

SmartStack Delivers Speed, Scale, and Simplicity to Your Data Center

SmartStack Integrated Infrastructure from Cisco and Nimble Storage



HIGHLIGHTS

Speed

- Accelerate application deployment and time to value.
- Support line-of-business IT requirements by optimizing application performance.
- Deploy the first integrated infrastructure based on flash-optimized storage technology.

Scale

- Lower initial capital expenses (CapEx).
- Scale computing, networking, and storage performance independently, to adapt to changing business requirements.

Simplify

- Reduce complexity with unified, integrated infrastructure.
- Reduce risk to your application environment with prevalidated solutions.
- Reduce your storage footprint by 30 to 70 percent.

Imagine being able to quickly deploy new, revenue-generating and productivity-improving applications.

The speed of business is accelerating. As enterprise applications proliferate, the long lead times required to design, procure, test, and deploy workloads can compromise your competitiveness. You need proven, easy-to-deploy, and scalable IT infrastructure with enterprise-class performance to fuel your long-term success.

SmartStack™ integrated infrastructure, jointly developed by Cisco and Nimble Storage integrates computing, networking, and storage resources. It scales transparently and independently, so you can quickly respond to changing business requirements. Whereas other approaches proliferate operational complexity and inefficiency, increase costs, and hamper your IT staff and business productivity, SmartStack solutions provide a proven reference architecture together with Cisco® Validated Designs to simplify deployment and accelerate the return on your infrastructure investments.

SmartStack Integrated Infrastructure

SmartStack solutions bring together the innovative Cisco Unified Computing System™ (Cisco UCS®) and the Nimble Storage® Adaptive Flash platform, creating the first integrated infrastructure solution based on a modern, flash-optimized storage architecture.

According to IDC, about 80 percent of IT staff time is being consumed managing and maintaining siloed traditional infrastructure ([IDC Integrated Systems: End-User Survey Report](#), document 251695, September 2014). Your staff has little time left to focus on strategic business initiatives. SmartStack solutions dramatically increase your staff efficiency and significantly reduce errors resulting from repetitive, manual configuration



SmartStack™



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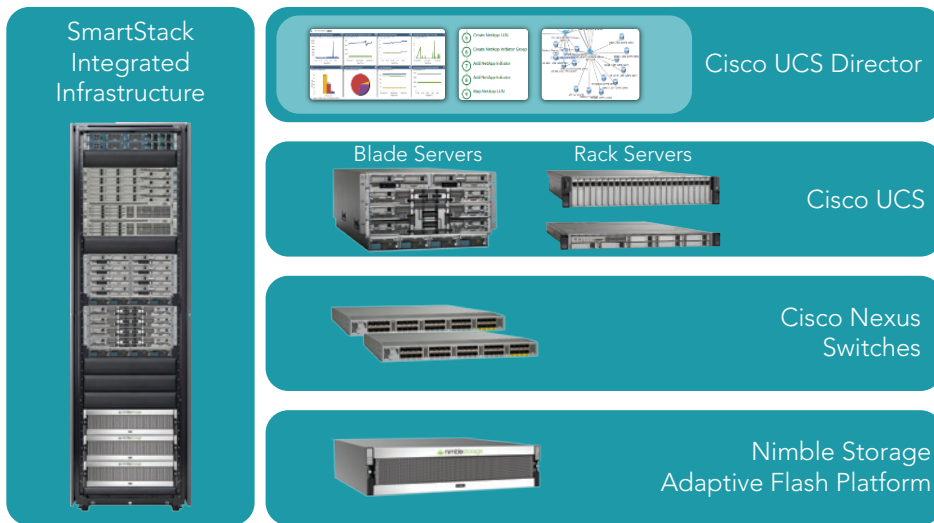


Figure 1. SmartStack delivers prevalidated, best-in-class infrastructure for a variety of data center environments and applications.

tasks. Policy-based automation increases efficiency, frees staff time, and helps ensure compliance. Cisco UCS Director provides comprehensive infrastructure automation and orchestration for your SmartStack solutions (Figure 1).

Speed

Success in today's hypercompetitive global marketplace requires a high degree of responsiveness to changing business conditions. You must be able to quickly and efficiently launch new revenue-generating and productivity-enhancing applications. You need a powerful high-performance infrastructure to support your applications and maintain your competitive edge.

