



First and 10-gig

Upgrading the Seattle Seahawks network infrastructure

The Seattle Seahawks kicked off their inaugural season in 1976 as a National Football League (NFL) expansion team. The organization quickly established itself as a new force in the league, amassing a dedicated fan following that has sustained them through three NFC championships and a Super Bowl title. The team plays its home games at CenturyLink Field, which seats nearly 70,000 fans and features 48 concession areas throughout the stadium. In addition to serving as the home field for the Seahawks, CenturyLink Field hosts more than 300 events each year including trade shows, corporate meetings and concerts.

In keeping with the team's history of serving its fan base, the Seahawks adopted a customer-first mindset dedicated to delivering a premier fan experience — whether it's watching a game on TV, at home or in-person at the stadium. This commitment requires hundreds of people behind the scenes making it all happen, from the technicians overseeing the TV production to those making sure the fans in the stadium are getting the best experience possible. Technology plays a key role.

Challenges: rising data demands, outdated and inflexible data storage and broadcast feed reliability

When fans walk through the doors of the stadium, they have high expectations of what that experience is going to be like, from scanning tickets at the gate to point-of-sale stations at the concession stands and retail vendors to the Wi-Fi connectivity. If the technology and connectivity experience in the stadium doesn't meet the level of operations they have come to expect in their home environments, fans can be disappointed.



At a glance

Industry

Sports and entertainment

Challenge

Provide an awesome fan experience through technology

Solution

A strong network backbone supports a new data infrastructure

- CenturyLink® MPLS/IP VPN
- CenturyLink® Vyvx® solutions for real-time global broadcasting of games and events
- 10 Gbps fiber circuits for Wi-Fi connectivity
- Professional services for overall design, virtual machine (VM) solution

With nearly 70,000 fans in attendance at the stadium on any given weekend, the existing Wi-Fi system was challenged to keep up with the connectivity demands of an increasingly always-connected public. The Seahawks needed to upgrade the Wi-Fi to provide necessary bandwidth and ensure the underlying network backbone could handle the handoff of data produced by tens of thousands of fans at once. The team was also operating a legacy physical server and storage environment that could no longer keep pace with a business that runs on data analysis. The Seahawks IT team needed a virtualized environment that would bring the flexibility, resilience and depth of storage that met their diverse data needs.

Because the sports and entertainment world is moving away from the traditional approach of satellite farms for transmitting data, live broadcasting was another challenge. This approach increasingly suffers from significant compression and latency issues, which could cause fans watching at home or on their mobile devices to miss an important play due to poor transmission quality. Fans expect a flawless feed that keeps them connected to what's happening on the field. The team needed a robust, reliable network infrastructure that could support the continually evolving live broadcast.

Solution: 10 Gbps circuits and a CDN meet modern fan expectations

The CenturyLink managed services team was brought in to implement the upgrades at both the stadium and the organization's headquarters. They oversaw the project, coordinating with various partners and contractors on delivery and installation schedules to ensure things stayed on track.

The Wi-Fi upgrade was divided into two phases. The first phase focused on the LAN/WAN upgrades for the stadium and involved upgrading the existing underpowered connections by replacing them with two 10 Gbps circuits.

The second phase of the stadium Wi-Fi project focused on installing new hardware under the stadium seats. These devices provide increased bandwidth to areas of the stadium that are more open and, therefore, harder to connect to the Wi-Fi network.

"A good fan experience starts with connectivity," said Chip Suttles, Vice President of Technology for the Seahawks organization. "CenturyLink has helped us provide that connectivity. They have delivered a best-in-class Wi-Fi solution at our stadium."

Through virtualization, CenturyLink provided a replicated, fail-safe environment for the organization's headquarters and stadium locations using an MPLS backbone to ensure failover without service interruption.

CenturyLink also provides CenturyLink® Vyvx® Solutions for live broadcasting of games and events. Vyvx allows for multi-point distribution of TV channels with a single feed. Fiber-based data circuits provide the expandable bandwidth, reliability and security the organization needed to vastly reduce latency issues. The added capacity and network infrastructure at the stadium will support the Vyvx circuits that broadcasters utilize on game days at CenturyLink Field.

"With the assistance of CenturyLink's project management and implementation services, we were able to bring in a new solution and put it online within three days," said Steve Steensma, a senior systems administrator with the Seahawks. "CenturyLink's project management kept us on pace and helped to ensure this project's success."

"These days, fans expect to be able to get on their phones and pull up Instagram or Twitter. They want to be able to post what they're doing at the game or show highlights of the game and at the same time check their fantasy football scores."

- Nick Johnson, Stadium IT Manager, Seattle Seahawks

Results and future plans: happy fans, today and in the future as growth continues

When the Seahawks rolled out their first generation of Wi-Fi, they were averaging between 1 TB and 2 TB of data traffic per game. This year, that number jumped to nearly 5 TB per game. According to Suttles, those numbers are expected to double or even quadruple in the future. They rely on CenturyLink to keep abreast of new technologies and how they can best deploy them within their organization.

The added network backbone and Wi-Fi capacity will allow the Seahawks to prevent bandwidth from becoming a bottleneck for fans' mobile devices and stay ahead of the curve on data utilization, which they expect to increase by at least 10 percent every year. They were also able to set up a third 10 Gbps circuit to handle additional bandwidth demands of special events held at the stadium such as large corporate meetings, trade shows, and concerts, providing a competitive advantage for the organization. And, the added Vyvx data circuits provide a faster, more reliable connection for TV broadcasters to get their data back to their home base and out to the world.

Besides improving application performance, the VM solution also provided additional peace of mind by reducing risk through redundancy and making maintenance and upkeep more seamless.

While the Seahawks continue to strive for excellence on and off the playing field, they view success as more than just about winning games. It's about winning the hearts and minds of dedicated fans. And that requires teamwork.

"There are a lot of moving parts within the technology realm that drives the sports industry," Steensma said. "With CenturyLink's high-speed fiber network backbone and Vyvx solutions along with their experienced team of consultants, it's easy to connect the pieces and put them into place."



"CenturyLink understands what drives us. I like to say we're a small business with a high profile. CenturyLink understands that we don't operate with unlimited budget, and they help us find the right competitive cost advantage and solution that meets our needs."

- Chip Suttles, Vice President of Technology, Seattle Seahawks
