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Aruba Wi-Fi solution mobilizes 10M sq. ft. and supports IoT at one of America's largest higher-ed institutions.



Proliferating Wi-Fi complaints on social media and an avalanche of help desk calls made a legacy wireless overhaul a primary concern for Brice Bible. Fortunately, it also topped his fellow executives' list.

"We're in a growth period and our new leadership recognizes the need for high-density, highly available Wi-Fi," says Bible, Vice President and Chief Information Officer for the University at Buffalo (UB), the flagship of the State University of New York (SUNY) system and the largest higher education institution in the country.

### High-Density, Highly Available Options Evaluated

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Our Aruba gigabit Wi-Fi, with ClearPass, AirWave and upcoming innovations, streamlines our complex environment while providing the robust, highly available network we need to meet customer expectations of today and tomorrow. J. BRICE BIBLE, VICE PRESIDENT AND CHIEF INFORMATION OFFICER, UNIVERSITY AT BUFFALO – SUNY

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To meet the 24/7 demands of 30,000 students spread across three campuses comprised of more than 1,200 acres with 150 buildings totaling 10 million square feet, UB sought a robust, scalable and secure Wi-Fi solution flexible enough to meet rapidly changing demands.

"As a member of our faculty stated, 'Wi-Fi is as important to a university today as ink or chalk was 100 years ago,'" says Bible. "We needed a solution that could evolve to meet new curriculum developments, satisfy student life expectations and enable everyone to connect with multiple devices."

After an extensive proof of concept phase, the University selected a comprehensive Aruba solution. "We evaluated Wi-Fi as three separate components," says Bible. "This included wireless architecture, meaning access points (APs) and controllers, network management and, for security, network access

control. Aruba stood out in all three.”

## Aruba: Best Price for Performance Value

In all, UB is deploying approximately 6000 Aruba 802.11ac Wave 1 and Wave 2 APs, Aruba’s 7000 Series Mobility Controllers, Aruba AirWave for network management, with the Clarity module, and Aruba ClearPass for policy management and guest access.

“We chose the Aruba solutions because they delivered greater price for performance value and the portfolio included gigabit Wi-Fi access points specifically designed for residence halls/hospitality applications,” explains Jerry Bucklaew, Network Architect with UB Information Technology.



“For policy management, ClearPass was the most flexible in terms of deployment and configuration,” he adds.

## ClearPass Unifies and Streamlines Security

According to Bible, ClearPass was key to UB’s selection of Aruba as it enabled two guest connectivity initiatives.

“Of course we’re using ClearPass Guest to create a guest’s active account,” he says. “More importantly, we’re also using it as a way to automatically drive individuals to register all of their personal devices, which then reside on the Guest side of the access house.”

Beyond Guest, ClearPass Policy Manager delivers insights and profiling capabilities as well as secure device authentication, Bible adds.

By replacing outdated legacy AAA with context-aware policies, ClearPass enables organizations like UB to achieve differentiated device access on their wireless and wired networks, as well as streamlining guest connectivity.

Profiler automates registration for thousands of devices

Another feature the University leverages is the ClearPass Universal Profiler, available built-in or standalone, which collects real-time data including device categories, vendors, and OS versions for wireless, wired and IoT devices.

At UB, the built-in Profiler is helping automate the University's move to require registration and authentication of every networked device. "Our two biggest types of devices are APs and IP phones on our wired network," says Bucklaew. "We've 6,000 of the former and 10,000 of the latter."



"With the profiler to determine whether a device is an AP or a phone, the appropriate policies can be applied in real-time," he continues. "It avoids individually registering 16,000 devices."

"As we expect IoT devices on our network to increase," Bucklaew adds "this capability will become even more useful. It's a big win for us."

## AirWave, Innovation Pipeline Complete the Solution

For network performance and availability, UB also appreciates AirWave. "AirWave does an excellent job of presenting information," says Bucklaew. "It gives us the reporting and troubleshooting capabilities we need."

Additionally, the university is excited about Aruba's forthcoming introductions related to incorporating artificial intelligence and the Rasa Networks acquisition. Such innovations will enable integrating big data predictive analytics to assist with adaptively and proactively managing networks for even greater resiliency and IT efficiency.

"We looked at Rasa before the acquisition," says Bible. "In our large, very complex environment, we don't control most customer devices, so we see a great deal potential value in the technology and look forward to Aruba's introductions around it."

## Immediate Rewards

Bible says the university is already seeing significant results from the new network. "When we first deployed wireless in 2000, it was one of those nice-to-have things," he says. "Wi-Fi was cool, but if it didn't work, it wasn't a big deal."

"Now, expectations have shifted and regardless of the location, application or type of customer, everyone considers wireless critical," Bible adds. "It has to work 100 percent of the time, no

exceptions.”

“For example, online and hybrid learning models are strategically important for our institution,” he continues. “Videos and recorded lecture utilization is growing exponentially. This makes reliable, high performance Wi-Fi in the residences as critical as classroom connectivity.”

### Satisfaction on the rise

Prior to the deployment, which is nearing completion, Wi-Fi connectivity became the item most complained about by students, faculty and administrators, says Bible.

Today, based on student surveys, residence halls equipped with the new Wi-Fi infrastructure have seen a 21% increase in satisfaction, compared to those still on the legacy network.

“We’re seeing utilization through the roof and complaints declining rapidly,” Bible says.

### IT efficiency improved

It’s a similar story in IT. There, Aruba’s solutions are reducing complexity, despite roughly doubling the University’s AP density, freeing up administration resources for more mission-critical tasks.

“With Aruba and ClearPass we’ve condensed our SSIDs from five or six down to three,” says Bucklaew. “Our ultimate goal is one for 802.1X and one for everything else.”

## Innovating for Today and Tomorrow

Looking ahead, Bible expects UB’s Aruba infrastructure to enable expanded Wi-Fi capabilities, like mobile engagement for location-based services, such as wayfinding.

He also foresees the University extending coverage to outdoor areas, fine-tuning their use of ClearPass on the wired network to bring it in line with the wireless side, and facilitate increased adoption of IoT.

“With our new Wi-Fi we’ve dramatically improved our ability to better meet the mobility expectations of its students, faculty and administrators, while preparing the University for the future,” Bible says.

## REQUIREMENTS

High-density, high-availability Wi-Fi

BYOD, IoT support and security

Intelligent, simplified, centralized solution

## SOLUTION

802.11ac Wave 1 and Wave 2 Aruba APs

7000 Series Controllers

ClearPass for secure network access

AirWave for Wi-Fi network management

## BENEFITS

Scalable 802.11ac-enabled Aruba Wi-Fi blankets 10M sq. ft.

Securely supports wireless, wired and guest connectivity with context-aware policies.

Streamlines administration of wireless and wired networks.

Enables adding outdoor connectivity and Mobile Engagement

Innovation pipeline to provide artificial intelligence and analytics

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