

# FlexPod Datacenter Infrastructure for MEDITECH Software

## Innovation and efficiencies for demanding healthcare workloads

### The Challenge

Healthcare providers remain under pressure to maximize the benefits of their investments in MEDITECH electronic health records (EHRs). As a mission-critical application, MEDITECH has stringent server and storage infrastructure requirements to ensure:

- High availability
- High performance
- Robust data protection, backup, recovery, and business continuance

MEDITECH users with legacy infrastructures that are ready for a refresh can now benefit from an innovative FlexPod<sup>®</sup> MEDITECH solution that increases IT agility and provides seamless scalability. It also reduces the cost and complexity of MEDITECH data center operations. The solution is FlexPod Datacenter Infrastructure for MEDITECH. It consists of MEDITECH software, which runs on a Cisco Unified Computing System (Cisco UCS) with Intel Xeon processors. The platform is virtualized with VMware ESXi, runs Windows Server 2016, and is coupled with MEDITECH's testing and certification for NetApp<sup>®</sup> FAS and AFF storage.

## Key Benefits

### Simplify IT Infrastructure with a Platform for Innovation

- Power the most demanding MEDITECH applications with infrastructure optimized for analytic workloads
- Dramatically reduce data center costs with industry leading efficiencies
- Confidently integrate the newest capabilities with rapid validation of the latest technologies

### Unleash New Insights on a Platform Trusted Worldwide

- Operate with confidence on a standard platform and NetApp/Cisco partnership trusted worldwide
- Simplify your support experience with full-stack support options from a single vendor
- Streamline IT administration by delivering a simple, cloud-like experience

### Move Faster with Unmatched Versatility

- Gain superior agility with the most cloud-connected infrastructure for multicloud environments
- Meet the needs of diverse workloads with granular scalability and broad application support
- Grow seamlessly to meet increasing application demands

## The Solution

Efficiently run MEDITECH software on a modern infrastructure

FlexPod is a proven data center solution offering a flexible, shared infrastructure that easily scales to support growing workload demands and exceeds all performance requirements. The innovative FlexPod platform has thousands of customers using it for mission-critical workloads and a robust channel of delivery partners. FlexPod Datacenter for [MEDITECH EHR](#) simplifies IT infrastructure, helps healthcare organizations unleash new insights from their data, and moves IT projects faster with automation and cloud connection.

NetApp's AFF and FAS arrays powered by the ONTAP operating system are certified by MEDITECH. Building upon that, FlexPod is a pre-validated platform aligned with, and supported by MEDITECH best practices, meeting stringent requirements for low-latency system performance and high availability. MEDITECH customers can consolidate infrastructure by using a common platform for a broad set of applications, including EHR, PACS, virtual desktops, and department-specific applications. FlexPod adapts and scales to changing applications and growth, future-proofing your infrastructure investment without forklift upgrades. The power of FlexPod is already working to help save lives in several MEDITECH environments worldwide.

### Value of a FlexPod pre-validated converged infrastructure

MEDITECH is prescriptive about its customers' hardware requirements because of overarching performance, dynamic recovery, backup, I/O, and availability requirements. FlexPod, a pre-validated, rigorously tested converged infrastructure from the strategic partnership of industry leaders Cisco and NetApp, is engineered and designed specifically for delivering predictable, low-latency system performance and high availability.

The FlexPod solution from Cisco, NetApp, and VMware meets MEDITECH system requirements with a modular, pre-validated, converged, virtualized, efficient, scalable, and cost-effective platform. It provides:

- Elimination of costly, disruptive downtime through ONTAP
- Pervasive simplicity and agility with the software-driven architecture of the industry-leading FlexPod workflow automation, orchestration, and management tools
- Faster IT responsiveness to business requests like MEDITECH backup and provisioning of additional test and training environments
- Cisco Application Centric Infrastructure (ACI) for centralized, policy-driven automation that accelerates application deployments
- Multiprotocol FAS or AFF storage systems that unify application silos, allowing NAS or SAN file or block storage on one converged platform
- Support for private, public, or hybrid cloud strategies with a consistent set of data management tools for edge, private, and public clouds
- Ability to address MEDITECH and other healthcare and general-purpose IT workloads on one platform
- Capability to perform storage maintenance, hardware lifecycle operations, and FlexPod upgrades without interrupting the business

