

# UCCS Uses NetAlly's Diagnostic Tools and Link-Live™ to Analyze and Troubleshoot Wireless Network Issues Quickly and Easily

## OVERVIEW

The University of Colorado at Colorado Springs (UCCS) is one of the largest employers in southern Colorado with approximately 1,600 faculty and staff, and is among the nation's fastest growing universities, with an enrollment currently near 12,000. Faculty, staff, and students heavily rely on an extensive wireless network for everything from curriculum to administration, and the campus boasts more than 1,600 access points (APs) spread across 60 main buildings and 75 APs which are outdoors, covering seven acres of space. UCCS's IT professionals also support access for remote buildings as part of the school's downtown presence, classroom and offices at nearby Fort Carson, and the anticipated Cybersecurity Building which will comprise 30,000 square feet of labs, classrooms and collaboration space (slated to open fall 2021), working to ensure constant connectivity across the entire organization.

## CHALLENGES

Reliable wireless connectivity is not just important to students, faculty and staff throughout the sprawling UCCS campus and remote facilities – it is essential. When issues arise, the university's IT team faces considerable challenges when it comes to pinpointing problems so they can be quickly resolved. The small size of the wireless team, consisting of two full-time IT professionals and a student employee, is stretched thin covering all 1,600 APs.

“It's probably safe to say the helpdesk fields calls nearly every day from someone on campus that is experiencing a wireless connection problem,” explained Cody Ensanian, Senior Wireless Network Technician for UCCS. “Our job on the wireless team is to figure out what's behind the problem. Is it the end-user's device, a problem with a university access point or an entire network segment? Sometimes we can help them over the phone, but if not, it means a member of our team has to go to their location and attempt to diagnose the problem.”

## AT A GLANCE

**CUSTOMER:** University of Colorado at Colorado Springs (UCCS)

- Internet
- Wi-Fi
- Network
- Security

**INDUSTRY:** Education

**LOCATION:** Colorado Springs, Colorado

However, field diagnosis can be tricky. Ensanian points out that determining what is behind a “connection failed” message may boil down to an AP being down, a bad password or certificate, an authentication or DHCP failure, a problem with the university’s wired network, or some type of interference interrupting the Wi-Fi signal. The team needs detailed information to know how to go about correcting the problem.

As trouble tickets pile up, the IT team is under pressure to resolve issues quickly and efficiently. According to Ensanian, having good quality Wi-Fi testing tools is crucial. “An effective troubleshooting tool needs to be easy to use, have a lot of functionality built in, and it must facilitate easy collaboration so results can be shared,” stated Ensanian. “NetAlly’s network analyzers and wireless testers are precisely what we need to do our jobs quickly and accurately.”

## SOLUTION

UCCS’s wireless team relies on NetAlly’s EtherScope® nXG network analyzer and AirCheck™ G2 wireless tester to troubleshoot the university’s extensive Wi-Fi network. Now when a trouble ticket is opened, the team is able to go into the field and effectively identify the source of the problem. The AirCheck G2 is a rugged, self-contained Wi-Fi testing device that performs detailed wireless network analysis. The EtherScope nXG all-in-one handheld network analyzer conducts a wide range of assessment tasks for both wired Ethernet and Wi-Fi. Both feature the AirMapper Site Survey app for creating heatmaps of coverage, interference, and performance in NetAlly’s Link-Live™ Cloud Service.

Ensanian explained that once a trouble ticket comes in, the wireless team goes into the field and uses the EtherScope nXG and AirCheck G2 to uncover the source of the interference or connectivity and performance issues. In many cases, co-channel interference might come from a business located within a shared facility, or from rogue APs installed by students, faculty or staff on their own. “The NetAlly analyzers have been extremely helpful in pinpointing interference, such as from microwave ovens, medical equipment or the HVAC system,” stated Ensanian. “These easy-to-use, but highly effective testing devices also allow us to look at retry rates and frame loss to better identify the source of interference. Packet capture has also been very useful for drilling down and pinpointing the source of the problem.”

He goes on to explain that the using the directional antenna with the testers is perfect for zeroing in on the source of interference. Once scans are completed, documentation, such as visual heat maps of key performance metrics, are automatically uploaded via the complimentary Link-Live Cloud Service where UCCS IT team members can access and review at any time.



Putting the EtherScope nXG and AirMapper Site Survey App in the hands of the IT team has delivered a greater degree of efficiency. The wireless team can now conduct surveys and Wi-Fi heat mapping quickly and easily, eliminating the need for follow-up trips to the site.



## RESULTS

For UCCS's wireless team, NetAlly's EtherScope nXG and AirCheck G2 testing tools have been invaluable. The "View Analysis" and topology mapping features in Link-Live have been ideal for viewing network discovery results, allowing the team to see previously unknown issues causing problems for the network. This has been especially helpful as the network has rapidly grown with more and more wireless devices accessing the network across the university's widely dispersed facilities and outdoor spaces.

Beyond wireless testing, the NetAlly tools also provide wired-testing capabilities. For UCCS, this versatility allows the wireless team to support the wired team, providing an overlap in field testing capabilities. Instead of simply handing off a wired problem, the wireless team can use the NetAlly tools to troubleshoot and fix basic to intermediate wired Ethernet problems on the spot, instead of having a follow-up field call by the wired team. This dramatically improves the efficiency of the overall IT workforce.

"With the NetAlly testing tools, I don't need to fumble around with multiple tools as I'm troubleshooting and pinpointing issues," added Ensanian. "Now I'm able to quickly and easily eliminate the source of the problem, such as PoE, a bad cable, or interference. I can check all these things with one tool instead of having to switch tools, which is incredibly handy. It reduces the amount of time I'm troubleshooting. Ultimately, I'm able to get the end-user back online quicker."

For Ensanian, NetAlly's free Link-Live Cloud Service has proven invaluable for collaboration amongst IT team members. Link-Live allows the wireless team to easily track test results and device information, such as MAC addresses, serial numbers, software versions, etc. Being able to view reports uploaded to Link-Live allows senior technicians to send student employees into the field and see results nearly instantaneously.

"The NetAlly testing tools have certainly made our jobs around troubleshooting much easier," concluded Ensanian. "EtherScope nXG and AirCheck G2 enable us to ensure staff can do their jobs, faculty can conduct research and teach, and students can attend classes and submit homework. These tools definitely help us make the end-user experience much better."

**For more information on the NetAlly EtherScope®nXG and AirMapper™ Site Survey visit:**

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