Borderless Network Connects Schools for Next-Generation Learning

Abu Dhabi Education Council begins to transform education with help from Cisco Services

EXECUTIVE SUMMARY

ABU DHABI EDUCATION COUNCIL
- Industry: Education
- Location: Abu Dhabi, United Arab Emirates

CHALLENGE
- Connect 270 public schools to the data center, the Internet, and each other
- Deploy education solutions for developing world-class learners
- Implement solutions quickly

SOLUTION
- Cisco Services for Borderless Networks and Data Center
- Cisco Borderless Network for Education

RESULTS
- New Borderless Network Architecture that supports the voice, data, and multimedia services the council needs today and can scale to support future growth
- Increased administrative productivity and consistency
- Approximately 40 percent of total schools are connected. All schools connected by end of 2011.

Challenge

Abu Dhabi is the capital and political, cultural, and industrial center of the of the United Arab Emirates (UAE). As part of the government, the Abu Dhabi Education Council (ADEC) develops and implements educational policies, plans, and programs to improve education in accordance with the highest international standards and to support national development goals.

ADEC's vision is to become one of the five best public education systems in the world, enabling students to become world-class learners able to fully participate in a sustainable, knowledge-based society. To achieve this, ADEC wants to enrich the learning environment and enhance student performance using technology that meets the needs of 21st-century learners, educators, and organizations. An optimized learning and working environment is equally essential for recruiting teachers and staff. ADEC hires teachers from around the world, most of whom are accustomed to having technology resources in the classroom.

However, the school system's networking infrastructure could not support its ambitious goals. The schools were not connected to each other or to the main data center, and only a few schools had Internet connectivity. Without comprehensive connectivity, teachers and administrators were not able to easily share learning resources or Internet-based courseware. Each school had independent information systems for student admissions, curriculum management, examination records, and operating finances. Many of those systems were paper-based. ADEC wanted to increase administrative productivity and improve consistency across the schools by centralizing these important systems in the data center.

At the same time, ADEC wanted to maximize its project budget without compromising service and solution quality. An aggressive timeline and the complexity associated with deploying new infrastructure in a data center and approximately 270 schools meant that ADEC also needed project management assistance.

"Technology is essential to reaching our goals, but we needed more than just the technology," says Mohammed Younes, ICT division manager for ADEC. "Implementing new technology in our data center and across 270 schools was a major logistics challenge. We needed a solution that delivered everything – the technology, project expertise, and investment protection."

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Solution

After several in-depth studies and market analysis, Younes and his team recommended Cisco to the ADEC executives. The executive team approved the recommendation based on Cisco's market position, quality, support resources, and presence in the UAE.

Cisco® Services was engaged to deliver a complete end-to-end Borderless Network Architecture. Cisco Borderless Networks securely, reliably, and seamlessly connect people, information, and devices regardless of their locations. Simplified connection to people and resources increases productivity and flexibility.

Designed to connect all school buildings, the architecture will provide secure access to critical information, transform the student enterprise information system (SIS), and create a technology-based learning and collaborative environment. The council also asked Cisco to establish a project management office to manage information, resources, and change to reduce risk, resolve problems quickly, and keep the project on track.

Cisco and ADEC took an architectural approach to transforming the school system's network and data center. This approach began with thoroughly understanding what ADEC wanted to achieve and determining the IT strategy that would be needed to implement its vision. The Cisco team reviewed ADEC's existing infrastructure and security strategy against best practices. Based on this assessment, they developed a conceptual Borderless Network Architecture, network roadmap, strategy, and detailed design for connecting the 270 public schools.

The data center features the Cisco Nexus® 7000, Cisco Unified Computing System™, and Cisco IronPort™ security. The network infrastructure in each school includes a WAN router, core and access switches, wireless LAN, and Internet connectivity. Comprehensive connectivity enables staff in the data center to centrally manage all of the schools' information systems. Altogether, the new infrastructure will support 150,000 students, teachers, and administrators.

