# Extenda X300



#### Terms used in this review:

Server – Windows 2003 server. Host – 2.7GHz computer with 2Gb RAM Terminal – Each of the three X300s (X300 interface, monitor, keyboard and mouse). Station – Either a terminal or the host computer.

- The Extenda X300 kit is a combination of software, PCI card (full height or half height) and 3 interface units which enable one host to serve 3 terminals at a cost of around \$330AUD per kit. The interface units connect to the PCI card by supplied cables each several metres long. The interface units do not require power packs.
- The Extenda X300 is a way of increasing computer provision while saving on computer purchase and network access points. One computer using one network access point with X300 becomes four stations all with network access.
- Login can be to the Host or to the school Server.

## Setting Up:

Setting up was fairly straightforward. I inserted the PCI card and connected up the three terminals. The supplied install sheet is confusing in its numbering and by the time I completed the first page part of the second page had already occurred.

#### Setup summary:

- Connect everything
- Deal with new hardware screens (with supplied CD in the CD drive).
- Access the CD
- Ignore the first menu item and select the second: Install Program.

- Enter serial numbers and activation codes when prompted. I found that photocopying the bases of the X300 interfaces on one sheet of A4 paper made inputting of these codes easier.
- Restart the computer and all terminals should become active.
- At some time the terminals will have to be registered (check prompt screens or manual) otherwise they will stop in an error state.

### **General Operation:**

My trial with the X300 was not exhaustive. Apart from some issues mentioned below, the Extenda X300 worked well. The host machine handled terminal requests without delay (but see audio CD issue later). The system was not tested in a classroom, however the benchtop test with all 3 workstations active proved the X300 could manage easily each station simultaneously running web browser plus Word, Powerpoint and Publisher documents of around 16 Megabytes each in file size. The windows Task Manager showed the host was using a bit over 1 gigabyte of its 2 gigabytes of memory. Attempting to use Youtube on all four stations resulted in much pausing while downloading continued but did not appear to overload the CPU of the host.

Ncomputing provide a manual on CD as well as online support. NCX console is a mixture of NCX software and Microsoft Management Control. Between the two there are many settings that control how the system works. I did not investigate the console in depth as my aim was to check the general operation of the X300 system. One thing I noticed was that each terminal can be forced to a particular login (either to the host or the server) which may be useful where the X300 is used in a classroom for a particular group of students eg Year 1. This could also overcome another issue with the X300: If the same login name is used on more than one terminal the software does not warn about this. However, as two users are now using the same profile on the host, conflicts can arise (for example Firefox and other programs will not run for both users).

Where students login to a server their profiles should be automatically added to the host, so there will be no need to create a user on the host for each server user.

### **Pros:**

- 1. Only one computer and network access point are required per four stations.
- 2. Per four stations only one computer has to be kept up to date with software upgrades etc.
- 3. The X300 can be setup so that forced shutdown can occur from the host only one computer per four to shutdown not four.
- 4. The terminals can be prevented from shutting down ie they can logoff but not shutdown.
- 5. Shutting the host down does not begin until a warning has been displayed on each terminal screen. A terminal user can prevent the shutdown by canceling the warning.
- 6. Available screen resolution and colour quality setting for each terminal are adequate for most educational activities.

- 7. Sound quality is adequate for playing mp3 files and listening to online activities that require sound.
- 8. Four workstations take less room than four computers.
- 9. Savings financially as well as in power consumption.
- 10. The X300 is an excellent way to pension off any windows 98 systems while continuing to use screen, keyboard, mouse and headphones.

#### Cons:

- 1. The X300 interface boxes have PS/2 connections for mouse and keyboard. These are so close together that USB adapters cannot be used for USB mice or keyboards. However, mice and keyboards are inexpensive and PS/2 versions can be purchased.
- 2. Care has to be taken to avoid the same user being logged in on more than station.
- 3. Some programs will run only once per workstation. An example is Moviemaker. If opened on a second terminal a message says: "Another user is running Windows Movie Maker on this computer. Please close the other session ... before starting a new one." Photo Story can be used simultaneously on all 4 workstations but the latter part of loading a story takes some time.

Running a program called sandboxie overcame the problem with Moviemaker. Sandboxie quarantines program settings so the computer thinks only one instance of a program is running. Using Sandboxie is easiest if purchased permitting programs to be automatically forced into sandbox mode.

4. The X300 does not work straight out of the box. The installation is straightforward however technical assistance may be required to get things going.

### Video:

Each X300 terminal has its own video card. The card is limited to a display of 800 x 600 or 1024 x 768 pixels in high colour (16 bit). This means that wide displays are not catered for nor 32 bit colour. This may preclude using older programs which require 256 colours or graphics programs which require higher resolutions or 32 bit colour. I was not able to check whether the X300 video card could run a program in compatibility mode.

