The College of Idaho

The College of Idaho First to Launch Aerohive's ID Manager for Self-Authentication Across Entire Campus

Challenges

- Upgrade and modernize wireless infrastructure to meet expectations of students and staff
- Deploy robust enterprise wireless solution while meeting budget requirements
- Allow self-authentication for onboarding of personal devices for students and staff

Results

- Aerohive surpassed expectations with ID Manager and PPSK functionality providing unique, secure network keys for BYOD
- Students and staff now self-authenticate onto network without intervention from IT staff, greatly reducing IT workload
- Achieved reliability and robust network access across entire campus, including operational efficiencies in outdoor locations and residence halls

About The College of Idaho

Situated 30 minutes from downtown Boise in Caldwell, Idaho, The College of Idaho (C of I) is the state's oldest private liberal arts college. Founded in 1891, the College is commemorating its 125th year of providing a legacy of academic excellence as Idaho's top college. C of I has approximately 1,200 students and offers the distinctive PEAK Curriculum, directing students to competency in humanities, natural sciences, social sciences and a professional field. As a result of PEAK, students graduate with a major and three minors in four years.

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> **—Alan Price**
> Systems Administrator,
> The College of Idaho

The College boasts a winning athletic tradition and a history of successful graduates, including seven Rhodes scholars.

The Challenge

Back in 2004, C of I won an Intel award for its wireless network, which was seen as innovative in part because if anyone had wireless technology back in 2004, it was seen as advanced. Fast forward several years later and the College basically had the same wireless layout as it had started with, and it desperately needed to upgrade and modernize its wireless infrastructure

The College had a scattering of Cisco access points, however the IT team needed a solution that would eliminate the bottlenecks of a controller-based infrastructure. As a residential campus and in the era of BYOD, the College needed to enable a large increase in density. Students expected the Wi-Fi in dorms and campus buildings would work like a typical home setting and support a multitude of personal devices. Students often started their college career with laptops, tablets, smartphones and other connected devices such as an Apple TV or Xbox. Constant connectivity was a very real demand for the entire college community and so was the need to securely on-board the large numbers of personal devices, with minimal impact to IT workload.

In addition, C of I needed to upgrade the network connection to have a consistently reliable solution in place. Some access points were still running on 802.11g and the College needed an increase in throughput. In addition, the IT team required greater visibility and control over the network, as well as simplified network management to roll out network changes without undue hassle.

The College comprises 23 buildings, including a renovated science hall, five residence halls, two apartment complexes and outdoor athletic facilities, including a new athletics center and upgraded football stadium. The IT team needed to expand and modernize the wireless infrastructure to accommodate student and faculty demand and expectations, as well as modernize many operations across its campus.

The Solution

A key consideration for the C of I was the ability enable self-authentication onto the new wireless network solution, and automate the process as much as possible. In the past, many students had trouble authenticating devices to the network and this created a lot of added work and expense for the IT team. C of I worked with Optiv Security, a security solutions provider and Aerohive reseller to determine the best solution.

While The College of Idaho considered Aruba, Cisco and Ruckus, they quickly settled on Aerohive. "We did not have the internal resources to support a controller-based model, so when we learned Aerohive came in at our price point, offered simplified configuration, deep reporting and data tools, and was 802.11n compatible, that ended the debate for C of I," explains Alan Price, Systems Administrator at The College of Idaho.

The most exciting part of the solution deployment came when C of I was able to integrate Aerohive's ID Manager, which allowed students and employees to self-authenticate personal devices onto the network. ID Manager is integrated with the College's existing Active Directory infrastructure to verify user identity, and then automatically issues a Private Pre-Shared Key (PPSK) for access to the campus network.

Unlike Pre-Shared Keys (PSK) used in the past, PPSKs are strong, unique keys that greatly enhance network security for BYOD. They also support most device types, including mobile devices and consumer electronics that students bring on campus. To enable easy and accessible authentication of BYOD, the College's IT group used ID Manager's open APIs to create a self-service portal on the campus network. All users need to do is enter their user ID and password to receive a unique key. The workflow has greatly reduced the burden on IT and help desk support.

Aerohive's ID Manager is managed through HiveManager on-premises. The College plans to transition as soon as possible to HiveManager NG, the next-generation NMS, continuing to host the solution on-premises, for complete end-to-end control.

The College began its rollout several years ago in phases, starting first in the residence halls and expanding to under-served areas on campus and adding additional access points as necessary. C of I selected Aerohive AP121, AP230 and AP170 access points, and all

technology operates at 802.11n or better. The entire campus has standardized on Aerohive's solution and has begun rolling out Gigabit Wi-Fi in certain dorms, resulting in connection speeds eight times faster than previously supported.

Results

After the initial deployment, the College has seen a substantive increase in the number of devices connecting to the network, with a four-fold increase in the last two years and an expectation of increased density as the number of access points continues to grow. College-issued devices are automatically configured to the network, and individuals can request a key and connect up to three personal devices at a time. Students and staff connect to the network via YoteNet, a Web portal that uses ID Manager's APIs to let users to create a unique, secure PPSK for their devices.

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The Aerohive solution allowed the College a wide range of choices for how to set up and administer the network, including plans to migrate its network management from the cloud to on-premises as its needs evolved. C of I had set up a very flat network in the past, but split the network into four this past year in order to enable separate testing across the network and to enable greater security. Aerohive reporting, monitoring and planning tools have been instrumental in each phase of the deployment.

The College has also added some outdoor access points, including an AP at the newly renovated football stadium to enable a mobile iPad-based sales terminal and mobile ticket scanners with Vendini software. Students also access the Canvas learning management system, utilize PaperCut for print management across campus, and login to Microsoft Office 365 from mobile devices.

Setting Campus Stage for Future Success

As the College continues to expand the wireless network to new areas of campus, adds additional access points and addresses challenging high-density locations, students, staff and guests will continue to benefit from the robust Aerohive infrastructure. While wireless network access at one time was a luxury, it is now an expected functionality, and BYOD is expanding the demands on the network with the need to connect multiple additional devices with constant connectivity. While in many ways The College of Idaho remains a very traditional college, the IT team is able to actively plan for future wireless requirements with a solid infrastructure in place.