## MEDITECH Software on FlexPod

By running the MEDITECH environment on this new foundation, healthcare organizations can expect to see staff productivity improve while lowering capital and operating expenses. Additional benefits of running MEDITECH software on FlexPod Datacenter include:

- **Multitenancy.** Support the increased needs of virtualized server environments, providing secure multitenancy and quality of service.
- **Resource optimization.** Help reduce server counts and boost utilization while improving performance.
- **Agility.** Reduced complexity and costs let organizations provision new database replications and environments to support initiatives such as population health management.
- **Productivity.** Deploy quickly and speed MEDITECH applications, greatly reducing login times, system response times, and other user interactions.
- **Industry-standard components.** Take advantage of industry-standard x86-architecture blade and rack servers, networking, storage, and enterprise-class management in a single system running MEDITECH software and the VMware ESXi hypervisor.

## Best-in-Class Components for Enhanced Data Center Efficiency

FlexPod components are integrated in a standard configuration that scales from entry-level designs for hundreds of users up to high-performance, large workloads for tens of thousands of users. This integrated approach can significantly reduce your capital and operating expenses through end-to-end virtualization and higher efficiencies at each layer.

### Cisco UCS

Cisco UCS Servers offer a software-driven architecture that delivers pervasive simplicity and operational agility. It combines compute and network resources, storage access, and virtualization into a scalable, modular system that is easily managed as a single entity by Cisco UCS Manager. Cisco UCS Servers simplify your data center architecture by reducing the number of devices to purchase, deploy, and maintain and by improving speed and agility for application deployments.

The Cisco UCS system is versatile. It simultaneously supports unique performance and scale requirements of various applications by using a common management and resource model. Service profile templates enable automatic, policy-based hardware configuration and deployment for large, stateless computing environments. The fifth-generation Cisco UCS Server platforms support the new Intel Xeon scalable processors, delivering faster CPUs and memory with increased core counts. Producing six new industry-standard world records in the M5 generation and

over 150 world records overall, the Cisco UCS M5 server portfolio continues to perform and innovate. In addition, Cisco UCS has replaced aging RISC-based, legacy systems with cost-effective, high-performance solutions based on x86. The cost savings and productivity gains made possible by these features will help transform healthcare IT from a cost center to an innovation center.

### Cisco data center switches

Cisco Nexus data center switches are built for scale, industry-leading automation, programmability, and real-time visibility. The Cisco Nexus 9000 series offers high performance, low density, low latency, and power efficiency that are taken to new levels with cloud-scale ASIC technology. Cisco Nexus 9000 switches also lay the foundation for software-defined innovations such as Cisco ACI, allowing intelligent software to automate hardware resources across next-generation data centers. Cisco Nexus switches offer options for unified fabric technology to identify and consolidate all network traffic onto a single simplified, cost-effective architecture based on FCoE. Dedicated FC support is available through Cisco MDS switches, which offer high-performance SAN extensions and reliable integration into existing SAN environments.

### NetApp storage

NetApp AFF and FAS systems:

- Reduce the cost and complexity for virtualized infrastructures by meeting all your storage requirements with a single, highly scalable solution.
- Support all NAS and SAN protocols on the same system, so you no longer need to purchase separate systems to accommodate different storage needs.
- Offer a predictable workload-specific effective capacity with the NetApp all-flash guarantee.
- Enhance operational efficiency with automated storage management, data protection, and security.
- Bring new levels of nondisruptive operations, scalability, and efficiency to enterprise storage with ONTAP.

AFF performance is optimized with innovative flash technologies and 40GbE, FCoE, and FC support. At up to 11 million IOPS per cluster with sub-millisecond latency, NetApp AFF systems are among the fastest all-flash arrays built on a true unified scale-out architecture. With ONTAP based storage, you can deploy the exact proportion of flash to spinning media for your environment and use a single storage system for flash, disk, and cloud storage.

