

# Divide and rule

Share the power of a single desktop PC with multiple simultaneous users to tap its true potential and make the most of your money.

BY FRANCIS D'SA



**M**any desktop computers available today feature blistering fast processors with at least 2 GB RAM and 250 GB hard drives. But what are they actually being used for? Aside from enthusiasts and multimedia freaks, most computers are used in offices and homes for basic applications and surfing the Internet. Using such machines for word processing, Internet surfing, email and instant messaging is like commuting around town in a Formula 1 racing car. Using PC sharing technology by NComputing, you can share the unused potential of the PC with multiple users and save on the cost additional hardware and software.

If you have more than one user at home, you usually end up creating extra user accounts for each person, but obviously only one can be used at a time. NComputing is a company that manufactures virtualization hardware along with supported software that

helps create virtual desktops on multiple terminals, enabling users to share a single computer. The products offer hassle-free installation, save almost 80 percent of your typical expenditure on software and hardware, and don't require much maintenance. Not to mention the devices are so compact that they weigh only a few grams.

Ncomputing's PC sharing technology doesn't use thin clients which are essentially PCs without hard drives that use the resources of a server. Instead, they use a small hardware device which runs virtualization software called vSpace. Ncomputing claims that their unique approach reduces hardware and maintenance costs by almost 50 and 70 percent respectively, while cutting power consumption by almost 90 percent.

Ncomputing offers two solutions in India—the Mustation X-series and the Mustation L-series. We reviewed the L series (L230) which supports sharing a desktop PC with up to 30 simultaneous users, but also got a look at how the X-series functions. The two different approaches each have their merits.

wireless network. The L230 is nothing but a dumb terminal without a CPU or hard drive, serving users with basic computing needs like surfing the Internet, office productivity, email, instant messaging, basic audio/video, and so on, eliminating the need to purchase multiple PCs. Each terminal uses the host computer's resources securely, independently and simultaneously. For example, if you have a staff of 20 users, you would need to purchase only one standard computer and 19 MuStations. The L230 thereby converts a single desktop into multiple PCs.

The L-Series has two variants, the L130 (1xVGA, 2xPS2 for mouse and keyboard and audio out) and L230 (1xVGA, 2xPS2 for mouse and keyboard, 1xUSB, audio out and microphone jack). Both the X-Series and L-Series support video resolutions of up to 1280x1024 or 1440x900 (widescreen).

Ncomputing's solution supports Windows XP, 2000, 2003 and Vista and certain Linux distributions such as Ubuntu and OpenSUSE. The installation is pretty short and simple. You have to install Vspace on the parent computer (which will need to have a static IP address) and set passwords for accessing vSpace and managing the MuStations. Additionally, you also have to add user accounts with the necessary privileges and security settings. The parent PC is ready to serve the terminals after a reboot.

## Features

The L-Series is a good option for those who have larger rooms or need their PCs to be on different floors or rooms. The L-Series does not need to be connected to the parent computer directly, but can be connected to a network hub, switch or router. It can even be used over a

## INFO

### PC SHARING NCOMPUTING L230

#### SYSTEM REQUIREMENTS

Monitor, PS2 keyboard & mouse, speakers, Ethernet cable

PRICE Rs 5,000 (plus tax)

CONTACT Monali Handa

PHONE +91 9810209800

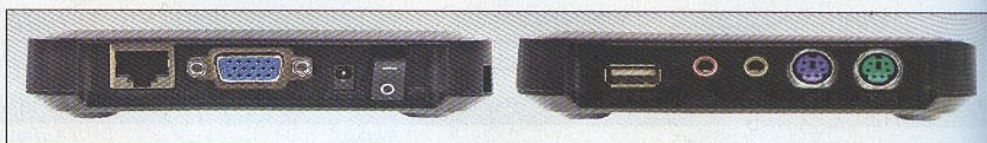
EMAIL sales-india@ncomputing.com

WEBSITE www.ncomputing.com

WARRANTY 1 year

### RATINGS

BUILD QUALITY	■ ■ ■ ■ ■
FEATURES	■ ■ ■ ■ ■
PERFORMANCE	■ ■ ■ ■ □
OVERALL RATING	■ ■ ■ ■ □
VALUE FOR MONEY	■ ■ ■ ■ □



The L230's back panel features a D-sub VGA connector, an Ethernet port, power jack and power switch while the side panel has a USB port, PS2 ports for input devices and audio jacks for the speakers and mic.



