

FLEXPOD FOR ENTERPRISE-GRADE CLOUDS

Red Hat, NetApp, and Cisco deliver open hybrid cloud solutions for business-critical use

TECHNOLOGY OVERVIEW



According to a survey of 539 global business executives,

82%

cite security to be the most important attribute when selecting a cloud solution.¹

Fully integrated and tested, Red Hat, NetApp, and Cisco OpenStack solutions give you a secure, reliable, manageable cloud foundation that reduces risks, speeds deployment, and accelerates return on investment.

CLOUD TECHNOLOGIES HELP TRANSFORM I.T.

New technologies and ways of consuming services and products are changing and accelerating how business is done. As such, today's IT organizations face an increasing number of demands that they must meet faster than ever before. Simply acting as datacenter administrators no longer meets business needs, forcing you to move to strategic business partner and internal service provider roles.

Cloud technologies can help you transform your IT organization. An effective enterprise-grade cloud can handle modern, business-critical workloads while meeting strict service level agreements (SLAs). As the leading cloud platform, OpenStack® is a natural choice for your cloud infrastructure. However, OpenStack can be challenging and time-consuming to deploy, leading to increased risk and costs.

Red Hat, NetApp, and Cisco deliver an enterprise-grade open hybrid cloud foundation that lets you deploy OpenStack faster and with less risk. Based on Red Hat® Enterprise Linux® OpenStack Platform and FlexPod®—NetApp and Cisco's integrated infrastructure solution—these solutions are secure, reliable, and easy to manage, accelerating return on investment (ROI) and allowing you to meet fast-evolving business needs quickly and efficiently.

PARTNERING FOR PROVEN EXCELLENCE

Through a long-standing partnership, Red Hat, NetApp, and Cisco deliver proven, enterprise-grade solutions that transform IT while reducing risk and improving ROI. Now, they are using this experience to develop OpenStack-based cloud solutions for business-critical use. Mutual OpenStack collaboration—including reciprocal validation and certification of each others' products and technologies—ensures cloud reliability and stability while giving you access to the latest advances and innovation. Full, collaborative support through cross-training of support engineers, the FlexPod Cooperative Support model, and TSANet let you operate Red Hat, NetApp, and Cisco joint solutions with confidence. In fact, Red Hat, NetApp, and Cisco are so committed to their partnership that each uses the others' technology internally.

With Red Hat, NetApp, and Cisco OpenStack solutions, you can build a secure, reliable, hybrid cloud environment to host business-critical and production workloads and help transform your IT organization. The following are some examples of the benefits of building your enterprise-grade cloud on a Red Hat, NetApp, and Cisco foundation.

SPEED CLOUD DEPLOYMENT

Building an OpenStack environment in-house often requires extensive knowledge and can be a complex and time-consuming process. Red Hat, NetApp, and Cisco OpenStack solutions are fully integrated, reducing deployment time and costs. These solutions let you take advantage of Red Hat, NetApp, and Cisco OpenStack and cloud infrastructure expertise, so you can focus on delivering value to your business instead of building a cloud from scratch. With more than 100 validated



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¹ KPMG, "2014 Cloud Survey Report: Elevating Business in the Cloud," January 2015.



Predictable, scalable performance ensures your cloud environment can meet business-critical SLAs.

designs, the FlexPod platform reduces validation efforts and speeds deployment. Plus, infrastructure sizing tools help you quickly determine the components you need. All of this adds up to faster time to value for your cloud.

DELIVER ON ENTERPRISE SLAs

Your business depends on your ability to meet SLAs for critical IT services and resources. If these services and resources aren't available when needed, productivity declines and business suffers. Red Hat, NetApp, and Cisco OpenStack solutions give you the scalable, predictable performance you need to meet enterprise SLAs in your cloud environment. As a main tenet of cloud architectures, scalability is built in to Red Hat Enterprise Linux OpenStack Platform. Adding to this, FlexPod's shared infrastructure allows resources to be allocated dynamically. Finally, service profile templates permit automatic, policy-based hardware configuration and deployment, speeding resource provisioning and improving accuracy. As a result, applications can scale elastically to meet critical SLAs at all times.



Co-engineering and integration extend advanced security technologies throughout your entire cloud stack.

INCREASE CLOUD RELIABILITY

Production IT environments must be reliable, and your cloud environment is no exception. Red Hat, NetApp, and Cisco OpenStack solutions are designed for robust operation, allowing you to deploy an enterprise-grade cloud environment. With these solutions, the powerful storage and management features of NetApp systems extend into your OpenStack cloud environment. Red Hat Enterprise Linux OpenStack Platform is also intensively tested and hardened to give you enterprise software features, including a longer life cycle, integrated security, and full support. Additionally, FlexPod features integrated high availability and allows nondisruptive upgrades. With this stable, dependable cloud foundation, you can move production workloads to the cloud with confidence to increase IT flexibility and agility.

IMPROVE SECURITY AND COMPLIANCE

Cloud security is a critical concern for IT organizations. Disparate cloud and infrastructure solutions can increase security risks and make it more difficult to ensure reporting and regulatory compliance. Red Hat, NetApp, and Cisco OpenStack solutions integrate security across your cloud environment, reducing risk and simplifying compliance. Through coengineering, Red Hat Enterprise Linux and Red Hat Enterprise Linux OpenStack Platform share security features like Security-Enhanced Linux (SELinux) and sVirt, safeguarding your operating environment. FlexPod incorporates NetApp Storage Virtual Machines to deliver secure cloud multitenancy. Additionally, FlexPod has passed several security compliance tests, PCI compliance validation, and an ICSA audit. The overall result is a secure, compliant cloud environment.



Prevalidated, integrated solutions reduce the risks involved in deploying a cloud environment.

