CASE STUDY

# Pac-12 Networks Connectivity

## Powered by Zayo and Ciena Network Infrastructure Solutions

*Pac-12 Networks — a sports-oriented digital cable and satellite television network owned by the Pac-12 Conference — teamed up with Zayo to centralize its production capability.*

# Overview

**Pac-12 Networks is the sports-oriented digital media network of the Pac-12 collegiate conference. The network has studio and production headquarters in San Francisco which serve schools in the conference's Western Pacific region. Pac-12 Networks broadcasts nationally across the US, providing 24-hour, sports-related coverage for all 12 universities in the conference. In addition to its original and studio content, the network produces and distributes 850 live events over the course of a year, including more than 30 football games, over 100 men's basketball games, and Pac-12 Championship events. Pac-12 Networks also operates a group of six regional sports channels focusing on particular schools within the conference.**

**YEAR LAUNCHED**

**2012**

**2020-2021 REVENUE**

**$343.5 M**

**PARTICIPATING SCHOOLS**

- The University of Arizona
- Arizona State University
- Cal
- Oregon State University
- University of Colorado Boulder
- University of Oregon
- Stanford University
- UCLA
- USC University of Southern California
- The University of Utah
- University of Washington
- Washington State University

**ORGANIZATIONAL CHALLENGES**

Find an alternative to the traditional on-site production model to reduce production costs while creating high-quality live sports broadcasts.

**CONNECTIVITY SOLUTION**

The Pac-12 Networks uses Zayo's **DIA network** as its primary ISP at its corporate headquarters. Zayo's **Dark Fiber network** and Zayo's **Wavelengths network** carry their 24-hour broadcasts of Pac-12-sanctioned sporting events.

**BUSINESS BENEFITS**

Multimillion-dollar aggregate savings resulting from remote production of sporting events, enabled by reliable, low-latency, high-bandwidth connectivity from Zayo's network.

Furthermore:

- Margin and profitability increased
- 85–95% automated scheduling from primarily manual scheduling
- Partnership with shared goals

# Challenges of remote venue connectivity

One of the biggest challenges that the founding team at Pac-12 Networks undertook was to build a remote production model for live sport event broadcasts. According to Ryan Currier, Pac-12's SVP of Engineering & Products, "Pac-12 Networks really was one of the pioneers in the concept."

Traditionally, each event required a production truck and full crew at the venue, where camera feeds and various other elements would be edited together and broadcast over satellite. Under the new production model, crew such as camera operators, audio engineers, and others would still be needed. However, "presence on-site in the venue is relatively minimal," says Currier. The raw camera feeds would be streamed in real time over IP to the central production facility in San Francisco. There the raw elements would be edited into the final product and then broadcast.

In theory, using these distributed methods costs significantly less than on-site production. But to unlock the potential benefits and also produce high-quality content, Pac-12 network's studio and production facility in San Francisco would need high quality connections to each and every potential sports venue.

At the time, the distributed model was still relatively unknown in the industry. Most tech providers, broadcast partners and vendors didn't yet have experience with it. Overwhelmingly the norm was on-site production trucks and satellite delivery. So the Pac-12 had to find partners across the industry who were willing to help engineer a solution.

A recurring issue they faced was how to reach on-campus sports venues. The raw feeds they would often stream over existing university networks to get them to production would need to share space with other compute and bandwidth-intensive data flows. They found it vital to identify key campus IT staff to coordinate the temporary increase in bandwidth overhead.

Pac-12 Networks had several infrastructure goals for its endeavor:

- Create flexibility where existing connectivity was suboptimal
- Increase connectivity to new venues quickly
- Simplify management of their WAN while maintaining fine-grained, customizable network access control

"Some of the connectivity we need 24/7/365. But for a once-a-year event, we need to spin up and spin down connectivity in a way that's cost effective, efficient, and very reliable," explains Currier.

The biggest challenge was to find a partner that could deliver solutions for these considerable connectivity needs. That partner would need to provide connectivity to remote venues on a 24/7 basis as well as to limited event venues, requiring temporary network connectivity in a short time frame with high reliability. Low-latency, high-bandwidth, and reliable network connections would be particularly crucial. A mix of connectivity types, some of which lacked the enterprise-grade SLAs to ensure performance, meant that Pac-12 Networks was looking for an alternative solution.

