

# A new era of intelligent data center networks for healthcare



## Data is at the center of healthcare delivery

Across the industry, leading healthcare institutions are evolving their data centers to support digital transformations and other organizational needs. Personalized care, complex treatment delivery, specialized equipment, medical IoT, personal devices, and digital imaging are a few of the services creating explosive healthcare data volumes. New hospital affiliations and outpatient clinics, improved connectivity in rural healthcare, application consolidations, cloud migrations, and software-as-a-service (SaaS) solutions, often leaving security, efficiency, and performance gains untapped.

The combination of skyrocketing data volumes and rapidly changing organizational needs is driving a need for real-time, always-on, highly secure, high-performing service delivery, from data centers to users and locations. As healthcare organizations are seeking to balance network objectives and security objectives, without compromising the user experience, HPE Aruba Networking delivers performance and security to take on every challenge of the modern data center.

Healthcare providers generate roughly 137 terabytes of data every day.<sup>1</sup>

Nearly half of clinicians report their organization's EHR system response time fails to meet their expectations.<sup>2</sup>

Healthcare data is valued at up to \$250 per record on the illicit market. To put this in perspective, the next highest is \$5.40.<sup>3</sup>

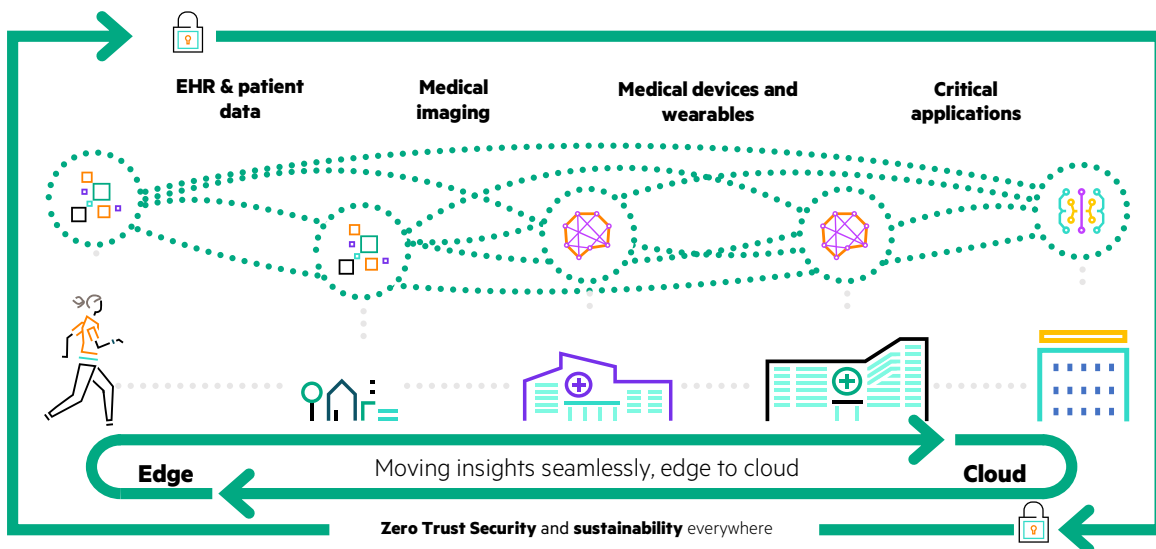


Figure 1. Data is at the center of healthcare delivery

<sup>1</sup> [Healthtech Magazine](#): How to Navigate Structured and Unstructured Data as a Healthcare Organization

<sup>2</sup> [EHR Intelligence](#): Slow System Response Time Hampers Clinician EHR Satisfaction

<sup>3</sup> [Forbes](#): How Healthcare Companies Can Protect Patient Information





## A new era of intelligent data center networks with HPE Aruba Networking

If your organization is like many in the industry—under resourced, underfunded, or both—your network infrastructure may struggle to support digital transformation efforts, manage ever-larger volumes of data, and mitigate cybersecurity risks. That's why our data center solutions integrate compute, storage, and networking infrastructure to help reduce the time, risk, and cost of standing up complex IT infrastructure. Using HPE Aruba Networking data center networking solutions, healthcare organizations obtain simplified data center architecture, enhanced performance, and reduced costs—all with embedded security—delivered by our DPU-enabled switch. Furthermore, our unified and automated approach to data center networking means you can achieve both performance and Zero Trust security—without sacrificing one for the other. You can move faster—deployment times are reduced from weeks or months to minutes—and deliver better patient care with data-first modernization that connects, secures, and automates your data center.

