



Acuity Brands Lighting

Upgrade from Autonomous APs to Support Next Generation Wireless LAN Services

Challenges

- Needed to secure the deployment, as well as to ensure the high availability and reliability required to use the WLAN to run their mission-critical ERP systems
- Experiencing zero downtime for its custom-developed, in-house inventory distribution system was required
- Acuity's existing WLAN was made up of a network of autonomous access points, and maintenance was proving to be increasingly unwieldy
- Acuity wanted to run its existing voice-over-IP system through the WLAN, but this could not be done with its existing Wi-Fi deployment

Results

- Using HiveManager to centrally manage and monitor its APs from a single location
- Aerohive proved able to provide advanced firewalling and IDS capabilities on the access point, which was a major benefit to the lighting company
- Aerohive's controller-less wireless LAN architecture eliminated the need to purchase expensive controllers, hence significantly reducing Acuity's costs
- Planned roadmap includes voice-over-WLAN throughout the company, as well as wireless mesh via 802.11n

One of the World's Largest Lighting Manufacturers

Acuity Brands Lighting, chose to upgrade from autonomous APs to Aerohive Hive APs. Aerohive's Cooperative Control architecture enabled easy-to-use management capabilities for the entire global deployment from a single site, without the cost or complexity of a controller-based architecture.

Acuity Brands Lighting manufactures some of the best known light fixtures in the world, including a host of specialized offerings for a wide variety of customer types from commercial/industrial facilities to residences. Acuity Brands manufactures its own products at 24 geographically dispersed plants, and prides itself on advanced supply chain management and sales fulfillment. Corporate facilities include manufacturing, distributions, engineering, and corporate headquarters. Sales are conducted in over a hundred semi-independent offices, or agencies, located around the world. Agencies are connected to the corporate offices via dedicated VPNs for real time order status and quotes.

Acuity Brands has built an industry-leading business which depends on its network infrastructure to keep things up and running. "It's essentially our job to maintain these mission critical systems 24/7," says Way Brunson, Network Engineering Project Lead. "A system

simply cannot go down, because in a global environment like ours, someone is always working somewhere."

The Challenge

With the responsibility for handling management of the global network engineering group, one area of particular concern for Brunson and his team was Acuity Brands' custom-developed, in-house inventory distribution system. "It is literally the company's lifeblood. Downtime for any reason is simply not acceptable." In order to protect this system from any possible security breach, Acuity Brands typically separates its manufacturing applications and traffic from its carpeted space users/traffic.

Technology versus Head Count

Like most enterprises, Acuity Brands is constantly balancing the benefits of technology against the resources required to keep systems running, ensuring that the network is working as hard as possible without siphoning off precious manpower for routine maintenance and support. While Acuity Brands was aggressively pursuing a number of new, cutting-edge technologies such as voice-over-IP, Brunson felt that their existing wireless LAN was becoming a roadblock.

Acuity Brands' existing WLAN was made up of a network of autonomous access points, and maintenance was proving to be increasingly unwieldy. Because their current WLAN lacked any centralized management, installation or upgrades had to be done onsite, access point-by-access point, at a typical cost of about 30 minutes each. In order to ensure continuity, IT staff was often forced to conduct this time-consuming process overnight. The result was a virtually insurmountable maintenance task, given that Acuity Brands is a global deployment featuring hundreds of separate access points.

Troubleshooting was also very difficult, due to inaccessible logs. "We didn't actually have an open project when we first met with Aerohive," Brunson says. "We just knew what we wanted our WLAN product to do. We were extremely frustrated because we could see the promise of the technology - particularly with things like Voice over WLAN - but we just couldn't see how to get there from where we were."

The Requirements

Acuity Brands' first consideration was to secure the deployment, as well as to ensure the high availability and reliability required to use the WLAN to run their mission-critical ERP systems. "Uptime is a key performance indicator for my team in every facet of every implementation, be it WLAN, LAN, MAN, or WAN," Brunson says.

Guest Access and VoIP

Additional goals included providing simple guest access without the risks of using open source software. Brunson also wanted to use run their existing voice-over-IP system through the WLAN, which could not be done with their existing deployment. "It is essential to us that users be able to roam from one access point to another without losing their conversation," Brunson says. "Acuity Brands' network design calls for high resiliency with Layer 3 links between different switches. That was good for availability, but it meant that if APs were on a different Layer 2 subnet and the user roamed from one AP to the other, the call would be dropped even if the APs were geographically close to each other."

Cost Containment

The proposal from the incumbent WLAN vendor included at least 2 centralized controllers with local access points, although the suggestion was to move to a distributed controller scenario. "We could have replaced our WLAN with one that was controller-based, but we just weren't willing to take on the expense and the

management headaches," Brunson says. He also wanted to further ensure the reliability of the network by adding redundancy, but in order to do that with a controller-based WLAN solution, he would need to either add a back-up controller for every controller in the network, or add a controller to back up all the controllers in a given location. Either scenario would blow Acuity's budget out of proportion. "It was a lot more of a capital expenditure than we were ready to make, not to mention the operational cost."

The Solution: Cooperative Control Architecture from Aerohive

When Aerohive presented its value proposition, the solution seemed almost too good to be true. The opportunity to test the reality came via an evaluation in a newly acquired company in Edison, New Jersey with a facility that was primarily devoted to manufacturing. The building also included a small distribution area as well as the requirement to host visiting sales staff from any office. Applications to support included typical office apps in addition to the mission-critical proprietary ERP system. The evaluation network featured three wireless networks and associated VLANs, with layer 2 segmentation throughout.

The evaluation deployment went well, and Aerohive AP's dynamic radio and power adjustments allowed Acuity Brands to avoid the high gain antennas that a site survey had indicated. In fact, the installation at the Edison facility proved so simple that Acuity Brands quickly broadened the deployment to include their Atlanta facility, which is a carpeted space. Both deployments are managed by a single HiveManager in the Atlanta office. Future plans include deployment of a second HiveManager at Acuity Brands's disaster recovery site and continued manufacturing and warehouse roll-outs. "Aerohive's ability to provide more advanced firewalling and IDS capabilities on the access point is a huge benefit to us," said Brunson. "The resiliency that we need is literally built into the system, while the centralized management makes it easy to upgrade and troubleshoot."

Acuity Brands' WLAN is now back on track to become a strategic advantage for the company, with a planned roadmap that includes voice-over-WLAN throughout the company, as well as wireless mesh via 802.11n. Brunson concludes, "Given what we've seen in our Aerohive installation, we expect that migration to actually be a fairly easy process. The Aerohive technology will allow us to avoid a big hardware upgrade, and the mesh will be even better. We expect to roll Aerohive corporate-wide. Everything we want in WLAN we expect to get from Aerohive, from our corporate offices to our warehouse and distribution centers."



Contact us today to learn how your organization can benefit from an Aerohive wireless LAN architecture.

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