

# SmartStack Integrated Infrastructure

## Cisco Validated Design Using Cisco UCS and Nimble AF7000 All Flash Array

What if you could quickly and easily deploy your business-critical enterprise applications on the only predictive infrastructure that can dramatically increase performance and availability while reducing costs? With Cisco® validated SmartStack™ solutions, you can.

SmartStack is the only enterprise platform that uses the power of a predictive infrastructure to dramatically increase performance and availability while reducing costs across all data center workloads and geographic locations. SmartStack is based on Cisco UCS® Integrated Infrastructure and the Nimble Storage Predictive Flash platform.

This SmartStack solution, using Cisco Unified Computing System™ (Cisco UCS) servers, Cisco Nexus® switches, and Nimble Storage All Flash arrays with VMware vSphere 6.0U2, is well suited for your latency-sensitive, mission-critical enterprise applications (Table 1). It delivers performance with outstanding scalability, a lower total cost of ownership (TCO), and exceptional resiliency.

You want to be able to quickly deploy and scale your enterprise-class infrastructure. This solution allows you to start small and use modular building blocks to incrementally scale either capacity or performance, or both, as your business needs dictate. And it enables you to simplify by standardizing on a consistent platform, helping reduce management costs and the risks associated with ad hoc deployments.

## Accelerate Your Business

In today's market, your business needs and user expectations require rapid deployment of new and revenue-generating applications. SmartStack is quick and easy to deploy, helping you generate revenue more quickly, increase staff productivity, and limit risk. Your business also needs peak application and workload performance. Cisco UCS has world-record-setting performance across all workloads,

and Nimble's Predictive Flash technology efficiently delivers greater performance and adaptability in a much smaller footprint than traditional storage infrastructure. Predictive Flash increases your staff's productivity by using predictive analytics and facilitating problem resolution. As a result, this SmartStack solution can easily adapt to the requirements of a wide range of applications.

## Optimize Performance and Availability

The SmartStack solution is built for speed, availability, and scalability. You can purchase exactly what you want today and easily scale your computing resources, storage performance, and storage capacity independently and nondisruptively as your business requirements change. With no single point of failure, the solution's nonstop availability delivers 99.9997 percent uptime, which is measured through Nimble Storage InfoSight Predictive Analytics. With this SmartStack solution, you can give business-critical applications the utmost performance and responsiveness they need.

## Reduce Costs

SmartStack enables you to reduce your TCO by one to two thirds. Our solution gives you all-flash performance at a lower cost than the cost for traditional enterprise storage solutions and up to two-thirds lower TCO than for other all-flash arrays—all while lowering administrative costs through automation. The capability to start small and easily scale your SmartStack solution reduces initial capital expenditures (CapEx) because you don't have to overprovision your infrastructure. It also reduces 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, creating more space and efficiency in your data center. You can create pools of resources that can be deployed dynamically to adapt to changing requirements so that your business can be more responsive.

# SmartStack with Cisco UCS and Nimble Storage All Flash Arrays

Cisco UCS Director provides a single point of management for the solution, enabling you to easily deploy IaaS or private clouds to improve the agility of your business. The Cisco UCS service profiles you create can be used again for even faster and simpler deployment of new infrastructure. This unified management helps lower OpEx by automating routine tasks, effectively freeing administrators from the constraints of labor-intensive manual configuration and management activities. In addition, InfoSight, an integral part of Nimble’s Predictive Flash platform, helps ensure peak health of your Nimble Storage infrastructure by proactively identifying problems and offering actionable solutions—all in real time from the cloud.

## For More Information








To read the Cisco Validated Design, visit:

- [http://www.cisco.com/c/en/us/td/docs/unified\\_computing/ucs/UCS\\_CVDs/smartstack\\_afa\\_design.html](http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/smartstack_afa_design.html)

To learn more about SmartStack, visit:

- <http://www.cisco.com/go/smartstack>
- <http://www.nimblestorage.com/smartstack>

Table 1 Business Advantages of SmartStack Technology

COMPONENT	BUSINESS BENEFIT
 <p>CISCO UCS DIRECTOR</p>	Build your private cloud or infrastructure as a service (IaaS), including a self-service portal for end users. Integrated with Cisco UCS Manager, Cisco Nexus switches, Nimble All Flash arrays, and VMware vSphere, you can configure the entire integrated infrastructure stack from this single point of management.
 <p>CISCO UCS BLADE AND RACK SERVERS</p>	Gain the flexibility to choose high-density, high-performance Cisco UCS B200 M4 Blade Servers or high-storage-capacity Cisco UCS C220 M4 Rack Servers, depending on your applications.
 <p>CISCO UCS FABRIC INTERCONNECTS</p>	Simplify your deployments with a high-speed unified fabric that delivers up to 80 Gbps of bandwidth and condenses IP, storage, and management networks into one using a wire-once architecture.
 <p>CISCO NEXUS SWITCHES</p>	Build, deploy, secure, and maintain applications through a more agile framework with solution readiness for Cisco Application Centric Infrastructure (Cisco ACI™).
 <p>CISCO FIBRE CHANNEL SWITCHES</p>	Gain consistent, predictable high performance with 8-Gbps connectivity to the Nimble Storage array.
 <p>NIMBLE STORAGE</p>	Nimble All Flash arrays combine fast flash performance with predictive analytics to deliver data quickly and provide an exceptional user experience.
 <p>VMWARE VSPHERE</p>	VMware vSphere is the industry-leading server virtualization software. It is well suited for server consolidation and the deployment of cloud infrastructure.



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