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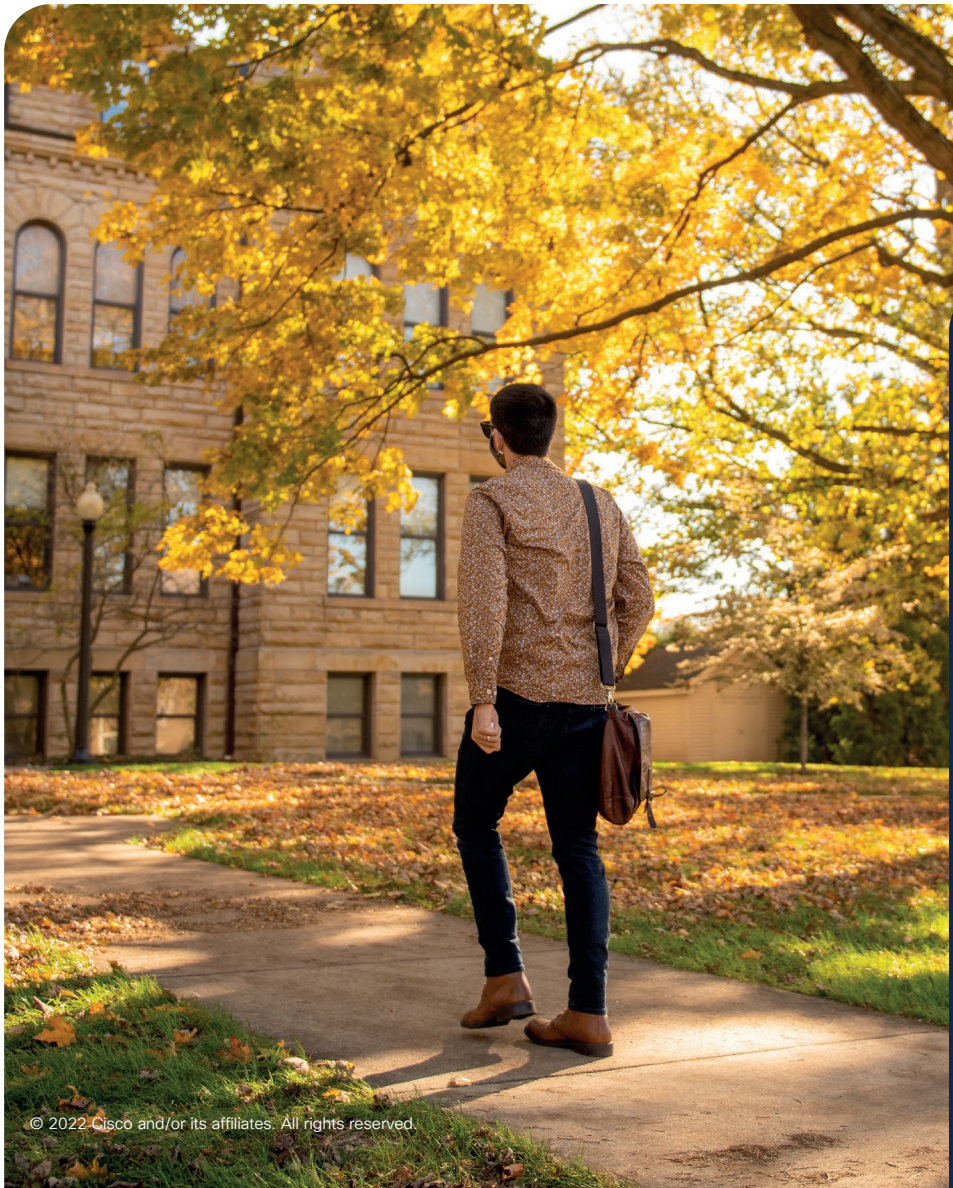
Baldwin Wallace

# Baldwin Wallace Improves Student Wi-Fi Experience and Security

## Northeast Ohio university delivers a seamless wireless experience with Cisco User Defined Network





## The customer summary

**Customer name**
Baldwin Wallace University

**Industry**
Higher Education

**Location**
Berea, Ohio

**Number of students**
3,330+

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### Business challenge

- Needed to provide a more reliable and secure Wi-Fi network on campus
- Aimed to simplify device registration and ease IT help desk tickets for students
- Sought to reduce burden on IT staff in complex process of onboarding students to the network

