



## Providing Data Center Design Expertise and High Performance Border Routers for Colocation Facility

### Challenge

Find highly reliable, economical BGP router to connect to three backbone providers.

### Solution

Vyatta 2502 appliances

### Benefits

- Scalable
- Fault tolerant
- Reliable
- High performance
- Expert guidance from Professional Services team

Southwest Data Centers, conveniently located in downtown Las Vegas, provides affordable colocation solutions for companies of all types and sizes. It offers secure space from 1U to full cabinets and private custom cages with connectivity to a choice of ISPs.

### Challenge

The building now housing Southwest Data Centers had served a series of tenants, from a paging company to call centers to a recently failed local wireless service provider. In support of these tenants, the building had raised floors, multi-fiber circuits, extensive cabling, and redundant power supplies and cooling systems. As a consultant to the former wireless provider, John Spracklen became aware of the site in 2008 and saw its potential as a colocation facility. Partnering with the building's owner and a sales and marketing executive, Spracklen formed Southwest Data Centers in January 2009.

The former tenants had left a Layer-3 Cisco 3550 Series switch fronted by a Cisco Pix firewall. The switch was simply not capable of supplying the throughput Spracklen would need, however. In addition, the legacy infrastructure only had a single feed from Time Warner Telecom. "I needed to offer connectivity to multiple carriers and Border Gateway Protocol (BGP) for redundancy," says Spracklen. "I needed seamless operation, the shortest hop, the fastest response time."

Spracklen sought a quote from Cisco for new equipment that would deliver the features and performance he anticipated needing. "I was aghast," says Spracklen. "It would take so much money to start up. There was no way I could justify it in any kind of medium-term return on investment. It wasn't going to happen. What I needed was something like other open source solutions that I have seen, but one that was enterprise-class and data-center quality. I knew that kind of solution had to be out there."

### Solution

After researching the market, Spracklen came across Vyatta, an open networking solution. "I downloaded their demo software and immediately said here we go, this is the feature set I'm looking for." It wasn't long before Spracklen decided that Vyatta was the solution he needed.

With so much riding on the Vyatta solution, Spracklen engaged Vyatta Professional Services to help plan the system. "They have knowledgeable people with large data center experience who know what pitfalls to avoid. They were able to help me design only as much system as I really needed."

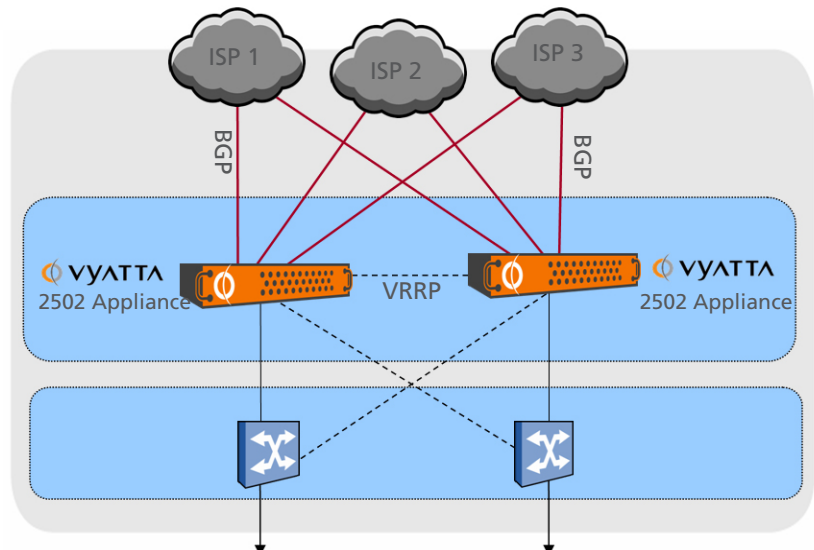
The Vyatta network includes redundant instances of Vyatta software running on two identical Vyatta 2502 appliances with 2Gbps fiber cards in each, in addition to the two ports built into each server. The Vyatta border routers provide BGP

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—John Spracklen,  
CTO, Southwest Data Centers

# Vyatta Case Study: Southwest Data Centers

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to Cogent, American Fiber Systems, and Time Warner Telecom circuits. This enables redundant links for the Layer-2 switches. "As long as one of the providers is still up, our customers can still get to the Internet."

Vyatta also runs Virtual Router Redundancy Protocol (VRRP) for automatic failover between the two routers, internal Border Gateway Protocol (iBGP) to ensure traffic is directed to the best router, and Open Shortest Path First (OSPF).

Deployed in February, Vyatta has performed flawlessly. "Since going production we've had zero downtime and zero issues so far," says Spracklen. "There have been no hiccups."

While reliability has been excellent, Vyatta performance has been equally impressive. "It can handle my Gigabit feeds at line rate in real time," says Spracklen. "The CPU doesn't bog down. The memory doesn't fill up. I did some stress tests and could not break it. The providers had the same experience. They were impressed."

## Benefits

Without Vyatta, Southwest Data Centers might never have gotten off the ground. The Vyatta solution enabled Spracklen to build an economical, reliable, high-performance network

that met his immediate needs, plus the scalability to grow as the business grew.

Another key benefit was the flexibility of Vyatta to offer everything Spracklen required in essentially one box. With Cisco, he would have needed a variety of separate boxes—smart switches, smart routers, and firewalls. "With Vyatta, all the processes are able to run on one box. I don't need multiple layers of boxes that perform different functions and have to communicate with each other."

Further down the road, Spracklen hopes to open a second location in Boulder City, about 35 miles from Las Vegas, where electricity costs one-third as much due to a long-term contract with the Hoover Dam. That makes an ideal economic environment for off-site storage of data. Vyatta will play a central role in that facility as well.

Spracklen sums up his experience with Vyatta this way. "Vyatta gave me the most bang for the buck. It's by far the fastest, most reliable system that I've deployed, and I was able to implement it faster, cheaper, and better than I could have with any other solution."



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