BAYLOR BEARS

Executive Summary

Industry

- Sports and Entertainment
- Higher Education

Stats

- Capacity: 45,000+
- Total Footprint: 93 Acres
- Stadium Footprint: 860,000 Sq Feet

Challenges

- Design and deliver a reliable and secure high-density Wi-Fi network for public use by tens of thousands of fans
- Leverage real-time content through gameday app; provide an interactive and engaging mobile experience for users while in-venue
- Establish visibility and control of users, devices, and applications on the network to ensure a quality experience

Products Utilized

- **ExtremeWireless™**
  - AP3715i and AP3765e
  - Wireless Controllers
- **ExtremeAnalytics™**
  - Application Analytics
- **ExtremeSwitching™**
  - S-Series, C-Series, and 7100
- **ExtremeControl™**
  - Extreme Control Center
  - Identity and Access Control
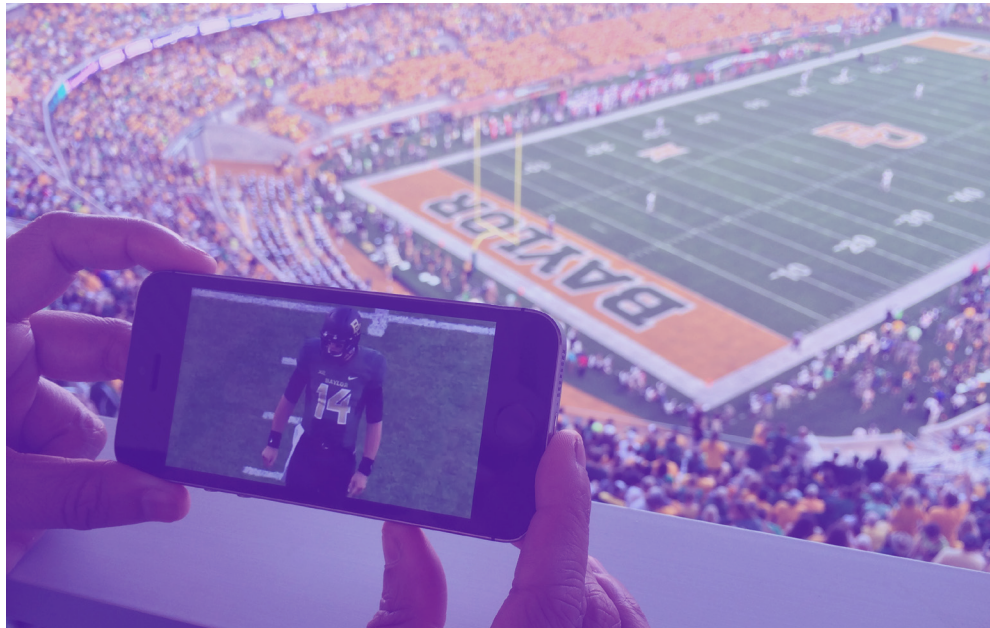
Baylor Outfits New Stadium with Professional Grade Wi-Fi for an Interactive Fan Experience

McLane Stadium is the home football stadium of Baylor University, a private higher education institution located in Waco, Texas. Devoted to delivering an exceptional gameday experience to its fans, in the fall of 2012 Baylor University embarked on a $260 million construction project to build an entirely new stadium on campus.

"As we conceived the technology infrastructure for the new stadium, the fan experience was always paramount. Today's football fans are "always on" and we wanted to deliver a gameday experience that leveraged the capabilities of the next generation of mobile devices. In order to support fan engagement that includes streaming video, social media sharing, connecting with family and friends back home, and other things we could not yet imagine; we knew we would need to provide at least as much bandwidth as the top NFL stadiums."

**Pattie Orr, VP of IT and Dean of University Libraries
Baylor University**

In today's mobile-centric world, connectivity solutions are paramount in supporting the desired experience of a fan base particularly among the younger, more technology-oriented demographic. Acknowledging this trend, and eager to provide a more engaging in-venue experience, Baylor University chose Extreme Networks' ExtremeWireless, outfitting the new stadium with a high density Wi-Fi solution to improve connectivity and enable an overall enhanced fan experience. As an added benefit, to guarantee a quality Wi-Fi experience for users and to establish another touch point with their fans, Baylor also chose to implement the Extreme Networks Certified Wi-Fi Coach Program to provide additional support for fans accessing the Wi-Fi network in-venue.

Stadium's Challenge

With the ultimate goal of establishing an enhanced mobile experience at McLane Stadium, the IT team at Baylor University needed to implement a robust Wi-Fi solution with the bandwidth capacity to support thousands of personal devices simultaneously in a high-density environment. Ultimately, a robust Wi-Fi solution would establish a platform to build upon, enabling Baylor University and Baylor Athletics to engage with their fan base with streaming video, unique content and value-added services.

To make this project a reality there were a number of challenges and considerations integral to the system's design and deployment process. The network would allow access for both public and private use, which meant security was an important consideration to ensure the protection of critical infrastructure assets. Since a plethora of organizational functions would leverage the system as well, Baylor needed a solution with an integrated management platform so appropriate policies could be programmed and enforced for respective groups requiring tailored levels of network privileges. Baylor would also be running a number of applications over its network, from mission critical applications to social applications to a custom-made gameday application. Control of and visibility into these applications and their usage were important capabilities to equip Baylor with the proper means to measure network performance and engagement patterns of its users.

