

Case Study: Maharashtra University of Health Sciences

MUHS Solution Requirement Details

- MUHS requires computing resources as they wish to completely connect and automate their office and administrative procedures. For this purpose they have dedicated 50 existing machines and 250 new machines.
- Robustness, efficiency, security and cost effectiveness have been stated as the desired qualities of the required solution.
- Applications have been developed in house by MUHS for sufficing their management and administrative software needs. These applications have been essentially developed using windows based technologies.
- Due to its proven robustness and cost effectiveness, MUHS will prefer the GNU/Linux platform to serve standard applications such as office suites, web browsers, file transfer software, mail clients etc. This server needs to coexist with the windows application server, which will server the windows, based applications developed by MUHS.

Solution Requirements

A server centric computing solution, which should enable the use of existing PC's / Thin client hardware over LAN to provide server centric computing, also providing a hybrid environment wherein windows as well as GNU/Linux based thin clients should coexist.

Proposed Solution

With reference to MUHS's computing requirements, a server centric computing solution will consist of the following software ingredients from Sundyne:

- Sundyne Display Manager (**SDM**) **software for LAN** based desktop and application computing,
- Sundyne's **Remote bootable Thin client Operating System** for Thin client computing over LAN

Sundyne's SDM Technology transforms a GNU/Linux server to an application Server capable to serve desired desktop applications to:

- Diskless Machines and / Thin clients running Sundyne Thin Client OS over LAN.
- And through SDM client application for remote locations over WAN for any Operating System platforms.

On the software front, our solution supports the client node to emulate terminal services provided by and Sundyne's Display Manager Server for GNU / Linux platform and terminal services provided by Microsoft windows. The solution will facilitate use of Linux based applications, by using Sundyne's Display Manager Technology implemented on GNU / Linux based server, Sundyne's Thin Client OS on the client Node, Sundyne's Xs protocol for remote desktop computing. It will also allow windows thin clients to exist in the network hence enabling use of windows based applications.

With GNU/Linux all Open Source applications will be available natively viz, an Office suite (word processor, spreadsheet, presentation application), a web browser, an email client, instant messaging, printing and the ability to read/write files, Local Printing, local CDROM and FDD support as per the requirements. The users will get access to their applications or resources depending upon the user credentials and authentication.

Sundyne's Thin client OS will use RDP protocol to connect to terminal services and the required application can be used from a Windows 2000/2003 terminal server in a KIOSK mode or a in desktop mode. The users will get access to their applications or resources depending upon the

user credentials and authentication. Linux RDP clients will also be provided so that users can connect to a Windows server from Linux.

BRIEF DESCRIPTION OF THE SOLUTION PLAN:

The solution will primarily operate on two central servers, one running Linux along with the Sundyne display manager and the other server running Microsoft windows 2000/2003 operating systems along with terminal services provided by windows. The data backup devices will be interfaced with either of the servers or a dedicated server will be installed for data backup.

The Network will be generally divided into two pools. One consisting of the nodes which will be booting into windows 2000/2003 and the other which will boot into the Linux operating system. The pools will be defined by the administrator of the network and they will be interchangeable (from win boot to Linux or vice versa) on making appropriate changes to the DHCP configuration file. The DHCP server will be running on the Linux operating system and will serve IP addresses to all thin clients in the network.

All users will be having their own user accounts and disk shares. All sensitive data will be stored in the Linux server and will be encrypted if necessary hence preventing any tampering with the same. Once encrypted, the data will be readable only by the person having the decryption key and even the system administrator will NOT be able to access this data without authorization.

Linux users will be able to access the Windows 2000/2003 desktop from within Linux using a native RDP client, which will be provided along with the Linux operating system.

The Linux server will serve all office applications like word processors, spread sheets etc. Along with, it will also serve other applications like web browsers, ftp clients, mail clients file explorers, calculators, diagram editors, image editors etc. The Microsoft Windows based applications developed in-house by MUHS will be served by the windows 2000/2003 server and will be accessible to ALL thin clients.

**THE FOLLOWING IS THE SCHEMATIC OF THE NETWORK LAYOUT
AS INDICATED BY MUHS**