Accelerate Application Deployment

Nimble and Cisco provide prevalidated integrated infrastructure solutions with a broad range of reference architectures designed to support your most critical business applications and workloads, including:

- Enterprise applications from vendors such as Oracle, SAP, and Microsoft
- Emerging applications such as big data and analytics applications

- Desktop virtualization
- Server virtualization

Rather than taking months to test and deploy a single application and risk missing market windows, you can choose integrated infrastructure solutions based on reference architectures or Cisco Validated Designs. This approach empowers your IT staff to quickly and efficiently deploy new applications to give you a competitive advantage (Figure 2).

Cisco and Nimble have made a significant investment to enable you to adopt a solution quickly and with little risk. Cisco engineers have tested, validated, and documented exact configurations in Cisco Validated Designs. Cisco and Nimble have worked together to size the solution so that your capacity and performance needs are met at a cost you can afford. Cisco Validated Designs are a recipe for success, enabling IT organizations to deploy infrastructure in a fraction of the time needed for traditional installations.

Optimize Your Applications

The most powerful processors available can't make your applications perform if they are starved for data. SmartStack combines Cisco UCS, with world-record-

setting performance across all workloads, and the Nimble Adaptive Flash platform delivers up to 500,000 I/O operations per second (IOPS). This solution delivers a high-performance foundation for your applications.

Scale

With traditional infrastructure, you need a detailed understanding of your resource requirements to accurately deploy a solution that will meet your needs today and scale with your business in the future. More often than not, you overprovision infrastructure because you don't have an accurate view into how your workloads use resources.

SMARTSTACK: AN EXCELLENT CHOICE

"Nimble's tight integration with the Cisco offering was a big selling point for us. We really did our homework before we decided to switch platforms. I spoke to analysts at Gartner and contacted a few of my colleagues at a local university for a reference. All of them confirmed that the SmartStack was an excellent choice, so we made the decision to purchase our first Nimble CS460G array."

—Tom Uva, CIO, WYNIT Distribution

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CISCO UCS: NUMBER-1 AMERICAS REVENUE MARKET SHARE IN X86 BLADES

—IDC Worldwide Quarterly Server Tracker, 2015 Q2, August 2015, Vendor Revenue Share

SmartStack is modular, so you can purchase exactly what you need today and easily scale your computing resources, storage performance, and storage capacity independently and nondisruptively as your business needs change. This capability saves initial capital expenditures (CapEx) because you don't have to pay to overprovision your infrastructure. It also saves operating expenses (OpEx) because you don't have to house, power, cool, and manage resources that you are not using. With SmartStack, you can immediately reduce your storage footprint by 30 to 70 percent. This reduction in turn reduces your storage system footprint and creates more space and efficiency in your data center.

Simplicity

IT organizations are burdened with cost and complexity, which stifles innovation and creates two main challenges:

- **Costly overprovisioning** that worsens as workload demands increase

- **Increased challenges** in establishing and maintaining service-level agreements (SLAs) for business-critical workloads

Reduced Complexity

In the past, you deployed infrastructure in application tiers and silos to support the unique characteristics and requirements of each application. Today, with SmartStack, you can support all your applications and workloads in the same integrated infrastructure solution. This solution effectively eliminates the complexities of siloed architectures and dramatically reduces both cost and complexity while optimizing application performance.

SmartStack is unified, integrated infrastructure that enables you to create pools of resources that can be deployed dynamically as business requirements dictate. SmartStack can be deployed quickly and easily, on day zero, using SmartStack SmartSetup™, an intuitive, wizard-based setup utility that configures both the Cisco UCS and Nimble Storage environments in minutes. These capabilities further reduce cost and complexity and ultimately make your business more responsive and agile.

Cisco SingleConnect technology is the single way that SmartStack interconnects blade and rack servers; physical servers and virtual machines; and LAN, SAN, and management networks. With significantly fewer network components, cables, and management points than traditional infrastructure, you have dramatically lower total cost of ownership (TCO). The technology's "wire once and walk away" approach eliminates traditional manual, time-consuming, error-prone processes

IMPROVE SPEED WITH A REDUCED FOOTPRINT

"When we moved our SQL, Exchange, and Citrix environments onto SmartStack for business critical applications our users immediately expressed their amazement with the performance increase. And that wasn't the only benefit. Now, with the Cisco UCS blades and Nimble, we've reduced our data center footprint down to just two racks of hardware. As a result, we have reduced our data center co-location costs by 50 percent."