### Key pillars of next generation data centers

#### Zero Trust for secure modern data centers

- Extends Zero Trust (microsegmentation, firewall and encryption) closer to your most security sensitive workloads.
- Increases workload security posture 70%.<sup>4</sup> This is important for a broader network since the breadth can increase the scope security concerns. This is especially true as the nature of security threats shifts from data breaches to denial-of-service ransomware attacks, which can leave a hospital unable to provide patient care.
- Secures PACS data, EMR, and telemedicine with transformative role-based policy management and real-time visibility across facilities and remote locations.
- Protects IoT, internet of medical things (IoMT), and other insights at the where patient, device, and application data is processed for an excellent patient, provider, and client experience at the edge.

#### Improved app response time and user satisfaction

- Improves network workload performance by 10X.<sup>5</sup>
- Eliminates lower-performance server connections to 25/100GbE, low latency connectivity. Many applications require real-time capabilities where very low latencies are non-negotiable.
- Provides high performance, ubiquitous access, and always-on networking.
- Deploys quickly and easily, a benefit for healthcare organizations that are often under resourced and underfunded.
- Scales to meet your growth and M&A needs.

#### Simplified architecture for data center efficiency

- Simplify data center provisioning and accelerate issue remediation with policy-based automation across a unified data center network.
- Saves up to 70% in costs over three years using the HPE Aruba Networking CX 10000 Switch Series over traditional Next-Gen Firewalls and standard L2/3 Ethernet switches.<sup>6</sup>
- Reduces security appliance sprawl and costly server agents for a more efficient data center.
- Cuts purchasing of, deploying, and managing appliances, agents, and software.

<sup>4</sup> [Expected security posture improvement from a recent HPE Aruba customer deployment.](#)

<sup>5</sup> Comparing HPE Aruba CX10000 providing DPU hardware-accelerated (800G) network and security services vs. traditional L2/3 ToR switch.

<sup>6</sup> TCO analysis are based on hypothetical examples, using specific industry assumptions. Individual customer configurations will vary based on specific designs and configurations. 3-year cost for next-gen firewalls and standard L2/3 TOR Ethernet switches. Assumes 500 servers, 24 server racks, 400 Gbps/rack, 8400 Gbps total bandwidth. Assumes 75% and east-west traffic needed inspection. Compared with a HPE Aruba CX10000 with AMD Pensando configuration providing accelerated stateful firewall services embedded into the L2/3 TOR switch.

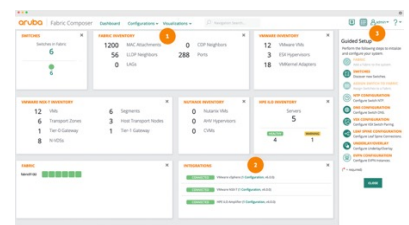


## HPE Aruba Networking data center solution components

HPE Aruba Networking data center solutions enable healthcare organizations to move away from expensive traditional data center approaches. Legacy data centers are complex, difficult to deploy, constrain applications, exhibit bandwidth issues, and require bolt-on security appliances. With HPE Aruba Networking data center solutions, you gain distributed centers of data where each application has the right balance of services and built-in security. You not only deliver great experiences to clinicians and patients but also enable your IT staff to rapidly accelerate deployments, including at distributed sites and when merging networks of acquired organizations into your environment, more cost-effectively than ever before, at ever-improving economies of scale.

### HPE Aruba Networking CX 10000

### HPE Aruba Networking Central with Fabric Composer



**High performing, secure, integrated:**

HPE Aruba Networking CX 10000 is an industry-first DPU-enabled switch with 800G of distributed stateful firewall for east-west traffic, Zero-Trust segmentation, and pervasive telemetry. Workloads are fully visible and portable. By combining the CX 10000 and Fabric Composer, you'll streamline network management with an architecture that is easier, simpler, and far-reaching.

**Simplified and centralized:** Fabric Composer is an intelligent, API-driven, software-defined orchestration tool that automates and simplifies configurations and network provisioning in the data center. It increases efficiencies and improves productivity for network operators and server and virtualization admins.

**Advanced segmentation and encryption:** With services like advanced segmentation and encryption, you'll drive protection deeper into the data center and dramatically scale and strengthen the security posture of your network workload.





### On-premises healthcare locations

Edge compute and security to run and secure applications and process data close to users and devices.



### Private data center

Private data center to meet organizational protocols or industry compliance mandates.



### Colocation facilities

Colocation to enable exiting the real estate business or saving on operational costs.

