

Location: Adairsville, Ga., USA

Organization: Yanmar America

Sites/Users: A new U.S. office, two manufacturing plants, two additional buildings planned, remote offices; 200 users growing to 500+

Industry: Manufacturing

Applications: Resilient IP telephony and managed wireless networking

IN BRIEF

GOAL

- Implement a multisite, scalable IP telephony system with carrier-class reliability and quality
- Implement a secure high-speed wireless network for three buildings
- Reduce costs of managing and growing phone system
- Maintain telephony services in the event of WAN or power failure

SOLUTION

- Network design, deployment and support by 3Com partner Kenneth G. Way & Company
- 3Com® VCX™ IP Telephony and IP Messaging Modules on IBM® System i™ servers
- 3Com Routers V7111 and V7122
- 3Com Switch 5500G, 4500G and 4500 LAN switches.
- 3Com IP phones 3108, 3105 and 3102
- The 3Com Wireless LAN Mobility System
- 3Com Wireless Switch Manager
- 3Com Wireless LAN Controller WX2200
- 3Com Wireless LAN Managed Access Point 2750

RESULT

- Highly reliable VoIP system provides seamless phone service with powerful new features
- Employees and visitors enjoy high-speed, secure wireless access in multiple buildings
- Simple, in-house management of phone system and wireless network saves time and money
- New phones are added with just an Ethernet connection



Global Diesel Engine Maker Implements 3Com® IP Telephony System and Wireless Network *Lowers costs, simplifies management and adds new features*

Yanmar developed the world's first commercial small diesel engine in 1933, and the Japan-based company has manufactured more than 15 million die-hard engines since for agriculture, fishing and industry. The company's American operations in Adairsville, Georgia were expanding into a new office building, with four additional buildings planned. Its aging PBX phone system had no more capacity to add users, while two of the Yanmar America buildings were soon going to need 100 new phones.

Yanmar IT Manager Brian Williams researched phone systems that could meet Yanmar's growing needs while also eliminating the limitations and high maintenance costs of its old system. Williams also was planning for a modern, secure wireless network for the new buildings and was interested in developing a single integrated infrastructure for both data and voice.

Working with Kenneth G. Way & Company, Yanmar's trusted IT support consultancy for a decade, they evaluated the options and chose 3Com's VCX™ IP Telephony system on IBM® System i™ servers and 3Com's Wireless LAN Mobility System. The result has been a flawless transition into the new buildings with an integrated feature-rich phone system and secure wireless network.

CHALLENGES

New Phone System. Yanmar's phone systems are mission-critical, so the company's expansion demanded a new, scalable phone system with carrier-class reliability and quality – and easy migration into the new buildings without any disruption of service. "If the phones are out," Williams explains, "we can't receive orders and it cripples our business financially. Frankly, we'd rather have our network down than our phones." Williams also was tired of needing an expensive outside technician to add new users and implement moves; he wanted the control and ease of management that a system his team managed in-house would provide.

Go Wireless. Yanmar management believed in the business benefits of supporting mobile workers and providing visitors with secure wireless access. They wanted a high-performance, highly secure yet manageable solution at the right total system price. The Yanmar network had 10 old Dell switches that Williams wanted to replace, and the move to new buildings was recognized as an opportune time to upgrade to a wireless network.

“We averaged 30 to 40 moves a year with costs of \$250 to \$500 per move with our old phone system. These costs have been eliminated with our new 3Com system.”

Brian Williams,
IT Manager
Yanmar America

WHY 3COM?

Williams had worked closely with IT Consultant Ken Monroe of Kenneth G. Way & Company for the past 8 years. Together they evaluated the options for VoIP and wireless systems that fit Yanmar’s needs, looking at offerings from Avaya, Cisco and 3Com. The company’s president and purchasing manager participated in final presentations from the three vendors.

Better value and more features

“The competitors weren’t only more expensive than the 3Com solution,” Williams explained, “they didn’t have nearly the features 3Com did. We saw that the 3Com solution would support our current needs, and our growth 5 and even 10 years down the line. It was an easy decision.”

