

# Enterasys Solutions for Healthcare



Technology plays a vital role in enabling healthcare providers to increase the quality and availability of patient care. In particular, wired and wireless networks are the critical “glue” that link caregivers with clinical applications, medical devices, and patient data. With patient safety as the top priority, the network must facilitate clinical collaboration, workflows, and overall availability of care while maintaining appropriate access control to data and services within a highly dynamic and mobile environment.

The healthcare environment presents numerous challenges from a networking perspective, including:

- A diverse set of clinical applications/systems, medical devices, and back office systems – and the need to share data between them locally and remotely
- An ever-changing patient population, along with an increasing need to monitor their status and maintain their electronic records, even when mobile
- An ever-changing physician and nursing population, with increasing expectations for mobile network connectivity to improve communications and access to patient data
- A continued increase in server and storage virtualization

These challenges, along with the always-present pressure to provide more services with a smaller staff and lower budget, demand networking solutions that go beyond basic high speed connectivity. In order to support critical services such as instant communication for caregivers, the integrated wired/wireless network must support uninterrupted connectivity throughout the entire healthcare environment, including areas such as elevators and stairwells.

## Solution Benefits

### Business Alignment

- Mobile communications and patient data access as well as location-based wireless services to improve patient care and safety
- Role-based network access and service provisioning for medical professionals, employees, patients, and guests
- Networked application priority and security to meet clinical requirements
- High availability and reliable performance for networked medical devices/equipment

### Operational Efficiency

- Minimize time and cost associated with network configuration changes
- Prevent disruptions and minimize time-to-troubleshoot through configuration and change management
- Provide out-of-the-box network policies based on healthcare operations best practices

### Security and Compliance

- Provide demonstrable controls for compliance audits
- Ensure patient data privacy and access control based on need to know
- Built-in protection against disruptions plus value-add visibility, monitoring, and reporting functionality

### Support and Service

- Industry leading customer satisfaction and first call resolution rates
- Personalized healthcare-focused services delivered by experienced, effective, and responsive subject matter experts

In addition, the network must also include embedded intelligence that can be fine-tuned to the specific needs of a healthcare provider, provide operational efficiency even in dynamic, diverse, high-change environments, and feature built-in security services to protect patient data privacy and reduce risk to ongoing operations. Healthcare providers around the world use Enterasys solutions to ensure availability of both wired and wireless networked devices, prioritize access to clinical applications involved with patient care, enforce authorized access criteria to protect patient confidentiality and preserve data integrity, and offer wireless network access to patients and guests.

### Better Outcomes via Better Access

Driven by the goal of improving quality of care and the overall patient experience, healthcare providers continue to deploy new/improved clinical applications and technologies like high speed wireless access, RFID for patient and device tracking, and server and storage virtualization. According to a recent healthcare study focused on time and motion, patient-related communication accounts for approximately 20% of a caregiver's time. Improving the timeliness and effectiveness of caregiver communication enhances patient care and safety as well as operational efficiency. Conversely, poor caregiver communication puts patients at risk and unnecessarily consumes caregivers' time.

The study also found that many patient deaths that follow the occurrence of an adverse event can be traced back to communication problems. Since quality of care and patient safety are directly correlated with caregiver communications, the study proposed deploying wireless networks to provide mobile handheld devices with access to patient data, as well as intelligent systems that can automatically track the location of caregivers and medical devices. In addition, fixed-mobile convergence (an integrated wired/wireless network) is an efficient way to enhance caregiver communication by providing mobile phone connectivity within the healthcare environment without relying upon cellular service.

**In a healthcare environment, the ability to communicate instantly is vital, and because cell phones don't operate well within our facility, it is especially important that our network interoperate with our VoIP and wireless voice solutions.**

*Michael Gogola, Chief Information Officer  
at the Hermitage Medical Clinic*

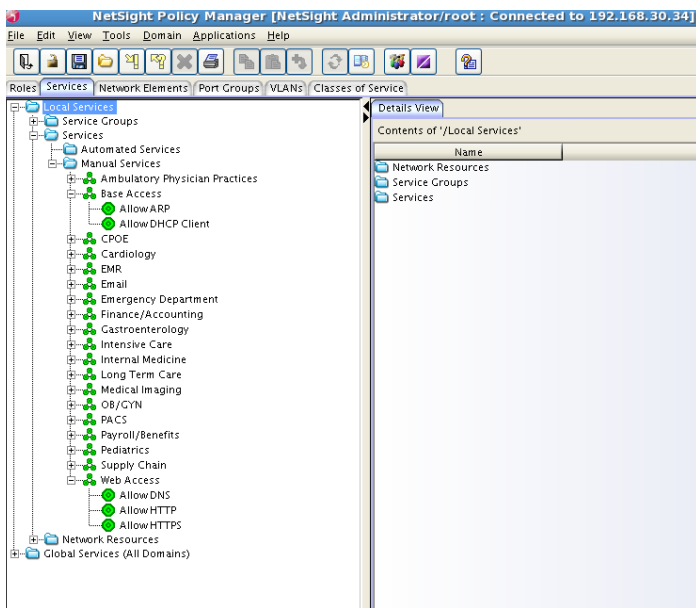
As the number and type of connected devices and applications increase and technologies continue to evolve, so too does the complexity of the networked environment. In recognition of the need to manage this complexity effectively and also tune the healthcare provider network to priorities centered on patient care, Enterasys provides capabilities to:

