ZyXEL

Success Story

Kamphaeng Phet Hospital, Thailand
ZyXEL Health Care Solution Revolutionizes IT System

Overview

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By switching to an effective IT system, the difficulty, delay, disorganization and confusion in document management were eliminated. Doctors work efficiently and people experience more responsive services.

Customer Name
Kamphaeng Phet Hospital, Thailand

Customer Industry
Health Care

Challenges
- Large-volume data transmission and recording on a daily basis
- Prompt pre-service is needed due to the nature of hospital services
- Protect the IT system from data hacking and unexpected attacks

Solutions
- MS-7206, GS2200-24, ES-2024, ES3500-24, GS-4024, IES-5005, USG2000

Benefits
- Data can be recorded digitally
- Workload of the staff and doctors can be reduced
- Faster data transmission and recording
- Improved hospital services

Challenges

The registration system of Kamphaeng Phet Hospital was manually operated in which records were written by hand. The manual system not only wasted paper and time but was also difficult to organize and inquiry.

The hospital needs a new IT system that replaces the current manual system and ensures that it provides easy-to-use, quick access, sufficient bandwidth, uninterrupted services and flexible hardware to support future functions.

The system support must be prompt since every minute in the hospital is extremely important due to its healthcare nature.

Background

The Kamphaeng Phet Hospital provides inpatient and outpatient services. The hospital can serve thousands of outpatients and provide 450 inpatient beds with 2 dispensing rooms. The hospital also has the experienced staff and technology to assist people. Considered a medium-sized facility, the Kamphaeng Phet Hospital plans to increase the number of beds for inpatients and IT infrastructure in the future to become a hospital of larger scale.

Solutions and Benefits

After considering the price, performance and after-sale services, the Kamphaeng Phet Hospital chose ZyXEL for its value-added offerings and prompt services.

The selected ZyXEL solution can be divided into two major parts: the data network for connecting computers in each department and the VoIP network that replaces the traditional telephone system. For the data network, the MS-7206 was selected as the core switch; it is a modular switch that provides fiber optical connections to the edge switches installed across departments. The installed edge switch is a Layer 2 managed switch capable of managing the entire network; the applied models include the

GS2200 24-Port L2 Managed Gigabit Switch as well as the ES-2024 and ES3500-24 24-Port L2 Managed Switches. For data protection, the Kamphaeng Phet Hospital employed an additional USG2000 as a Firewall UTM (Unified Treat Management) device to protect data from hacking as well as to manage the internal and external networks.

For the VoIP network, the Layer 3 Gigabit Switch GS-4024 was selected as the core switch to connect the IES-5005 MSAN devices. The switches installed in each department or each building are equipped with VoIP line cards that allow effective connection to the existing analog telephones with the new VoIP system. In the future, phone lines can be increased through simply adding new VoIP line cards to the IES-5005. In addition, IES-5005 is capable of connecting to the fiber optic system.

Upon installation, the Kamphaeng Phet Hospital was brought into a digital environment. Registration and diagnostic data is recorded digitally and data deliveries between buildings and departments are performed through the fiber optic network that significantly speeds up data transmission. ZyXEL's health care solution improves the hospital's service, reduces workload of the staff and doctors and saves paper cost. Moreover, reliable consultants and equipment also help the system to work smoothly without interruption.
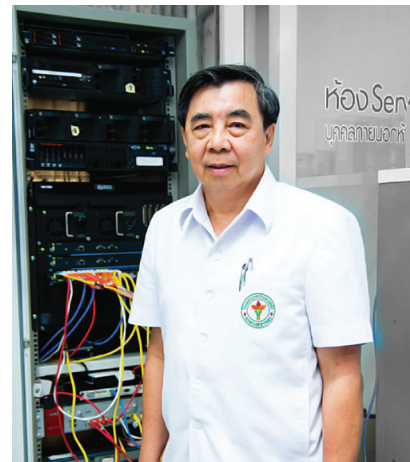
Products Used

Data Network

MS-7206
Modular Layer 3 Core Switch for High-end Networks

- Non-blocking 384G switching performance
- Dual active-active switching fabrics
- Hot-swappable I/O modules
- Six slots (two for management and four for I/O modules), total of 10U
- Intelligent QoS and traffic control for enhanced availability
- Extended L3 routing and L2 switching functions for highest performance
- Intelligent L2/L3/L4 local switching

GS2200-24
24-port GbE L2 Switch

- Comprehensive L2 switching features
- 56 Gbps non-blocking switch fabric
- 4 dual-personality (RJ-45/SFP) GbE interfaces
- Port security and enhanced 802.1X port authentication
- MAC freeze and intrusion lock
- 8 IEEE 802.1p hardware priority queues
- WFQ, WRR and SPQ queuing algorithms
- IPv6 ready logo approved

