Solution Brief

Keep Pace with Business Change by Modernizing Your IT Infrastructure

Attain the flexibility and performance needed to handle the most demanding workloads

KEY FEATURES

Achieve Fast Response with an Agile Infrastructure
Effortlessly support changing business requirements with a single, efficient, and agile infrastructure.

Increase Business Value Through Efficiency
Deploy cost-effective solutions for a new era of business-critical efficiency, performance, and flexibility.

Maximize Results Without Disruption
Eliminate planned downtime with continuous access to applications and data.

Today's Business Requires Agility and Cost Efficiency

We have entered a new era in which agility and cost efficiency are central to business success. However, organizations continue to struggle with the pace, complexity, and changing demands of a data-driven world. And the limitations of aging infrastructure components, incompatible systems, and delayed availability of new application features on legacy RISC/UNIX® systems prohibit IT from achieving productivity gains. In order to grow and stay ahead of the competition, businesses need to transform IT from a cost center to an innovation center.

IT modernization

The growing adoption rate of the x86 architecture as the industry standard has created a gravitational pull on software developers and technology innovators. As a result, many commercial applications have been restructured to take advantage of the improved economics of industry-standard hardware based on the Linux® operating system. Organizations now have access to a flexible, cost-effective architecture that meets or surpasses the performance, reliability, and availability of current RISC/UNIX implementations. And with the strong industry backing and support of thousands of software and hardware partners, organizations are now presented with a compelling argument to modernize aging RISC/UNIX infrastructures and achieve the cost and productivity benefits needed to meet their business goals.

NetApp and Cisco help transform data centers with an agile infrastructure to drive cost and performance efficiencies across critical application workloads. Based on industry-leading platforms and software and a unified architecture, the Cisco® Unified Computing System™ (UCS™), NetApp® storage, and the FlexPod® data center solution enable organizations to achieve an improved total cost of ownership. By making the transition to a modern infrastructure, IT is positioned to easily adapt to changing business requirements today and in the future.

"In the past we needed at least 6 hours to deploy code out to our Web servers, as we were only able to make changes once a day. Today we use Cisco USC service profiles, NetApp rapid cloning, and our custom orchestration tool to deploy or update as many as 60 virtual servers in less than 30 minutes. And it's all automated—we've replaced a complicated, mistake-prone, 100-step runbook process with push-button code deployments that are bulletproof and complete 92% faster."

Andy Lapin
Chief Architect, Kelley Blue Book Company, Inc.

Achieve Significant Business Benefits with a Modern IT Infrastructure

IT can now realize productivity gains by modernizing aging RISC/UNIX systems to dramatically reduce costs and gain immediate access to new applications and features. Through application and infrastructure modernization, organizations are positioned to rapidly achieve business goals with the ability to quickly respond to change, operate more cost efficiently, and increase customer satisfaction.

Improved database TCO

Database licensing costs often represent a large part of the overall IT budget, and they are often the single largest expense of infrastructure costs. By modernizing the IT infrastructure, IT is positioned to significantly reduce database license costs, deliver predictable performance, improve availability, and efficiently manage across a shared (physical or virtual) environment.

- **Dramatically reduce downtime.** A highly redundant architecture maximizes the availability of mission-critical workloads. Minimize database downtime when implementing upgrades, maintenance, and technology refreshes. Accelerate backup and recovery in a database environment. For example, with a modern IT infrastructure it is possible to copy an 8TB database in 108 seconds, occupying 2MB of additional space.
- **Enable predictable performance.** Get the most out of database licenses with improved performance from servers and storage that deliver industry-leading benchmarks (Cisco: 1,609,186 (tpmC); NetApp: 1.5M SPECsfs (IOPs).
- **Manage data efficiently.** Streamline the management of unstructured and structured data, distributed databases (both single-instance and RAC) servers and storage, as well as disaster/recovery and backup environments.

Ready access to new application functionality

Leading vendors are optimizing enterprise software solutions for x86-based servers to capitalize on the outstanding performance when running on servers and storage that deliver industry-leading benchmarks.