#### **Pros:**

1. Available resolution and colour quality setting for each terminal are adequate for most educational activities.

#### Cons:

- 1. Some graphics programs may require higher resolution and colour quality.
- 2. Wide screen monitors are best not used with the X300
- 3. May not suite the native resolution for newer LCD screens.
- 4. X300 terminals might not be able to run Programs which require compatibility mode ie 256 colours (eg Living Books, older CDs).

### Sound:

Each X300 terminal has its own sound card and volume controls (via the volume control in the system tray), which makes it easy to control volume levels on a particular terminal. A review I read said that quality of sound was a limitation. I checked the sound three ways:

- 1. Played mp3 files in windows media player. The X300 played different mp3s on host and 3 terminals at the same time without any interference or breaking up.
- 2. Ran some internet education type activities that involved sound (Flash or Shockwave). The system could handle separate activities on the host and 3 terminals.
- 3. On a terminal played an audio CD from the host machine: At times the CD played normally with some background hiss or noise from the terminal sound card. Periods of silence between tracks involved no background noise. At times the sound broke up as the system could not give sufficient resources to playing the CD when other terminals required a percentage of host CPU time.

#### **Pros:**

- 1. Each terminal has its own sound card and volume controls.
- 2. Sound is adequate for Web and computer activities.
- 3. Sound is adequate for playing mp3s. Terminals can select different mp3 files without any effect on the others all playing successfully.

#### Cons:

- 1. Sound quality on a terminal is nowhere near the quality of that on the host machine and quite a limitation.
- 2. Maximum volume on a terminal was a pleasant level for me. I'm not sure whether the sound would be loud enough for hearing-impaired students.
- 3. Playing an audio CD is possible from one terminal (or the host) at a time.
- 4. If one station is playing an audio CD and other terminals try to access the CD there is no indication the CD is busy and the drive hunts about ineffectually obviously trying to keep up with each terminal. However, when the same track was being accessed it played ok on two stations.
- 5. At one point I had Windows media player active on all 4 desktops. Inserting an audio CD resulted in all 4 attempting to play the CD with none playing without breaking up.

### **USB ports:**

These can be allocated to particular stations with the supplied software (NCX Console). Inserting a USB memory stick (without allocating ports) in a USB port on the host resulted in a Removable Disk window appearing on each station. Even after closing any windows using the Removable Disk, the device could not be safely removed as the host reported that the device could not be removed right now. The remove safely screen could be accessed from each terminal but gave no message either way when removable disk was selected. At other times the remove safely process completed correctly. The section in the Manual re USB-Device Assignments shows that the NCX console can permit all or particular stations to access a particular USB port. The Manual's procedure is not detailed. I found the easiest way to allocate these is to do them one at a time. I inserted a USB device into a USB port and then followed the directions on page 26 of the manual. I clicked to expand the USB tree (+) until I saw removable device. I knew this was the USB port I was using. Selecting it brought up the allocation window and I could allocate that port to one or more stations.

#### Pro:

1. Stations can be allocated particular USB port(s). This gives total control over how USB ports are used. There are no USB ports on the X300 interface (even though the manual indicates there could be). I suggest that where USB ports are to be available, USB extension cables are run to each station for USB device insertion.

#### Cons:

- 1. Safe removal of a USB device shared by all stations is problematical.
- 2. The manual's instructions for Assigning USB devices are not easy to follow.

#### Note:

- 1. The host works just as a PC, the terminals work via X300 so there will be minor differences between them. For example I attempted to open a powerpoint presentation already being worked on at another terminal. Attempting this on the host prompted a message permitting a read only version to be opened. From another terminal the message suggested that the file would need to be closed before this terminal could access it.
- 2. The X300 can be used with older peripherals as easily as with new. The Host, however, should be a recent computer with at least 2 Gigabytes of memory.

### Technical:

In the early stages of the trial some server settings had not been adjusted and there were unacceptable problems from the terminals arising most likely from profile issues. Prompt assistance was forthcoming from NComputing Technical Support. Once user logins were happening efficiently things went much more smoothly. So it is possible (though not likely) that a host can work on a system but terminals may not.

#### Summary:

The Extenda X300 required some computer knowledge to setup. I found that it operated almost seamlessly with most common programs with little if any onscreen delay or incompatibility. It should definitely be considered when expanding computer provision and is definitely worth considering if one or more of the following apply:

- 1. Financial constraints.
- 2. Shortage of network access points.
- 3. Space constraints.
- 4. Availability of spare monitors, mice and keyboards.

5. Replacing older win98 computers with low specs. The peripherals can be retained and used with the X300 to provide Windows XP operating system stations.

Main X300 website: <u>http://www.ncomputing.com/Default.aspx</u>

#### ZNet Asia Review of X300:

http://www.zdnetasia.com/reviews/hardware/desktops/0,3800010304,42710153p, 00.htm

#### ZNet Australia Review of X300:

http://www.zdnet.com.au/reviews/hardware/networking/soa/NComputing-X300/0,2000065582,339285989-2,00.htm