Case Study

NEC

Secure Cloud Solution

Ministry of Education, Province of San Juan

The Ministry of Education in San Juan, Argentina, is a government agency responsible for creating and executing policies for education excellence. The Ministry designs equitable and innovative educational programs for pre-school, primary, secondary and higher education levels. Their aim is to ensure a quality education system that contributes to the integral training of people and development of the province by formulating and implementing policies, standards and sectoral regulation.

NEC delivered a secure cloud solution to integrate and optimize information management for the Ministry's education system. Utilizing desktop virtualization and IP telephony, this solution improves the efficiency of managing the administrative and academic processes within the educational institutions. It also provides users quick and easy access to Internet, email, file sharing via Web portals, and Voice over Internet Protocol (VoIP) telephony service.

Customer
- Ministry of Education, Province of San Juan, Argentina

Industry
- Government

Challenges
- Inefficient information management system
- Sensitive data not secured sufficiently
- Administrators' decision-making ability impeded
- Outdated processes
- Equipment not standardized

Solution
- Secure Cloud Solution with Desktop Virtualization and IP Telephony
  - Thin client terminal, US110
  - Virtualization servers, NEC Express5800/120Rj-2
  - Management server, NEC Express5800/320Fd-LR fault-tolerant server
  - Storage SAN for virtual PCs, NEC D3-10
  - Storage NAS for data and user profiles, NEC ST1220
  - UNIVERGE SV8500 communications server
- Education Management Suite (EMS) Software

Results
- Streamlined processes
- Faster response time
- Reduced maintenance costs
- Effective management tools
- Better transparency of administration
- Easy communication between the offices and schools
- Enhanced security
- Improved services to community

Challenges

The Ministry of Education delivers educational programs to over 40 percent of San Juan's residents, and represents half of the region's public administration staff. Information management within the organization was inefficient and impeded administrators' ability to make informed decisions. The entire system was convoluted and inconsistent – users were working on different types of computers with a variety of operating systems – and required too much maintenance. The infrastructure needed to be simplified.

The Ministry required a voice and data network solution to connect the main office with 192 schools more efficiently. To improve the accessibility of information, the Ministry first needed to re-evaluate and streamline its administrative processes, then design a new information management system to support the updated processes.

Improving security was also a priority for the Ministry. They wanted to integrate biometric access control to secure data processing and development areas. Addressing these issues with the outdated client-server architecture and expanding the functionality of the IT infrastructure would have negative impact to response times and services to the users.

Solution

In response to the Ministry of Education's unique needs, NEC delivered a secure cloud solution utilizing its desktop virtualization solution (Virtual PC Center: VPCC) and IP telephony (UNIVERGE) – all based securely in the data center. As the first virtualization project for the Ministry, there were natural concerns about such a large-scale integration project and new software.

"NEC's staff was committed to a smooth collaboration with our IT personnel. We felt very comfortable with their work," said Gustavo Quiroga, Project Manager, Ministry of Education in San Juan.
"From the beginning, we wanted a close working relationship with NEC. It was so close at times that it was difficult to distinguish between internal resources and NEC!"

This secure cloud solution, customized for the Ministry of Education, delivers the security and cost-savings of DaaS (Desktop as a Service), SaaS (Software as a Service) and PaaS (Platform as a Service) methodologies through the data center.

Each school is networked seamlessly with the Ministry of Education and its management offices via NEC's UNIVERGE SV8500 Communications Server. This open standards application server can support voice, unified communications and mobility solutions for tens of thousands of users.

At the core is the NEC Education Management Suite (EMS) software. The EMS software serves as a tool to improve the efficiency of existing processes. It provides students, teachers, principals, administrative staff and parents an efficient solution to support the advancement of education. Based on customized applications, administrative and educational processes can now rely on new tools for maximizing computers and the Internet for educational purposes.

The NEC secure cloud solution ensures that the applications for government standards, accounting and payroll, document scanning, scholarships, biometric identification, training, the website and email are always available.

To improve data security and minimize maintenance, all back-end hardware and software is housed securely in the data center. This DaaS, SaaS and PaaS approach eliminates downtime and reduces the capital investments of locally maintained data centers.