### Network solution

- Resolved wireless access challenges with a Cisco® User Defined Network (UDN) and Cisco Identity Services Engine (ISE)
- Enhanced network management and security with Cisco DNA Center™ and Cisco ISE
- Improved wireless coverage and reliability with Cisco networking access points, switches, and controllers

### Business results

- Eliminated burden to IT help desk in supporting a high demand of requests for onboarding wireless devices
- Reduced process for students to access the wireless network from 12 steps to two
- Continued virtual platform class delivery for students during storm closures

## Baldwin Wallace tackles critical need for easily accessible wireless

Located in Berea, around 12 miles southwest of Cleveland, Ohio, Baldwin Wallace University (BW) is a private university with nearly 2,800 undergraduate and approximately 500 graduate students. The 278-acre campus is located on a suburban campus site close to local residents, a high school, and a major airport. Around 2,000 students live on campus in residence halls during the school year.

BW felt the challenges that go with an aging network struggling to support current demands. An upgrade of the wired and wireless network was needed for the university to provide easily accessible wireless to a growing number of student devices. Its team responded by installing a wireless network. However, the challenge of maintaining secure and available Wi-Fi connectivity soon became a critical issue and started to reflect poorly on the university's reputation. Greg Flanik, Chief Information Officer at BW, explains, "People would ask for advice on what to bring when coming to BW, and a typical response was 'bring an Ethernet cable, the Wi-Fi is terrible!'"

> "We went from having wireless that was so bad we couldn't do anything, to having such good infrastructure that we can teach classes online when other schools are canceling for storms."

**Greg Flanik**
Chief Information Officer, Baldwin Wallace University

## Growing demands with more devices

Compounding the issue was the fact that students are no longer just looking to connect phones or laptops. The device list is growing to include gaming systems, streaming media devices, smart devices, printers, and other equipment. And while BW's Wi-Fi connectivity would work if users had the patience to follow through the complicated sign-up process, most simply gave up and connected to their phone's "hot spot" function or the university's guest network. "We would look at the guest network and see something like 4,000 devices connected," explains Flanik. "There was clearly no way we had 4,000 guests!"

The problem extended far beyond students' ability to enjoy themselves. "All our academic and business processes are tied to being connected to the network," says Flanik. "When you're a student or employee here, your ID card is on your smartphone. You use your smartphone to access buildings on campus, to pay for meals, and to register for classes. And you use your computer to look at your degree audit."

BW needed a long-term solution from a trusted, innovative technology provider that would grow and develop with the university. "Cisco gave us a lot of assurance about what they could deliver," says Flanik. "The team here researched and played with the technology, then sold me on it. When your teammates start selling you on an idea, it's a slam dunk."

## Cisco UDN provides private and secure network partitions

BW implemented a Cisco User Defined Network (UDN), which is managed through Cisco DNA Center. UDN provides remote onboarding of student devices and gives each student their own private and secure network partition. The student experience is more like they have at home with visibility of only their own devices.

The infrastructure supporting the solution includes Cisco Catalyst® 9100 Series Access Points, 9800 Series Wireless Controllers, and 9000 Series Switches. Cisco access points were placed in alternate dorm rooms to ensure seamless coverage while minimizing interference, no easy feat in BW's heavy-brick buildings, some of which date back to its founding in 1845.

Flanik continues: "Even if you're in a room that doesn't have an access point (AP), you're getting heavy bleed from the room next to you on either side, above and below you. Everyone is covered."

## Sophisticated network access solution enhances security

The same Service Set Identifier (SSID) is now used throughout the university, from residence halls to classrooms and offices. Students sign in with two-factor authentication, and their MAC address is registered with Cisco Identity Services Engine (ISE). "It's now a very sophisticated network access solution," says Stephen Kraus, Network Administrator at BW.

"People would ask for advice on what to bring when coming to Baldwin Wallace, and a typical response was 'bring an Ethernet cable, the Wi-Fi is terrible!'"

**Greg Flanik**
Chief Information Officer, Baldwin Wallace University

"If a device is part of the UDN network, it gets access to the internet and all the things students need."

Kraus is also using the Cisco DNA Center Wireless 3D Analyzer tool to optimize the network, identify coverage gaps, and add or upgrade APs in new or refurbished university buildings. "I'm currently using it to gain visibility into the coverage in one of our new dorms," he says. "We can verify that the AP placements will deliver the best coverage that we need. Just having that visibility is amazing."

