station using the included control features so that only that station will see the devices connected to that port. If ports are unassigned, then all stations will have access to attached devices, which is also the case for a CD/DVD drive.

So, what are some of the limitations or items to be aware of before going forward with an installation? First of all, you will want to make sure that you have a capable enough processor (anything purchased within the past year or two should be adequate) and adequate RAM in the host computer. We are currently using almost 2-year-old Core 2 Duo processors, and have upgraded to 4 GB in each host (which cost less than $100 per machine). We conducted stress tests and while we did see some performance degradation across the workstations while under a heavy processing load, under normal user conditions, there is rarely any noticeable difference between using one of the stations and a stand-alone PC.   While we have found no challenges with normal video use, there may be some issues if you attempt to do full motion video or intense CAD type operations. The X300 kit supports a maximum of 1024x768 resolution, so it may not give the sharpest image on larger or widescreen LCD monitors. (The newly released

X550 kit offers a maximum of 1280x1024 and 1440x900 (widescreen) and also includes 5 units in a kit.) One other concern to be aware of right now is that in a test situation where a Comsifter Internet filter was installed, it would not function properly. NComputing has informed us that they are working on a solution that will assign virtual IP addresses to the devices, which should alleviate the problem. So far we have only encountered one piece of software that has not run properly with the NComputing devices (some no-longer-available software distributed with an old textbook). Licensing of software is another thing to be aware of. Since desktop virtualization is an emerging and evolving industry, it can be hard to get firm answers on what licensing of software may be required. Generally, you will need current licenses for each workstation or user that is accessing the software (or site licenses). Currently there is no support for Windows Vista hosts, but a beta is available for Windows Server 2008.

NComputing also offers the L series devices which can be placed anywhere on your LAN, giving the same benefits but not limited to the proximity of the host computer. One Windows Server host can support up to 30 of these devices, or a Windows XP host can support up to 10.

These devices are available to NAD schools at a discounted price through Blue Curl, and they have set up a web store for us at http://BlueCurl.ca/shop . Blue Curl will also answer any questions you may have and will help in solving any technical issues you may encounter (Brad Calbick brad@bluecurl.ca) is our contact. Please contact me (chill@cauc.ca) if you would like any more information about these devices, and happy computing.