

FLL BREAKS NEW GROUND WITH AIRPORT-WIDE WIRED AND WIRELESS NETWORK

Fort Lauderdale/Hollywood International Airport is one of only a few airports in the United States that has built and is managing its own wireless LAN (WLAN). Implementing airport-wide wired and wireless network capabilities for its tenants, and providing wireless Internet access for passengers is FLL's latest initiative, aimed at changing the image of air travel from chaotic and exhausting to pleasant and productive.

"Cisco has been a very good company to work with. If we have a problem, they always come right over to work with our team. They're very supportive, technically competent, and always stay abreast of new technology, especially wireless. They recognized that technology even back in the days when no one knew what it was."

Jim Smith,
Manager of Information Systems,
Broward County Aviation Department

BACKGROUND

Air travel can be challenging even to a seasoned veteran. Weather, air traffic, mechanical difficulties, and other situations can cause delays, unexpected schedule changes, and long waits inside the terminal. Now, additional security restrictions require passengers to arrive at the airport earlier, potentially creating additional downtime while waiting for departure.

With as many as 20 airlines servicing more than 17 million passengers annually, Fort Lauderdale/Hollywood International Airport (FLL) wanted to change the image of air travel for passengers and help airlines optimize resources, reduce costs, and make a challenging process smooth and efficient.

CHALLENGE

Prior to 2001, FLL had no network. Each of its tenant airlines installed, owned, and maintained their own hardwired network in each terminal. This business model had created an environment with multiple networks, no standardization, and wiring that threaded throughout the building. With new airlines coming in and former ones leaving, the system was out of control.

The first order of business was to develop a common infrastructure to meet the needs of airport tenants and help FLL reduce costs, increase competitiveness, and attract additional airlines to the airport.

"We felt that wireless was the direction airports would be going in the future," says Julie Howlett, director of information systems, Broward County Aviation Department. "But first, we needed to make sure we had a standardized network that was stable and secure."

Howlett and her team wanted a strong, robust network with a scalable, fiber-optic backbone that would enable growth and accommodate applications, such as high-speed wireless, IP telephony, and airline-specific operations, including gate management systems and common use terminals. The goal was to develop a shared services model that would provide airport tenants with hardwired, wireless, and fiber connectivity at a fraction of the cost of building their own network.

FLL gathered a team that included Cisco Systems[®], BellSouth, Roving Planet, and NeTeam to design a product solution set and operational model that met the airport's specific requirements.

SOLUTION

BellSouth worked with Cisco® and FLL on the network design, which includes fiber-optic connection from the terminals to the central data center and dispersed to four remote sites throughout the airport. Currently, 20 Cisco wireless access points are located throughout the terminals.

The Roving Planet solution incorporated integration, control, management, and security that enabled dynamic bandwidth management and integration with all current and future security standards. NeTeam conducted a radio frequency (RF) site survey and provided a wireless network design to ensure the airport had wall-to-wall wireless coverage. NeTeam's wireless design also ensured that all access points and antennas were hidden from view to maintain airport aesthetics and enhance physical security of the wireless network. After BellSouth completed installation of the network, NeTeam conducted a wireless network certification to verify complete coverage. BellSouth is also providing infrastructure management and after-hours network monitoring.

After the network was operational, FLL evaluated three different business models for operation of the new network:

- *Airport Managed Model*—The airport retains full control, outsourcing only selected portions of management.
- *Single Wireless Internet Service Provider (WISP) Model*—All management is outsourced with network capital supplied by the WISP.
- *Managed Service Provider (MSP) Model*—All management and contracts are outsourced, the public has access to multiple WISPs, and network capital is supplied by the MSP.

With its own strong IT staff in place, FLL chose the Airport Managed Model. Howlett and her team felt that the risk of outsourcing management to an MSP outweighed the cost advantages, and they decided to build their own network, retaining internal control to ensure quality, stability, and standardization.

To avoid the potential of conflicting frequencies, FLL does not allow airlines or other tenants to build any other IEEE 802.11 networks, requiring those who want wireless capabilities to join the FLL network. Roving Planet's Central Site Director product enables FLL to set up virtual wireless networks-making the network look and work like an independent system-while FLL retains control of the bandwidth and infrastructure.

RESULTS

FLL has gone from multiple standalone networks to a common infrastructure that offers tenants a cost effective, manageable network, provides passengers with wireless Internet access in the terminal, and increases internal productivity throughout the organization. Specific benefits include:

- *Competitive advantage*—Small airlines can save thousands of U.S. dollars by connecting to FLL's network rather than installing their own. "It's difficult for those airlines to put in their own network when they might have only one or two flights a day," Howlett says. "Connecting to our network represents substantial savings for them."
- *Potential source of revenue*—Although FLL provides free Internet service to the public, the business model could easily be changed to a fee-for-service. "Eventually, we'll begin charging for public Internet access," Howlett says, noting that the fee will be reasonable and used for cost recovery rather than profit.
- *Scalability*—The network growth capacity can accommodate airline-specific operations, emerging applications such as IP telephony, and additional users as needed.

- *Increased quality*—Network traffic management enable FLL to establish quality of service (QoS), guaranteeing an appropriate the required level of bandwidth for the private users (airlines and other tenants), while still providing service to the public.
- *Enhanced productivity*—Any FLL network port or access point can provide access to any part of the FLL network, enabling airlines to switch locations from gate to gate or terminal to terminal, as needed.

“One of our airlines is soon to be connected to our wireless network and plans to use it to push movie content out to the plane from their server,” Howlett says. “And as the plane taxis in, the pilot will be able to log in from the cockpit to get flight updates and other critical information.”

NEXT STEPS

With the first step behind them, the possibilities are endless, and FLL is looking ahead to moving to an airport operational database by bringing applications onto the airport network. An additional 30 access points are being installed at the lower level of each terminal.



Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the **Cisco Web site at www.cisco.com/go/offices**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Cyprus
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland
Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland
Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

All contents are Copyright © 1992–2004 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company.
(0402R) STO/LW5895 03/04