

FlexPod®

Streamline Containers and Microservices with FlexPod and Docker Datacenter

In a more static world, organizations could manually deploy and configure applications and systems in their data centers. But in today's fast-paced environment, organizations are implementing containers and microservices, seeking their simplicity and portability to modernize their applications. That's why many companies are turning to Docker Datacenter running on FlexPod® systems. With this Cisco® and NetApp® solution, your development and IT teams can adopt containers across the enterprise to containerize traditional applications, refactor applications as microservices, and efficiently create and deliver new applications.

Create and Deploy Anywhere

Docker solutions running on FlexPod allow your DevOps teams to quickly and easily deliver existing enterprise applications, new service-oriented solutions, and patch and update applications. Code, runtime environments, system tools, libraries, and system resources are distributed in self-contained, independent deployment units that are portable across private and public cloud

infrastructure. As a result, you can create, distribute, deploy, and run your applications anywhere and have confidence that they will perform as expected.

Build on Proven Architecture

Cisco and NetApp understand the importance of modernizing application delivery. That's why we've worked to deliver an agile and flexible solution that offers advanced capabilities. Built on FlexPod, our solution includes Cisco Unified Computing System™ (Cisco UCS®) servers, Cisco Nexus® switches, NetApp ONTAP® storage, Docker Datacenter and the NetApp Docker Volume Plug-In, and Red Hat Enterprise Linux.

With FlexPod, we deliver a verified, lab-tested architecture that provides detailed design and implementation guidance. Our approach helps reduce risk and guesswork by giving your architects and administrators a guidebook for implementation. By following the guidelines in a Cisco Validated Design, you can easily move to a Docker container-based approach and continuously develop, deploy, and support applications.

Eliminate the Storage Management Hassle

With the NetApp Docker Volume Plug-In, your developers and IT staff can easily access the best NetApp storage for the job. This open-source plug-in supports all NetApp primary storage platforms, including Data ONTAP, SolidFire®, and E-Series storage, all at the same time. Your DevOps teams can easily deploy multiple simultaneous application instances that use different persistent storage configurations, including customized volume properties and tailored storage solutions that accelerate performance, without having to learn detailed storage management commands and processes. Just use the well-documented Docker API, and the plug-in handles the details of storage management.

Share and Move Resources

Running multiple applications on a server is one of the best ways to control costs. Docker containers provide a safe and secure way for you to host multiple applications and tenants without concern that one of them will consume all the available



resources. If you need to move an application, you can simply move its container to a different segment of your IT infrastructure. Data remains available, because Docker volumes are accessible across multiple hosts, and volumes can easily be exported and imported. You can also clone data for additional data access, integrity, or recovery operations.

Keep Traffic Moving

You need assurance that your shared IT resources won't be slowed down by an I/O bottleneck. With Docker Datacenter running on FlexPod, production traffic uses a dedicated interface created on a Cisco UCS virtual interface card (VIC). This interface automatically fails over from the primary to a secondary unified fabric connection if a failure occurs. Container file system traffic uses a bonded pair of network interfaces, with one interface connected to each system fabric. Groups of tenant containers are isolated through dedicated storage VLANs. Automated network optimization helps ensure that the network delivers well-defined and predictable service,

including security through network segmentation, quality-of-service (QoS) policies, and network characteristics such as lossless Ethernet and jumbo-frame support.

Standardize, Secure, and Scale Your Way

Our solution gives you the freedom to standardize, secure, and scale the underlying environment so that your teams can quickly respond to dynamically changing requirements. You can purchase the systems you need today and scale your integrated infrastructure up or out for greater performance and capacity.

You can scale nondisruptively by adding or upgrading components without having to adjust your software or networking capabilities or interrupt operations. Cisco UCS management detects new components and automatically configures new servers, making the process fast and error-free.

Simplify Management

Traditional approaches often fail to deliver cohesive infrastructure management. Our management approach lets you tie your

infrastructure to your applications across containers and physical elements for better visibility and control. Automation, orchestration, and lifecycle management capabilities simplify deployment and help enable your IT staff to operationally integrate your IT resources to address complex, time-consuming, manual, and compartmentalized processes.

Move to FlexPod

If your organization needs to improve the way that it builds, ships, and distributes applications, consider FlexPod and Docker Datacenter. With this innovative solution, you can easily, securely, and continuously deliver applications and services and accelerate time-to-value.

For More Information

For more information about FlexPod, visit <http://www.cisco.com/go/flexpod> and <http://www.cisconetapp.com>.

Read the Cisco Validated Design for [FlexPod Datacenter with Docker Datacenter for Container Management](#).

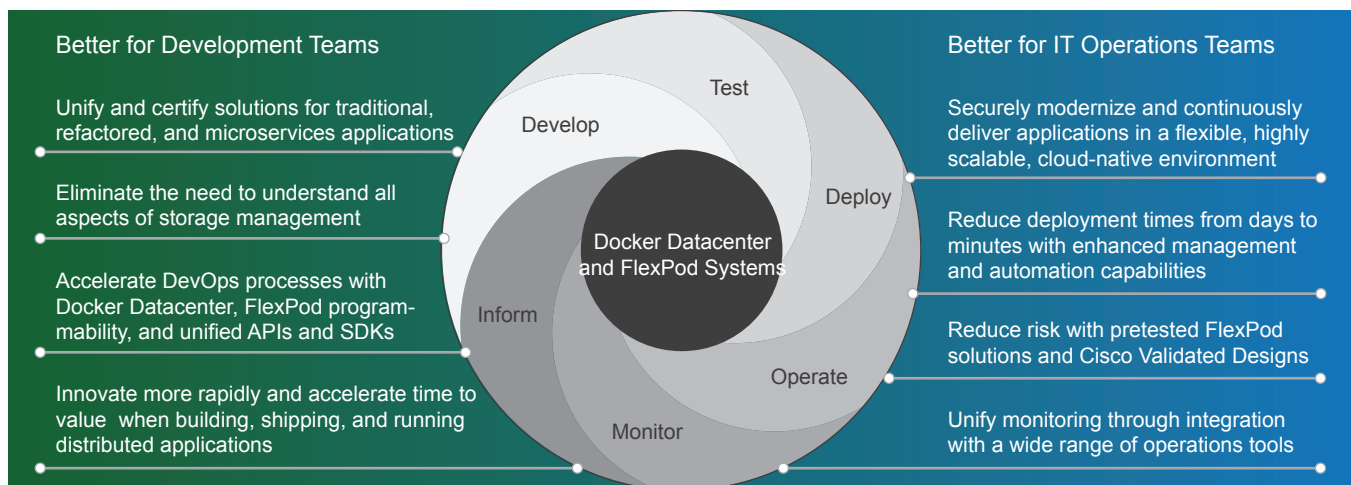


Figure 1) Docker Datacenter and FlexPod Platforms Support Continuous Application Development and Delivery

