



Extreme<sup>®</sup>  
networks



# EXTREME SOLUTIONS FOR HEALTHCARE

## SOLUTION GUIDE



### Featuring

- 4 Use Cases Demonstrating Extreme Solutions for Healthcare
- 4 Case Studies: Healthcare Transformation

### About Extreme Networks

Extreme Networks, Inc. is a leader in cloud networking focused on delivering services that connect devices, applications, and people in new ways. We push the boundaries of technology leveraging the powers of machine learning, artificial intelligence, analytics, and automation. 50,000 customers globally trust our end-to-end, cloud-driven networking solutions and rely on our top-rated services and support to accelerate their digital transformation efforts and deliver progress like never before.

Learn More [here](#)

***Make Your Network a Strategic Asset.***

## Introduction

Today's healthcare organization faces worsening staffing shortages, increasing cybersecurity threats, and growing technical debt. Technology solutions can help address these challenges, but all require strong connectivity, making the network the strategic asset that unlocks the future.

A high-performance network can transform healthcare operations by strengthening patient data protection and compliance, optimizing operational efficiency, and enhancing patient experiences. By harnessing the data resident in the network, organizations can gain clearer insights for decision-making and increase IT productivity. With more devices operating wirelessly, robust Wi-Fi technology is the connective tissue unifying healthcare operations.

This solution guide will demonstrate how healthcare organizations can leverage the network to tackle transformational projects, reduce technical debt, and deliver a total experience for clinicians, patients, and their families, making healthcare more efficient and profoundly better.



### BRIAN MCDONALD

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## Extreme Solutions for Healthcare

The network is the central nervous system of modern healthcare services. Foundationally, it must be reliable, secure, and interoperable. As patients increasingly take charge of their health decisions, healthcare organizations have aligned their investments toward a strategy focused on personalizing patient experiences. Improved patient satisfaction and engagement are the top outcomes that organizations want to achieve from digital transformation, followed closely by patient safety and cybersecurity, operational efficiency, and availability. Further, harnessing the data resident in the network is key to driving medical innovation.

The top challenges faced in the healthcare industry today can best be described by the following four use cases. This section of the guide also introduces the Extreme solutions that address these use cases.

## Use Cases

- Enhance Patient, Clinician, and Guest Experiences
- Enable Operational Efficiency
- Strengthen Patient Data Protection and Compliance
- Enhance Data-driven Decision Making for Medical Innovation

## USE CASE 1

# Enhance the Total Experience



Cloud applications and digital solutions are a necessity for today's healthcare organizations. Network connectivity failures can disrupt care, hinder clinician productivity, and reduce patient trust, tarnishing a hospital's reputation.

Healthcare systems can avoid disruptions and improve patient satisfaction by ensuring continuous access to Wi-Fi and critical applications and providing an exceptional experience for patients, clinicians, and visitors.

- Patients demand an experience that matches the level of customer service they expect from retail and consumer brands.
- Clinicians rely on the network to do their job. Given the staffing shortages affecting healthcare, a network that is simple to deploy and manage can positively impact productivity.
- Devices and applications used in healthcare delivery depend on wireless and wired network connectivity.

## Extreme Solution

Deliver the best patient experience, improve HCAHPS scores, and ensure application performance through cloud networking



Universal Wireless provides always-on access from any device to business-critical applications, allowing patients, clinicians, and guests to reliably connect to Wi-Fi



ExtremeCloud™ IQ provides time-saving operational efficiencies to IT teams



Advanced reporting helps ensure network health



SD-WAN provides the best possible experience for business-critical applications in the cloud or data center

### “ Cordaan Takes Patient Care to the Next Level

*"Everything we do at Cordaan is focused on giving our patients the most comfortable experience as well as the most advanced treatments and care. As our network is central to achieving this, we need a secure, agile, and resilient cloud infrastructure to cope with increased demand from thousands of personal and medical devices so our visitors and staff can continue to experience reliable connectivity."*

