



DIGITAL DOCS

A complete network cutover promotes healing at Bend Memorial Clinic



As a growing medical clinic with more than 100 providers representing 30 specialties serving approximately 1,200 – 1,500 patients daily, technological stability, efficiency, and confidence are essential. The Bend Memorial Clinic seeks to provide the best patient care with the best technology available.

As part of that mission, BMC implemented an extensive electronic health records (EHR) system. Physicians use wireless tablet computers to access medical records: the case history, lab results, even x-rays are all instantly available. However, without a robust, dynamic network supporting all those devices, the system often proved to be very frustrating for the users. When there were network issues, the billing system didn't

work correctly and physicians couldn't access the network and stay connected.

The old network was a flat, unsegmented, unsubnetted, network using outdated HP ProCurve equipment. The core switch was completely inadequate for the network. When the new EHR system was implemented, it was apparent that the existing network system simply could not handle the influx in traffic.

With a robust network in place, BMC was able to expand its original network usage and become a leader in the medical technology community.

While considering the massive upgrade and redesign, BMC decided to contact Mountain States Networking and utilize Justin Kuryunny's engineering expertise



to create a system that would meet the Clinic's unique needs.

Part of the challenge was logistical: the BMC Eastside Clinic needed complete and uninterrupted coverage on all three floors. The previous wireless system utilized autonomous access points throughout the building. Problems arose when an access point failed or coverage lapsed and doctors moving throughout BMC would find themselves kicked off or unable to connect.

The new configuration called for a complete changeover to a Lightweight Access Point Protocol (LWAPP) environment controlled by two Cisco Unified Wireless LAN controllers (WLCs) teamed together—the redundancy ensures that if one controller fails, the other automatically takes over network operations with a near-zero network recovery time.

The controllers manage 42 access points, reconfigured to act as one. Mountain States took all the single access points and then created a cloud in the building.

Not over the building or around the building, but actually in the building. Led by Justin Kuryunny, one of the top wireless engineers on the west coast, Mountain

States continued work, replacing the core switch with a Cisco Catalyst 6509 running dual 720 Supervisors and all the floor access switches with Cisco Catalyst 3560s, upgrading connectivity for nearly 1500 nodes. Mountain States helped create a custom wireless configuration:

the Supervisors were channelized and trunked into the WLCs, providing additional redundancy in the event of a Supervisor failure.

The result? A system where any engineer with layer-3 knowledge can come in and manage this network without any problems. It's organized, segmented, and subnetted.

Replacing the entire outdated infrastructure, from concept to implementation, only took a year, but the results are invaluable. During the height of their network problems the BMC Help Desk received 750–1300 calls per month. Under the new system, those calls have gone down to less than 200 per month. It's not just average users avoiding problems—since completion, nothing has been reconfigured.

A spokesman for BMC commented, "Really, there's only one way to do a correct network cutover. And if you have Mountain

States on your team, it's going to be just fine. I wouldn't trade my relationship with Mountain States for anything in the world. They're a quality team: the purchasing staff, the management, the engineers—Justin, Cory, Dan, all of them—are just excellent.†

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Bend Memorial Clinic is able to provide the network capacity and technology for EHR and other systems to smaller clinics and offices that would otherwise be unable to take advantage of this technology for their patients. Having a healthy network quite literally results in healthier people thanks to BMC's vision and preparation.

The Bend Memorial Clinic network is vibrant and strong, supporting doctors and specialists as they serve their patients, providing healing and hope.

Bend Memorial Clinic found success with:

- Cisco Catalyst 3560 switch
 - Cisco Catalyst 6509 switch
 - Cisco Catalyst 4510R-E chassis
 - Cisco WLC 4402-50
 - Cisco ASA 5520
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ABOUT BEND MEMORIAL CLINIC

Bend Memorial Clinic (BMC) is Central Oregon's largest multi-specialty medical clinic with more than 100 providers representing 30 specialties including urgent care, occupational medicine, primary/specialty care and clinical services. BMC's five locations throughout Central Oregon provide Total Care, which ensures quality, comprehensive and convenient healthcare in a coordinated, respectful environment. BMC has provided primary and specialty care since 1946. For more information, please visit www.bendmemorialclinic.com.



ABOUT MOUNTAIN STATES NETWORKING

Mountain States Networking is an authorized Cisco Gold partner with Advanced Specializations in Data Center Networking Infrastructure, Routing & Switching, Security, Unified Communications and Wireless LAN solutions. Mountain States Networking is also an Authorized Technology Provider (ATP) for Cisco IP Interoperability and Collaboration Systems, MDS Fabric Switching, Outdoor Wireless Mesh and Rich Media Communications. www.mstates.com

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