



ExtremeCloud™ IQ for Healthcare

Healthcare: An Industry Under Transformation

The healthcare industry is transforming at a rapid pace. The adoption of consumer technologies, increased consolidation and advances in connected medical devices, means that healthcare organizations need to be proactive with their IT and infrastructure strategies.

Why Cloud?

Although once hesitant to embrace the cloud, an Extreme Networks survey found that 98% of healthcare organizations are hosting at least one solution in the cloud. There are a few key reasons for this shift:

- **Need to increase efficiency, while providing a more retail-like experience:** With a more complex competitive environment and more sophisticated consumer demands, healthcare is continually under pressure to reduce costs, while providing a better quality of experience.
- **Data analysis via Artificial Intelligence/ Machine Learning (AI/ML):** Healthcare organizations are looking to analyze so much data that on-premises applications/ information systems are no longer a viable or scalable option (for example: population health management and the shift to value/outcome-based care all depend on AI and data analytics).
- **More dispersed, mobile workforce:** 56% of healthcare organizations have a network that spans 11-100 buildings, yet only 24% have a dedicated IT resource at each site.

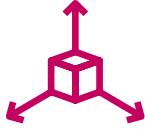
Cloud Infrastructure Management is on the Horizon

Although many healthcare applications such as Electronic Medical Records (EMRs), Contact Centers and Health Information Systems are migrating to the cloud, infrastructure management solutions have largely remained on-premises. This is expected to change. While only 14% of healthcare organizations leverage cloud management today, 41% have plans to move their infrastructure management into the cloud in the next 1-5 years. (Extreme Networks)

ExtremeCloud IQ is a clinical-grade infrastructure management solution that meets the reliability, scalability, security and intelligence required for mission critical healthcare networks. Leveraging an innovative third generation cloud architecture, ExtremeCloud IQ delivers healthcare organizations a F.A.S.T infrastructure management solution:

- **Flexibility:** right-sized for skills, scale, and business objectives
- **Agility:** speed and continuous delivery of new management features and capabilities
- **Security:** proven protection in the most risk-sensitive environments
- **Technology:** access to best of breed technologies in the world

Why ExtremeCloud IQ: Technology Benefits



Scalability and Elasticity



Reliability



Flexible Deployment Models



Secure by Design



AI/ML Driven Insights

Scalability and Elasticity



ExtremeCloud IQ is one of the only third generation cloud-based infrastructure management platforms available in the industry today, making it well suited for the unique demands of healthcare networks. Based on a microservices, clustered-based architecture, ExtremeCloud IQ not only offers massive scaling, it also offers healthcare organizations much-needed elasticity to be better able to cope with on-boarding of new locations as a result of mergers and acquisitions, increasing telehealth requirements and surging demand for remote real-time patient monitoring.

Reliability



The network is the nervous system of the digital healthcare organization, it therefore needs to be reliable and stable. With Extreme, a loss of connectivity to the public cloud will not impact network traffic or the underlying infrastructure. There is no dependency on the cloud management system for the infrastructure to function. Because Extreme's switching, routing and wireless solutions are all based on distributed control & data planes, each local device has its own configuration file and can continue to forward traffic without access to the cloud management system. This also applies if the cloud management subscription service expires. Again, in this case, users and devices still have full, untethered access to the network. Access to the cloud-based management tool, however, would be suspended until the subscription service is renewed.

In addition, the third generation architecture which is microservices and cluster-based contributes to the extremely high levels of availability and reliability and eliminates any concerns of single points of failure.

Flexible Deployment Models



Unlike many competitive offerings, ExtremeCloud IQ offers public, private, local and hybrid deployment options. The same microservices-based architecture and the same operating system is used for every deployment model ensuring a high level of feature consistency between each. Furthermore, our cloud technology is cloud-provider agnostic meaning that it can be hosted in AWS's, Azure's or Google's cloud environment, in addition to the private and local options.

Secure by Design



ExtremeCloud IQ is secure by design. Extreme Networks was the first major cloud-managed networking vendor to attain ISO/IEC 27001 certification for its Information Security Management Systems (ISMS). Furthermore, ExtremeCloud IQ facilitates compliance with data protection regulations through automated PCI and GDPR audits and comprehensive logging tools. Furthermore, features such as firewalling, threat detection with continuous monitoring, DDoS-attack prevention and flow control are also available to help secure the end to end network.

AI/ML Driven Insights



In healthcare, the analysis of vast amounts of data via AI/ML holds the key to delivering better patient outcomes and more proactive, preventative care. The same holds true for the network. Large data pools allow the network to learn and to ultimately become more intelligent. ExtremeCloud IQ has a massive data pool, analyzing over 3 Petabytes of data every day with its rich AI/ML capabilities. This gives it the intelligence to provide healthcare IT professionals with the critical insights they need to help detect network problems - even before they affect patients and staff:

- **Client 360:** Provides a real-time or historical snapshot of the "total client experience", including quantitative health metrics for each patient, staff or connected device.
- **Network 360:** Provides a real-time or historical snapshot of the overall network health. Key performance indicators can be aggregated by day, week, or month, and includes device health, client health, Wi-Fi health, network health, services availability, applications, and security.
- **Comparative analytics:** ability to anonymously benchmark network health relative to other similarly-sized healthcare organizations.

Why ExtremeCloud IQ: Business Benefits



**Increased
Agility**



**Increased
Efficiency**



**Superior Quality
of Experience**

Increased Agility



Projects are moving rapidly within the healthcare space and networking IT teams can no longer afford to be the bottleneck. Whether it's the quick on-boarding of several recently acquired clinics, or the deployment of many new connected medical devices, cloud management takes the complexity out of networking and Wi-Fi so that healthcare projects can be completed faster, with greater ease.

ExtremeCloud IQ offers simple wizards to onboard devices, enabling thousands of APs, switches or routers to be up and running in just minutes. Consistent policies can be easily implemented for all users and devices across all locations with ease. Simple network planning and mapping tools enable you to import hospital and clinic floor plans to help you easily determine the number and locations of devices for each ward or each remote office/clinic.

Increased Efficiency



Whether it's the delivery of patient care through the adoption of new technologies or it's the deployment and management of the network, healthcare is focused on increasing efficiency in every aspect of the organization.

ExtremeCloud IQ simplifies day to day network operations by enabling all locations to be managed as a simple extension to the main hospital through intuitive centralized management. Maintenance such as patches, updates and upgrades can be completed all at once if desired, rather than location by location. Troubleshooting is much more efficient with machine learning capabilities that process and rapidly analyze vast amounts of data, so it is easy to pinpoint the root cause of any issues and even identify potential issues before they become service impacting.

Superior Quality of Experience



A heightened patient and staff quality of experience is major focus of healthcare organizations. With the network deemed as critical as hospital utilities such as power and water, ExtremeCloud IQ provides healthcare IT professionals with the critical insights they need to identify problems, resolve network errors, and optimize performance before they affect patients and staff. Machine-learning calibrated client health data and network health data are provided, providing administrators with a wealth of information in a simple and informative way. Additional features such as dynamic RF Monitoring and programmable radios help to ensure optimal performance of the Wi-Fi network.