

Better Healthcare with VMware SD-WAN and Microsoft Cloud

Delivering enhanced patient experiences through increased collaboration and real-time insights

vmware®

SD-WAN™

Digital transformation in healthcare

The healthcare industry is in the midst of a digital transformation. Unlike many other industries, this transformation in healthcare has until recently moved more slowly. But COVID-19 has changed all of that—breaking down longstanding barriers and accelerating digital health at a pace few could have imagined. It forced providers to rely almost entirely on digital channels for care delivery.

This solution overview explains how VMware SD-WAN™ enables a successful healthcare network transformation delivering the best patient and healthcare provider experience when combined with Microsoft Cloud for Healthcare.

The essence of Microsoft Cloud

Microsoft Cloud enables the healthcare industry to gain efficiencies through automation, optimizing workflows, lowering the costs associated with healthcare delivery, and facilitating personalization in care plans to ultimately improve outcomes. Additionally, Microsoft Cloud for Healthcare can perform deep data analysis functionality for both structured and unstructured data, which in turn enables healthcare organizations to turn insight into action. Healthcare organizations can leverage the cloud to quickly store patient records and medical images, giving both patients and healthcare providers control and ease of access without compromising security. Finally, cloud-based telehealth systems add an element of convenience to healthcare delivery while upgrading the patient experience. Through these applications, organizations can share healthcare data and improve collaboration while providing patients healthcare coverage through the preventative, treatment, and recovery phases.

Reliable and enhanced patient care

As a result of COVID-19, patients are increasingly using telehealth applications to engage with their healthcare providers. Video conferencing and over-the-phone care is becoming the norm. Physicians are using these methods of communications for assessment and diagnosis of patient cases. Microsoft Cloud for Healthcare helps healthcare organizations integrate secure virtual health capabilities by creating cohesive workflows, artificial intelligence (AI) health bots and virtual visits into the care journey, enabling patients to engage with their healthcare providers and book appointments, receive information for their queries and arrange consultations with doctors, including setting up hospital visits. Patient medical records (EMR) and high-resolution medical images are increasingly and efficiently stored in Microsoft Cloud for Healthcare and can be conveniently and securely accessed by patients, as well as physicians. Finally, Microsoft Cloud for Healthcare enables patient insights through a secure portal and various mobile tools, all of which help facilitate a better

patient experience through personalized care. At the end of the day, healthcare providers must be expeditious and responsive to their patients and need to create an optimal Quality of Experience (QoE). VMware SD-WAN provides a very reliable, scalable and high performing network that enables seamless cloud connectivity to Microsoft Cloud for Healthcare, delivering the necessary Quality of Service (QoS) to ensure the critical applications used by patients and care providers are correctly prioritized. VMware SD-WAN ensures the underlying transport network reduces latency and packet loss while delivering high availability and reliability to support patients with the best engagement experience as part of their quality care.

Empowering health team collaboration for the best patient care

Microsoft Cloud for Healthcare helps organizations empower their care teams to collaborate and share knowledge in a single, secure place. By creating a comprehensive patient view, healthcare providers gain a better understanding of the situation and needs to enable faster decision support and action across care teams. VMware SD-WAN is a cloud-first solution that facilitates optimized access to SaaS and IaaS services within Microsoft Cloud. The solution simplifies and automates connectivity to Microsoft Cloud, ensuring quick and secure access.

As healthcare providers increase their cloud usage and access to virtualized applications, including using virtual desktop interface (VDI) to access applications such as Epic and other EMR systems, VMware SD-WAN ensures VDI apps, Microsoft Teams, Microsoft Office 365 and Microsoft Dynamics 365 are delivered optimally using intelligent application prioritization, bandwidth reservation, best transmission link and link remediation for impaired network conditions. These capabilities increase healthcare collaboration efficiency, provide fast decision making based on actionable insights and ensure a superior patient care experience. Having the ability to monitor patients, whether in facility or at home, through monitoring of IoT devices and wearables, allows healthcare providers to extend patient care beyond the hospital walls and securely collect critical patient data. By doing so, healthcare providers can continue to effectively treat patients in recovery, those undergoing rehabilitation and those with disabilities or chronic diseases without forcing them to physically access hospitals nor having to admit them. VMware SD-WAN with integrated VMware Edge Network Intelligence™ can quickly collect and correlate data from various connected medical and IoT devices across the network, from multiple sources, and provide continuous real-time patient monitoring and care, regardless of physical location.

Improved operations, network insights and compliance

As healthcare providers move to the cloud, they also face new operational challenges. Everything from learning about cloud and integrating with their existing network operations, to reducing complexity of connecting to the cloud, to addressing the shortage of IT resources—healthcare providers have an uphill battle. Troubleshooting problems across the network and the cloud can be very overwhelming for IT. VMware SD-WAN simplifies operations through a cloud-hosted management platform that centralizes network and security policy creation, distribution and control. Whether it involves initial deployment or day to day operations, healthcare IT teams can gain end-to-end network visibility, including across Microsoft Cloud with VMware SD-WAN. Healthcare IT teams can gain a better understanding of their network operations through capacity management, leveraging intent driven analytics and correlation and quickly troubleshooting problems to ensure the highest network performance. This detailed network visibility provides IT with the peace of mind to quickly identify issues and optimize the network. With the integrated AI-driven VMware Edge Network Intelligence, VMware SD-WAN can extend patient data with financial, operational and medical device information to enable faster decision making, increased healthcare provider productivity and ultimately a better overall

patient care experience. Healthcare IT staff can eliminate frustrating experiences and improve the overall network posture by increasing network availability and reliability, enabling quick troubleshooting and network remediation, establishing unique application policies and ensuring the highest performance with integrated, intrinsic security—all with the VMware SD-WAN solution.