## SPECIFICATION SHEET : X-SERIES AND L-SERIES

MODEL	X300	X550	L130	L230
Description	3-user kit with PCI card, vSpace and 3 access devices	5-user kit with PCI card, vSpace™ and 5 access devices	1-user kit with vSpace & Ethernet-based access device	1-user kit with vSpace & Ethernet-based access device
Max users per PC	7 (2 cards x 3 + PC)	11 (2 cards x 5 + PC)	31 (30 access devices + PC)	31 (30 access devices + PC)
Speaker out	Stereo	Stereo	Stereo	Stereo
Mic In	No	No	No	Yes
USB support	No	No	No	Yes
Power adapter	Not required	Not required	Required	Required
Connection type	Direct cable (to PCI card)	Direct cable (to PCI card)	Ethernet	Ethernet
Max distance from PC	5 meters (Cat 5e UTP) 10 meters (Cat 6 STP)	5 meters (Cat 5e UTP) 10 meters (Cat 6 STP)	Any distance over LAN or WAN	Any distance over LAN or WAN

To set up the terminal, all you have to do is connect its keyboard, mouse, monitor and speakers, and then hook it up to the LAN. Network settings have to be configured on the MuStation. There are settings for acquiring an IP address automatically (DHCP) or assigning a static one, depending on your network.

Next, you have to choose the parent computer to which you wish to connect from the server connection list. If you have a large network, you can run vSpace on multiple PCs on the same network to serve multiple users. Then each terminal can be assigned to a particular host or multiple hosts depending on the user's profile.

Once connected to the parent computer, each terminal is just like a

regular standalone PC running Windows. You can use it to surf the Internet (if the parent computer has Internet connectivity), share documents or play media files. The parent computer runs an application called NCT-2000-XP Management Console in the background, which can be accessed by double-clicking its icon in the system tray. Here you can configure each MuStation without having to physically visit it. The list of configurable parameters includes IP address, server connection priority, software settings, printer settings, display resolution, USB port access, and so on. You can update the MuStation's firmware remotely and even view its screen to monitor user activity. On the other hand, each user can share the

host's resources such as printers, optical drives and the Internet connection.

### Build Quality

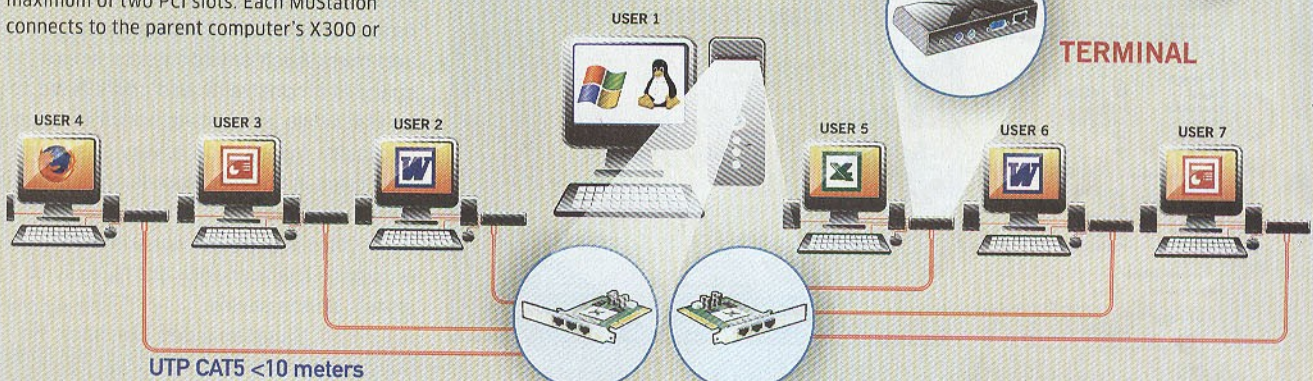
The MuStations of both the X-Series and L-Series are sturdily built. The shell is made from good quality plastic and doesn't feel weak. It has absolutely no moving parts, which makes it immune to rough handling.

