

Implementation of an ADSL Internet Connection for Corporate and Private Clients

ENERGOAQUA, a.s



Energoaqua has been in operation in Rožnov pod Radhoštěm since 1992. The headquarters are located in an extensive industrial park formerly occupied by Tesla Rožnov. Its primary business activities are in the fields of energy and water management.

SYNERGY, spol. s r.o.

SYNERGY spol. s r. o. (SYNERGY Ltd.) has existed in its current legal form since 1994. From its inception, it has employed high-level professionals in the field of IT. The company offers complex IT services and solutions, combined with complex LAN/WAN system implementations. It operates a surveillance center equipped with a proactive on-line protection system, working on a schedule that meets the service requirements of its customers. In addition, it acts as a local ISP (Internet Service Provider) and is a partner of ZyXEL, selling and implementing its products.

The industrial park is situated in the very center of Rožnov pod Radhoštěm. A number of small and medium firms are also located there. Energoaqua provides a wide variety of services for these firms including telecommunication services and the production and distribution of heat, technical gasses, water and electricity. Initially, companies in the industrial park used dial-up Internet services, but these services quickly became outdated and no longer fulfilled the companies' needs.

The industrial park is also surrounded by panel housing developments, with approximately 1000 households that represented potential customers. The need for better quality ADSL connections, combined with voice and data services through existing telephone lines owned by Energoaqua, did not escape the notice of the company's director, who decided to take advantage of it.

“We were attracted to the solution offered by SYNERGY, based on ZyXEL products, because of its complexity and its excellent price-to-performance ratio,” --Ing. Zdeněk Lošťák, Energoaqua, a.s

The Challenge

The goal was to replace the inadequate existing connection with a newer, faster and better-quality ADSL connection, thereby expanding Energoaqua's portfolio of services for corporate and private clients.

Implementation

ADSL technology enables Internet access via existing telephone networks. In order to offer ADSL, access points (DSLAMs) must first be installed in local telephone switchboards.

The “DSLAMization” of Czech telephone switchboards by Czech Telecom began three years ago. It began offering ADSL on a commercial basis after numerous delays. At first, it offered download speeds of up to 192 kb/s, which was nearly four times faster than dial-up and cost more than 1000 CZK.

An alternative to ADSL Internet connections via Český Telecom is accessible via alternative operators that use so-called local loops (LLU – Local Loop Unbundling), i.e. the use of one's own telephone network, as in the case of Energoaqua.

Energoaqua turned to SYNERGY, with which it has a long-standing working relationship in the area of active LAN elements and structuring cabling systems (metallic and optical), and which is also a partner company of ZyXEL, the world's largest supplier of DSL routers, as well as a specialized firm in the area of broadband Internet access. Together, they chose the solution for connecting the specified location to the core network with the help of an ZyXEL IES 2500 IP DSLAM, which best met all requirements, and, according to Energoaqua's management, offered the best performance at a reasonable price.

IP DSLAM exceeds traditional technology in many ways, including increased effectiveness, higher speeds, and greater ease of administration. IP DSLAM technology, for example, reduces the complexity of data format conversion, solves traffic congestion problems with high-speed, non-blocking Ethernet switching technology, and provides a good mechanism for video multicasting applications, such as IGMP snooping. By eliminating protocol transformations over the access network, telecommunications operators have an alternative method to deploy a more cost-effective Ethernet infrastructure from metropolitan to core networks.

In the pilot stage, 24 households and companies were connected, with the option to easily expand the number of customers in the future. The final price was under 200,000 CZK, including the ZyXEL IES 2500 IP DSLAM and small end-user ADSL equipment. Implementation took two days, including installation.

Simple Administration

All ZyXEL modular IP DSLAMs utilize MSC1000A (management and switching cards) for uplink and subtending purposes. MSC1000A includes four gigabit Ethernet interfaces for deployment in a ring or tree topology. ZyXEL provides a wide range of copper or optic transceivers on the uplink and subtending interfaces for applications of various distances and types of media. A big advantage of this solution is distinct cabling for DSLAM and splitter chassis based on Telco connectors.

Complete Range for DSL Services

All IP Express models offer G.SHDSL and ADSL/ADSL2+ technologies in "last mile" applications. Speeds range from 128 Kbps up to 24 Mbps and loop-reach travels of up to 6 kmps. Broadband services can be offered using existing copper wire infrastructures, which generates additional revenue with minimal installation time and expense.

VLAN Offers Security and Segmented Class of Service

IP Express uses VLAN (Virtual LAN) to segment the class of services provided by service providers.

Each permanent virtual circuit transformed to and from an ATM-based CPE can be configured and mapped to an assigned VLAN with different packet priorities. Service providers can then differentiate the class of services for Internet, VoIP, and video broadcasting. By using VLAN, IP Express also enables service providers to provide business-to-business Intranet with network privacy and security.

End-to-End management minimizes the operation cost

In addition to basic configuration, fault, security, and performance management, the NetAtlas EMS management device also provides powerful and advanced remote management capabilities that help service providers minimize daily operational costs. The loop-back design helps isolate network problems, while new firmware and IP Express configuration allow for remote changes, eliminating the need for "truck rolls" to provision new customers or reconfigure services for existing customers.

Key Benefits

"Quality combined with reliability and, above all, perfect technical support on the part of the manufacturer were the main reasons we offered our clients solutions based on ZyXEL products." -- Ing. Michal Vaculík, SYNERGY spol. s r.o.

- Clients can access the Internet in combination with voice calls and other services
- Guaranteed reliable and secure operation
- Complete solution from one manufacturer -- ZyXEL -- including a wide variety of terminals
- Ease of expanding the number of users and the ability to combine various xDSL technologies
- Advantageous price
- Graphical management via Web browser or SNMP
- Time savings for the administrator
- Distinct cabling using Telco connectors

ZyXEL Product Used

ZyXEL IES-2500



Specifications

Rack-mounted IES-2500 contains 6 slots, 1 for management and switching card – MSC and 5 for line cards. Operates on alternating current (AC). Equipment is connected by a splitter chassis in a rack mount.

Terminals

ZyXEL P-660R

About ZyXEL Communications

ZyXEL Communications Corp. (TSE: 2391), headquartered in Hsinchu, Taiwan, is the world's leading residential gateway provider and was recently ranked as Taiwan's First "Green Enterprise," and the second best "Green" Company in Asia (2007 CG watch, Asian Corporate Governance Association). ZyXEL's comprehensive Internet Protocol-based (IP) networking solutions include access multiplexers, customer premise equipment, Internet security and Wireless LAN equipment, enabling high-performance network services for SOHO, small to mid-sized businesses and service providers. ZyXEL works closely with worldwide network equipment vendors, telecommunications companies, ISPs, and other major businesses. For more information, visit the company's website at <http://www.zyxel.com>.