As more data is stored in the cloud and access, exchange and use of electronic health information by and between patients, healthcare providers and healthcare insurance companies become more prevalent, VMware SD-WAN ensures organizations will comply with the protected health information (PHI) through Fast Healthcare Interoperability Resources (FHIR), as well as Health Insurance Portability and Accountability Act (HIPAA) and other industry regulations.

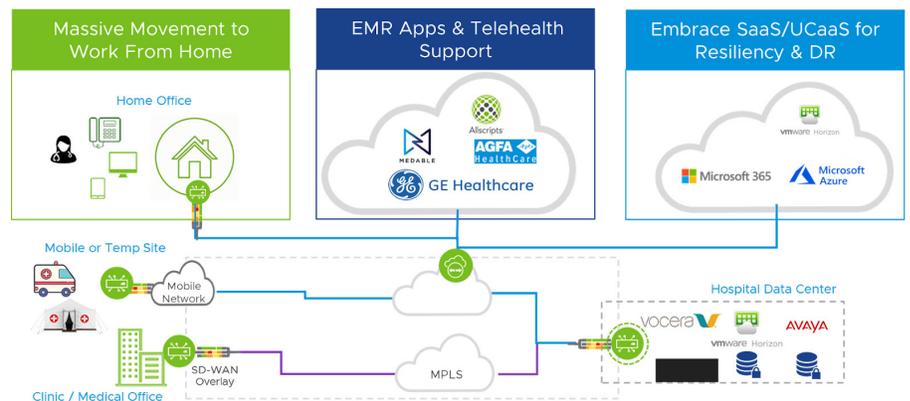


FIGURE 1: VMware SD-WAN delivers a holistic and high-quality healthcare solution with Microsoft Cloud.

Benefits of VMware SD-WAN for Healthcare

VMware SD-WAN offers numerous benefits for healthcare organizations looking to digitally transform and deliver the best patient and healthcare provider experience.

Simplified cloud onramp

As a result of COVID-19, most primary care and specialist physicians are adopting telehealth as a substitute for in-person clinic visits. These applications reside in Microsoft Cloud for Healthcare or Microsoft Azure, along with other healthcare specific applications and are consumed as a SaaS. VMware SD-WAN provides healthcare organizations a simple and automated cloud onramp to Microsoft Cloud for Healthcare or Microsoft Azure through a global network of cloud-hosted gateways and a set of integrated APIs, ensuring secure connectivity and a superior cloud experience.

Intrinsic end-to end security

Today’s healthcare executives continue to deal with challenges related to securing a growing number of locations, including healthcare workers who are working from home, combined with the explosive growth of connected devices, including IoT. These challenges are introducing new complexities and increasing the attack surface. VMware SASE Platform™ combines industry-leading SD-WAN and cloud security and delivers flexibility, agility, protection, and scale for enterprises of all sizes while providing an operationally simple and automated on-ramp to SaaS and other cloud services in Microsoft Cloud. VMware SASE Platform extends the security boundary beyond the data center and cloud to applications and users, minimizing the attack surface, and protecting users, networks, applications, and data against any vulnerabilities and threats.

Application assurance

VMware SD-WAN ensures the availability and performance of mission-critical applications, like telehealth, even under impaired and congested network conditions. Healthcare providers can unlock the power of Microsoft Office 365, Microsoft Azure and Microsoft Dynamics 365 by combining application recognition, traffic prioritization and shaping, and the ability to measure network path performance, thus ensuring the highest quality of experience for end users.

Operational simplicity

From initial deployment to day-to-day management, VMware SD-WAN simplifies operations through a cloud-hosted management platform that centralizes network and security policy creation and enforcement. The solution visualizes application delivery performance, providing detailed network and application health. Additionally, VMware SD-WAN supports an integrated AIOps solution, VMware Edge Network Intelligence, that ensures proactive remediation to tackle application problems caused by wireless and wired LAN, WAN, network services, security services and applications.

Deep integration with Microsoft Cloud

VMware has implemented significant integration with the Microsoft Cloud. When it comes to healthcare, these integrations are significant to facilitate a better user experience for healthcare providers and patients.

As a result of API integration, VMware SD-WAN enables secure, automated and optimal connectivity to SaaS-based services such as [Microsoft 365](#), which includes Office 365, Dynamics 365 and [Microsoft Teams](#) components. These productivity and collaboration tools ensure care teams can connect with patients, increase communication and collaborate more efficiently in a secure, real-time environment to address issues from single-patient monitoring through pandemic-level crises that necessitate a broader reach and level of interaction. Healthcare providers can create personalized patient care experiences by sharing patient care activities and information among all participants involved in the patient's ongoing care and enabling faster decision support and actioning across care teams.

Similarly, [VMware Horizon using VMware SD-WAN](#) allows healthcare providers to quickly and securely access patient EMR applications such as Epic directly from Microsoft Healthcare Cloud using any device, regardless of where they might be located. VMware SD-WAN delivers a secure and high performing solution to healthcare providers ensuring a rich user experience by improving application performance and problem resolution through dynamic remediation.

VMware SD-WAN ensures simple, automated WAN connectivity to healthcare providers accessing their SaaS and/or IaaS within Microsoft Healthcare Cloud through [Integration with Microsoft Azure Virtual WAN](#). Healthcare providers can significantly improve connectivity for all their various clinics, hospitals, pharmacies, outpatient venues, and more and optimize cloud access across Microsoft's global WAN, spanning 170 countries and 8,000 ISP peerings using VMware SD-WAN. By doing so, healthcare providers greatly simplify configuration for last-mile Internet connectivity and ensure application availability and performance, finding connected and innovative ways to create better experiences, insights, and care.

VMware is a proud member of the [Microsoft 365 Network Partner Program](#).