- Ensure availability of both wired and wireless networked devices
- Prioritize access to clinical applications involved with patient care
- Enforce authorized access criteria to protect patient confidentiality and preserve data integrity
- Offer wireless network access to patients and guests

The following table contains a sample of network access policies and priorities based upon configured associations between applications and user roles (e.g., physician, patient, etc.), which work together to create an easily managed and highly adaptable network with deterministic operational behavior.

	Guests & Patients	Physicians
<b>Fixed-Mobile Convergence for Voice</b>	Prohibit	Allow and Prioritize
<b>Wireless Clinical Monitoring &amp; Bedside Access</b>	Prohibit	Allow and Prioritize
<b>PACS</b>	Prohibit	Allow, Quality of Service guarantee, prioritize from operating rooms
<b>Electronic Medical Records</b>	Read-only to their own records	Allow
<b>Wireless Internet Access</b>	Allow with bandwidth restrictions Prohibit P2P/gaming	Allow via handhelds and tablets only

By combining widespread network access with a deep level of control and visibility into network traffic, Enterasys provides unique capabilities to prioritize access to resources based on location (e.g., the emergency room), application (e.g., Electronic Medical Records), user role (e.g., orthopedic surgeon), time of day, and many other factors. This ensures that only the right users have access to the right information from the right place at the right time in accordance with the appropriate priorities to enhance patient care & safety. As an example, wireless network utilization for caregiver communications can be assigned the highest priority network access, while clinical functions such as registration and bedside data collection can be automatically prioritized over patient/guest Internet access. Rather than being constrained by technology implementation, the network access policies are defined based on the operational priorities and needs of the specific clinical environment. See the sample screenshot on the following page from the Enterasys Network Management Suite (NMS) healthcare policy configuration user interface.



Another benefit of the increased level of control and visibility of Enterasys solutions in a clinical environment is that the network itself can provide added protection for medical devices. Generic or device-specific policies can be created to allow connections and data traffic based on the device type and similarly to deny connections or traffic types that the device cannot process and could potentially threaten its availability.

Finally, the increasing use of multimedia collaboration technologies with video and large medical imaging files drives the need not only to control and prioritize that traffic but also for scalable and robust network services with both wired and wireless access points. Enterasys networking solutions are designed to be easily adapted and expanded over time without imposing time and cost consuming network redesign.

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Not only do we save between 20 and 25 percent on total cost of ownership over other leading vendors, but we also have the security of knowing that any time we pick up the phone with a question or a concern, Enterasys will do whatever it takes to answer our questions or solve any problem—even those caused by other vendors' equipment.

*John Iraci,  
Vice President Enterprise Infrastructure, DJO*

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## Operational Efficiency and Cost Control

The continuing challenge to “do more with less” in IT is not unique to healthcare, but the complexity of the healthcare environment makes that challenge particularly onerous. With more devices being networked, more data being stored and shared, technological advances, new applications, increased mobility, as well as constant changes in caregiver personnel and patient traffic, healthcare network operators cannot provide support effectively without driving improved IT optimization and efficiency.

A hallmark feature of Enterasys solutions is the ability to eliminate the inefficient and time consuming task of manual, switch-by-switch network configuration changes. The benefits are not only efficiency but also error reduction, since manual operations for network configuration changes (e.g., setting up individual telnet sessions to each switch and performing access control list changes and re-ordering) are eliminated. Consider as well that the ratio of network operations staff members to users for an Enterasys network is typically 1 staff member for every 2000 - 5000 users, whereas a typical industry ratio is 1 staff member for every 200-500 users. Such efficiencies significantly reduce the operational burden upon IT staff so that they can focus on more strategic projects.

Many studies have indicated that 80% of network outages are caused by improperly executed configuration changes. In addition, the 2009 Network Instruments State of the Network Global Study found that 80% of respondents stated that identifying the source of a problem was their primary troubleshooting concern. It is easy to see the impact to network operations when improper configuration changes are exacerbated by the challenges associated with identifying the source of a problem. Therefore the ability to make network configuration changes once for deployment throughout the network has a significant impact on time and cost savings – but even more importantly, network reliability is dramatically improved. Further, the deep visibility into behavior all the way to the point of connection into the network provided by Enterasys helps healthcare providers eliminate common sources of issues before they occur as well as quickly isolate and remediate network disturbances.