# Implementing the vision

Pac-12 Networks started building their distributed production network around 2012. The first few years were mostly indistinguishable from a traditional truck satellite model, doing production on-site. But the network that would realize their dream – to transport a large quantity of video traffic from different event locations to the centralized production facility – took several years to evolve. Pac-12 Networks needed a connectivity solution that could easily scale and provide low latency and a high level of reliability. When they met with Zayo, it was an obvious choice.

To build the connectivity infrastructure that Pac-12 Networks needed, Zayo used several of its premium solutions. Zayo began rolling out its Wavelengths services to venues to quickly establish connectivity. Under their flexible SLAs, Pac-12 Network could easily scale bandwidth up and down based on the production needs. The San Francisco production offices were connected using Zayo's **Dedicated Internet Access**, **Wavelengths**, and **Dark Fiber** solutions. Zayo's DIA network also became the primary ISP at Pac-12 Networks corporate headquarters. As they continued to build out a reliable transport network over a period of time, they also leveraged Zayo's Dark Fiber solutions for venue connections.

The need for highly reliable, high-bandwidth connectivity to remote sports venues was just one of the driving factors that led Pac-12 Networks to partner with Zayo. They chose Zayo as a major provider of connectivity infrastructure worldwide. "In the early days, we started with smaller productions that had fewer cameras, but now, we are doing college basketball games using distributed production methodologies," Currier explains. "A lot has depended on providers like Zayo who can deliver that level of connectivity at a reasonable price point. Honestly, we're no longer constrained by connectivity at this point." Ultimately, the bandwidth-enabled remote production model has culminated in tremendous savings by eliminating the need for on-site production and satellite truck rolls.

Pac-12 Networks has been operating this way for almost a decade now. Over time, vendors and other media networks have also come around to the distributed production model. For a lot of live production entities, the pandemic has accelerated this trend. Ultimately it seems the model has taken deep root in the sports broadcast industry and will be the standard moving forward, in part thanks to Pac-12 Networks fighting to realize its vision.

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# Building blocks of a modern sports media network

## Wavelengths →

Zayo's Wavelengths solution powered by Ciena provides Pac-12 Networks with high-speed, dedicated, private, and secure connectivity with low and predictable latency to multiple remote sports venues by leveraging its vast network of global points of presence (POPs) and on-net datacenters in North American locations.

- Dedicated, high-bandwidth connects to remote locations over a fiber network
- Transport of bandwidth-intensive video content from sports venues over fast, direct, and predictable long haul and metro network
- Easily scalable bandwidth (up to 400G), on a dedicated circuit with the full range of Wavelengths offerings
- Used to broadcast 24-hour coverage of Pac-12 sporting events, including Olympic sports and broadcasts of archived sports telecasts via satellite and cable networks

## Dedicated Internet Access →

Zayo's Dedicated Internet Access network (DIA) provides Pac-12 Networks with a superior IP experience with fast installation time, traffic bursting capabilities, and operational simplicity.

- Engineered to deliver the reliability, security, and performance of a fiber-based network
- Allows Pac-12 to easily add more sports venues seamlessly to its network with scalable, customizable bandwidth

## Dark Fiber →

Zayo's Dark Fiber solutions offer Pac-12 Networks complete control of their fiber.

- Full path transparency with the ability to create diversity for maximal uptime and minimal latency
- No components shared with other customers; 100% dedicated network with end-to-end protection
- Used to broadcast the Men's and Women's basketball conference championships in Las Vegas once a year; high-reliability, low-latency connectivity for a high-quality production

## Find out how Zayo connectivity fuels innovation for forward-thinking organizations.

**Learn more about Zayo:** zayo.com

**More about Pac-12 Networks:** pac-12.com

### About Zayo

Zayo Group Holdings, Inc. provides mission-critical bandwidth to the world's most impactful companies, fueling the innovations that are transforming our society. Zayo's 126,000-mile network in North America and Europe includes extensive metro connectivity to thousands of buildings and datacenters. Zayo's communications infrastructure solutions include dark fiber, private data networks, wavelengths, Ethernet, dedicated internet access and datacenter connectivity solutions. Zayo owns and operates a Tier 1 IP backbone and through its CloudLink service, Zayo provides low-latency private connectivity that attaches enterprises to their public cloud environments. Zayo serves wireless and wireline carriers, media, tech, content, finance, healthcare and other large enterprises. For more information, visit **zayo.com**.