Carrier-class reliability and sound quality

3Com’s IP telephony system supports a distributed multisite architecture for maximum system resilience to ensure Yanmar’s business continuity. The backup system is ready to automatically come online in case the primary has a WAN failure or power outage, delivering 99.999 percent availability. 3Com’s VoIP technology also delivers carrier-class sound quality. “A few years ago we noticed a lot of dropped packets with VoIP,” says Williams. “Now we don’t hear that.”

A commitment to open standards and strength in both data and voice

3Com has more than 35,000 IP telephony systems installed around the world and is well seasoned in both data and voice networking. Yanmar’s 3Com system uses open, extensible standards, including Session Initiation Protocol (SIP)-based VoIP, supporting a growing range of VoIP applications and hardware from many vendors.

THE SOLUTION OVERVIEW

Resilient IP Telephony from 3Com and IBM

Based on their common values of open standards, reliability, scalability and integration, 3Com and IBM have partnered to offer 3Com IP Telephony solutions running on IBM System i™ platforms. The partnership delivers the high-availability functionality implemented in telco environments with all the end-user features – and more – expected from PBX systems. For the utmost in reliability, integrations consultant Ken Monroe explained, “We put the 3Com VoIP on a new, dedicated IBM System i server, with a primary in one office and a backup in a different building.” 3Com’s VCX IP Telephony solution is implemented with a security-hardened Linux operating system running on the System i.

Secure Managed Wireless Network

3Com’s Wireless LAN Mobility System enforces consistent network-wide access and security policies as users roam Yanmar’s multi-building wireless network. Free from dependency on port or device connections, Yanmar employees can now plug their laptops or phone sets into any jack in any building and the wireless switched LAN recognizes them, enabling them to use voice mail and e-mail as they would at their desks. Yanmar visitors get access to the Internet but not to the local LAN.

The 3Com solution supports Power over Ethernet (PoE), which eliminates the need for separate power connections for phones. The Ethernet cable supplies the data and the power. PoE also protects voice traffic from going down when the power is out, and PoE phones take advantage of a common wiring and switching infrastructure.

SOLUTION COMPONENTS

“The PoE has been a lifesaver. It’s so nice to connect phones with Cat 5 cable and nothing else.”

Brian Williams,
IT Manager
Yanmar America

3Com VCX™ IP Telephony for IBM System i features a highly resilient architecture and powerful features. Well suited for Yanmar’s multisite and multinational networks, 3Com’s VCX 7000 IP Telephony Module runs on the robust IBM System i platform delivering commonly accessed IP-PBX features, advanced trunking services, voice boundary routing and support for media gateways and wideband IP phones.

The 3Com IP Messaging Module provides Yanmar centralized voice mail, fax mail and e-mail service. Users can see their voice and fax mail as e-mail, and can even have their e-mail read to them. Yanmar employees now have extensive distribution list capabilities, including the ability to schedule the delivery of messages. Executives can broadcast time-sensitive messages to a global distribution list.

3Com VoIP Gateways enable internetworking between the IP network and legacy equipment and applications, including PBXs and the public switched telephone network (PSTN). Yanmar uses both analog and digital SIP-compliant VoIP gateways from 3Com that – used in conjunction with the 3Com IP Telephony Module – mediate control signaling, handle calls and facilitate access to IP trunking network services. Yanmar staff remaining on digital PBXs can interact efficiently with co-workers on IP telephony systems, keeping productivity high and facilitating a smooth, phased migration to an enterprise-wide IP infrastructure.

3Com IP Phones are designed and built following the principle that the quality of the user experience in IP telephony cannot exceed the quality of the IP phone. 3Com’s IP phones provide advanced features, high fidelity and ease of use and management.

The **3Com Wireless LAN Mobility System** powering Yanmar’s wireless network includes a **3Com Wireless LAN Controller WX2200** with **3Com Wireless Switch Manager** software. Together they provide Brian Williams and his team with sophisticated planning, configuration and management tools, including the ability to centrally manage and control their 28 PoE-powered **3Com Wireless LAN AP2750 Managed Access Points**. This provides comprehensive management of Yanmar’s highly secure, multiple-building wireless deployment, with the PoE capabilities of the AP2750 MAPs allowing Yanmar a great deal of network-wiring flexibility.