BW now has an effective, secure Wi-Fi network with strong coverage and easy connectivity. Where the old sign-in process would involve about a dozen steps to complete, students can now sign in quickly and easily with the UDN app, even from home before they make their way to campus. "Once they have the app it's really just two steps: find your MAC address, add the device, and you're done. Rinse and repeat," says Flanik.

When a student, let's say "John", clicks into the UDN app, he'll have a personalized view of only his devices. John can see his phone, tablet, printer, gaming device, and more, but he doesn't see devices belonging to others. Likewise, no one can see John's devices or try to get access. John is connecting to a shared network, but with UDN he gets a personal slice of the network with privacy and security.

BW currently has 2,800 registered users, and the network typically handles 7,800 connected devices.

## Help desk requests for network access plunge to zero

At the end of its first academic year of use, the results are striking. Previous years would see BW's help desk bogged down with students looking for help, particularly at the start of the academic year when up to 10 IT staff would spend around a month helping users gain access to the network. Things have since changed. "All year we have had not one wireless complaint," says Flanik. "None. Absolutely zero."

With BW's campus IT staff no longer overwhelmed with new requests for adding devices, the team can focus on planning, designing, implementing, and optimizing the network. This refocus helps provide an even better experience for students, faculty, and staff. Flanik also adds that when two severe winter storms caused other local universities to cancel classes altogether, BW was able to benefit from its newly robust and reliable network. "We went from having wireless that was so bad we couldn't do anything, to having such good infrastructure that we can teach classes online when other schools are canceling for storms."

Flanik notes that the improved network also enables other opportunities. The more devices a student can connect quickly, the more BW can build an experience that makes them feel comfortable in their transition to college. "These things help retention," he says. "And sharing information and resources, where it makes sense, helps foster student creativity and growth."

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> Chief Information Officer, Baldwin Wallace University

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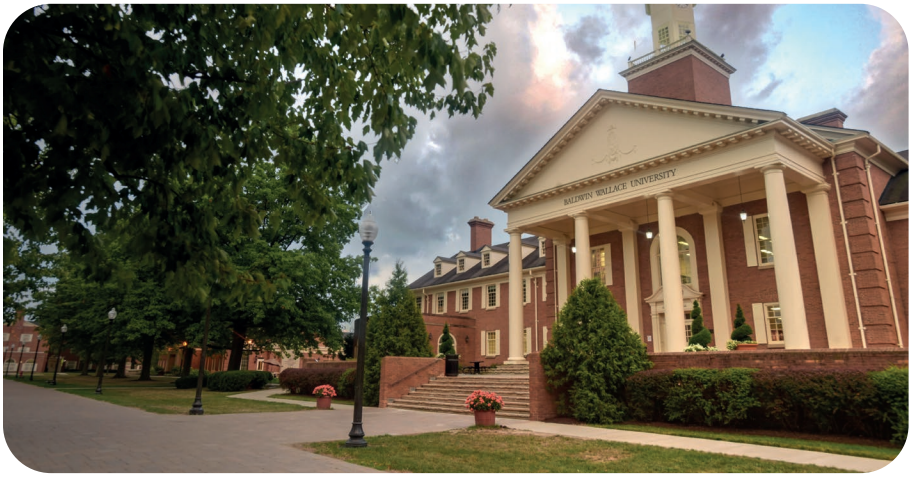


## Going forward

BW plans to phase in Cisco Catalyst Wi-Fi 6E access points across the entire campus. This will provide more spectrum and channels to help reduce wireless interference. The technology also delivers lightning-fast speeds while increasing coverage and security. Wi-Fi 6E is ideal where a high number of users and devices are running voice and video collaboration applications such as Webex® by Cisco, or streaming class content and research essential to the learning experience.

"Since all academic and business processes are connected to the network, a student who isn't connected is struggling," Flanik says. "Connectivity is a requirement."

Now the speed and reach to students is greatly improved, and communication can change. BW started sending push notifications with instructions and reminders—"Please finish scheduling your courses," "Note the last day to drop classes," and more. This increased communication can also help improve the student experience.

BW has a culture that continues to innovate. "We put together a solid solution here with Cisco DNA Center and Cisco UDN on campus and it works," Flanik says. "And now we have something to build from for years to come."

## Learn More

Please visit: Cisco.com

# Product list

### Routing and Switching:

- Cisco Catalyst 9000 Series Switches

### Network Management:

- Cisco DNA Center
- Cisco User Defined Network

### Security and VPN:

- Cisco Identity Services Engine (ISE)

### Wireless:

- Cisco 9120 Access Points
- Cisco 9800 Series Wireless Controllers



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