

# Scaling New Heights with Linux

aRCUS Stores discovered twin advantages of Linux in its quest for a good IT solution—the OS was able to handle the expanded use of its existing applications while ensuring scalability across multiple locations.

While planning its expansion drive, the IT team at aRCUS Stores was faced with a dilemma—it needed a solution to upgrade its e-mail and intranet/Internet applications, that should also be scalable.

On evaluating Linux, the team found the operating system (OS) capable of not only taking care of present issues, but also scalable enough to take care of future requirements. Once the company's second centre came up at Mumbai, its main applications needed to be replicated between two locations with proper security and authentication. As an organisation with high volume and value retail transactions, the solution needed to be scalable enough to take care of multiple stores and to support high performance.



## THE SOLUTION

The first step involved migrating the Windows 2000 server to the Linux platform in the existing single server environment. An e-mail server based on Sendmail having SMTP/POP3/Web protocols was one of the crucial migrations. Other services like application/Web proxy server on Squid, Firewall/NAT on IPTABLES, VPN on

### Business benefits

Applications	Business benefits	Installed platform
Firewall VoIP E-mail server (Q-mail cluster) Application proxy server File and print server RAS server VPN Content filter on Linux platform	Total cost of ownership much less compared with other systems, superior end-to-end growth and risk management capabilities, scalability, reliability and security on one high-powered server system, multi-application ported on same server. Multi-location benefits, improved service quality; reduced operating costs, simpler and more flexible IT infrastructure requiring less management	IBM server with Linux. Leased and dedicated circuits to other locations. Dedicated Internet access using fixed IP addresses. Multiple location links via leased circuits.



Linux has provided a high level of reliability and efficiency, and a lower cost of ownership. We have multiple locations with a single domain on the Q-mail concept, which works at an excellent speed. The OS offers efficient tools to manage expensive bandwidth allocation for various usages. Linux security solutions have also provided strong control at the administrator level. However, limited skills can be a major issue for Linux implementation.

—Vishal Kapoor, manager—business planning and information systems, aRCUS Ltd

FREESwan, VOIP on SIP, and file and print services on Samba were also implemented.

When multiple stores started coming up, the solution had to be modified to handle issues such as bandwidth utilisation, security, accessibility, and throughput on real applications.

The solution was further modified to allow multiple locations to access the centrally located retail management server via a Virtual Private Network (VPN) built on open source. Sendmail was replaced with a cluster of Q-mail servers to support multiple locations accessing mails.

Q-mail clusters based on replication were required because the management wanted all the users to be mapped at a central location on a single domain. But for multiple locations, they wanted local mail to stay local and not to go out over the wide area network (WAN). The cluster provided the means to save bandwidth while not compromising on manageability. This cluster also provided fault tolerance between different Q-mail servers.



The Linux-based messaging system is a cost-effective, unlimited and dependable e-mailing system, which performs as a strong mailing solution for our internal and external messaging systems across inexpensive hardware. It delivers

breakthrough messages to our organisation's user community by forwarding nearly a million messages per month, without us having to break into a sweat.

—R. Swaminathan, team leader,  
IT Infrastructure, aRCUS Ltd

Individual locations had their own Samba and Squid servers. Squid was configured to pick up the cache from the neighbourhood. This also helped save bandwidth. Any location, depending on its rights, could access any of the Samba servers for file access and print services. This meant that anyone could print a report to a remote location easily.

### MEETING HIGH EXPECTATIONS

By building the IT foundation on Linux, aRCUS was able to take advantage of all the knowledge and processes it had developed over the years. This was a key operation for aRCUS—getting the new solution up and running quickly to keep the total cost of the operation low.

### Home building the aRCUS way

aRCUS Limited, a Turner Morrison group company, is mulling over the induction of some equity partners after the launch of three aRCUS home and building stores. The retail company had earlier announced its plans to invest one billion rupees to set up ten outlets in the next three years.

aRCUS Limited aims at completely changing the way a home is built or refurbished by setting up a chain of one-stop shops for selling all that you need to build or improve a home. The stores plan to meet all the basic needs of its customers at one place, with goods of assured quality available at a reliable price.

In addition to rapid returns on its investment, the Linux-based solution gave aRCUS a robust infrastructure, which could support the company's growth. The advantage was that Linux already had everything that the company needed to expand its business across the country. **LFY**

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DOING THE RIGHT THING,  
AT THE RIGHT TIME  
AT THE RIGHT PLACE

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