



Cisco DNA for Healthcare

Improve patient care and streamline operations

Enter a new era in networking for healthcare. Make sure your organization is ready to enable digital transformation with a simple, automated, and intelligent foundation. Cisco DNA. The Network. Intuitive.

The healthcare industry is going through a digital disruption that is upending its traditional business models. A proliferation of connected medical devices. Tech-savvy patients and staff. Telemedicine. Security concerns. An explosion of data. Changing payment models focused on preventive care. That's already yesterday. Tomorrow will bring something new. In a world of less time and lower budgets, IT still needs to make it all happen. You're already juggling Bring-Your-Own-Device (BYOD) policies, Internet of Things (IoT) technologies, analytics, and cloud services. Now you have more devices transmitting more data. More threats. More on the line. You need streamlined processes, automation, and innovations. You need a new vision for what the network can do.

The Cisco® Digital Network Architecture (DNA) revolutionizes how you design, build, and manage your medical campuses, clinic, and research centers. It's the foundation for a network that is constantly learning, constantly adapting, and constantly protecting. Simplify and centralize your management and get networks up and running in days rather than months. Turn intent into action with network-driven insights for greater patient engagement and smarter operations. Your patients, members, care teams, and administrators have high expectations. Deploying our Cisco DNA infrastructure and solutions is how you stay ahead.

Benefits

- Facilitate patient and research data security, anywhere and in real time
- Increase facility efficiency and lower maintenance costs
- Provide network services for streamlined business and clinical workflows across the care continuum and partner ecosystem
- Enable personalized engagement for patients and caregivers
- Optimize and automate processes, applications, and technical architecture components

Trends and challenges

Line-of-business imperatives

- Facilitate security and compliance
- Provide effective and accessible resources for patients, members, clinical staff, and researchers
- Foster patient care and research collaboration among staff members
- Increase administrative, management, and clinical efficiency
- Enter new markets and open up additional revenue streams
- Optimize office space use and sustainability