**ROB BERGFELD, MANAGED ICT SERVICES, CORDAAN**

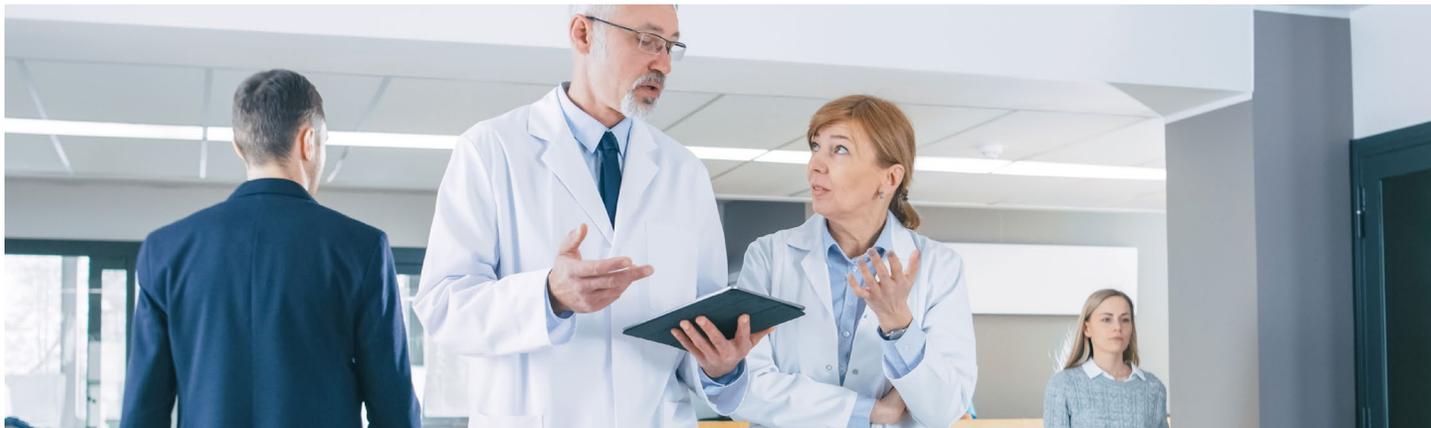
### “ Wi-Fi 6E Upgrade Enables Enhanced Care Experiences at Novant Health

*"The new Wi-Fi 6E APs from Extreme enable us to tap into a fast, secure, and interference-free spectrum, ensuring our most demanding and mission-critical, technology-dependent services can operate more reliably and with greater speed and performance."*

**ROB HALE, MANAGER OF INFRASTRUCTURE AND TECHNICAL ENGINEERING, NOVANT HEALTH**

## USE CASE 2

# Enable Operational Efficiency



The network is a strategic asset for healthcare organizations, primarily because it plays a pivotal role in addressing the challenges and issues that have recently plagued the healthcare industry including:

- Clinical Staffing Shortages – Staffing declines have accelerated, affecting speed and quality of care.
- IT Staffing Shortages – IT staffing shortages have been a persistent issue, exacerbating response times and resolution times as well as limiting projects that require broad expertise and complex work.

Cloud networking solutions enable operational efficiency in the healthcare industry by serving as the technological backbone that seamlessly connects disparate systems, facilitates data integration, and supports critical processes:

- Manage and deploy high-performance networking and security across all locations—clinics, hospitals, and remote caregiver home offices.
- Network resiliency helps IT organizations that have limited staff or experience.

