

Wireless Services Take to the High Seas

Princess Cruises deploys Wi-Fi across its fleet of luxury cruise ships.

EXECUTIVE SUMMARY
<p>PRINCESS CRUISES</p> <ul style="list-style-type: none"> • Hospitality and Tourism • Santa Clarita, California • 18,000 employees <p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Provide ship passengers with wireless Internet access, miles from shore • Update the ship's emergency response communications system with current wireless technology • Enable mobile kiosks & Point of Sales registers for wireless sales transactions
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Deployed the Cisco Unified Wireless Network across the fleet • Implemented location-based services to track point-of-sale kiosks • Extended secure, segmented Internet guest access to passengers and staff
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Fee-based Internet usage among passengers has increased by more than 300 percent • Passengers can access the Web without compromising network security • Wireless point-of-sale kiosks are expected to increase sales of ship merchandise

Business Challenge

Since its initial voyage in 1965 with a single ship that sailed to Mexico, Princess Cruises is recognized as one of the most luxurious cruise lines in the world. Now a subsidiary of Carnival Cruises, Princess became renowned in 1977 when its Pacific Princess liner was cast in the title role of a popular TV show called "The Love Boat." Today Princess operates 15 ships, with three more expected to join the fleet by 2008. Princess Cruises carries more than a million passengers each year, to destinations all over the world, with ports of call spanning from Alaska to Australia.

Princess does all that it can to meet the needs of the modern vacationer. And in the Internet age, many modern travelers want to stay connected to the rest of the world, even while they are on vacation. In the 1990s, Princess began offering Internet services in limited areas of the ship dubbed "business centers." Comprising a series of fixed PCs attached to the Internet via a satellite connection, they were not very popular at first.

However, "as soon as we started calling them 'Internet cafes,' there was a huge explosion in the number of users," says Claude Gigoux, Manager, Networks and Telecommunications for Princess Cruises. For several years Internet access was limited to two or three small areas on the ships, but recently the crew saw a need for network expansion.

"In the past few years we have had a huge increase in people bringing their laptops on the cruise and wanting wireless Internet connections," Gigoux says. "From a vacation standpoint it is good for passengers if, instead of sending a hundred postcards, they can send an e-mail with a picture saying, 'we are having a wonderful time.'"

Princess also planned to expand its on-board shopping to include a mobile point-of-sale system so that passengers could buy gifts and other merchandise from mobile kiosks all over the ship.

Network Solution

Gigoux knew that Princess's new networking needs would be best met by a wireless LAN, both for logistical and architectural reasons. "Ships are a notoriously difficult environment to wire," Gigoux says. "You have metal bulkheads and metal deck heads, and any cable that has to be run has to

be waterproofed. Running a cable in a ship costs 10 times as much as in a building. So wireless really lends itself to extending a network on a ship.”

But he also knew that, due to the architectural and operational nature of a cruise ship, a WLAN on a ship would require more wireless access points than a typical wireless network would. “The generators throw out a whole lot of RF,” Gigoux says. “And wireless signals do not go as far when there is that much steel.”

To that end—and with plans to deploy WLANs across 18 cruise ships—Princess sought a solution in which hundreds of access points could be configured, managed, and updated from a central controller on each ship. “We knew that we could achieve our goals if we found the right partner,” Gigoux says. “We wanted someone with a proven track record and the expertise to materialize our vision.”

Together, MTM Technologies, a Cisco® Gold Certified Partner and Princess Cruises decided to equip each ship with a Unified Wireless Network from Cisco. Cisco offered superior security tools as well as the central management features that the ships required, Gigoux says. The networks included a mix of Cisco Aironet® 1100 and 1200 Series lightweight access points and Cisco 4400 Series wireless LAN controllers. The WLANs on each ship were connected to the ship’s main satellite network feed.

Cisco Wireless Control System (WCS) software was deployed to manage and monitor the network. Network monitoring tools are especially important on a ship, where heavy wave swells and a variety of other factors can affect the satellite connection.

