LS NETWORKS

CASE STUDY

Simpler, More Reliable, Greater Control

You need a reliable network. You can't have a single point of failure. That includes your network access. The traditional mindset is that redundant access purchased from separate vendors is the only way to achieve a resilient network.

Douglas Fast Net (DFN) knows that isn't true anymore.

DFN is a subsidiary of Douglas Electric Cooperative in Roseburg, Oregon. They started offering faster telecommunications to Douglas County in 2002. For years, DFN operated a typical broadband model — an access provider system relying on multiple backbone transit providers. One of those was LS Networks.

The growing demand for high-speed internet services in rural communities across the country is no different in Douglas County. DFN sought a new approach that would let them address growing demands for scale and reliability among its customers without the related increase in upstream costs and complexity.

"We've struggled to reliably serve high speeds rurally. If you are out here, you know there is a huge demand for connectivity," said Todd Way, General Manager of DFN. "We provide connections and access to information for home schools, health clinics and small businesses. We see what an important difference good network access makes in our community."

When DFN searched for a way to provide the reliability and the scale they needed to grow their service offerings, they found that it was not through the traditional approach of adding vendors. Instead, they consolidated to a single vendor: LS Networks met their objectives.

Consolidation is the Right Call

In 2015, DFN established a new model with a single powerful backbone for DFN's network. The LS Networks Distributed Core is an innovation in networking that protects against a single point of failure without the cost and complexity of multiple vendors.

Going against the traditional approach of adopting a multi-vendor strategy to provide network resilience, LS Networks was able to offer DFN the route and network transparency, equipment configuration options, aggregate demand pricing and scalability all in one place: one vendor, one contact and one network to manage.

The LS Networks Distributed Core places multiple in-region core points of presence (POPs) throughout the territory. An MPLS mesh network capable of multiple levels of reroute options provides clients like DFN multiple separate connections, each individually protected using Multi-Chassis Link Aggregation Group (MC-LAG) and guaranteed separately to take different routes to the LS Networks internet core routers. No single POP, fiber connection, piece of equipment or upstream outage can cause an outage for DFN's internet services.

"You can truly verify separate network and equipment connections for redundancy, and then get contractual guarantees for that configuration. That's something you can't do with traditional vendor diversity,"

— Leif Hansen, Director of Engineering and Operations at LS Networks

LS Networks is uniquely designed to offer redundant paths, equipment and routes to their clients using a "flagship" MPLS network architecture.

With over 70+ core routers distributed within the communities served, LS Networks provides completely redundant paths from any point of presence (POP).
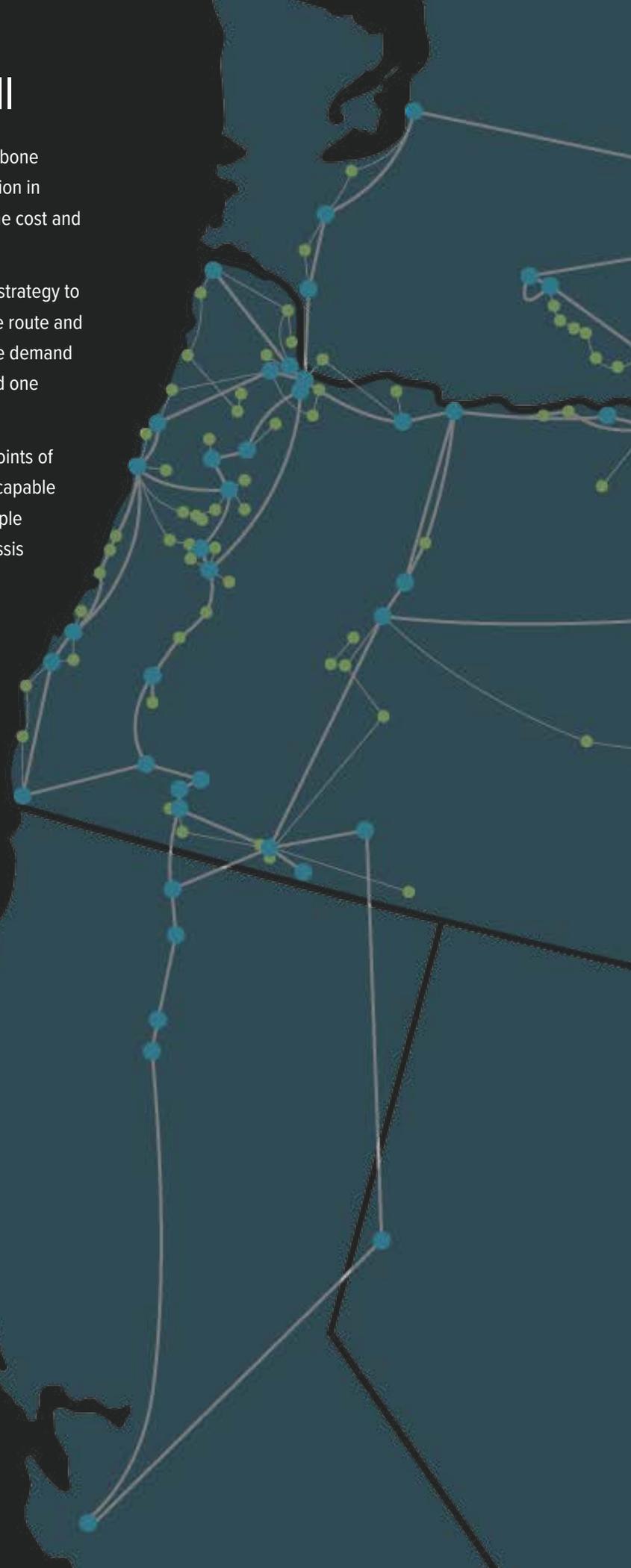
When Vendor Diversity Isn't Diverse

The traditional approach to reliability was to adopt a multi-vendor strategy, purchasing separate connections from different vendors, believing that this would ensure no single point failure.