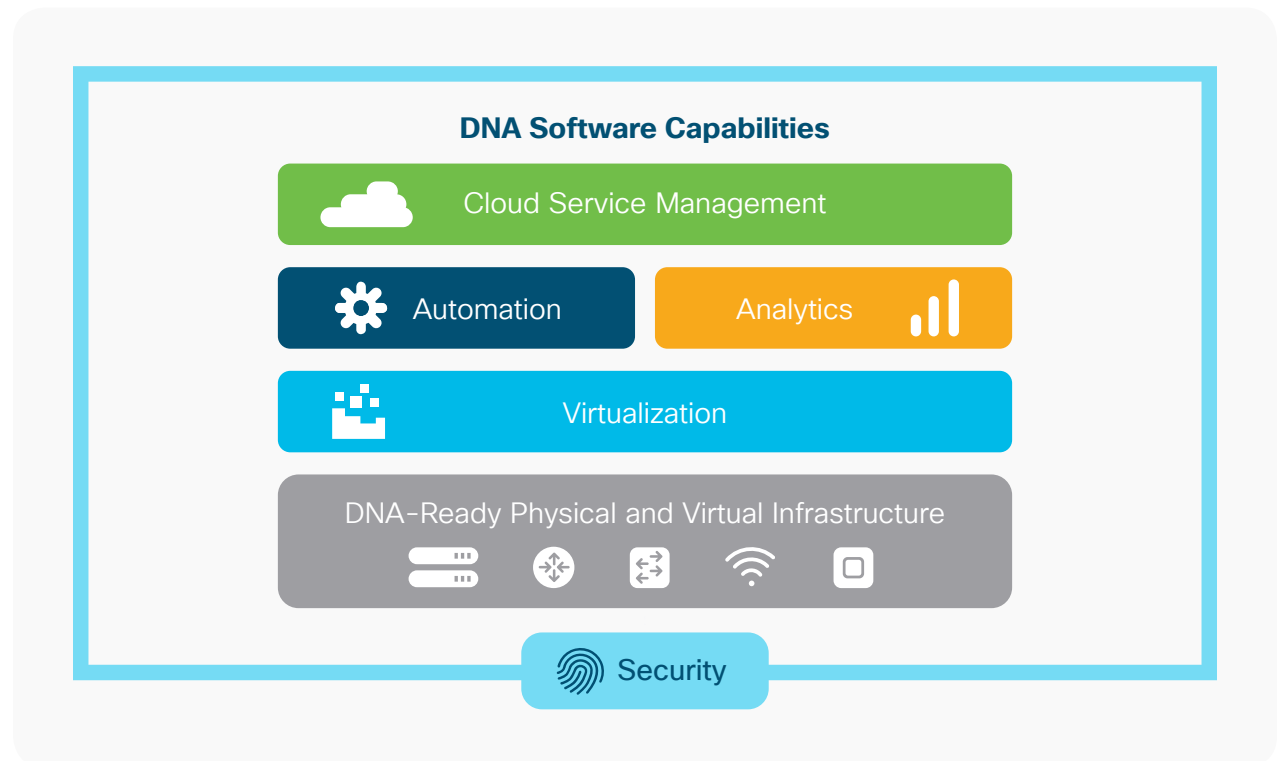
IT challenges

- Prevent security breaches across hospitals, clinics, and research centers
- Understand and support technology innovations to support clinical operations
- Manage patient and research data through standards, integration, protection, and governance
- Provide simple, secure access to analytics for key stakeholders
- Enable automation to reduce the network administrative workload
- Maintain an environment that balances cloud-delivered and on-premises services

Key DNA features

Figure 1 illustrates the components that help you reap the benefits of DNA. Explanations of each component follow.

Figure 1. DNA components



Cloud service management: Design, provision, enable policy, and assure network services through centralized management and integrated security. Enable visibility of end-to-end network services, on premises or in the cloud, across the care continuum.

Automation: Fully automate the network infrastructure based on one policy across the entire network fabric. Simplify and scale operations by automating day-to-day configuration, provisioning, and troubleshooting.

Virtualization: Deploy clinical applications and network services in minutes on any platform—data center or public cloud—and connect users to applications with one seamless and highly secure segmented network.

Analytics and assurance: Proactively predict performance and detail traffic flows through machine learning to correlate user, device, and application data for business and operational insights. Identify issues and provide actionable insight to deliver better, more relevant experiences especially for critical applications like Electronic Health Records (EHRs).

Network security: Detect and mitigate threats with end-to-end network segmentation, and enforce security policies across the network. Identify and mitigate threats and vulnerabilities in encrypted traffic with network analytics. Protect against ransomware and other malware attacks.

Table 1. Products and solutions

Product or Solution	Description	Benefits
Cisco IOS® XE Software IOS XE At-a-Glance	Enhanced operating system software for Cisco devices that supports programmability, controller-based automation, and serviceability.	Provides IT flexibility through programmability, Network Functions Virtualization (NFV), and SDN-based automation.
Cisco DNA Center DNA Center At-a-Glance	A single dashboard for managing your enterprise network. Uses intuitive workflows to simplify the provisioning of user access policies combined with advanced assurance capabilities.	Makes it easy to design, provision, and monitor the network. Increases user satisfaction with a policy-driven onboarding experience and increases network uptime.
Cisco Software-Defined Access (SD-Access) SD Access Solution Overview	Highly secure end-to-end segmentation, automated user policy access, and a single network fabric.	Enables network access in minutes for any user or device to any application without compromising security.
Cisco Intelligent WAN (IWAN)/SD-WAN IWAN Solution Overview	A comprehensive set of traffic and application control and security features for the WAN that have been integrated into Cisco branch office routers.	Enables hybrid WAN by securing Internet connectivity, therefore reducing bandwidth costs. Delivers a great user experience and allows you to deploy branch offices quickly.
Network security Stealthwatch Solution Overview TrustSec Solution Overview Identity Services Engine Data Sheet Umbrella Product Overview	Uses the network as a sensor to gain visibility through real-time analysis and intelligence. Also provides more granular control to enforce policy across the network.	Reduces risk and protects your organization against threats. Delivers 360-degree visibility through real-time analytics for deep intelligence across the network. Lowers complexity with end-to-end security.

