



Enabling you to connect.™

Case Study Wi-Fi/Wi-Fi Analytics

Every year, Cincinnati's Lindner Family Tennis Center hosts a world-class, professional tennis tournament, the Western & Southern Open. With the objective of enhancing the fan experience with Wi-Fi, Cincy Tennis turned to Powernet to implement reliable Wi-Fi service accessible to attendees from all over the venue. Additionally, event planners wanted to drive attendees to the Cincy Tennis mobile app, gain user insights and keep fans connected while on-site.

Calculating the Basics

Installing wireless Internet in a large outdoor venue is no small undertaking. While working with Cincy Tennis to understand their goals of keeping attendees connected, the Powernet engineering team developed an unique installation plan. A significant factor for developing the hardware needs was understanding the high density traffic patterns of the tournament grounds and ensuring fans can walk throughout the venue without losing Wi-Fi access.

Powernet engineers calculated the number of users the network could maintain and how many devices each access point (AP) could support. This resulted in the installation of 84 Ruckus AP's - all utilizing the new 802.11 AC standard in order to provide the fastest Wi-Fi for all users.

The team calculated that the peak attendance would be 28,000 a day, and assumed around 7500 fans would be on the Wi-Fi each day. Each AP could support up to 500 devices meaning the Fan Wi-Fi by Powernet could essentially support up to an estimated 40,000 devices at once. This engineering resulted in actual Wi-Fi speeds of 30.37 Mbps while handling 1500 gigabytes of data overall.

All in the Execution

Powernet showcased the new standard of AP's at the venue, which used VSZ (Virtual SmartZone), the mechanism that controls the AP's on site. Using VSZ, engineers were able to see how many attendees were on each AP, what Service Set Identifiers needed to be broadcasted, and track attendee movement throughout the venue.

Major Pro Tennis Tournament Calls for Expansion of Outdoor Network for Nearly 200k Fans

Western & Southern Open

Industry: Sports
Entertainment; Large
Outdoor Event Venue



Number of Attendees:
199,000 (event total)

Event Duration: 9 Days

Challenge

- Provide fan Wi-Fi to 20 acre outdoor venue
- Build a network supporting a high-density environment
- Provide a great customer experience
- Enhance the fan Wi-Fi experience to drive people to the W&S app.

Solution

- Installed 84 Ruckus access points all meeting new 802.11 AC standard (First Ruckus All AC stadium)
- Complete cloud managed solution
- Used Ruckus SPoT (Smart Positioning Technology) to feed data into Beyond Wi-Fi location analytics portal
- Utilize Beyond Wi-Fi to capture user data including demographic, social, and location-based information

Results

- Reliable Wi-Fi network
- Average network speed of 30.37 Mbps
- 1,500 gigabytes of data saved
- Provided attendee insights

Cabling and mounting the devices was additionally challenging due to the expansiveness of the 20 acre outdoor project. Existing vertical assets were used as mounting points wherever possible allowing Powernet to keep the need to fabricate custom mounting solutions to a minimum. Establishing cable paths was a major project in itself for this mainly concrete venue. 23,000 feet of cabling was required to complete the project, which was successfully installed in a cost effective and aesthetically pleasing manner.

Attendee Insights

Powernet was able to monitor attendee engagement- from how long they stayed active to where they were spending most of their time. After analyzing traffic patterns for a few days during the tournament, the team noticed one location in the food court consistently had large numbers of attendees in the morning hours. Comparing the Beyond Wi-Fi heat map to the floor plan of the venue, Powernet saw that the source of the activity was the sole coffee vendor. From there, Powernet researched the people who had logged on through Facebook to see that over 35% liked coffee.

Serving an Ace

While it was challenging to design, monitor and test the Wi-Fi to ensure it would perform as expected, the real test wasn't until the 9-day event began and the network was used by the fans. Due to the rigorous planning and clean installation of all hardware, the network experienced nearly 100% up-time and a network running speed of at least 40 Mbps down and 40 Mbps up on the busiest day.

The combined Wi-Fi service and Beyond Wi-Fi analytics left event organizers pleased with the overall experience. Shawn Leibold, Director of Business Development for Cincy Tennis said, "The partnership with Powernet and their ability to provide a world-class Wi-Fi solution to over 20 acres of the venue was truly the difference maker for our fan's experience this year".

Powernet met the goals of providing fast, reliable Wi-Fi to tennis fans at the Western & Southern Open, and gathered valuable analytics and insights that can be used to plan future events.

About Powernet

Since 1992, Powernet has enabled businesses to connect through innovative telecommunications solutions. With **networking, voice, data, Wi-Fi, call center** and **carrier services**, Powernet has the technology and expertise to meet the needs of any size business.

Contact us for more info:

powernetco.com

Fun Facts Learned About Fans

- 45% repeat visitors to event
- 16,000+ total fans connecting to Fan Wi-Fi by Powernet overall
- Most popular area by heat map: Food Court
- Nearly 20,000 impressions/reach on Powernet social media
- 131% increase in followers on Facebook



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