ES-2024
24-port L2 Managed Fast Ethernet Switch

- Port-based and IEEE 802.1Q tagged VLAN (4K PVID)
- Intrusion lock, MAC freeze, MAC filtering & Static MAC forwarding for L1/L2 security protection
- 802.1x for access authentication and management over VLAN and bandwidth per valid user's attribute
- MVR ensure valid transmission of multicasting stream on the network-wide multicast VLAN iStacking™ clustering technology, one IP management for 24 devices

ES3500-24
24-port FE L2 Switch with GbE Uplink

- 16 K MAC address table
- Policy-based QoS optimizes multi-service quality
- IGMP snooping v1, v2, v3, MVR
- Multilayer (L2/L3/L4) ACL suite for security protection
- High redundancy and resilient architecture with RSTP and port trunking
- IPv6 management support

USG2000
Unified Security Gateway

- Robust security without sacrificing performance
- Comprehensive support to IPv6
- Robust hybrid VPN (IPSec/SSL/2TP)
- Zero-configuration remote access with EASY VPN
- Supports L2TP VPN on mobile devices (iPhone and Android phones)
- ICSA firewall, IPSec certification
- Content filter stops malware and Web threats
- Powerful email security
- Non-stop Internet access with multiple WAN and 3G backups

GS-4024
Managed Layer 3 Gigabit Ethernet Switch

- Supports RIP and OSPF protocols
- Supports DVMRP and IGMP multicasting
- Resilient and flexible networking with RSTP, VRRP and Port Trunking support
- Optional backup power support
- Multilayer (L2/L3/L4) ACL suite for security protection
- iStacking™ clustering technology for one IP management
- Supports SNMP and RMON

IES-5005
3.5U 5-slot Chassis MSAN

- Non-blocking Gigabit backplane
- Multi-service interfaces including ADSL2/2+, G.SHDSL.bis, VDSL2, VoIP (SIP & H.248), fiber-based FE and E1 IMA
- Comprehensive QoS to enhance Triple Play users' experience
- Field proven IGMP snooping and proxy for IPTV deployment
- Flexible ACL, VLAN-aware DHCP and anti-IP/MAC address spoofing to prevent malicious attack
- DHCP option 82 and PPPoE IA features support versatile IP address assignment

Diagram

Data Network

VoIP Network
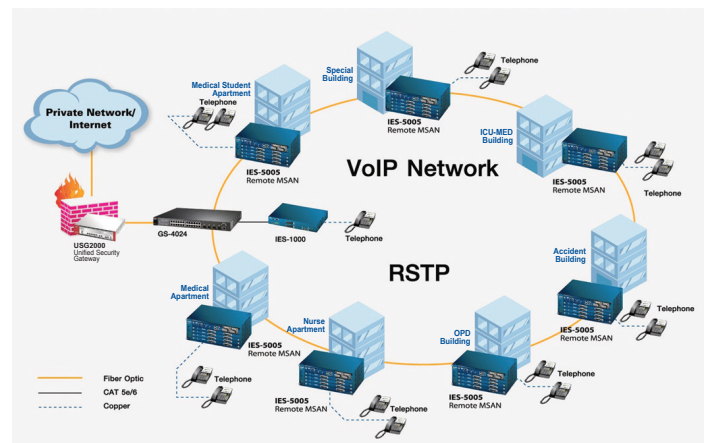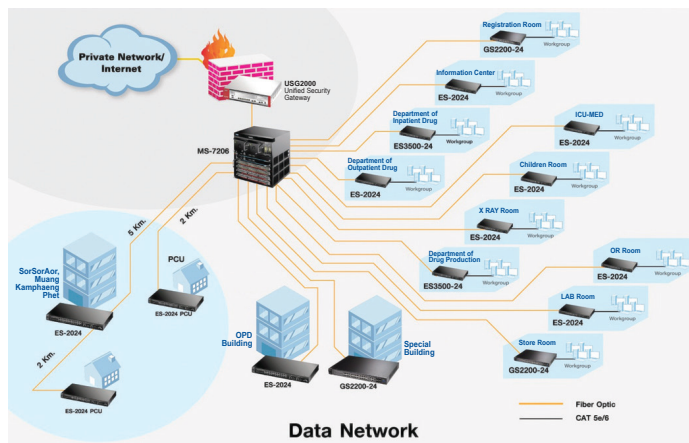
About ZyXEL Communications

ZyXEL Communications Corp., founded in 1989 and headquartered in Taiwan, is the leading provider of complete broadband access solutions. As one of the early modem manufacturers, ZyXEL has undergone many transformations in the fast-paced networking industry. Today, ZyXEL is one of the few companies in the world capable of offering complete networking solutions of Telco, SME/Enterprise, and Digital Home for a wide range of deployment scenarios. Telco solutions include wired and wireless access network equipments, networking customer premises equipments, and Carrier Switches. SME and Enterprise solutions include Unified Security Gateway, LAN Switches and WLAN. Digital Home solutions include network connectivity devices and multimedia solutions.

The company has 3200 employees and distributors in 70 countries, reaching more than 150 regional markets. The ZyXEL Communications Corp. includes 33 subsidiaries and sales offices and two research and development centers worldwide. For more information, visit the company's Website, http://www.zyxel.com.