REDUCE CLOUD IMPLEMENTATION RISKS

All changes to your IT environment involve risk, but today's IT organizations can't afford setbacks when moving to the cloud. Red Hat, NetApp, and Cisco OpenStack solutions are prevalidated, reducing the design, implementation, and infrastructure tuning risks involved in deploying a cloud environment. Unlike community OpenStack, Red Hat Enterprise Linux OpenStack Platform is fully supported and co-engineered with Red Hat Enterprise Linux to increase stability and interoperability. And the FlexPod platform lets you start small and expand your infrastructure over time without disruption to your environment.



A collaborative support model streamlines issue resolution and gives you a single point of contact for support.

TAKE ADVANTAGE OF COMPREHENSIVE CLOUD SUPPORT

For production operations, you need enterprise-grade support to give you access to the latest technology and ensure issues are resolved quickly. Backed by award-winning global support teams and the FlexPod Cooperative Support model, these solutions let you take advantage of the combined experience, resources, and technical support expertise of Red Hat, NetApp, and Cisco. Through collaboration and cross-training of support engineers, the vendors work together to resolve customer issues. This gives you a single point of contact and streamlines identification and resolution, regardless of where the problem arises, so you can operate your cloud efficiently and reliably.

CREATE AN OPEN HYBRID CLOUD FOUNDATION

Public cloud services are an essential part of modern IT operations. By unifying public and private cloud environments, Red Hat, NetApp, and Cisco OpenStack solutions let you take advantage of the best both private and public cloud services have to offer. Unified management tools allow you to create a hybrid cloud environment and more easily administer cloud resources. This lets you develop and deploy applications in either environment and move them as your needs change. The overall result is streamlined management and better control of public cloud resources.

BUILD AN ENTERPRISE-GRADE CLOUD WITH RED HAT, NETAPP, AND CISCO

Red Hat, NetApp, and Cisco integrate the FlexPod platform and Red Hat Enterprise Linux OpenStack Platform into a secure, efficient, highly available, production-ready, hybrid cloud environment.

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

With Red Hat Enterprise Linux OpenStack Platform, Red Hat combines all the innovation and benefits of community OpenStack with the enterprise-grade life cycle, features, and support you need for your production cloud environment. Commercially hardened code increases stability and eliminates the need to customize and compile code in-house. Co-engineering with Red Hat Enterprise Linux and integration with other elements of the trusted Red Hat stack—including Red Hat Enterprise Virtualization—enhances interoperability, security, and performance. World-class, global support and consulting, training, and certification services give you access to current best practices and Red Hat's cloud expertise while improving the reliability of your cloud. Finally, a comprehensive ecosystem of certified partners means you'll always be able to add complementary applications and tools to meet your needs.



KEY TECHNOLOGIES FOR ENTERPRISE-GRADE CLOUD SOLUTIONS

- Red Hat Enterprise Linux OpenStack Platform
- Cisco UCS integrated infrastructure
- Cisco Nexus switches
- NetApp FAS and E-Series storage systems

FLEXPOD INTEGRATED INFRASTRUCTURE PLATFORM

Based on Cisco Unified Computing System (UCS) servers, Cisco Nexus switches, and NetApp FAS and E-Series storage, FlexPod forms a flexible, open, integrated foundation for your enterprise-grade OpenStack cloud environment.

With unified management and policy-based configuration, Cisco UCS integrated infrastructure is ideal for OpenStack cloud environments. Preconfigured Cisco UCS Solution Accelerator Paks simplify and accelerate cloud deployment. The flexible, modular Cisco UCS architecture also makes it easy to expand your infrastructure as demands increase. End-to-end infrastructure management capabilities allow you to quickly provision cloud resources without manual intervention. This also increases infrastructure visibility and monitoring while streamlining administration.

NetApp FAS and E-Series storage systems deliver secure, scalable, high-performance storage for your cloud environment. These systems maximize storage utilization and simplify data management for increased efficiency and lower costs. Additionally, NetApp's contributions to the OpenStack



“The true potential of cloud lies in an organization’s ability to leverage this agile delivery model to transform the business.”

RICK WRIGHT
PRINCIPAL AND GLOBAL CLOUD
ENABLEMENT LEADER, KPMG

Cinder and Manila projects expose value-add features in NetApp block and file storage through an easy-to-consume storage service catalog. This allows you to use key features—including Snapshots, data-deduplication, rapid cloning, and secure multitenancy—in your enterprise cloud deployment.

FlexPod combines these best-in-class components into a unified platform for physical, virtual, and cloud applications and workloads that speeds deployment and provisioning, reduces risk, and lowers IT costs. Highly customizable and scalable, FlexPod’s efficient design simplifies datacenter infrastructure and streamlines management and operations. FlexPod is tested and proven with popular hypervisors, operating systems, applications, infrastructure software, and cloud platforms, so you can customize your cloud to best meet your needs. Plus, cooperative support between Red Hat, NetApp, and Cisco streamlines issue resolution and gives you a single point of contact for support.

CONCLUSION

IT organizations must evolve to meet changing business needs. Cloud technologies are an essential tool in progressing from datacenter administrator to strategic business partner and internal service provider. Based on Red Hat Enterprise Linux OpenStack Platform and FlexPod, Red Hat, NetApp, and Cisco deliver an enterprise-grade open hybrid cloud foundation that is secure, reliable, fast to deploy, and simple to manage, so you can transform your IT organization with confidence. To learn more about building a business-critical cloud for your organization, contact your Red Hat, NetApp, or Cisco sales representative or visit the following links:

- www.redhat.com/openstack
- www.netapp.com/us/solutions/flexpod
- www.cisco.com/go/flexpod



ABOUT RED HAT

Red Hat is the world’s leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 80 offices spanning the globe, empowering its customers’ businesses.



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