

# Wi-Fi CERTIFIED 6™ powers universities into the future



## Wi-Fi CERTIFIED 6™ connects a growing number of devices on campus

Wi-Fi 6 networks enable universities to accommodate a vast number of devices and applications to improve student life, learning, and safety on campus. From collaborative and immersive learning to smart buildings with enhanced security systems, Wi-Fi 6 provides the capacity, efficiency, and performance needed to deliver seamless high-speed internet connectivity across the campus while accommodating thousands of personal and entertainment devices.

According to a recent survey, 77 percent of higher education campuses are adopting Internet of Things (IoT) technology to improve the student experience, as well as aid in recruitment efforts.<sup>1</sup> Colleges and universities are already seeing students consuming content on as many as seven devices per student<sup>2</sup> as they work, learn, and collaborate on campus. Such devices may include laptops, smartphones, tablets, e-book readers, gaming devices, streaming media devices, smart watches, voice-controlled speakers, and even augmented reality (AR) or virtual reality (VR) headsets.<sup>3</sup>



The increased number of devices—both those making up campus infrastructure, as well as student-owned devices—requires greater network capacity. Many higher education institutions have upgraded their networks using [Wi-Fi CERTIFIED 6](#) to provide the best educational experience possible, and continue to attract and retain students.

### Universities upgrade to Wi-Fi CERTIFIED 6 networks

Since Wi-Fi 6 access points (APs) and devices became available, multiple higher education institutions around the globe have upgraded campus infrastructure to better support current and anticipated wireless connectivity needs. A sampling of these institutions includes:

Albany State University - Albany, GA, USA

Butler University - Indianapolis, IN, USA

Leeds Beckett University - Leeds, UK

Minnesota University - Minneapolis, MN, USA

Pikes Peak Community College - Colorado Springs, CO, USA

Sacramento State - Sacramento, CA, USA

Seneca College - Ontario, CA

University of Newcastle - Newcastle, AU

## Benefits of Wi-Fi CERTIFIED 6

Wi-Fi CERTIFIED 6 networks emphasize quality connectivity in locations with hundreds or thousands of connected devices, such as universities. The following key capabilities enable Wi-Fi CERTIFIED™ devices to ensure optimal functionality, even for high bandwidth applications. Each connected device performs at an optimum level and meets the highest standards for security and interoperability.

**Orthogonal frequency division multiple access (OFDMA):** effectively shares channels to increase network efficiency and lower latency for both uplink and downlink traffic in high demand environments

**Multi-user multiple input, multiple output (multi-user MIMO):** allows more downlink data to be transferred at one time, enabling APs to concurrently handle more devices

**160 MHz channel utilization:** increases bandwidth to deliver greater performance with low latency

**Target wake time (TWT):** significantly improves network efficiency and device battery life, including IoT devices

<sup>1</sup> Center for Digital Education, 2018

<sup>2</sup> Refuel Agency College Explorer, 2019

<sup>3</sup> ECAR Study of Undergraduate Students and Information Technology, 2018

## Wi-Fi CERTIFIED 6 enables campus-wide IoT applications

Universities are deploying Wi-Fi 6 networks on campuses to support IoT technology. College campuses often operate like small cities. Not only do they maintain their own facilities—including buildings, security, waste, and recycling systems—they also have a student population that expects to be connected at all times. This makes universities an ideal microcosm to adapt existing IoT technologies, and a playground to explore and expand its uses.

### Energy conservation

Facilities departments are often the first to use IoT on campus. With building sensors that connect to Wi-Fi®, facilities managers can automatically turn on or off HVAC systems and lighting in buildings, resulting in significant energy savings. Outdoor environmental sensors can help track and control emissions, while smart outdoor lighting can automatically illuminate pathways at pre-programmed times—improving both energy efficiency and student safety. At the University of Minnesota, Louis Hammond, the service owner for data and voice network services, notes the university is using Wi-Fi CERTIFIED 6 IoT connections to reduce energy and usage costs.<sup>4</sup>

### Upgraded security systems

A recent study found that security is the number one investment priority for higher education officials in the coming years.<sup>5</sup> Wi-Fi 6 powered IoT enables campuses to upgrade their security systems and equip buildings with smart access controls, internet-connected security cameras, and emergency notification systems that leverage the connected devices students already carry, such as phones and laptops. By implementing a Wi-Fi CERTIFIED 6 network, Albany State University was able to upgrade its campus security system with improved video quality and analytics capabilities that allow the police department to more quickly respond to incidents on campus.<sup>6</sup>

### Improved educational outcomes

As the capabilities of technology has expanded, the demand for smart classrooms equipped with VR and AR has also grown. New collaboration tools make it easier than ever for students to be involved in the learning experience, even when taking a class remotely. Pete Williams, Chief Information Officer at Butler University, notes that Wi-Fi 6 delivers significant benefits as the landscape of higher education evolves.<sup>7</sup> Classroom environments are evolving as new technology is released, and Wi-Fi CERTIFIED 6 provides the connectivity needed to harness and adapt those technologies for the universities of today, and tomorrow.

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*“Just take a look at 4K, VR, AR, and the capabilities and the requirements they’re going to drive from a throughput perspective. We believe that Wi-Fi 6 is going to help us meet that need.”*

*- Pete Williams, CIO, Butler University*

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## Wi-Fi CERTIFIED: Technology to trust

Since 2000, Wi-Fi Alliance has been driving the adoption and evolution of Wi-Fi through the Wi-Fi CERTIFIED program. The Wi-Fi CERTIFIED logo designates products with proven interoperability, backward compatibility, and the highest industry-standard security protections in place. Wi-Fi CERTIFIED devices can communicate with previous and future generations of Wi-Fi technologies, enabling homes installed with Wi-Fi CERTIFIED networking devices to provide a seamless, interoperable experience with a multitude of other Wi-Fi devices brought into the home for years to come.



Learn more: [www.wi-fi.org/wi-fi-certified-6](http://www.wi-fi.org/wi-fi-certified-6)

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<sup>4</sup> Aruba, 2019

<sup>5</sup> Century Link, 2017

<sup>6</sup> Cisco Meraki, 2020

<sup>7</sup> Center for Digital Education, 2019