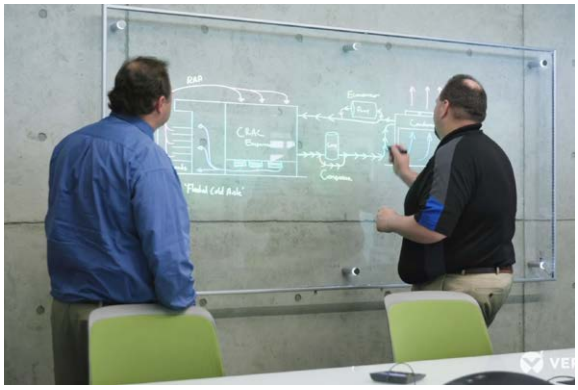
SECANT TECHNOLOGIES

A Vertiv Case Study



ABOUT THE COMPANY

Secant Technologies, of Kalamazoo, Michigan, provides more than 600 regional customers with cloud hosting, colocation, managed services and data center design services.

Founded in 1983 as a software development company, Secant in 2014 opened its 3,400 square foot data center in Kalamazoo, providing colocation, cloud hosting and interconnection services. It is southwest Michigan's only tornado-hardened, HIPAA & SOC-audited facility, engineered to Tier 3 enhanced standards. It has two other data centers in the Detroit suburb of Southfield.

The Secant data center has six separate 10-gigabit fiber entrances from carriers and many of those are ringed. Reaching out to its other two data centers, Secant can pick up an additional 50 carriers for connectivity to the Cloud.

Strategy

Secant Technologies planned its data center to gain the highest possible efficiency, reliability and capacity per rack for its customers. Its thermal management strategy allows it to achieve rack densities up to 36kW using perimeter cooling, providing the capacity, scalability and flexibility required by today's hybrid computing users.

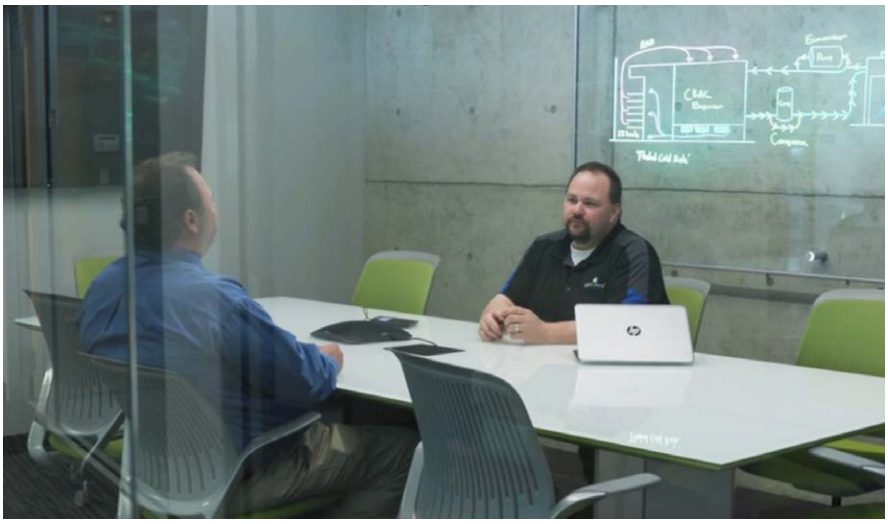
It also designed the data center to maximize usable white space and minimize power and cooling infrastructure. To meet its power and thermal management needs, Secant turned to Vertiv for the Liebert® NX™ three-phase 200 kVA UPS systems and Liebert® DSE™ free-cooling economizer systems.

Not only are power and cooling redundant, but also the data center's fiber entrances, network switching, storage, interconnect services and infrastructure monitoring systems. All are designed to be concurrently maintainable.

Results

Secant has experienced zero downtime since opening the data center. "When we set out to build our own data center, it was because we were seeing more and more hosting and cloud opportunities from our own customer base, and we realized we needed to build an asset that would have a 15-to-20 year operational life," said Alex Ellingsen, Chief Technology Officer. "We have to exceed the reliability they got in their own on-premise environment. If not, they're going to quickly question 'Why did I move into the cloud?'"

For thermal management, Secant chose a flooded cold aisle design with cabinet containment using passive chimneys to maintain a constant 75°F supply air temperature. With this configuration, Secant is able to easily manage airflow and temperature for each cabinet without affecting others, to meet varying customer needs.



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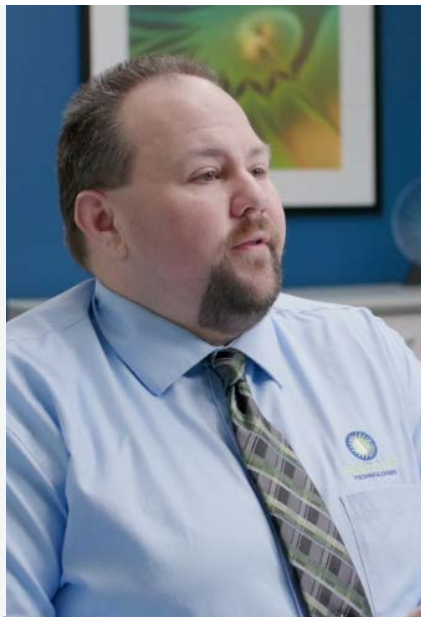

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"The hot air is contained inside of each of the cabinets with a passive chimney into a return air plenum and then fed back through the CRAC unit," explained Chris Nicholson, director of data center and hosted services. "This gives us the highest and the hottest return air we can possibly get and that gives us the efficiency cooling we can possibly get."

Using the Liebert® DSE™ with pumped refrigerant economization is more efficient than using DX or chilled water cooling. It eliminates the cost of water and its treatment, as well as the significant piping infrastructure required for chilled water.

"In three years of operation, the Liebert DSE systems have given us the highest possible amount of free cooling that we can get, which actually for us is just under 80 percent," Nicholson said.

"The biggest added benefit that we weren't expecting from the Vertiv products was the level of automation in the Liebert DSE in the units, provided by the Liebert iCOM controls." Nicholson said. "It gives us a lot of options. I don't have to manually switch between full and partial free cooling. I don't have to monitor it. I don't need to have maintenance people constantly change setpoints or maintain different gear. It's a single, standalone unit that just does almost 80 percent free cooling by itself all the time."

For power protection, the data center has two distinct power feeds from its external transformer via isolated transfer switches with their own generators and isolated entrances into the facility. Secant chose the Liebert NX UPS for its online double-conversion topology, small footprint and ability to run with flywheel backup instead of lead-acid batteries. "We have hardened electrical rooms without a huge amount of available space, so how we put that solution together was critical," Nicholson said.

Secant monitors its power system down to the rack PDU level. "We do that so we can see if there are power utilization issues, off balance power, any kind of phase-to-phase variance, any anomalies at all," he said.

As Secant's needs grow, the existing equipment can grow along with it, with the potential of adding more Vertiv power and cooling units as required, said Ellingsen.