

APPLICATION NOTE

The Need for Speed in Healthcare Networks

Healthcare facilities are generating and sharing more digital information than ever with an increasing array of stakeholders. From transmitting full-body MRI images and genome data to HD video consultations and DIY medical devices, healthcare networks must work at higher speeds to deliver critical services.

Driven by the explosive growth and wide variety of application data that needs to be shared among internal and external stakeholders, healthcare concerns are looking to next-generation network architectures to support ever-increasing bandwidth requirements and traffic types cost-effectively.

To address this challenge, healthcare providers are adopting optical networking and Ethernet infrastructure to ensure their critical patient data is delivered quickly and reliably, while demonstrating a solid return on their network investment.

Advanced Patient Care Requires More Bandwidth

Best practices in the ANSI/TIA-1179 Healthcare Facility Telecommunications Infrastructure standard recommend that healthcare networks support a minimum of 10 Gb/s speeds in most areas, with 40/100 Gb/s in the healthcare network data center core to ensure critical information is available when and where it is needed.

Figure 1 shows bandwidth requirements for various modalities per average patient study and annual totals. Figure 2 shows the required nominal serial rates for

Modality	MB per study (avg.)		GB per year
Angiography	15		45
Direct and Computed Radiography	42		2688
Computed Tomography	52		1040
Medical Records	39		195
Nuclear Medicine	1.3		3.9
Ultrasound	18		90
Total TB per 100,000 studies		4.1 TB	

Source: Edward M. Smith "Storage Management: What Radiologists Need to Know," 38 (5) 13-15.

Figure 1: File size for select modalities

Features and Benefits

- Bridges the time and distance gap between patient and provider
- Improves patient experience and satisfaction
- Controls costs with improved workflow and operational efficiencies
- Implements a compliant and comprehensive Business Continuity/Disaster Recovery strategy