Especially in common network corridors, ISPs often sublease or move network capacity from one of the small number of providers available in those areas. And they don't have to tell anyone.

As a result, networks seeking diverse upstream connections can end up purchasing bandwidth from two different providers that share the same underlying infrastructure. A network outage on that common infrastructure results in a network outage on both connections, negating the perceived benefit of a multi-vendor strategy.

Transparency and Manageability Make a Difference

Particularly in rural areas, true redundancy via multiple providers is often an illusion. Network providers function in a complex world in which competitors also sell transport to each other. Most service agreements do not allow the end client to know the specifics of a route, so there is no way to verify or guarantee redundancy. As business situations change, those routes can change without notice.

LS Networks is designed differently than large providers, and they do business differently. LS Networks operates with transparency that competitors often avoid or are simply unable to offer. Unlike the national providers, LS Networks gives their customers detailed documentation of their fiber routes and equipment configurations and topology.

"You can truly verify separate network and equipment connections for redundancy, and then get contractual guarantees for that configuration. That's something you can't do with traditional vendor diversity," said Leif Hansen, Director of Engineering and Operations at LS Networks.

Customer Control of BGP

Not only could DFN obtain unprecedented transparency, but it was able to provide better manageability of its connectivity. LS Networks extended BGP communities to DFN. Doing so helped DFN resolve a performance problem that would have affected their customers.

"BGP calculates the shortest route, the route having the fewest network hops, automatically. When DFN went with the shortest route, they had problems with latency and packet loss because of congestion between two upstream networks. By giving the customer control over BGP, they were able to weigh their preferred network paths and choose for themselves a higher performing route that had lower latency," said Hansen.

Keeping it Local Yields Benefits

Serving businesses and residents in Douglas County, DFN had other good reasons for choosing LS Networks for their new architecture. With a strong presence and core routing in more towns in Oregon, LS Networks MPLS network provides higher performance and reliability for regional traffic, which isn't always the case with the nationally-focused providers.

"With larger providers, they can't afford to deploy 70+ core nodes in Oregon — they're doing one or two in Oregon and Washington," said Bryan Adams, Director of Sales and Marketing at LS Networks. "As a result, if you're in Redmond talking to someone in Bend, that traffic has to route to Portland first, and if their Portland router fails, your traffic might be backhauled to California or Colorado first. You can be hopping to Texas and back just to get to a neighboring city."

With a strong presence and many core nodes throughout the region, LS Networks delivers the local network options that the national providers can't. LS Networks brings the edge of the network closer to the customers, building a strong MPLS network with many POPs in the community. LS Networks provides DFN and its customers with reliable high-speed connectivity. And because LS Networks supports full IPv6 now, DFN is ready for the future.

Getting More For Less

Consolidating from a multi-vendor approach to LS Networks delivered more than just the reliability, performance, scalability and flexibility DFN was looking for. They saved money, as well. By being able to purchase redundancy from a single vendor, DFN did not have to pay a second internet provider for full redundancy.

"When you go with diverse vendors, if you want 100 Mbps and full redundancy, you have to purchase two separate 100 Mbps connections and pay twice for it. With a single vendor approach with the right aggregate options like LS Networks, where network diversity is built in, you pay for it once. You can save up to 50 percent of the cost, but get greater guarantees on your reliability," said Hansen.

"We understand that connectivity in rural communities is important, so we've built our network to make sure they have the most reliable service possible."

—Bryan Adams, Director of Sales and Marketing, LS Networks

LS Networks vs. Conventional Wisdom

For decades, the conventional wisdom has been that complete redundancy can only be achieved with multiple vendors. This approach costs more, is more complex and can restrict control in the hands of the technical team in comparison to a single vendor with the right options. For DFN, having this additional option from LS Networks was the right solution.

As a result of consolidating to the LS Networks backbone, DFN has attained greater reliability, flexibility, scalability and manageability. The new system architecture also delivers better performance for less cost. With LS Networks providing connectivity, DFN is now able to offer fiber not just to local businesses, but to residential customers.

The LS Networks team said the demand for high performance, reliable internet connectivity is increasingly common in the rural Northwest. They are committed to delivering the reliable connectivity that rural communities need.

"If you look at the heritage of LS Networks, we approach business differently," said Adams. "We're not just about profit — we're here to serve the community. We support the greater good as a better business model."

Headquartered in Portland, OR, LS Networks is committed to the community and is owned by a collective of rural electric cooperatives and a Native American business enterprise, including over 60,000 citizens and communities. We're not about the money. We're about the service to and for our customers.

LET'S DISCUSS YOUR NEEDS
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