SUCCESS STORY

Secondary Schools of Rajasthan

Bringing computer education to millions of students in 6500 schools of Rajasthan, India

The government of Rajasthan sought to provide computer education to students in its state-run schools. As the largest state in India, Rajasthan was facing several significant roadblocks–hardware costs, maintenance, and power shortages among them. NComputing's **vSpace for Linux** *desktop virtualization solution helped address these requirements most economically and effectively.*

Challenges

The government of Rajasthan sought to find a cost and energy-efficient computing solution for their 6500 secondary schools.

Solution

NComputing, Pearson Education Services, and Compucom have deployed more than 500,000 thin clients for desktop virtualization. Specifically, the **X350**, **MX100**, and **vSpace for Linux** from *NComputing*.

Results

Schools realize a host to user ratio of 1:9, significantly cutting the state's initial investments and lowering the ongoing costs of support and maintenance. Power needs are low, placing less stress on infrastructure in rural and remote schools.

Termed the "Integrated Scheme for Computer Education (CE) and Information and Communication Technology (ICT)," the initiative seeks to set up computing labs in around 6500 schools across the state's 33 districts.

If implemented with traditional PCs, the project would have required a significant initial investment in hardware, and ongoing expenses in support, maintenance, and power supply.

Exploring a more cost-effective option

School children use just a fraction of an average PC's computing capacity. Setting up individual PCs for each student would be wasteful. While concerned officials were contemplating how to accomplish this challenging task, they came across *NComputing*. *NComputing* applies desktop virtualization technology to split a computer or server's computing power across multiple workstations – allowing schools to expand usage to more students economically.

The government created a transparent bidding process to select the best technologies and implementers. Following a strict selection process, the selection committee chose *NComputing*, Pearson Education Services, and CompuCom.

Implementing based on an innovative outsourcing model called Build, Operate, Own, and Transfer (BOOT), outsourcers were to install, staff, and manage the labs for a five-year term. Such an

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Managing Director, CompuCom

Deployment Architecture

Virtual Desktops:
10 *NComputing* 3-user kits (**X350**/**MX100**) devices in each lab

Host to User Ratio:
One host for three devices serving nine users (1:9)

Desktop Virtualization Software:
vSpace for Linux

Operating System:
Linux Ubuntu 16.04

Applications:
School Education Content (CAL) with Linux Office Suite, Internet, and other applications as per the school syllabus.

arrangement helps ensure that the labs are installed quickly and in line with strict performance benchmarks. The five-year period also enables school staff to develop their skills, not only in computer-aided teaching methodologies but also in managing the labs.

"We were pleased to partner with *NComputing* for this project," said S K Surana, managing director, CompuCom. "The combination of *NComputing*'s cost-effective shared computing solutions and our world-class education services has been a winning combination for this initiative, and is easily replicated for public and private educational institutions across the state."

"At Pearson, we are committed to fulfilling the educational needs of schools across the country with the best content and technologies," added Srikanth Iyer, COO, Pearson Education Services. "We worked with *NComputing* to successfully implement computer labs, resolving challenges like access and affordable computing for government schools in Rajasthan, especially in rural and underserved areas. The technology also delivers a very positive green impact."

75 percent less support, maintenance

Beginning in 2012 with the *NComputing* **X350** and 2018 with **MX100**, the state deployed *NComputing* thin clients in each lab using the **vSpace for Linux** desktop virtualization platform. A keyboard, mouse, and monitor are connected to each thin client, allowing each student a personal computer workspace.

Apart from a low initial purchase price, the *NComputing* platform brought additional benefits. These solutions require 75 percent less support and maintenance, and 90 percent less electricity. These thin clients use just 1 watt of electricity compared to 120 watts in a traditional PC–a critical advantage in remote parts of the state where power supply is a perennial issue.

500,000 NComputing virtual desktops

NComputing has almost become a de-facto solution of choice for affordable computer education across India. More than 500,000 *NComputing* virtual desktops are running in government education projects in Andhra Pradesh, Bihar, Punjab, and Maharashtra. The solution is also quite popular in private educational institutions.

"Hundreds of thousands of children benefit from the increase in quality and availability of information," says Amit Khanna, Vice President of *NComputing*. "The adoption of ICT and desktop virtualization solutions solved the initial concerns and provided a backbone for future improvements."

"Rajasthan is one of the most progressive states in India. It is delightful to see the way the government has encouraged ICT in schools for enhancing the quality of education, for equipping the students with skills for a better future," he added. "*NComputing* has been regularly partnering with governments of Indian states for bringing the benefit of ICT to millions of students in the country. *NComputing* is pleased to bring the benefit of shared computing technology to the state of Rajasthan too."

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