- **Reduce time to deploy and upgrade applications.** Provide data mobility for seamless infrastructure upgrades and maintain application performance integrity. Create an insulation layer between applications and the underlying data infrastructure for transparent upgrades, maintenance, and hardware refreshes without losing access to data.
- **Maximize developer productivity.** Add new applications quickly. Accelerate application test and development up to 50% with NetApp Snapshot™ technology and cloning features.
- **Meet service SLAs and reduce operational cost.** Streamline management with easy-to-use tools. Allow users to grow and shrink volumes on the fly and enable allocated storage to exceed physical storage. Gain support for new, modern business applications, such as those from SAP, Oracle, and Microsoft.

Plan for Tomorrow with a Modern Infrastructure Today

Outstanding performance and availability

The Cisco Unified Computing System (UCS) with intelligent Intel® Xeon® processors delivers cost-effective scalability, high performance, advanced reliability, and the data protection that businesses expect for their most data-intensive enterprise applications. Intel Xeon processors are designed to meet business performance needs, with reliability, availability, and scalability features equal to, and, in some cases, greater than, current RISC processors. Cisco UCS is the first truly unified data center platform that combines Intel Xeon processors with networking and storage access in a single cohesive system. Some of the world's most successful companies, across a variety of industries, have transitioned their most critical business applications and database deployments to Cisco UCS. You too can transform your mission-critical computing environment so that it is ready for the challenges of both today and the future.

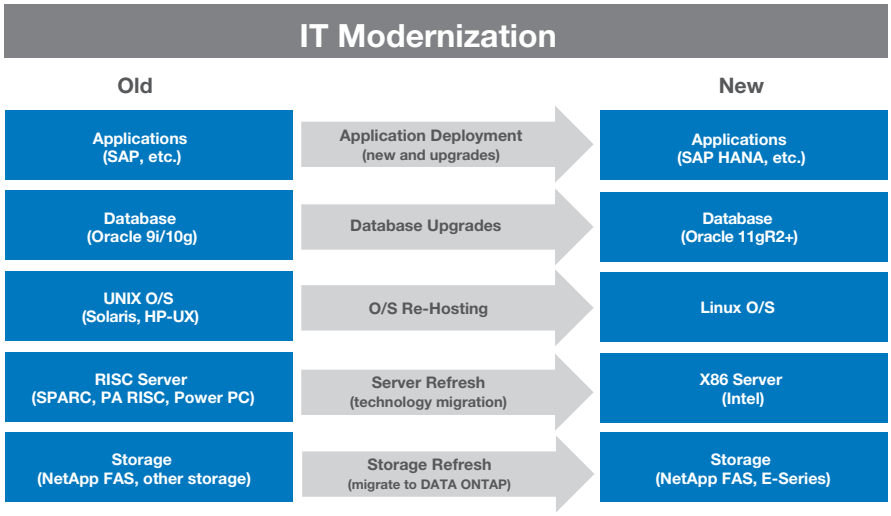

Figure 1) IT modernization framework

Accommodate data growth with flexible scale-out storage

NetApp storage solutions built on Intel Xeon processors enable companies to successfully handle the massive data growth and infrastructure complexities with scale-out storage solutions optimized for today's demanding workloads. By optimizing data management at exabyte scale, organizations can easily adapt to changes in the business with an immediate response to unpredictable data growth. Businesses get unprecedented agility, data protection, and efficiency to manage their growing data with cost-effective storage solutions that result in greater business value.

Make the transition with a prevalidated data center platform

FlexPod, jointly developed by NetApp and Cisco, is a flexible infrastructure platform designed to ease your IT transformation with maximum efficiency and minimal risk. Components include NetApp unified storage systems, Cisco UCS servers, and Cisco Nexus® switches. The FlexPod architecture can scale up or out, and it can be optimized for a variety of mixed workloads in both virtualized and nonvirtualized environments.

Make disruptive upgrades a thing of the past

Undergoing a technology refresh can bring considerable benefits to your business. But the process can introduce significant consequences if the transition is not handled properly. Since RISC/UNIX application migrations are not all the same, proper planning and a sound migration methodology are required to help enable a successful migration.

Put an end to disruptive and complex technology migrations with access to Cisco and NetApp expertise and proven processes to successfully migrate data from RISC/UNIX environments for a smooth production rollout of business-critical applications. Complete sets of services are available to help you confirm ROI and reduce TCO, performance-test migrations, and migrate applications based on your criteria and requirements.