Heat dissipation is almost negligible and hence ventilation isn't a major priority. The X-Series terminal is as small as a wallet and can be mounted either on a wall, below a desk or behind an LCD monitor. The same applies to the L-Series devices, which are each about the size of a large sandwich. Additionally, the L-Series devices ship with VESA

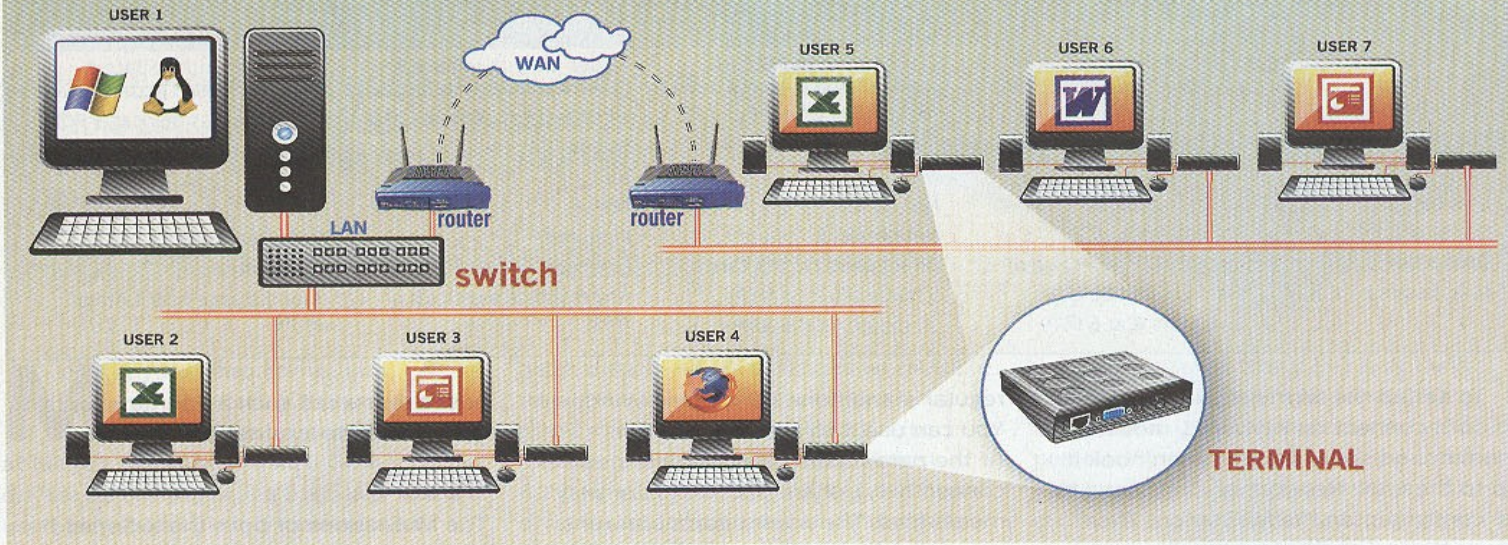
## THE X-SERIES

The X series has two variants—X300 which supports up to seven users, and X550 which supports up to 11 users simultaneously. The package includes one PCI card, three or five terminal hardware devices called MuStations, and cross-crimped network cables for each terminal. Usually, you can connect up to two PCI cards (X300 or X550) to one desktop computer as most motherboards today have a maximum of two PCI slots. Each MuStation connects to the parent computer's X300 or

X550 PCI card via a cross-crimped UTP CAT5 cable which can be up to 10 meters long. The power consumption of a MuStation is a mere 2 Watt, and it uses the resources of the parent computer. This means if your parent computer has a 2 GHz processor, each terminal as well as the parent computer would effectively run at around 500 MHz if all are running the same application at the same time.



