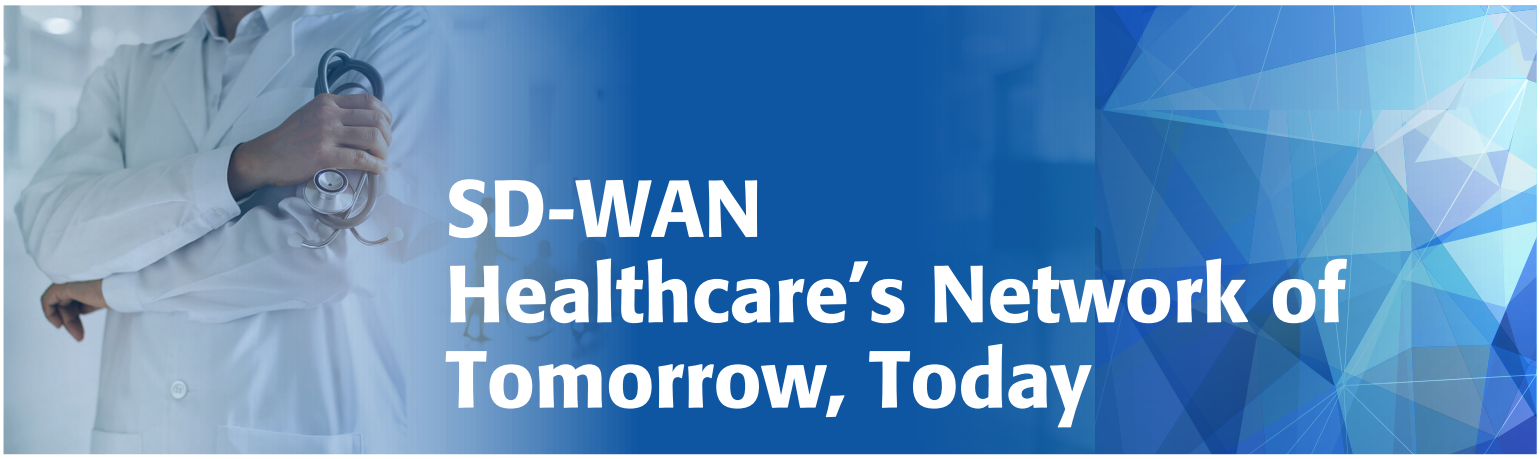

SD-WAN Healthcare's Network of Tomorrow, Today

BENEFITS

- **Reliable, secure, and efficient** delivery of monolithic files and information to, from, and between the cloud, data centers, and branch offices or clinics
- Ensures ability to **treat patients** at all times
- **Quickly** turn up new sites or integrate newly acquired sites into existing network
- **Automatically** comply with PCI DSS regulations at every transaction-ready location
- Configurable and customizable templates and profiles simplify deployment and **eliminate** human error
- Proactive problem **identification** and remediation
- Continuous **visibility** and visualization of network performance
- **Leverage** low-cost and easily accessible circuits and infrastructure for remote offices
- **Reduction** of in-person doctor visits by residents
- **Future-proofing** the network for long-term projects

Providing healthcare today is much more than making a diagnosis or prescribing medication. The advancements in medicine, the increase in regulations to protect patient and doctor, and the digitization of the entire process requires a scalable, secure, uninterrupted and bandwidth-flexible healthcare IT network.

The Burden on the Network – Common Use Cases

The networks of yesterday are not built to support the increasing demands of the modern healthcare organization. The following trends and evolution in care place a high burden on existing networks that must change.

Virtual Desktop Infrastructure (VDI)

Clinicians increasingly turn to VDI so that they can easily use technology at the point of care to access EMR. VDI supports multiple devices (smartphones and tablets) and has robust security for HIPAA. However, it requires high levels of bandwidth, which is often not available in most clinics or branch offices.

Electronic Medical Records (EMR) and Electronic Health Records (EHR)

Patient files and records have shifted to digital form and organizations increasingly leverage cloud-based storage and application delivery to enable care providers constant access.

Telehealth

Telehealth heavily utilizes video conferencing as a virtual connection point between patient and care provider. It also leverages cloud applications to deliver access to EMR and the sharing of high-resolution medical images. This Unified Communications (UC) application requires high-level of reliable bandwidth.

Quality of Service (QoS)

When a patient requires over-the-phone care or physicians are discussing patient cases for assessment and diagnosis, QoS is critical. Dropped calls or jitter-heavy connections are detrimental to providing high-quality care.

Remote Branch Offices, Clinics, and Pharmacies

Growth by mergers and acquisition is a growing strategy for healthcare organizations, meaning that care is often shifted to small remote or regional branch offices. Each office must adhere to the same HIPAA and care requirements as primary care offices, and a reliable and secure network connection is imperative.

Pre- or Post-Treatment Payment

Healthcare offices and clinics often require patients to render payment at the time care is provided. This requires that offices provide either a payment device or an ATM connected to the network. Not only must this highly sensitive data be segmented from regular office traffic, but it must also adhere to PCI DSS Compliance regulations.

Software-Defined Wide Area Network (SD-WAN)

Software-Defined WAN (SD-WAN) enables healthcare IT to leverage existing infrastructure and any transport available to support the modern and future demands on its network. SD-WAN provides IT with the structure to deliver a seamless, simple, secure, and uninterrupted connection across the entire network, for all applications and data delivery, from the cloud to data centers to branch clinics or offices.

Application and Data Segmentation

Not all healthcare traffic and applications are the same and require the need to be treated differently. SD-WAN segments traffic end-to-end to isolate various types and meet compliance requirements. IT managers have full control with SD-WAN of traffic isolation (via VRF) by custom segments (voice, data, HIPAA, PCI, etc.) that can be applied by site type via established profile templates. This ensures that IoT and OT traffic is separated from EMR traffic and corporate versus guest internet access across all locations in the network.

Dynamic Multi-Path Optimization (DMPO)

Dynamic Multi-Path Optimization (DMPO) aggregates all available links including broadband, LTE, and MPLS circuits and using application-aware per-packet link steering and on-demand remediation, achieves optimal performance under all conditions including brown-out or black-out scenarios. This ensures that healthcare data is accessible and transmittable at all times, including the accelerated transfer of radiological images (PACS, DICOM, etc.) and that subsecond failover maintains stable VDI sessions and real-time traffic for voice, video, and telehealth communications.

Central Management and Control

Cloud-delivered SD-WAN centralizes the monitoring, visibility and cloud control to enable zero-touch branch deployment across distributed locations while delivering automatic business policy and firmware updates, configurable rules, prioritization of applications, link performance, and capacity measurements. IT personnel can manage all network traffic and applications and remediate from a central location rather than have to roll a truck to remote sites.

Zero Touch Deployment

SD-WAN edges placed in each primary and remote branch office or clinic automatically authenticate, connect, and receive configuration instructions with the centralized management portal once connected to the Internet in a zerotouch deployment. This enables healthcare organizations to quickly deploy new sites as well as transition newly acquired locations into the overall network.

Security

A stateful and context-aware (application, user, device) integrated nextgeneration firewall delivers granular control of micro-applications, support for protocol-hopping applications, such as Skype and other peer-to-peer applications. The secure firewall service is user- and device OS-aware with the ability to segregate voice, video, data, and compliance traffic. Additionally, SD-WAN integrates seamlessly with best-of-breed security vendors (such as Palo Alto Networks, Zscaler, Symantec, and Check Point), allowing healthcare organizations to easily implement the security profile of their choice.

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