AFF storage systems reduce overall storage costs while delivering the low-latency read and write response times and IOPS required for MEDITECH workloads. Both NetApp FAS and AFF systems have been tested and certified by MEDITECH, providing

customers with the performance and responsiveness that are key to MEDITECH operations. In addition, NetApp AFF and FAS systems offer features that are useful in MEDITECH environments, simplifying management, increasing availability, and reducing the total amount of storage needed:

- **Storage efficiency.** Reduce total capacity requirements with deduplication, compression, compaction, and thin provisioning.
- **Space-efficient cloning.** The NetApp FlexClone® capability allows you to almost instantly create readable/writable database copies. These clones consume additional storage only as incremental changes are made.
- **Integrated data protection.** Full data protection and disaster recovery features help customers protect critical data assets.
- **Nondisruptive operations.** You can perform upgrading and maintenance without taking data offline.
- **End-to-end redundancy.** Redundancy in FlexPod means no single point of failure.

## VMware vSphere ESXi

The VMware vSphere hypervisor is the industry-leading hypervisor that virtualizes servers and consolidates applications on less hardware.

- **Built-in management tool.** Create and provision virtual machines easily and in minutes.
- **Storage usage efficiency.** Allocate storage resources beyond the actual capacity of the physical storage.
- **Advanced memory management.** Overcommit memory resources and perform page sharing and compression to optimize memory performance.
- **Hardened drivers for high reliability.** Enable optimal performance for the vSphere hypervisor through partnerships with independent hardware vendors.

## Windows Server 2016

The solution supports Windows Server 2016 on VMware ESXi 6.5 with Xeon processors. Windows Server 2016 is a cloud-ready operating system that supports your current workloads while introducing new technologies that make it easy to transition to cloud computing when you are ready. It includes a comprehensive set of features that range from midlevel servers to the largest enterprise data center environment.

## FlexPod Cooperative or Solution Support Speeds Problem Resolution

FlexPod Cooperative Support, which comes with every FlexPod solution, is a partnership between NetApp, Cisco, and our technology partners Microsoft, VMware, Citrix, and Red Hat. (You can also add NetApp, Cisco, or partner solution support for a single point of contact.) Your IT staff chooses which vendor to call according to your initial assessment of the problem. Knowledgeable FlexPod engineers work to resolve your issue quickly using shared communications, expertise gained through ongoing joint training, and a formal escalation process. In addition to FlexPod Cooperative Support, customers can choose a Solutions Support option. Solutions Support builds on Cooperative Support and focuses not on individual products or components, but on solutions, providing a central contact point, and making it easy to get any issue with any product in a solution deployment resolved. FlexPod delivers choice with Solution Support offerings from either NetApp, Cisco or the partner.

## Configuration Validation Software for FlexPod

The optional FlexPod configuration validation software, Converged Systems Advisor, which helps FlexPod configure to best practices for optimal performance and availability. An on-premises agent uses cloud analytics to monitor and validate the deployment of your FlexPod infrastructure. This FlexPod tool simplifies key administrative tasks with an automated review of more than 100 best practices, component support updates, and resilient design requirements. With continual remote monitoring and notifications, this software helps administrators prevent gaps in system supportability and protect their investment in mission-critical data center infrastructure. These capabilities simplify lifecycle management and improve productivity with infrastructure support. Converged Systems Advisor comes standard as part of NetApp Solution Support services.

## FlexPod Reseller Partners

FlexPod Premium Partners are an elite group of Cisco and NetApp resellers who have been recognized for the depth and breadth of their FlexPod expertise. They offer a comprehensive suite of FlexPod system integration and implementation services applicable to the entire FlexPod Datacenter lifecycle.

FlexPod Premium Partners orchestrate a master implementation plan, including MEDITECH-specific and MEDITECH-experienced resources through Cisco and NetApp.

Engaging a FlexPod Premium Partner for a data center deployment can help IT departments reduce risk, customize their FlexPod solution, and accelerate time to production availability.