**THE L-SERIES**



mounting brackets, which can be used to mount them to the back of any LCD monitor or even a wall.

The L-Series MuStations are powered by an external 5-volt power brick, while those of the X-Series do not need an external power source as they draw power from the X-Series PCI card via the UTP CAT5/6 Ethernet cable itself.

**Performance**

Each L-Series device consumes around 5 Watts of power as compared to around 80 Watts on an average desktop computer (excluding the monitor's

power consumption), while an X-Series MuStation utilizes only 1 Watt of power from the host computer.

We tested the both the X-Series and L-Series. It was quite an experience to watch a regular desktop used as two individual computers at the same time. We also tried a total of five X-Series MuStations (using an X500 PCI card) installed on a system with an Intel Core 2 Duo processor and 2 GB of RAM, and found that the computing power was more than enough for basic tasks such as Internet browsing and office suites. The only problem we faced was

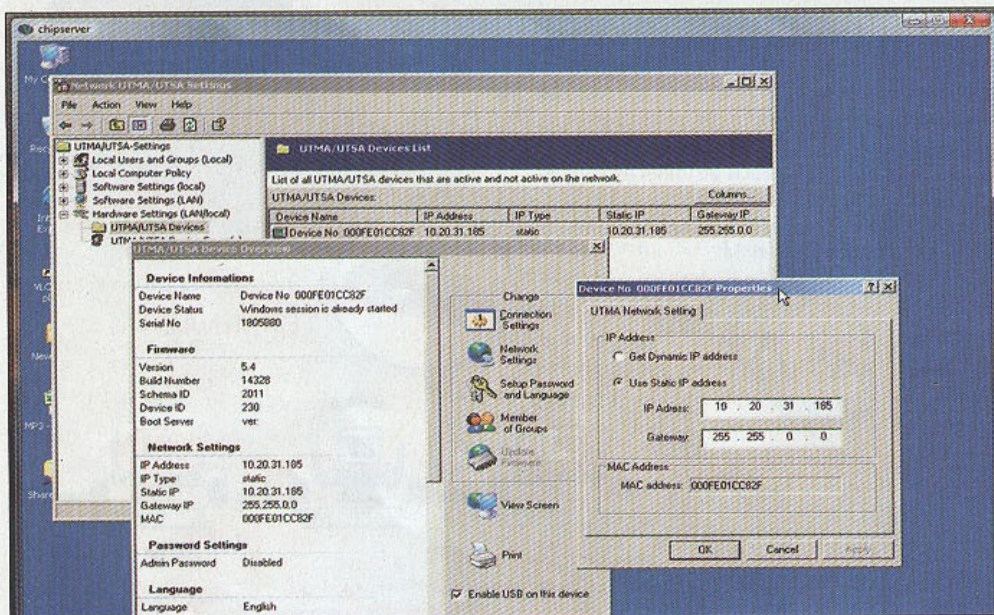
that video playback on terminals using the X-Series was a little jittery. But on the L-Series, video playback was like a frame-by-frame animation. So to conclude, the X-Series is better than the L-Series when it comes to performance and power consumption. But when it comes to features like flexibility of cable length and connectivity options like USB and audio input, the L-Series takes the cake. Currently, you can only use storage devices through the USB port, not printers and input devices. Also, support for Gigabit Ethernet is not yet supported on any of the models, which could have improved the speed by a huge margin.

**Verdict**

A PC sharing concept like this is the best solution for those who could benefit from savings on electricity bills and who are looking for cost effective and maintenance-free hardware. The concept can be applied perfectly in classrooms, small businesses, libraries, cybercafés, data entry centers, training institutes, and many such environments where space is a constraint and costs need to be cut, while computing power is not a necessity. Installation is very easy and an expert is not required at any stage to configure anything.

**For:** Ultra-low power consumption, negligible maintenance costs, easy to install, space saving.

**Against:** Sluggish video playback, no support for USB input devices.



Using the NCT-2000-XP Management Console on the parent computer, you can configure each MuStation's IP address, server connection priority, software settings, printer, display resolution, USB permissions, etc.

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