Accelerate your journey to a digital-ready network with Cisco DNA Services

Regardless of where you are in your journey, we have a lifecycle of services to support your entire DNA solution. Start your journey to a simple, automated, and intelligent network, with a solid foundation. Our [DNA Advisory Service](#) will help you create a strategic plan and roadmap with predictive steps to get you where you want to be, achieving extraordinary business and care outcomes. And we'll get you there with little disruption.

[View additional DNA services](#)

Product or Solution	Description	Benefits
Network analytics and assurance DNA Analytics and Assurance At-a-Glance	Proactively monitors the network, gathering and processing information from devices, applications, and users. Correlates events and presents actionable insight through the Cisco DNA Center. Evaluates trends within the network to identify areas where there might be performance degradation in the future.	Identifies root causes and provides suggested remediation for faster troubleshooting. Integration with Cisco DNA Center provides an easy-to-use single dashboard with insights and drill-down capabilities. Machine learning continually improves network intelligence to predict problems before they occur.
Digital-ready infrastructure DNA-ready Infrastructure Overview	Physical or virtual routing, switching, and wireless products that serve as the foundation for Cisco DNA.	Helps you move faster, more efficiently, and more securely with a robust infrastructure built from the ground up with Cisco DNA software capabilities.

Use cases

Use Case and Description	DNA Products and Solutions
Patient engagement	Cisco Connected Mobile Experiences (CMX) enables location-integrated mobile engagement for patients and visitors, including wayfinding and location-aware alerts.
Remote care and collaboration	DNA Center provides optimization for voice and video application performance and automated QoS.
Clinical workflows	Cisco Aironet® and Cisco Meraki access points integrated with Apple technology improve roaming, avoiding poor experiences when conducting a voice or video call using a iOS device on a Cisco wireless network. They also prioritize critical applications with automated QoS using through the Apple and Cisco partnership .

“Network digitization is how we’ll continue to improve our clinical services. The network is now an integrated part of the business, automatically adjusting to the organization’s needs dynamically.”

Hamish Laing

Executive Medical Director and CIO
ABMU Health Board

Use Case and Description	DNA Products and Solutions
Business operations	<ul style="list-style-type: none">• CMX and Meraki location analytics enable visibility into the number of visitors, dwell time, and type of mobile device used.• DNA Center and SD-Access automate network workflows, providing end-to-end segmentation, and deliver a consistent user experience for clinical applications regardless of the user’s location in the hospital.• DNA Analytics and Assurance helps IT solve clinical application performance issues quickly before they become widespread issues.• Enterprise NFV delivers services faster for less cost on physical or virtual computing platforms across multiple locations.
Security and compliance	<ul style="list-style-type: none">• Cisco IoT Threat Defense provides an adaptable, extensible platform for the security of connected medical devices. It offers device profiling, automated policy-based segmentation, ransomware and malware defense, network behavior analytics, remote access, and firewall protection.• The Cisco Umbrella™ secure Internet gateway provides a first line of defense against phishing, malware, and ransomware.• Cisco Medical NAC has a set of more than 300 profiles for the accurate profiling of medical devices to enable automated network segmentation and policy based security enforcement.

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Start your digital transformation today

Visit our website (<https://www.cisco.com/c/en/us/solutions/enterprise-networks/dna-healthcare.html>) or contact your Cisco sales representative to get started on your journey.

A digital network increases clinician productivity and improves patient care

Challenge: The Ontario, Canada-based London Health Sciences wanted to improve collaboration and productivity across its seven hospital campuses and multiple remote sites. Its medical staff members were spending a lot of time traveling for training, and care teams were inundated with paperwork. That all took time away from bedside care. Additionally, mobile devices grew fivefold in 2 years, which put a strain on IT management.

Solution: Cisco DNA connected a multicampus organization as a single entity and provided highly secure, reliable access to medical teams, patients, and visitors with Cisco wireless, routing, and switching solutions. Cisco Prime® Infrastructure enabled unified management, and Cisco ASA firewalls provided security. These solutions helped care teams to securely share information, become more efficient in communications, and improve patient care.

Results

- Higher clinical workflow productivity through collaboration integrated with mobile devices and the wireless network
- Protection against malware and ransomware threats
- 40 percent improvement in adverse medical events using mobile workstations
- More time available to spend with patients