Data security was also improved by integrating biometric access control between the Ministry of Education and the management units. The system tracks time and attendance to secure the data processing center and development areas.
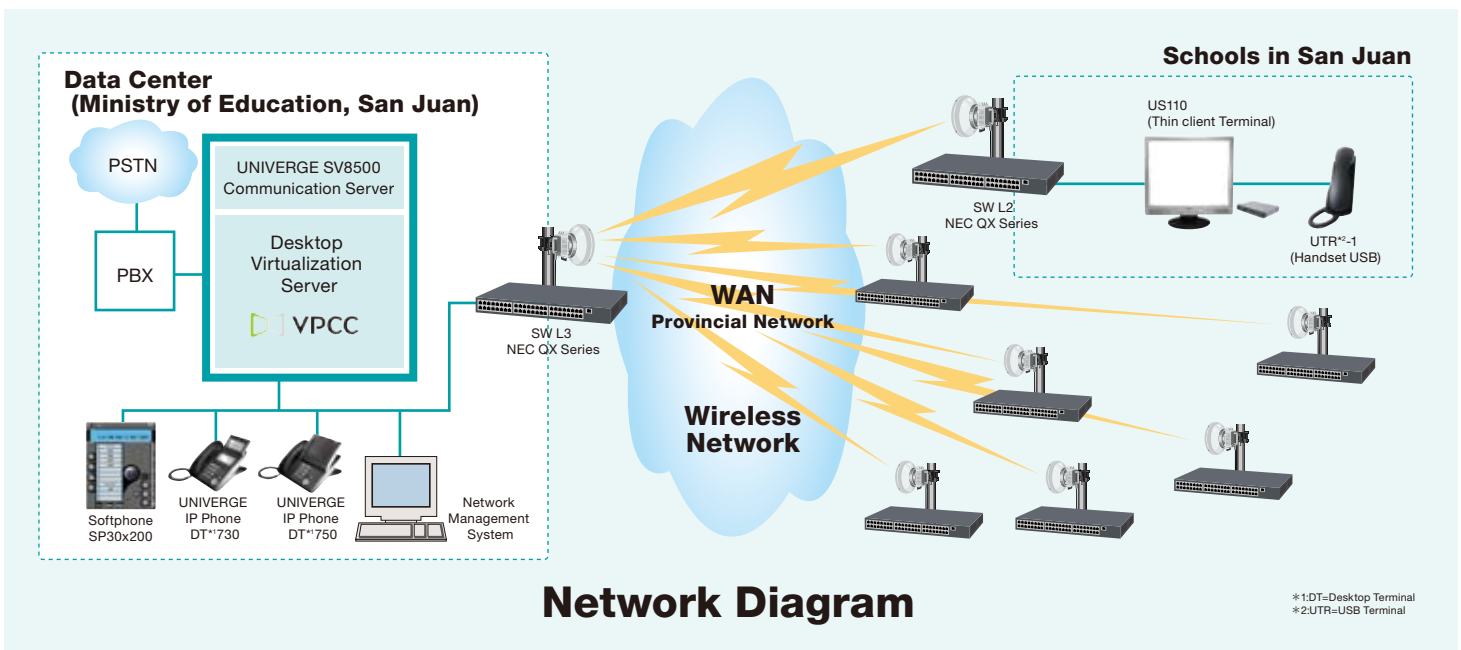
Replacing the myriad of PCs throughout the organization with a desktop virtualization solution ensures a secure computing platform and simplifies management of the workstations.   The US110 thin client terminal provides rich PC-quality high-speed video and audio without the hands-on maintenance of typical PCs.

"The deployment, following exacting Project Management Institute (PMI) methodologies, took one year," commented Fabián Rossi, IT Program Manager of NEC Argentina.
"We planned the deployment to coincide precisely with the relocation of the Ministry of Education to its new Civic Center. We wanted to manage the deployment efficiently to ensure our client maximized their investment."

Due to the scope of the project, the deployment was handled in stages.
"The deployment was successful. We were pleased that each phase

Network Diagram

Data Center
(Ministry of Education, San Juan)

PSTN

UNIVERGE SV8500
Communication Server

PBX

Desktop
Virtualization
Server

VPCC

SW L3
NEC QX Series

Softphone
SP30x200

UNIVERGE
IP Phone
DT*¹730

UNIVERGE
IP Phone
DT*¹750

Network
Management
System

WAN
Provincial Network

Wireless
Network

Schools in San Juan

US110
(Thin client Terminal)

SW L2
NEC QX Series

UTR*²-1
(Handset USB)

*1:DT=Desktop Terminal
*2:UTR=USB Terminal

was completed on schedule," admitted Gustavo Quiroga.

"Problems are natural for the deployment of such a large infrastructure change, but they were resolved appropriately for our situation. I have been very satisfied with the service and performance of NEC."

Because of the ease of management, the Ministry will maintain the system with existing internal resources. Gustavo Quiroga added, "The IT managers have expanded their knowledge of cloud environments, such as virtualization, thanks to NEC's training and working side-by-side daily during the implementation of the project."

Results

NEC delivered an end-to-end network solution for 400 workstations to 192 schools and administrative offices. Streamlining processes and the infrastructure reduced maintenance costs significantly and simplified management of information technology (IT). A desktop virtualization solution improves the performance and maintenance of PCs, while lowering the cost of ownership. Better integration and mobility of work is possible with the virtual workstations.

"We were able to increase the number of desktops available significantly," said Gustavo Quiroga.
"We were surprised that although the number of users had increased, the number of end-user support requests decreased considerably. Management is much easier now."

"The goal of the project was to enhance response time, improve management transparency and enrich services to the community," added Gustavo Quiroga.
"We are now able to do all of that efficiently. We also offer valuable information analysis tools to management for better decision-making."

Currently, the Ministry of Education is considering extending the voice and data network to incorporate approximately 350 other schools. This project expansion will integrate thin clients and telephones for the rest of schools of the province.

About

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