CASE STUDY

Hospitality

Avoiding Obstacles and Interference Essential to Delivering Consistent Wi-Fi Aboard the Queen Mary

Noted as one of the ten most haunted places in the world by the travel site Legends of America, something more modern haunts the historic ship, Queen Mary — big Wi-Fi problems. With myriad nooks and crannies, obstacles everywhere and thick metal walls, the ship's construction and configuration, until recently, made it next to impossible to get Wi-Fi working properly. Short of installing hundreds of access points (AP), which would haunt the ship with a whole new set of RF and management problems, the exorbitant cost was too scary to consider.

Previously, the Queen Mary had only been able to offer broadband access over the dated electrical network using Powerline technology. This required front desk staff to check in and out special power adapters that guests could use to plug Ethernet cables into their laptops and other devices, assuming a wall jack was available.

Built in the 1930s with thick metal and other unfriendly Wi-Fi materials, getting a reliable signal to the 300+ guestrooms on the ship was next to impossible. Enter dynamic beamforming and Ruckus Wireless.

Meanwhile, more and more guest were coming aboard with handheld mobile devices, like iPhones and MAC AIR laptops that do not have integrated Ethernet jacks.

Twenty-four Ruckus Smart Wi-Fi APs are hidden in mahogany-covered cable chase ways on three decks of the Queen Mary. Each AP provides Wi-Fi service to approximately 12 rooms.

With 12 decks, some one million square feet of space, including guestrooms, meeting space and restaurants, the Queen Mary now operates as a world-class entertainment destination. So, providing reliable Wi-Fi access was no longer a "nice-to-have" — it was essential.

"We just hadn't been able to get wireless to work properly," said Edgar Stevens, IT systems analyst for the Queen Mary." The ship is basically one big metal box divided into segments and there was no single wireless system at the time that could provide adequate signal coverage. In some locations, signal path loss was so severe clients simply couldn't stay connected."

Stevens recognized the need for a robust Wi-Fi system that could deliver consistent performance. However, with a limited number of power outlets and a strict budget, his challenge was finding a Wi-Fi system that did not require blanketing the ship with hundreds of APs. Stevens turned to Hotel Internet Services (HIS), which had helped it install, run and maintain the ship's original powerline solution.

"Back when the Queen Mary first approached us, Wi-Fi technology just wasn't robust enough to meet their challenge," said Gary Patrick,

OVERVIEW

Launched in 1936, and now permanently docked in Long Beach, California, the historic Queen Mary hosts nearly three million visitors per year. The one million square foot vessel serves as a luxury hotel and public venue with more than 300 guestrooms, 80,000+ sq. ft. of meeting space, conference facilities and restaurants. Over 1,019 feet long, the Queen Mary has 12 decks with more than 2,000 portals.

REQUIREMENTS

- Enable reliable wireless coverage for 300+ guest rooms and event services
- Minimize the number of APs required
- Centralized management and simple administration of WLAN
- Ensure stable client connectivity in challenging Wi-Fi environment
- Ability to adapt to RF interference and obstacles automatically
- Wireless meshing support
- Affordable solution that is easy to deploy
- Seamless integration with the existing
- Opera Property Management System and Nomadix Internet Gateway
- Standard 802.3af PoE support
- Multiple SSIDs

SOLUTION

- 33 ZoneFlex 2942 802.11g Smart Wi-Fi APs
- Ruckus ZoneDirector 1025 for guest rooms and ZoneDirector 1012 for conference area

BENEFITS

- Broadband service revenue doubled in the first two weeks with no advertising
- One-third fewer APs required than competitive alternatives at one-half the cost
- Complete coverage of guest rooms, conference facilities
- Signal penetration in hard to reach areas
- Central management for entire WLAN

Ruckus® WIRELESS

CASE STUDY

Hospitality

THE QUEEN MARY®

"The Queen Mary is effectively a big metal box. This made offering a reliable Wi-Fi service next to impossible.

With dynamic beamforming from Ruckus, we were able to get Wi-Fi signals in, around and through almost anything at half the cost of conventional systems and with only one-third the number of APs."

Edgar Stevens
IT Systems Analyst
for the Queen Mary

president and CEO of Hotel Internet Services, a leading provider of wireless systems and integration services within the hospitality industry. "Now, with the availability of Ruckus Wireless products with their miniaturized smart antenna arrays and dynamic beamforming technology, we were able to propose and deliver a solution quickly and cost effectively."

Taking advantage of Ruckus Wireless product's Wi-Fi technology and their ability to extend range and steer signals around impenetrable obstacles (termed "beamsteering"), HIS needed only 33 Ruckus ZoneFlex 2942 Smart Wi-Fi APs to provide wireless connectivity from any of the luxury ship's guestrooms or common areas located throughout the Main, A and B decks.

