FlexPod for Epic Directional Sizing Guide

FlexPod

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Purpose

This technical report provides guidance for sizing FlexPod (NetApp storage and Cisco Unified Computing System) for an Epic Electronic Health Record (EHR) application software environment.

FlexPod systems that host Epic Hyperspace, InterSystems Caché database, Cogito Clarity analytics and reporting suite, and services servers hosting the Epic application layer provide an integrated platform for a dependable, high-performance infrastructure that can be deployed rapidly. The FlexPod integrated platform is deployed by skilled FlexPod channel partners and is supported by Cisco and NetApp technical assistance centers.

The sizing exercise described in this document covers users, global reference counts, availability, and disaster recovery (DR) requirements. The goal is to determine the optimal size of compute, network, and storage infrastructure components.

This document is outlined into the following main sections:

- Reference Architecture, which describes the small, medium, and large compute storage architectures that can be used to host the Epic production database workload.
- Technical Specifications, which details a sample bill of materials for the storage architectures. The configurations that are described are only for general guidance. Always size the systems according to your workload and tune the configurations as necessary.

Overall solution benefits

By running an Epic environment on the FlexPod architectural foundation, healthcare organizations can expect to see improved staff productivity and decreased capital and operating expenses. FlexPod, a prevalidated, rigorously tested converged infrastructure from the strategic partnership of Cisco and NetApp, is engineered and designed specifically to deliver predictable low-latency system performance and high availability. This approach results in high comfort levels and the best response time for users of the Epic EHR system.

The FlexPod solution from Cisco and NetApp meets Epic system requirements with a high-performing, modular, prevalidated, converged, virtualized, efficient, scalable, and cost-effective platform. FlexPod Datacenter with Epic delivers the following benefits specific to the healthcare industry:

- **Modular architecture.** FlexPod addresses the varied needs of the Epic modular architecture with purpose-configured FlexPod platforms for each specific workload. All components are connected through a clustered server and storage management fabric and a cohesive management toolset.
- **Accelerated application deployment.** The prevalidated architecture reduces implementation integration time and risk to expedite Epic project plans. NetApp OnCommand Workforce Automation (WFA) workflows

for Epic automate Epic backup and refresh and remove the need for custom unsupported scripts. Whether the solution is used for an initial rollout of Epic, a hardware refresh, or expansion, more resources can be shifted to the business value of the project.

- **Simplified operations and lowered costs.** Eliminate the expense and complexity of legacy proprietary RISC and UNIX platforms by replacing them with a more efficient and scalable shared resource capable of supporting clinicians wherever they are. This solution delivers higher resource utilization for greater ROI.
- **Quicker deployment of infrastructure.** Whether it's in an existing data center or a remote location, the integrated and tested design of FlexPod Datacenter with Epic enables customers to have the new infrastructure up and running in less time with less effort.
- **Scale-out architecture.** Scale SAN and NAS from terabytes to tens of petabytes without reconfiguring running applications.
- **Nondisruptive operations.** Perform storage maintenance, hardware lifecycle operations, and software upgrades without interrupting the business.
- **Secure multitenancy.** Supports the increased needs of virtualized server and storage shared infrastructure, enabling secure multitenancy of facility-specific information, especially when hosting multiple instances of databases and software.
- **Pooled resource optimization.** Help reduce physical server and storage controller counts, load balance workload demands, and boost utilization while improving performance.
- **Quality of service (QoS).** FlexPod offers QoS on the entire stack. Industry-leading QoS storage policies enable differentiated service levels in a shared environment. These policies enable optimal performance for workloads and help in isolating and controlling runaway applications.
- **Storage efficiency.** Reduce storage costs with the NetApp 7:1 storage efficiency guarantee.
- **Agility.** The industry-leading workflow automation, orchestration, and management tools offered by FlexPod systems allow IT to be far more responsive to business requests. These requests can range from Epic backup and provisioning of additional test and training environments to analytics database replications for population health-management initiatives.
- **Productivity.** Quickly deploy and scale this solution for optimal clinician end-user experience.
- **Data Fabric.** The NetApp Data Fabric architecture weaves data together across sites, beyond physical boundaries, and across applications. The Data Fabric is built for data-driven enterprises in a data-centric world. Data is created and used in multiple locations, and it often needs to be leveraged and shared with other locations, applications, and infrastructures. Customers want a way to manage data that is consistent and integrated. The Data Fabric offers a way to manage data that puts IT in control and simplifies ever-increasing IT complexity.

Scope

This document covers environments that use Cisco Unified Computing System (Cisco UCS) and NetApp ONTAP based storage. It provides sample reference architectures for hosting Epic.

It does not cover:

- Detailed sizing guidance for using NetApp System Performance Modeler (SPM) or other NetApp sizing tools
- Sizing for nonproduction workloads

Audience

This document is for NetApp and partner systems engineers and professional services personnel. The reader is assumed to have a good understanding of compute and storage sizing concepts, as well as technical familiarity with Cisco UCS and NetApp storage systems.

Related documents

The following technical reports are relevant to this technical report. Together they make up a complete set of documents required for sizing, designing, and deploying Epic on FlexPod infrastructure:

- TR-4693: FlexPod Datacenter for Epic EHR Deployment Guide
- TR-3930i: NetApp Sizing Guidelines for Epic (requires Field Portal access)
- TR-3928: NetApp Best Practices for Epic