## Extreme Solution

Enhance operational efficiency by enabling high-performance networks



Universal Wired and Wireless reduces risk and complexity across hospitals and clinics



Unified management of wired, wireless, SD-WAN, 3rd party and IoT devices simplifies operations



ExtremeCloud IQ CoPilot delivers AIOps capabilities, empowering IT with proactive insights and faster problem resolution



Extreme Fabric unifies, automates and secures the network from the data center to the hospital to the clinic



### Prima CARE Delivers Best-in-Class Patient Experience through Operational Efficiency

*"With ExtremeCloud IQ, we're able to see a dashboard of the network, we're able to make changes quickly on the fly, we're able to keep our firmware updated. We're not technically held back by anything."*

**KEVIN ANDRADE, DIRECTOR OF OPERATIONS, PRIMA CARE**



### Grifols Transforms their Operations

*"Dynamically orchestrating the performance of our business applications over our WAN, which is made possible by [ExtremeCloud SD-WAN], is one of the pillars of our digital transformation. It allows us to improve the experience of donors while controlling our operating costs."*

**JOSEP SANS, GRIFOLS, GLOBAL NETWORK MANAGER**

## Strengthen Patient Data Protection and Compliance



Data security has become especially critical to the healthcare industry, as patient privacy hinges on HIPAA compliance and the secure adoption of electronic health records (EHR). In the digital era, healthcare applications are often hosted on public clouds, and protected health information (PHI) is often transmitted via public Internet connections, over which the IT organization has little visibility or control. Bad actors can exploit public data networks to steal electronic health records or disrupt critical IT systems and services.

By implementing patient data protection and compliance solutions, healthcare organizations can protect data in transit, defend infrastructure against denial-of-service (DoS) attacks, and ensure compliance with HIPAA and other data privacy regulations across the globe.

The network forms the foundation for patient data protection and compliance. It provides the infrastructure and mechanisms necessary to securely manage, transmit, and protect sensitive patient information while adhering to stringent regulatory requirements. Without a robust network infrastructure, it would be nearly impossible to ensure the privacy, security, and compliance of patient data in the healthcare industry.

### Extreme Solution

Safeguard protected health information and improve regulatory compliance by connecting people, data, and applications securely and at scale

-  Wired, wireless and SD-WAN devices connected by Extreme Fabric enable a unified, secure and automated network
-  SD-WAN enables secure access to business-critical applications in the data center or cloud
-  ExtremeCloud IQ is secure by design: ISO 27001/27701/27017 and CSA-STAR certified, SOC 2 and GDPR compliance
-  ExtremeCloud Edge helps healthcare organizations address data privacy, protection, and sovereignty
-  Extreme Fabric unifies, automates and secures the network from the data center to the hospital to the clinic

#### “ Ziekenhuis Oost-Limburg Enables End-to-end Visibility and Strengthened Security

*"Extreme Fabric Connect enabled us to easily assign devices to an island within our network and let them have the complete management of their own environment, without interfering in any possible way with the hospital's operations. And that functionality is infinitely scalable – we can accommodate virtually any number of such implementations."*

**KURT GIELEN, IT MANAGER AT THE ZIEKENHUIS OOST-LIMBURG**

#### “ Henry Ford Health Secures Their Future

*"Wireless security visibility is paramount in the rapidly growing IoT hospital environment. Henry Ford Health System has chosen Extreme AirDefense as its wireless intrusion prevention and detection platform to protect its airspace comprised of thousands of mobile devices. AirDefense provides us visibility into both Wi-Fi and Bluetooth/BLE devices, empowering our team with a single, proven solution to quickly detect and react to security event"*

**ALI YOUSSEF, SENIOR CLINICAL MOBILE SOLUTIONS ARCHITECT, HENRY FORD HEALTH SYSTEM**

## USE CASE 4

# Enhance Data-driven Decision Making for Medical Innovation



Enabling data-driven decision making for medical innovation involves leveraging data, analytics, and actionable insights to better understand network performance. Data is arguably the most valuable resource for performance and outcome improvement across industries, and healthcare is no exception.

The process of gathering, parsing, and analyzing network data while protecting patient privacy can help healthcare organizations find ways to improve patient care, increase efficiencies, strengthen privacy protection, and adopt advanced medical technologies:

- With limited experience of IT staff, tools that automate deployment, proactively raise alarms, and provide explainable insights to aid in decision making and issue resolution are vital to promoting operational, clinical, and IT efficiency.
- By embracing data-driven decision making, the healthcare industry can accelerate medical innovation, improve patient outcomes, reduce costs, and ultimately enhance the quality of care delivered to patients.

