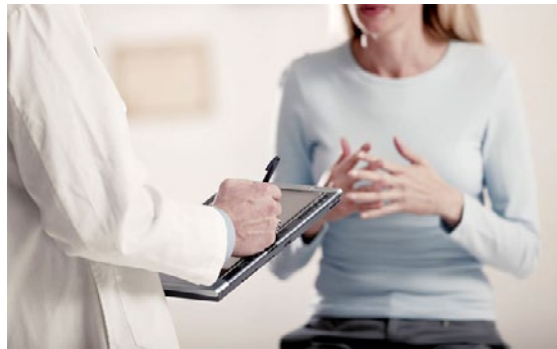Central Utah Clinic, PC
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Smarter Wi-Fi Streamlines Clinical Operations, Improves Patient Care for Large Healthcare Provider

For Central Utah Clinic (CUC), wireless wasn't the answer, it was the problem.

Having installed some 50 discrete Cisco 1200 series access points in 15 of its 20 healthcare clinics throughout Utah, IT staff at CUC constantly had to troubleshoot problems ranging from unstable connections and fluctuating performance to downed service and client devices just unable to connect to the network. This often required the already busy IT staff to travel to remote clinics sprawled across the state.

Meanwhile, more wireless devices were hitting CUC's Wi-Fi network. Physicians were bringing in Apple iPADs, notebooks and other handheld devices in CUC so they could show patients medical images in exams rooms and access CUC's AllScripts electronic medical records (EMR) application. Pharmacy scanners were also being used for filling presriptions.

Central Utah Clinic needed to provide more stable wireless support for physicians using Apple iPADs and notebooks to enter patient data into its AllScripts EMR application

And Cisco 7920 and 7921 VoIP phones were being used by staff in larger departments that were constantly mobile and needed real-time accessibility. But with spotty coverage and flacky VoIP over Wi-Fi connectivity it was hit or miss.

"We knew that Wi-Fi needed to play a much more strategic role within our clinics for us to deliver a better patient experience and to help streamline operations, but our existing system just wasn't designed for industrial-strength use," said Jamie Steck, IT Director at Central Utah Clinics.

CUC's had a myriad of wireless requirements including adding centralized wireless LAN management, moving to high-speed 802.11n, migrating to WPA2, outfitting the remaining non-wireless sites with Wi-Fi and providing a more reliable and robust Wi-Fi network that allowed CUC to add application services such as multimedia kiosks in waiting rooms and RFID tracking.

"We're a long-time Cisco shop, and our first move was to look at simply adding Cisco controllers and more 1200 access points," said Steck. "But the cost of the APs and controllers was prohibitive. We had been paying nearly $800 per 1200 and a pair of Cisco redundant controllers to support our environment was nearly $50,000. So we began to look at alternatives."

CUC ultimately selected the Ruckus ZoneFlex smart Wi-Fi system. "With the Ruckus ZoneFlex system we were able to replace all of our APs, at all of our sites, with dual-band 802.11n APs and add redundant controllers at a cost that was less than adding redundant Cisco controllers and additional 802.11g APs for the sites where we didn't have wireless," said Steck.

Beyond simply cost, CUC has interested in fixing wireless performance and connectivity problems. The new iPADs that doctors were using to access CUC's EMR application didn't stay connected. What's more, wireless coverage was spotty and performance was inconsistent.

COMPANY OVERVIEW
Founded in 1969, Central Utah Clinics is largest group of independent physicians in Utah - operating 20 multi-specialty outpatient clinics throughout Utah. The company has over 800 employees including 110 physicians offering care in 19 specialties.

REQUIREMENTS
- Move to 802.11n across all locations
- Simple migration to WPA2
- Secure connectivity for iPADs
- Simpler HIPAA security
- Low latency response times for its AllScripts EMR application
- Centralized management without a controller at every site
- Simple administration and deployment
- Automatic interference rejection
- Multimedia support
- Remote troubleshooting and diagnostics
- Guest networking
- Location tracking of devices

SOLUTION
- 50 ZoneFlex 7363 dual-band 802.11n indoor Smart Wi-Fi APs
- 2 ZoneDirector 3050 Smart wireless LAN controllers
- 2 ZoneFlex 7731 point-to-point 802.11n wireless bridges
- FlexMaster Wi-Fi management system

BENEFITS
- Lower cost of deployment over incumbent Cisco 1200 series system
- 2 to 3X improvement in range and performance with fewer APs
- Smart redundancy between controllers allows seamless failover for authenticated clients
- More stable client connectivity for iPADs
- Reduced packet loss
- Centralized management minimized remote visits to clinics