Extreme Networks Solution

Baylor University chose Extreme Networks out of three potential vendors as the wired and wireless infrastructure provider of McLane Stadium. Extreme Networks' specifically engineered antenna architecture, a proven track record of excellent support, and the company's recent success in large open-air stadiums were all compelling reasons behind the decision. Unlike some other models, the Extreme Networks solution grants data ownership to the venue operators, an important capability when tracking network and application performance, adoption rates, and bandwidth consumption. The overall cost of the Extreme Networks solution and Baylor's existing familiarity with core technological components ultimately swayed Baylor to select Extreme Networks.

Through their relationship with Extreme Networks, Baylor University and Baylor Athletics equipped the newly constructed McLane Stadium with the latest high-density Wi-Fi technologies. This dramatically improved the overall stadium experience. Fans now have the ability to access a variety of applications as well as stream real-time content during the game such as instant replays, game day statistics, as well as other exclusive offerings. The installation was successfully completed prior to the 2014 football season.

The Extreme Networks solution includes wired, wireless, network management and network analytics technology. Leveraging the ExtremeSwitching line of products, including 7100 switches, C5 stackable switches, and S4 chassis, Baylor provides the bandwidth required in high-density environments. The Wi-Fi installation includes access points and wireless controllers, ExtremeControl for onboarding and authentication, as well as ExtremeSecurity for central management and visibility.

Results

The deployment of these technologies supported more than 45,000 people in attendance at McLane Stadium during events and enhanced the overall fan experience.

1. **In-Venue, High-Density Wi-Fi Internet Access.** With the completion of the high-density Wi-Fi system, Baylor University is able to deliver free, open-access Wi-Fi to guests at McLane Stadium, vastly improving the mobile connectivity of the entire complex, including the inner bowl, club level, suites, press box, concourses, and locker rooms. While the new construction of McLane Stadium is reason enough to draw full attendance, the technology provides the avenue for guests to share their experience. Baylor believes that the ability to tap a strong Wi-Fi network is much more of an expectation than a luxury when in-venue, so investment in this solution helps to meet the growing demands of a more mobile-centric culture, both now and in the future.

2. **Differentiated In-Venue Experience and Exclusive Content.** An improved network not only allows fans to access the day-to-day applications and mobile services they would use at home, but also encourages them to share their experiences while in-venue. Through the Baylor InGame app, fans at McLane Stadium have access to real-time content and can interact with the university like never before. The app enables access to live and on-demand media content, news and headlines, live scoring integration, player bios and statistics — not to mention facility information like seating and parking maps, directions and more. All of these features produce a unique experience only available in-venue, while also creating a strong digital platform for connecting with their fan base. Baylor InGame empowered by Extreme Networks is able to engage Baylor fans anywhere they go.

3. **Network Management.** Granular Visibility and Control. ExtremeWireless solutions deliver robust Wi-Fi connectivity, but Baylor's investment in the OneFabric Control was equally important. Including the NetSight management suite and Network Access Control, Baylor now has granular visibility into how the solution is performing, as well as the ability to seamlessly onboard personal devices and to establish detailed network policies to enforce on their network from a single pane of glass. From an ROI perspective, Baylor is also able to leverage the location-based services included in the solution to push a promotion to a specific seating area or to permit access to a certain application while in-venue. The features of these technologies, combined with ExtremeAnalytics engine, enables Baylor to continuously improve the experience for their fans.

4. **Certified Wi-Fi Coach Program for Ongoing Support.** Based on the standardized model employed at professional sports venues, the Extreme Networks Certified Wi-Fi Coach Program is an integrated training package that teams undergo to implement their very own Wi-Fi Coach program in-venue. The Wi-Fi Coach Program acts as a walking helpdesk for those who may need additional support accessing the network. In addition, it enables another touch point between team and user, as well as providing an additional point of measurement of quality assurance. Baylor's Wi-Fi Coach Program is staffed by undergraduate students studying Management Information Systems (MIS) at the Hankamer School of Business at the university. Students receive real-world experience interacting and troubleshooting with users through this valuable internship. Mentoring by the IT staff before, during and after games builds confidence and enriches the students' resumes.

Concluding Remarks

Baylor University and Baylor Athletics successfully completed their first season of Wi-Fi at McLane Stadium. Typical of high density Wi-Fi systems, especially in the first deployment year, the solution at McLane Stadium required small tuning adjustments to improve coverage throughout the season, with the continued intent to deliver an excellent fan experience. Overall, the feedback has been very positive and the investment in Wi-Fi well received; the Wi-Fi system saw an average adoption rate of 31% from the 2014-2015 football season at McLane, with unique clients using Wi-Fi of just over 17,000. However, Baylor sees this as merely the beginning and plans to continue to build upon these successes, finding creative ways to leverage the platform that the strong in-venue connectivity has provided. Having met the challenge of rolling out an in-venue Wi-Fi system, Baylor is now seen as innovator in this space and is sharing its experiences with peer institutions that plan to undertake the same endeavor.

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