## Extreme Solution

Improve decision making and drive medical innovation by harnessing the data resident in the network



ExtremeCloud IQ helps healthcare administrators better understand network performance and provide an exceptional experience



Universal Wireless with ExtremeCloud IQ enables asset tracking and location insights



ExtremeCloud IQ CoPilot provides Explainable ML for actionable insights to proactively improve the healthcare network and client performance



SD-WAN provides comprehensive visibility tools for network and application performance management



### Samaritan Health: Single Pane of Glass Visibility into Entire Network Environment

*"I am grateful for our relationship with Extreme Networks and am excited about how the products are maturing. The currency of the future is data and my ability to deliver usable communication quickly and efficiently will be imperative. I have a great partner in Extreme to do that."*

**KYLE AUMELL, TECHNICAL SERVICES MANAGER, SAMARITAN HEALTH**



### Memorial Health

Memorial Health uses a customized dashboard that provides a single pane-of-glass view for monitoring and network analytics.

**CASE STUDY**

# OSF Healthcare

**OSF Healthcare** is an integrated health system located in Illinois and Michigan. Dedicated to innovation and digital transformation to improve the lives of their patients, the organization consists of 13 acute care facilities and two colleges of nursing, as well as a robust physician organization.

Ranked as a top 10 innovation center in the US, the OSF mission is to reinvent the healthcare delivery system of the future. They launched OSF Innovation to embrace change and solve the biggest healthcare challenges of today head on. "We need innovations both large and small to reinvent healthcare to meet the needs of our communities," OSF explains on their website dedicated to advancements in healthcare. In fact, OSF operates a center in downtown Peoria, Illinois called Jump Trading Simulation and Education Center, full of medical and technology professionals who are innovating in the healthcare space.

“It’s very rare to find a solution that drives automation, minimizes security risk, and reduces costs without sacrificing one for another.”

**DIRECTOR NETWORK SERVICES, OSF HEALTHCARE**



### Challenges

- Robust, reliable network infrastructure for continuous connectivity across locations
- Secure network to protect customer data
- Network agility for supporting business needs and advanced research capabilities
- Ease of management via automation capabilities



### Solution Components

- Extreme Fabric Connect
- Extreme Fabric Attach
- Extreme Wired Access
- ExtremeCloud IQ



### Results

- 30% capital replacement savings
- 60% maintenance reduction
- Enhanced security
- Simplified network
- Reduced cost
- Guaranteed connectivity

### Henry Ford Health



Highlighting the system’s dedication to patient experience and improved patient care, **Henry Ford West Bloomfield Hospital** is leading the industry providing excellence in the patient experience through the direction of a former CEO of The Ritz-Carlton chain of fine hotels.

#### Hospital Stats

- 3.3 million outpatient visits and more than 89,000 surgical procedures performed at HFHS More than 101,396 patients admitted to HFHS hospitals
- 67% of HFHS admissions are by persons ages 50 and older
- Revenue: \$4.22B, net income: \$21.5M, uncompensated care: \$210M
- 7,400 births at HFHS hospitals
- More than 300,000 home healthcare visits annually



“Wireless security visibility is paramount in the rapidly growing IoT hospital environment. Henry Ford Health System has chosen Extreme AirDefense as its wireless intrusion prevention and detection platform to protect its airspace comprised of thousands of mobile devices. AirDefense provides us visibility into both Wi-Fi and Bluetooth/BLE devices, empowering our team with a single, proven solution to quickly detect and react to security event”