The Cisco Unified Wireless Network was ideal for several reasons, Gigoux says. In addition to superior management capabilities, it included advanced security features, including the ability to support a myriad of applications securely—on a single network.

“We liked the fact that with a centralized controller on each ship, we only had to do the configuration once,” Gigoux says. “And it is not likely, but if someone steals an access point, we can rest assured that without a connection to a controller, a stolen access point is not a security risk.”

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— Claude Gigoux, Manager Networks and Telecommunications, Princess Cruises

He also liked the fact that, in addition to supporting wireless industry standards such as WPA2, the Unified Wireless Network supports advanced authentication protocols such as PEAP (Protected Extensible Authentication Protocol) and LEAP (Lightweight Extensible Authentication Protocol). Furthermore, the system supports virtual LANs to keep traffic segmented and secured. This allows for multiple logical networks to run within the same physical network: passengers gain access to the Web on one logical network, the ship’s administrative staff has access to confidential corporate data on another logical network, and another VLAN can be dedicated to the mobile point-of-sale applications.

“Security is a big issue for us,” Gigoux says. “We have a lot of personal information for a lot of people. We do not want a hacker getting access to secure information when we come into a dock.”

Today, two ships in the fleet are fully equipped with wireless network access in most of the public areas of the ship. The rest of the fleet will be equipped by late spring of 2007, and Princess may be working with MTM Technologies to expand the wireless beyond the public areas to all passenger and crew areas of the ships within the next year.

“Princess is revitalizing its core business operations on land as well as on the high seas,” says Steven Stringer, president and chief operating officer at MTM Technologies. “We have partnered with Princess Cruises to develop technology solutions in their new Tours Office and Disaster Recovery Center in Seattle and are designing future projects in their Administration Facility in Los Angeles. Best of all, their long-term visionary thinking is paying dividends today.”

Business Results

Although the WLANs are fairly new, Princess has seen multiple revenue streams from offering wireless services to its passengers. The cruise line has seen a 300 percent increase in basic Web access among ship passengers since the onset of the wireless network services, Gigoux says. This garners significant income for the cruise line, which charges a per-minute fee for the network access; access prices vary according to the passenger’s vacation package.

PRODUCT LIST

- Cisco Aironet 1100 and 1200 Series Access Points
- Cisco 4400 Series Wireless LAN Controllers
- Cisco 2700 Series Wireless Location Appliances
- Cisco Wireless LAN Controller Modules
- Cisco Wireless Control System

The ships also see significant revenue from the mobile kiosk point-of-sale system. These kiosks have become an integral part of special events and activities on the ships. For instance, if an activities director is offering a yoga class on deck, a crew member can be at the ready with water bottles and juices to sell to thirsty yoga practitioners. Crew members also sell luxury items such as jewelry from

the kiosks. And thanks to the capabilities of the Cisco 2700 Series Location Appliance, the crew always knows where these kiosks are. In conjunction with the WCS software, the location appliance uses advanced RF fingerprinting technology to simultaneously track the exact location of the kiosks. And the IT staff can set proactive alerts, letting them know if a kiosk travels outside of an authorized zone.

Next Steps

The scalability of a Cisco Unified Wireless Network lets Princess simply and securely support new applications. Gigoux and crew are considering several new wireless applications as the cruise line continues to equip its fleet with wireless networks.

The cruise line is also investigating the idea of replacing the security staff’s walkie talkies with wireless IP phones that can run across the WLAN, Gigoux says. And a system of wireless handheld scanners is under consideration to help automate the ship’s inventory system.

With up to 3100 passengers on any given voyage, a cruise ship is a complex operation with many more potential applications for wireless networking.

“They are like entire little towns floating around,” Gigoux says.

For More Information

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For more information on Cisco Unified Wireless Network Solution, visit:
www.cisco.com/go/unifiedwireless.

For more information on Princess Cruises, visit: <http://www.princess.com/>



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