3Com Stackable Switches (5500G, 4500G and 4500) provide Yanmar’s network infrastructure with advanced network access control and security, network monitoring software and PoE, delivering great value. 3Com’s intelligent, voice-ready family of managed, stackable and clusterable 10/100 and 10/100/1000 Ethernet switches provide Yanmar with flexible LAN connectivity and voice-optimized features.

“We moved 100 people out of the old building, on a Friday, and by Monday all their phones were operating at the new office building, *without one problem or glitch.*”

Brian Williams,
IT Manager
Yanmar America

KEY BENEFITS

Lowered total phone system costs

Built upon industry-standard server platforms, a license-free Linux operating system and in-house centralized system management, 3Com’s IP Telephony system lowered Yanmar’s total cost of phone system ownership.

Powerful in-house manageability

Williams happily said goodbye to expensive visits from specialist technicians. “Now our on-site IT staff manages the phone system internally. We averaged 30 to 40 moves a year with costs of \$250 to \$500 for each move with the old phone equipment. These costs have been eliminated with our new 3Com system.”

Easy moves

“We knew we’d be moving 40 people from Plant One to Plant Two, and we didn’t want any disruptions,” Williams recalled. “As it turned out, we had *no* problems. Then we moved 100 people out of the old office, on a Friday, and by Monday *all* their phones were operating at the new corporate building, *without one problem or glitch.*”

Proven carrier-class dependability and scalability

3Com IP telephony systems carry billions of minutes of VoIP traffic with 99.999 percent proven availability. The new 3Com system can easily handle Yanmar’s projected growth from the current 200 users to 500 users over the next few years. In fact, the 3Com platform can scale to support up to 50,000 users.

Managed wireless security

Visitors receive access to the Internet but not to the Yanmar LAN, while employees can wirelessly access their full LAN resources anywhere in the buildings.

Economical shared infrastructure

One Ethernet infrastructure provides both computer and phone connectivity, with no additional power connections required for telephones thanks to PoE.

Cost-saving phone features

- Least-cost call routing and centralized dialing plans reduce Yanmar’s intracompany long-distance costs.
- Built-in five-way teleconferencing eliminates carrier fees.
- Four-digit transfers now allow quick and easy transfers from the construction group in Georgia to the parts department in Chicago.

Flexibility and ease setting up new phones and devices with PoE

PoE reduces Yanmar’s cost of deploying IP phones, wireless access points and IP security cameras. “The PoE has been a lifesaver,” claims Williams. “It’s really nice to connect phones with Cat 5 cable and nothing else.”

Long-distance savings and powerful new features for mobile users

Yanmar’s traveling employees now use a mobile snap-in device that enables them to make long-distance calls from their laptops over any hotel high-speed Internet connection, saving the company substantial international long-distance charges. The system also enables employees in hotel rooms to receive the calls they would get at their office desk.

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Standards-based

3Com’s IP telephony is based on Session Initiation Protocol (SIP) signaling, the industry-leading standard for IP telephony. Compatible with all standard SIP-based software and hardware, the 3Com system provides Yanmar a great deal of future flexibility and no vendor lock-in.

Phone emergency services

All phones have 911 capabilities.

Survivability

High phone availability is ensured in a variety of unlikely, but possible situations. Should the IP network fail, the local VCX unit can place outbound calls through the PSTN. In the event of failure of the PSTN, the local VCX unit is able to place outbound calls through the IP network. And should a VCX call controller fail, a remote IP phone can initiate outbound calls from its backup call controller. For seamless communications, user profiles are immediately available should the IP phones need restarting after a local call controller failure.

LOOKING AHEAD

Soon Williams will extend Yanmar’s 3Com IP Telephony system to the company’s Chicago office with a private T1 connection, continuing to expand the benefits of the VoIP system throughout the expanding Yanmar America organization.

Yanmar executives and Williams are confident that Yanmar America’s phone and network infrastructure and systems will support the company’s growth plans.



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