Power over Ethernet (802.3af) switches on each of the decks feed Cat 5 cabling to eight Ruckus ZoneFlex 2942 Smart Wi-Fi APs hidden in hallway ceilings. HIS deployed some APs in mesh mode where pulling Ethernet cable wasn't possible. In all, 24 APs now provide Wi-Fi access to all 314 guest rooms. The remaining APs provide Wi-Fi services to the public areas such as the conference and meeting room spaces.

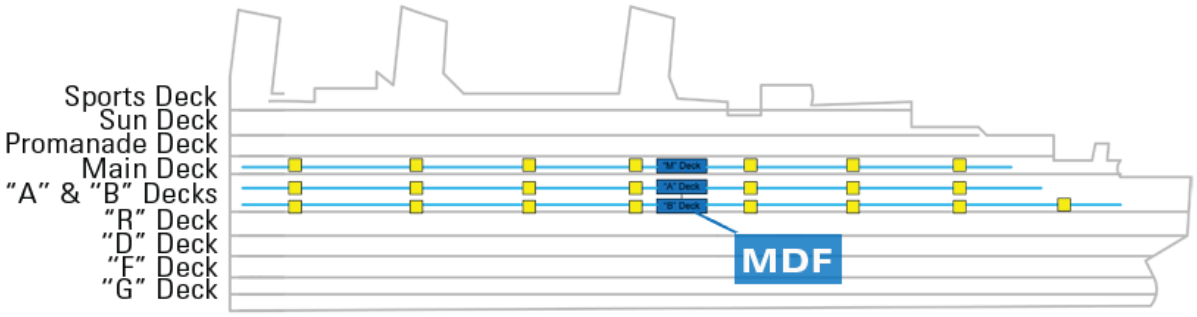
"Other Wi-Fi systems we considered that provided central management would have required more than 90 APs to obtain the same coverage but they cost more and did not have the ability to adapt to changes in the environment," said Patrick. "Using fewer APs that deliver stronger and more stable signals significantly reduces our CAPEX and OPEX while at the same time providing the ship's visitors with a much better Wi-Fi experience."

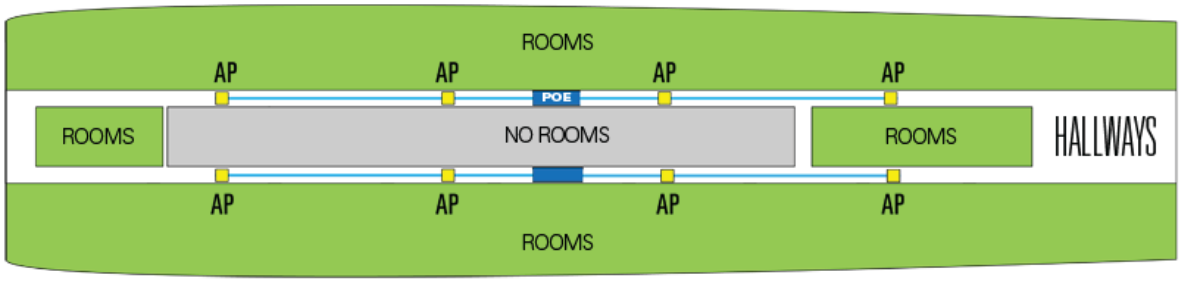
Unlike other Wi-Fi APs, the Ruckus 2942 integrates a high-gain directional antenna array that focuses Wi-Fi signals only where they are needed — constantly "steering" signals around obstacles to reach areas that other APs can't. Each antenna array provides up to 7dBi in signal again and additional gain up to -15dB from interference avoidance. Avoiding interference enables Ruckus APs on the Queen Mary to deliver more reliable throughput and connectivity.

A Ruckus ZoneDirector 1025 controller, installed to manage the guest room network, interfaces directly to a Nomadix Internet access gateway while another Ruckus ZoneDirector 1012 controller, which interfaces with a Zyxel Internet gateway, manages the conference area Wi-Fi network.

Through its Opera Property Management System, the Queen Mary now offers time-based Wi-Fi Internet access to guests, visitors and conference attendees. "In the first two weeks after we installed the Ruckus Wi-Fi system, we doubled the average broadband service revenue without even advertising its existence," said Patrick. "This shows you how much people want and expect a wireless connection."

33 Ruckus ZoneFlex APs on three decks and two ZoneDirector controllers deliver reliable Wi-Fi to 300+ rooms, convention space and public access areas





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