Success Story

Zyxel Nebula and SD-WAN Solutions Foster Russia's Future IT Wizardry

INDUSTRY
Education

CUSTOMER
HSE Moscow Institut of Electronics and Mathematics

COUNTRY
Russia

SOLUTIONS
Zyxel Nebula & SD-WAN Solution

Overview

Challenges

- Modern, futureproof equipment for more effective education
- State-of-the-art computer labs to attract students, teachers
- Technical training to take full advantage of network technology

Results

- Quick, intuitive deployment for immediate connectivity
- Web-based interface delivers rich management features
- Hands-on training with the latest cloud management and SD-WAN technologies
- Zyxel multi-tier certification programs give students the ability to master real-life situations

Solution

- Zyxel Nebula Solution
- Zyxel SD-WAN Solution

"Thanks to the latest technology [from Zyxel], students are ready for practical work in companies and enterprises immediately after graduation."

Dr. Andrey Vishnekov
Department Head of Computer Systems and Networks, MIEM

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Background

The Tikhonov Moscow Institute of Electronics and Mathematics (MIEM HSE) is the renowned engineering school within the National Research University's Higher School of Economics, one of the most respected institutions of collegiate education in Russia. MIEM's distinguished and award-winning professors deliver practical, real-world instruction; as a consequence, the school's talented graduates are highly sought after in myriad business sectors at home and abroad. In 2015, MIEM created the School of Computer Engineering, the result of a merger of several departments. Operating in a new facility with cutting-edge labs, state-of-the-art infrastructure, and a powerful LAN with one-gigabit capability, the school is devoted to developing applied technologies in the electronics, engineering, and aerospace industries.

Challenges

The School of Computer Engineering within MIEM had wanted to upgrade its existing network infrastructure for two reasons. First, they would be unable to achieve their lofty standard of education without the most up-to-date, futureproof equipment. Second, the high-tech overhaul would be an attractive selling point to prospective students and staff. Since network technology is increasingly reliant upon cloud computing, the school desired a solution that would be able to reflect this current trend while maintaining the flexibility and scalability for whatever the future held in store. In addition to new hardware, the school wanted its staff and students to receive extensive technical training, empowering them to use the network to its fullest potential.

Solutions and Benefits

Dr. Andrey Vishnekov, department head of Computer Systems and Networks at MIEM, spearheaded the project. "The main educational task of students is to acquire modern knowledge and competencies in the development and operation of computer networks," Vishnekov said. "Therefore, the educational process must meet the highest requirements in terms of studying modern network and telecommunication technology."

The school's versatile and secure solution harnesses all the power of Zyxel's cloud-based Nebula technology. The **NSG50 Nebula Cloud Managed Security Gateway** is the epitome of simplicity. Its quick, zero-touch deployment enables instant site-wide visibility and control over event logs, traffic stats, bandwidth consumption, connected clients, and application usage. The best part? All this can be done remotely within the **Nebula Control Center**.

The **ZyWALL VPN50 Firewall** also delivers top-of-the-line speed and security to the academic program, but its greatest strength is its ability to take full advantage of Zyxel's Nebula SD-WAN technology. The potent SD-WAN service gives clients the ability to instantly engage with local servers, remote devices, and a wide range of popular cloud-hosted applications.

To deliver fast, stable WiFi, the school deployed the **NWA1123-ACv2 802.11ac Access Point**, which utilizes an optimized antenna and RF design. But how to coordinate all these devices? The **GS1920-8HPv2 8-port Gigabit Smart Managed Switch** simplifies communication for complex networks—just like the one at MIEM. Both **GS1920-8HPv2** and **NWA1123-ACv2** can be run via stand-alone mode or through Zyxel's Nebula Cloud interface for user-friendly remote management and configuration.

Zyxel made it possible for the school to work with the latest hardware and software, ensuring its students are in the know when it comes to the most recent tech trends. And since Zyxel offers up to seven different certification programs, these gifted minds will be well-positioned for success in the job markets of the future.

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Products Used

VPN50 • VPN Firewall

- Nebula SD-WAN for optimal WAN service
- Easy setup tunnel to Amazon Virtual Private Cloud (VPC)
- Facebook WiFi, Intelligence social media authentication
- Robust hybrid VPN (IPSec/ SSL/L2TP over IPSec)

NSG50 • Nebula Cloud Managed Security Gateway

- Complete network, security, and application control from anywhere via the cloud
- Zero-touch site-to-site VPN
- Secure networks with IDP and Application Patrol, Content Filtering, and Anti-Virus
- Built-in DHCP, NAT, QoS, and VLAN management
- Static route and dynamic DNS support
- Identity-based security policies and application management
- Cloud management and cloud statistics

GS1920-8HPv2 • 8-port Gigabit Smart Managed PoE Switch

- NebulaFlex™ gives you the flexibility to switch between standalone and our license-free Nebula cloud management
- Nebula Cloud: allows simple deployment with agile network management
- Standalone: Easy management and setup with web-based GUI
- Fanless designs offer silent operations in your office
- View your PoE status at a glance through the 5-segment PoE usage LED, no need to go through the GUI
- Supports PoE+ to offer 30W per port with total PoE power budget of 130W
- The most compact 8-port PoE switch within 130W PoE power budget range

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NWA1123ACv2 • 802.11ac Dual-Radio Ceiling Mount PoE Access Point

- NebulaFlex™ gives you the flexibility to switch between standalone and license-free Nebula cloud management
- Nebula cloud management allows easy deployment, real-time configurations, and access to all your access points at any time
- 802.11ac 2x2 support for combined data rates of up to 1.2 Gbps
- Compact ceiling-mount design with optimized RF performance
- Robust build quality including solid-state capacitors to ensure long life and operational reliability

Nebula Control Center (NCC)

- Responsive web design and intuitive user interface
- Multi-tenant and multi-site view
- Role-based administrative privileges
- Real-time as well as historical monitoring and reporting
- Site-based auto and smart configuring tools
- Misconfiguration protection to prevent NCC disconnections
- Rich site-wide management tools (dashboard, map and floor plans, and topology)

About Zyxel Communications

Focused on innovation and customer-centricity, Zyxel Communications has been connecting people to the Internet for nearly 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for telcos and service providers, business and home users. Zyxel is building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play. Zyxel, Your Networking Ally.