Cisco Services' infrastructure and wireless teams provided comprehensive planning, design, and implementation services to meet aggressive implementation deadlines. The teams expect to have completed deployment of all schools by the end of 2011 through dedicated teamwork. Etisalat, a Cisco Gold Certified Partner, was selected as the prime system integrator responsible for supplying Cisco equipment, installing it, and providing project management support for cabling and network connectivity, including interoperability with the national telecom service provider. Cisco Services provides consultative support for implementation and has full deployment responsibility for the Cisco network infrastructure in all of the schools.

PRODUCT LIST

Routing and Switching
- 300 Cisco 2911 Series Integrated Services Routers
- 300 Cisco Catalyst 4507 Switches
- 3,000 Cisco Catalyst 3750 Series Switches
- Nexus 7000
- Cisco Unified Computing System
- Cisco ASR 1002 Series Aggregation Services Routers

Security
- Cisco IronPort Web Security Appliance

Wireless
- 300 Wireless LAN Controllers
- 12,000 Cisco Aironet 1142 Series indoor access points
- 4,000 Cisco 1262 Series outdoor access points

Cisco Services
- Cisco Network Architecture Discovery
- Cisco Network Architecture Planning and Design
- Cisco Data Center Planning and Design
- Cisco IP Telephony Design
- Cisco SMARTnet Service

After deployment, Cisco will provide ongoing technical support through the Cisco SMARTnet® service. Cisco SMARTnet gives ADEC's IT staff direct, anytime access to Cisco engineers, the Cisco Technical Assistance Center (TAC), and an extensive range of online resources. ADEC receives fast, expert technical support, flexible hardware coverage, and personalized capabilities to help them resolve critical network issues. The Cisco Services project management office helped ensure steady progress toward the project completion.

"The entire project has been simplified by using the Cisco Services project management office," says Younes. "I wanted Cisco to have full ownership and accountability for the project, and the Cisco team was highly professional, ethical, and responsive. It is one of the best teams I have worked with."

ADEC has implemented the Oracle eBusiness Suite into the architecture, initially using the Human Resources, Procurement, and Finance modules. A system-wide student registration system is also in production and will replace numerous, diverse paper-based systems. The data center security and core system upgrades are being finalized and the next steps include implementing Active Directory for authentication and remote desktop services, as well as deploying teaching and learning management tools.

Results

The Cisco Borderless Network Architecture will be a cornerstone for transforming education across Abu Dhabi. Approximately 150 schools will be fully deployed by late summer 2011. The schools that are already completed have Internet access, content filtering, and end-to-end wireless capabilities in place.

The Cisco networking solution supports ADEC's vision for the future, helping to create a student-centric, technology-based learning environment that builds community for learning and collaboration. As a result of the successful schools initiative, the Abu Dhabi government has also recommended Cisco and Cisco Services for projects within high-level government.

"Already we have seen significant improvement in network availability, bandwidth, and stability," says Younes. "Administrators are now able to take advantage of enterprise-class applications and 16,000 teachers have email and self-service access to a portal for sharing resources."

The borderless network architecture provides ADEC with investment protection. The Cisco network platform can easily be expanded to accommodate advanced applications that ADEC might add in the future. High scalability will enable new applications and capabilities to be added over the next three to five year with minimal adjustments. ADEC expects to implement physical security, RFID equipment tracking, online testing, eLibrary, remote instruction, web- and video-based training and collaboration, and Internet research capabilities. Cisco Unified Communication solutions will be implemented for developing teacher proficiency and enhancing productivity.

"The future looks very bright," says Younes. "As we anticipate a number of complex initiatives, we are blessed to have made the correct decision in choosing Cisco. We have the infrastructure that will stay with us and scale so that we can now move forward confidently."

For More Information

To find out more about Cisco Services, visit: www.cisco.com/go/services

To learn more about the Abu Dhabi Education Council, visit www.adec.ac.ae/english/pages/default.aspx

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