

Q (Walsh) believe that everything is bigger in Texas, then take a look at the new stadium for the Dallas Cowboys.

The \$1 billion-plus, 3.2-million-square-foot facility in Arlington, Texas, is the largest domed stadium in the NFL. Two steel arches that soar 320 feet above the playing field support a retractable roof that is the longest single-span roof structure in the world. The new home for the storied football franchise is an architectural marvel that features bleeding-edge technology to give fans the best experience possible, including the world's largest high-definition video board hanging from the roof above the 50-yard line.

Two video screens facing the sidelines are 70 feet tall and 60 yards in length, spanning the field from one 20-yard line to the other. Two large end-zone video boards are also attached to the roof, giving every fan access to live game footage as well as instant replays and pre- and post-game shows that feature interviews with players and coaches.

"What makes these video boards unique is there's no bad seat in the house. You get a great view of the game whether you're looking on the field or at the video boards," says Scott Purcel, the Cowboys' broadcasting director.

Since February, Cowboys CIO Pete Walsh and his team of 11 IT staffers have raced to install the IT infrastructure in the new stadium, which

includes a new data center with 127 Hewlett-Packard blade servers and a new 100 terabyte storage area network (SAN) using HP's StorageWorks 8100 Enterprise Virtual Array systems. The team built a high-speed communications network with Cisco Systems equipment that includes Wi-Fi, IP phones and an IP television system that will broadcast content to 2,900 flat-screen Sony televisions throughout the stadium, showing live game footage, advertising and menus at the concession stands. The team also installed 185 IP security cameras to safeguard the facility.

The new data center supports not only the team's operations but team owner Jerry Jones' 30-plus companies in more than 90 locations. That's a total of 400 employees, including real estate developments, two MRI centers, oil and gas companies and 35 pro shops that sell team apparel and other merchandise.

"We support the football club, the cheerleaders, the scouting and medical staff, as well as the concession stands and the merchandise stores," Walsh says. "But it's not just football, so you can understand the logistics and challenges we have trying to keep everything running."

#### Inside the Data Center

Providing 24x7 uptime is critical for all the businesses, but for the football team, it's

particularly important on game day. To improve reliability and prevent downtime, the IT department equipped each server with two power supplies, each rack of servers with duplicate copper and fiber connections, and each row of servers with backup switches, says Bill Haggard, the team's director of enterprise infrastructure. The staff also installed two power distribution units in each row of servers; and if there's a power outage, a diesel generator is available to keep IT operations running.

"We designed redundancy into the data center," Haggard says. "We can't lose connectivity or have downtime because 2,900 screens could go blank and could result in no advertising, no menus and no concession sales."

To ensure there's plenty of bandwidth, the team laid 250 miles of fiber-optic cable throughout the stadium and built 69 wiring closets. The largest closets, such as the one near the ticket office and Hall of Fame area, feature eight Cisco switches and four 10Gbps Fibre Channel connections to the data center. The smaller closets feature three Cisco switches with two 10Gbps Fibre Channel connections. The team doesn't yet need all the bandwidth or have enough data to fill its 100TB SAN, but it purchased more than it needed to meet future requirements, Walsh says.

The Dallas Cowboys' gleaming new stadium is a technology paradise.

By Wylie Wong



