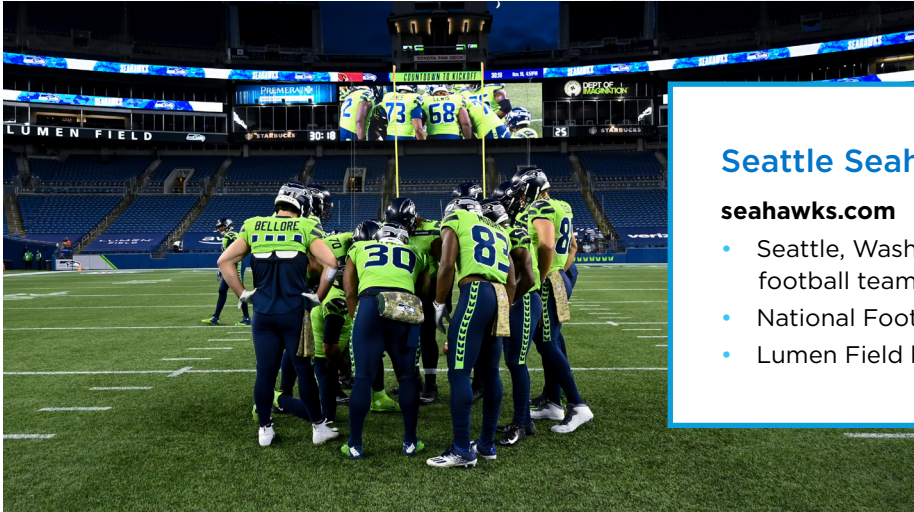# First and 10-gig

Upgrading the Seattle Seahawks network infrastructure

Seattle Seahawks

seahawks.com

- Seattle, Washington-based professional American football team
- National Football League member since 1976
- Lumen Field home stadium

Challenges

- Rising data demands required network overhaul
- Legacy servers and storage unable to handle diverse data needs
- Live broadcasting required reliable network to reduce latency issues

Solutions

- Upgrade stadium with two 10 Gbps circuits
- Hardware under the stadium seats to extend Wi-Fi connection
- MPLS backbone to ensure failover without service interruption
- Lumen® Vyvx® Solutions for live broadcasting of games and events

Results

- Data utilization expected to increase by at least 10% per year
- Supporting an average of over 6 TB of data a game over networks
- Able to handle more devices with fewer bottlenecks
- Vyvx data circuits provide a faster, more reliable connection for TV broadcasters
- Improved application performance

> " A good fan experience starts with connectivity. Lumen assisted in helping us deliver a best-in-class Wi-Fi solution at our stadium."
>
> — Chip Suttles,
> Vice President of Technology
> Seattle Seahawks

SEATTLE SEAHAWKS

LUMEN®
TECHNOLOGIES

Challenge

Rising data demands require network overhaul

With nearly 70,000 fans in the stadium on any given weekend, the existing Wi-Fi system was challenged to keep up with the connectivity demands of spectators. 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 also operated a legacy server and storage environment that could no longer keep pace with a business that runs on data analysis. The Seahawks needed a virtualized environment that would bring the flexibility, resilience and depth of storage that met their diverse data needs.

Live broadcasting, which often suffers from significant compression and latency issues, was another challenge. 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 live broadcast.

Solution

10 Gbps circuits and a CDN meet modern fan expectations

The Wi-Fi upgrade was divided into two phases. First, the LAN/WAN in the stadium was upgraded by replacing the existing network infrastructure from a 1gb to 10gb data backbone supported by a robust and redundant (two) 10 Gbps circuits. A third 10 Gbps circuit was added to support the over 200+ stadium events outside of normal operations.

Second, new hardware was installed under the stadium seats to provide increased bandwidth to areas of the stadium that are more open and harder to connect to the Wi-Fi network.

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

Lumen provides the Vyvx Solutions for live broadcasting of games and events, allowing for multi-point distribution of TV channels with a single feed. Fiber-based data circuits provide expandable bandwidth, reliability and security while reducing latency issues. The added capacity and network infrastructure at the stadium support the Vyvx circuits utilized on game days.

Results and future plans

Happy fans, today and in the future as growth continues

The added 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 also added a third 10 Gbps circuit to handle extra bandwidth demands of special events at the stadium. The added Vyvx data circuits provide a faster, more reliable connection for TV broadcasters to livestream games and events.

The VM solution improves application performance, reduces risk through redundancy and makes maintenance and upkeep more seamless.

"There are a lot of moving parts within the technology realm that drives the sports industry," said Steve Steensma, a senior systems administrator with the Seahawks. "The Lumen high-speed fiber network backbone, Vyvx solutions and experienced team of consultants make it easy to connect the pieces and put them into place."

That's what we call teamwork.

Lumen Solution Set
- Lumen MPLS/IP VPN
- Lumen Vyvx solutions
- 10 Gbps fiber circuits

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