—Aaron Britt, director of information systems infrastructure, DMB Associates

and lets you quickly and easily add servers to SmartStack.

Unified Management

SmartStack can be managed through a single pane using Cisco UCS Director, providing comprehensive infrastructure orchestration and management. Unified management helps lower OpEx by automating routine tasks, effectively freeing administrators from the constraints of labor-intensive manual configuration and management. Nimble Storage InfoSight™ cloud-based storage

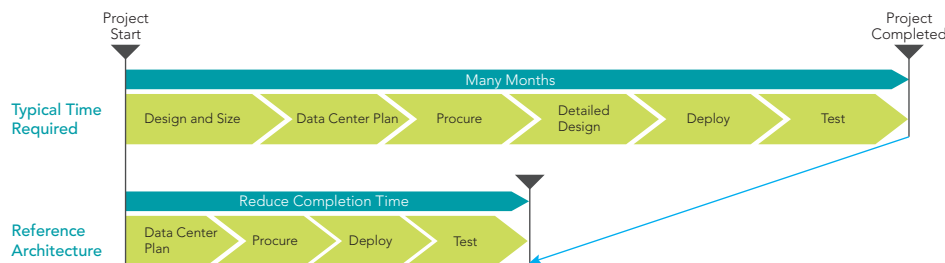


Figure 2. SmartStack takes less time to deploy than traditional infrastructure.

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Cisco and Nimble Storage were voted the top Platinum sponsors at Oracle's JD Edwards Summit in February 2015 (voted by conference attendees).



—<http://blogs.cisco.com/datacenter/cisco-voted-top-platinum-sponsor-jde-summit-2015>

management, an integral part of the Adaptive Flash platform, helps ensure peak health of your Nimble Storage infrastructure by proactively identifying problems and offering actionable solutions—all in real time. InfoSight provides intelligence to help you deploy the right balance of enterprise storage resources—dynamically and intelligently—to meet changing business requirements.

Reduced Risk

Nimble and Cisco have worked closely to reduce risk when you deploy SmartStack, performing extensive testing and providing a joint support model.

Cisco and Nimble performed thorough and detailed testing across a broad range of business applications and workloads to create reference architectures using industry best practices. These prevalidated reference architectures provide easy-to-follow blueprints to help ensure successful deployment in a fraction of the time needed for traditional, siloed architectures. Upon deployment of the solution, you will have a configuration fully optimized for your workload.

In addition, if problems arise, Cisco and Nimble will work together, with your IT organization, to get your system up and running quickly. Joint support includes:

- One number to call to get your problem resolved
- Simplified support for SmartStack aided by support engineers that work to quickly resolve your problem
- Combined Cisco and Nimble resources and technical expertise to transparently deliver support to customers through a formal shared communications and escalation model.
- Support backed by TSAnet, a global alliance framework that enables fast-track technical support cooperation among multiple partners

The result: rapid, coordinated resolution of your technical issue. SmartStack support keeps your critical infrastructure up and running.

About Cisco and Nimble Storage

Together, Cisco and Nimble Storage are redefining the way that enterprises deploy applications—with integrated infrastructure. SmartStack combines networking and server technology from Cisco with Nimble's Adaptive Flash platform. The combination creates the first Cisco UCS Integrated Infrastructure offering based on a modern, flash-optimized platform. Easily deployed as a single, flexible, cost-effective, and easy-to-order integrated system, SmartStack provides speed, scale, and simplicity to enterprises.

For More Information

- For information about SmartStack, visit:
 - <http://www.cisco.com/go/smartstack>
 - <http://www.nimblestorage.com/smartstack>
- For information about Cisco UCS, visit <http://www.cisco.com/go/ucs>.
- For information about Cisco UCS performance, visit <http://www.cisco.com/go/ucsatwork>.
- For information about the Nimble Storage Adaptive Flash platform, visit <http://www.nimblestorage.com/products-technology/adaptive-flash/>.



SmartStack™



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