Availability is the lifeblood of the healthcare network, and Enterasys provides capabilities designed to allow network operations to be tuned to the specific requirements of a given environment to optimize performance, prioritize services or applications, and reduce the risk of disruption. Enterasys provides out-of-the-box best practices network policies that serve as building blocks that can be customized to specific needs. Included in the set of network policies is a policy specifically for healthcare providers with sample rules for common user roles, services, and applications utilized in healthcare environments. To reduce the risk to ongoing operations, policy rules can be initially deployed in an audit mode which models the behavior of the rules prior to actually putting them into operation. The chart on the next page shows the rule “hits” from a sample policy that can be used by network operations to determine if the traffic that triggered the rule is legitimate or not and therefore if the rule should be put into full operation.



Another strong trend in healthcare IT is server and storage virtualization to provide operational efficiency, business continuity, and power/energy conservation. A key networking capability for virtualized environments provided by Enterasys is the ability for network access and quality of service settings to follow virtual machines regardless of the hardware they get dynamically enabled on. Where other solutions typically require manual reconfiguration of network interfaces in an otherwise automated process, Enterasys switches adapt on-demand and via the Enterasys Network Management Suite (NMS) provide the real-time location of a virtual machine and associated application services as well as an audit history of virtual machine mobility.

## Security and Compliance

With the increase in network connectivity and data sharing among healthcare providers comes increased risk to the confidentiality and overall security of patient healthcare data. Fundamental to reducing that risk are strong identity-based controls for who has access to what data and resources based on need to know. Enterasys provides strong support for role-based assignment of network, application, and device access with unique policy capabilities and support for multiple standards-based user authentication methods. Implementation of these capabilities forms a strong foundation for demonstrating controls to auditors as part of an overall program for compliance with requirements of the Joint Commission, the American Medical Association, HIPAA, and Sarbanes Oxley.

The ongoing need to prevent and detect potential security breaches calls for solutions that can do so without hindering ongoing operations or introducing extra management burden. With Enterasys, security is embedded in the product's core architecture. Rules and other controls define who is allowed to access the network and the services or resources that can be accessed. Many classes of common accidental or malicious threats can be effectively addressed by "hardening" the network with best practice rules and policy settings. This is particularly important in healthcare environments, where a broad range of device types and legacy

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We have unprecedented visibility into the network that has given us the ability to create and enforce compliance policies that are crucial in the healthcare industry.

Today, my small staff of two administrators can focus on giving support to caregivers in the hospital instead of troubleshooting the network.

*Mike Miller, Network Manager at Samaritan Hospital (Ashland, Ohio)*

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systems are networked with a new generation of clinical applications. Additionally, advanced security applications from Enterasys such as the patented Distributed Intrusion Prevention System and Security Information and Event Manager (SIEM) add additional threat detection/location/containment/removal capabilities as well as enhanced visibility, monitoring, and reporting.

## Services and Support

When something goes wrong on the network and threatens to disrupt operations or patient safety, healthcare providers need access to the people and the technology to figure it out – fast. The Enterasys customer support organization delivers industry-leading customer satisfaction and first call resolution rates.

Featuring personalized service and agents that average over 10 years of service and are co-located with engineering to drive issue resolution, Enterasys customer support personifies the Enterasys mantra that "there is nothing more important than our customers." In addition to technical support, Enterasys also offers a wide range of educational and professional services.

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Enterasys' strong, customer-centric culture is more than just a marketing cliché. Customer feedback continues to highlight customer support and service as a differentiator.

*Gartner Doc ID# G00166799 Magic Quadrant for Enterprise LAN (Global), 2009*

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## Why Enterasys for Healthcare

Enterasys networking solutions provide unique capabilities that are leveraged by healthcare providers around the world to ensure availability of both wired and wireless networked devices, prioritize access to clinical applications involved with patient care, enforce authorized access criteria to protect patient confidentiality and preserve data integrity, and offer wireless network access to patients and guests.

Enterasys is committed to helping our healthcare provider customers deploy and optimize networking solutions that are uniquely tuned to their environment and specific needs. To that end, Enterasys provides network policy templates based on best practices as well as policies unique to healthcare. These policies leverage the existing network design and provide immediate value with no risk, and serve as building blocks toward more advanced capabilities. And, as a strong complement to our technology offerings, Enterasys customer support offers unparalleled expertise and customer care to ensure our healthcare provider customers get the help they need to keep their operations up and running and to enable the highest quality of patient care.

To find out more about Enterasys and our award-winning networking solutions, please visit [www.enterasys.com](http://www.enterasys.com)

## Contact Us

For more information, call Enterasys Networks toll free at 1-877-801-7082, or +1-978-684-1000 and visit us on the Web at [enterasys.com](http://enterasys.com)



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