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W I R E L E S S

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With the help of its service provider, Cinergy Wi-Fi, CUC began deploying ZoneFlex dual-band 7363 APs at each site. These APs communicate with redundant ZoneDirector 3050 controllers at CUC headquarters over an MPLS network - elminating the need to have a controller at every clinic.
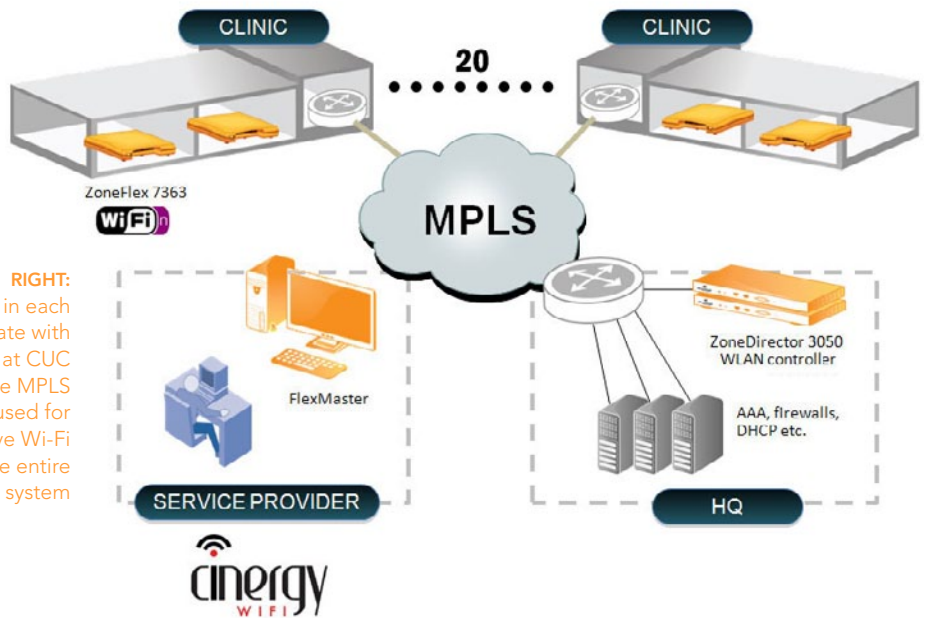
"We have a very diverse population of end devices and had experienced tons of problems connecting iPADs and different notebooks and laptops with various chipsets that didn't like talking to our Cisco gear," said Erik Briggs, IT manager at CUC. "With the ZoneFlex system, we saw these connectivity problems simply disappear."

At each site, CUC found they could deploy half the number of ZoneFlex APs per clinic while being able to triple coverage and performance. "It simply shocked us," said Briggs.

Redundant ZoneDirector 3050s provide centralized management, configuration and monitoring of the entire WLAN. Smart redundancy between CUC ZoneDirectors increases network resilience and provide seamless failover for authenticated clients.

CUC's ZoneDirectors automatically synchronize network configuration and runtime information such as generated guest passes, generated and activated

RIGHT:
Ruckus 7363s in each clinic communicate with ZoneDirector 3050s at CUC headquarters over the MPLS network. FlexMaster is used for realtime and proactive Wi-Fi management of the entire distributed WLAN system

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Founded in 1969, Central Utah clinics operates 20 multispecialty healthcare clinics, as well as a surgical center spanning the state of Utah.

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Erik Briggs
IT Manager
Central Utah Clinics

dynamic pre-shared keys, and authenticated captive portal clients. If the active ZoneDirector becomes unavailable, the standby ZoneDirector becomes active, taking over WLAN management and providing network services.

Administrators can reach the active ZoneDirector, through a single management IP address. This simplifies management and enhances network integration since the management IP address never changes. Each ZoneDirector can still be reached through its own IP address.

For robust but simplified security, CUC has implemented Ruckus-patented dynamic PSK technology. Upon successful authentication, the ZoneDirector generates a unique PSK that is bound to each laptop, notebook or iPad client device. The PSK and requisite SSID information is automatically downloaded and installed on each client device. This eliminates CUC IT staff from having to manually configure each end device with a unique

key and enables them to simply decrement the ActiveDirector database when a user is no longer valid instead of having to change the pre-shared key for all users.

Cinergy Wi-Fi, remotely monitors the entire CUC WLAN environment using the FlexMaster Wi-Fi management system.

With FlexMaster, Cinergy Wi-Fi has access to and controller over the enter WLAN with the ability to configure controllers, individual APs and gather real-time AP, client and network statistics. This has reduced the need to send CUC IT staff on site for troubleshooting and is reducing support costs.

"When we selected the Ruckus ZoneFlex system we just thought we were getting better coverage and more stable connectivity," said Steck. "What we found was a system that is more robust than mature WLAN offerings that are three times the cost."

RIGHT:
CUC coverage and heat maps show a dramatic difference in range and performance between four Cisco 1200 APs (top) and two Ruckus dual-band 7363 APs (below)

BEFORE: Four Cisco 1200 APs without dynamic beamforming

AFTER: Two Ruckus 7363 APs with dynamic beamforming

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