Achieve Fast Response with an Agile Infrastructure

Thrive in today's state of constant change

IT modernization solutions from NetApp and Cisco enable businesses to rapidly adapt to changing business conditions. IT is now positioned to make decisions more quickly, bring products to market faster, and drive revenue growth. And with the ability to operate with predictability in the face of extreme complexity, IT can effectively respond to evolving customer needs to drive both customer loyalty and sustainable profit.

- **Eliminate wasteful overspending.** Scale performance and capacity by pooling several systems of any size to support numerous, diverse workloads that can be provisioned in minutes.
- **Achieve cost and performance benefits.** Scale performance, capacity, and operations without the need to scale the number of people managing the environment or sacrificing performance.
- **Future-proof your data center.** Scale to large-scale data centers without architectural changes with an elastic, scalable, flexible pool of compute, network, and storage resources that can be put into action at any time.

Increase Business Value Through Efficiency

Achieve flexibility and cost benefits

IT modernization solutions from NetApp and Cisco enable businesses to avoid complex, costly projects with IT investments that extend the business value of critical business systems. IT is now positioned to say yes to the business, using IT as the catalyst to deliver measurable business value with speed and efficiency.

- **Superior price/performance.** Achieve flexibility and cost benefits leveraging the outstanding performance and economics of the x86/Linux architecture by replacing expensive, complex RISC/UNIX platforms.
- **Improved TCO.** Power mission-critical workloads with a shared IT infrastructure that enables IT consolidation and the potential for massive cost savings by running numerous workloads on the same hardware.

IT MODERNIZATION	
COMPONENTS	**BENEFITS**
Cisco Unified Computing System	Delivers a single, unified system based on Intel Xeon processors with automation to simplify and accelerate deployment of applications and services.
NetApp Storage	Industry-leading unified storage platform for unprecedented levels of scalability and data storage flexibility to keep businesses running nonstop. Support for numerous workloads on all protocols leveraging existing resources and minimizing or eliminating technology replacement costs.
FlexPod	Prevalidated base data center configuration built on Cisco UCS, Cisco Nexus data center switches, and NetApp FAS storage components. Optimized for a variety of mixed workloads in both virtualized and nonvirtualized environments.
Intel Xeon	Manage and secure crucial business data and exceed the demands of the most mission-critical IT challenges with a powerful and reliable server featuring the Intel Xeon processor family.
Linux Operating System	Ready access to new applications and functionality with the de facto standard operating system for x86 architectures.

Table 1) NetApp and Cisco IT modernization solution components.

- **Consistent, repeatable deployments**. Modernize business processes by automating time-consuming, repetitive tasks to eliminate human error. Easily clone and redeploy resources to reduce preparation time for new initiatives.

Maximize Results Without Disruption

Continuous access to critical business applications and data

IT modernization solutions from NetApp and Cisco enable businesses to manage and secure business data with powerful and reliable servers and storage using Intel Xeon processors. By eliminating downtime, even during routine upgrades and maintenance, technology refreshes, and capacity and performance expansion, IT is positioned to exceed the most demanding mission-critical IT challenges.

- **Lose nothing.** Protect and accelerate the business with data protection solutions to reduce backup time, speed data recovery, and improve business operations.
- **Gain data protection.** Extensive reliability, availability, and serviceability (RAS) features in silicon and the storage subsystem provide error detection, correction, containment, and recovery in all processors, memory, and I/O data paths to protect against data loss. You also get the advanced RAS features in Linux.
- **Achieve a highly redundant architecture.** Standard redundant components provide the utmost availability of critical data and mission-critical applications.

Get Started Today

Now is the time to modernize IT with an agile infrastructure based on the Cisco Unified Computing System and NetApp storage. These innovative solutions provide the flexibility, reliability, and availability needed to achieve today's business goals. By replacing aging RISC/UNIX infrastructure components and incompatible systems, IT can achieve the productivity gains needed to rapidly adapt to change while achieving greater cost efficiency and increased IT agility.

NetApp and Cisco have a powerful global presence and have been working together on a data center vision for almost 10 years. Built on jointly validated reference architectures, our solutions have helped thousands of our mutual customers to increase efficiency and agility while reducing TCO.

Visit *www.netapp.com* and *www.cisco.com* for further information.

About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at *www.netapp.com*.

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