## Deploy data centers, your way

While healthcare organizations are moving away from the constraints of traditional on-premises deployments to modern cloud-enabled solutions, timelines, and appetite for adopting cloud infrastructure varies. Simultaneously, the interest in enabling workloads to function with cloud-like velocity and agility is strong. To assist healthcare organizations in overcoming these challenges, HPE Aruba Networking data center solutions provide high-performance, flexible cloud-like, and hybrid deployment options that also improve security and functionality.

## Managing budget and operational demands

Healthcare organizations have undergone substantial digital transformation over the last decade. There are more medical and personal IoT devices in the healthcare landscape than ever before, and this trend is not slowing down. The healthcare IT organization faces the difficult challenge of added complexities, including how they prioritize investments in digital tools, technology, and analytics.

Many healthcare IT departments are refreshing their network infrastructure to support a modern healthcare model where digitally managed in-person patient care, telehealth, and home healthcare all operate seamlessly. The goal is to provide care that is flexible, meets patients where they are at, and does not further burden the medical care teams and organizational staff. There are many avenues to pursue digital transformation in healthcare, and it is certainly not one-size-fits-all.

HPE Aruba Networking can help you finance your data center and reduce budgeting complexity, while enabling you to move forward with your digital transformation initiatives and goals.

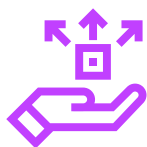
- **HPE GreenLake for Networking:** This network as a service (NaaS) offering allows you to quickly deploy and transition to a subscription based, OpEx model for better financial flexibility and improved data center network infrastructure resourcing. HPE GreenLake for Networking enables you to reserve CapEx funds for other projects.
- **Fast and flexible IT solution integration with HPE:** HPE Aruba Networking data center solutions stand apart from network-only vendors by offering a variety of deployment and integration options powered by HPE GreenLake. Data centers can be on-premises, fully managed in a pay-per-use model at the edge, or in colocations. According to a Forrester study, customers deploying HPE GreenLake report up to 80% faster time to market when implementing complex global IT projects.

In addition to cloud and as-a-service options, customers can select from an array of pre-engineered and tested HPE and HPE Aruba Networking integrations for more traditional on-premises, customer-managed options. Ready-to-deploy, custom IT data center solutions help simplify and speed IT service delivery while reducing the time, risk, and expertise needed.

- **HPE Financial Services:** During digital transformation, organizations typically aim to maximize technology within available budget. Often unexplored is the flexibility to fund these new projects when the IT assets are managed across a solution's entire lifecycle. HPE Financial Services provides a suite of options to sustainably propel your organization's growth.







**Distributed**



**Streamlined**



**Protected**



**Automated**



**Unified**

## Why HPE Aruba Networking?

Standardize on a single vendor with tightly integrated solutions that securely connect all your enterprise domains, edge to data center to cloud, and eliminate the complexity of bolt-on and third-party additions. Gain a data-first networking modernization strategy that is grounded in five key tenets:

**Distributed:** puts services closer to where data/apps live. Network and security policies follow workloads and tap the power of DPU-enabled switches to offload compute.

**Streamlined:** breaks the cycle of “more”. Subtract appliances, devices, siloed tools, shadow monitoring networks.

**Protected:** drives pervasive Zero Trust defense. Supplies policy-based micro-segmentation and closes east-west traffic exposures.

**Automated:** eliminates manual tasks. Provides simplified orchestration, deterministic policy automation, and algo-driven infrastructure, whether physical or virtual.

**Unified:** provides full-stack visibility. Leverage real-time telemetry for infrastructure, applications, domains, and micro-services.

Implementing an HPE Aruba Networking data-first networking modernization strategy enables a transformational shift, powering enterprises’ new era of intelligent data center networks.

## Summary

Today’s healthcare landscape is flooded with data that must be processed, secured, and delivered. Many applications that use this data require real-time capabilities where very low latencies are non-negotiable. With HPE Aruba Networking Data center networking solutions, you can evolve your data center network to simplify your architecture, enhance performance, and reduce costs—all with the strongest embedded security.



## Our solution partners



CSPi Technology Solutions offers Managed IT Services, Professional Services, and Cloud Services to assist clients in architecting and managing a secure, high-performance, and highly available IT infrastructure. Our engineers have industry experience and specialized certifications in networking, wireless & mobility, unified communications & collaboration, data center, and advanced security technologies, ensuring tailored solutions for our clients' needs.

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## Learn more

[IDC Spotlight—Meeting the Need for High Performance and Security Through a Modern Datacenter Fabric](#)

[Data center investments simplify IT and cloud modernization](#)

[Simplify, accelerate and secure data center networking and IT operations.](#)

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