**ALI YOUSSEF, SENIOR CLINICAL MOBILE SOLUTIONS ARCHITECT, HENRY FORD HEALTH SYSTEM**



#### Challenges

- Provide wall-to-wall wireless coverage with continuous availability
- Facility structural and regulatory issues
- Manage and secure a large healthcare network
- Maintain confidentiality and patient privacy
- Maintain HIPAA and other compliance requirements



#### Solution Components

- Extreme Air Defense
- Extreme Wireless Access



#### Results

- Meets contractual SLAs for wireless reliability
- Pervasive wireless for all campuses
- Predictable OpEx
- Manage large and diverse infrastructure with small IT staff
- Secure network maintaining confidentiality and patient privacy

## CASE STUDY

# Novant Health

**Novant Health** is a nonprofit integrated healthcare system comprised of 15 medical centers and more than 1,800 physicians in over 800 locations. With more than 35,000 personnel and physician partners, Novant Health provides care for patients and communities across North Carolina, South Carolina, and Georgia. The healthcare system’s mission is to deliver remarkable healthcare by combining the talent and expertise of its staff, the capabilities across its systems, and a commitment to helping patients get better and stay healthy.

“The new Wi-Fi 6E APs from Extreme enable us to tap into a fast, secure, and interference-free spectrum, ensuring our most demanding and mission-critical, technology-dependent services can operate more reliably and with greater speed and performance.”

**ROB HALE, MANAGER OF INFRASTRUCTURE AND TECHNICAL ENGINEERING, NOVANT HEALTH**



### Challenges

- Reliable connectivity and capacity to support a growing volume of telehealth services and enhancements to patient experience
- Robust network security to protect sensitive, confidential patient information
- Greater control and visibility of network performance and health



### Solution Components

- ExtremeCloud IQ
- Extreme Wireless Access
- Extreme Network Fabric



### Results

- **Advanced Wi-Fi Reliability and Performance:** Increased capacity and Wi-Fi 6E upgrade enables enhanced care experiences for patients and ability to add new telehealth services and technologies.
- **Secure, High-Speed Connectivity:** Higher level of security delivered through Extreme Wireless helps protect entire campus infrastructure.
- **Simplified Network Management:** Single pane of glass view simplifies management of all network devices and makes it easier to manage a growing network with plans for future wireless deployments.



## CASE STUDY

# Cordaan Group



Established more than 10 years ago, **Cordaan Group** has become one of the largest healthcare providers in the Netherlands. The Group provides care to more than 20,000 citizens across 120 locations in every district of Amsterdam and its metropolitan area. Cordaan's 6,000 employees and 2,500 volunteers, in association with numerous research institutes and social organizations, offer a large range of services in managed healthcare facilities and patient homes. Cordaan aspires to lead the way in developing long-term care throughout the country's capital area.

“Everything we do at Cordaan is focused on giving our patients the most comfortable experience as well as the most advanced treatments and care. As our network is central to achieving this, we need a secure, agile, and resilient cloud infrastructure to cope with increased demand from thousands of personal and medical devices so our visitors and staff can continue to experience reliable connectivity.”

**ROB BERGFELD, MANAGED ICT SERVICES, CORDAAN**



### Challenges

- Secure and scalable connectivity for thousands of end-users and personal and medical devices.
- Simplified network management and maintenance to improve operating efficiency and dedicate more time to patient experience enhancing initiatives.
- Increased network capacity to accommodate bandwidth demanding applications and devices.



### Solution Components

- Extreme Wired Access
- Extreme Wireless Access
- Extreme Fabric Connect™
- ExtremeCloud IQ



### Results

#### Scalable Connectivity

- Cloud-managed Wi-Fi ensures reliable and scalable connectivity
- Secure, agile, and resilient infrastructure copes with increased volume of personal and medical devices

#### Seamless and Secure Cloud Network Management

- Network segmentation protects critical applications and medical devices in event of cyberattack or security breaches

#### Simplified, Cost-Effective Network Maintenance

- End-to-end visibility and unlimited access to data enables IT staff to monitor and manage expanding number of devices and services
- Improved level of operating efficiency