Nimble/Cisco SmartStack Integrated Infrastructure for Enterprise-class Oracle Workloads
Nimble Storage Overview
<table>
<thead>
<tr>
<th>Key Alliances</th>
<th>Headquartered in San Jose with operations in U.S., Canada, Europe, Asia and Australia</th>
<th>Publicly Traded Company Since December 2013</th>
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<tbody>
<tr>
<td>1,000+ Employees</td>
<td>6,000+ Customers Since 2010</td>
<td>900 Channel Partners Worldwide</td>
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<td>Gartner 2015 MQ Leader</td>
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The Nimble Adaptive Flash Platform

CASL ARCHITECTURE
Significantly better performance/$ and capacity/$

SCALE TO FIT
Non-disruptive, flexible scaling to massive scale

INTEGRATED PROTECTION
Rapid backup and recovery

EASE OF OPERATIONS
Proactive support and operational simplicity
The Nimble Adaptive Flash Platform

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The Cisco, Oracle, and Nimble Partnership

- 20+ year relationship
  - Initially in networking, now extended to systems
- Foundational customers to each other
- Joint engineering engagement at many levels
  - Oracle infrastructure platform – Oracle VM & Oracle Linux tested/validated on UCS and Nimble Storage
  - Database – Oracle RAC is the first certified Unified Fabric
  - Early access code and hardware exchanged between Oracle, Cisco, and Nimble
- Performance benchmarks over 30 benchmarks on Oracle Linux
- Joint Solutions
  - SmartStack for Oracle DB
  - SmartStack for Oracle JD Edwards
Nimble/Cisco SmartStack Overview
WHAT IS SMARTSTACK?
Nimble Storage Adaptive Flash storage arrays and Cisco Unified Computing System comes together to deliver…

1. An integrated infrastructure stack that assists in **computing, networking, and storage**

2. A solution that **efficiently integrates a number of workloads**, from Oracle Databases to SAP Hana and Business Applications to Data Protection

3. A flexible deployment model that is **jointly supported by** Nimble and Cisco

SmartStack infrastructure components and design are based on a **validated reference design** as a result of documented, **real workload testing**
WHAT WORKLOADS ARE VALIDATED WITH SMARTSTACK?

SmartStack’s tested and validated infrastructure is proven to meet the demands of diverse workloads

Validated Workloads

SMARTSTACK WITH CISCO (UCS)

UCS B-Series & C-Series Servers with UCS Manager & Director

Cisco Network Switches

Nimble Storage CS-Series

DATA PROTECTION

BUSINESS CRITICAL APPS & DATABASES

Snapshots And/or Backup

Disaster Recovery

VDI

vmware

CITRIX

BUSINESS APPS

SAP S/4 HANA

SharePoint

ORACLE

JD EDWARDS ENTERPRISEONE

DATABASE

SQL Server

ORACLE DATABASE

PRIVATE CLOUD

Microsoft

vmware

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Solving Your Business Problems

HOW CAN SMARTSTACK SOLVE YOUR BUSINESS PROBLEMS?

Common Business Challenges

- Difficulty in quickly employing business applications
- Overspending (CapEx) by overprovisioning to guard against future forklift upgrades
- Lost productivity (OpEx) in deploying and managing disparate infrastructure
- Timely resolution of business-disrupting support issues with multi-vendor solutions
- Ensuring business continuity for the enterprise

Problem Solving Benefits

- Achieve faster time to deployment while minimizing risk with pre-validated reference architectures
- Don’t overspend, get the right size for for today, scale seamlessly tomorrow
- Simplify operations with unified management
- With a single point of support, resolve business-disrupting support issues quickly and easily
- Robust service-level agreements for data protection and disaster recovery
The Key Difference with SmartStack

HOW DOES SMARTSTACK STANDOUT?
SmartStack delivers in ways that other solutions can’t to ensure the best results at a significantly reduced price

SMARTSTACK SOLUTION

1. BEST-OF-BREED COMPONENTS
   - 4x+ less Rackspace, power, and disks required for same level performance as legacy integrated infrastructures. Provides maximized return on capital expenditure investments.

2. SCALABILITY & FLEXIBILITY
   - Ability to future-proof CapEX investment, without having to over-provision

3. MANAGEMENT & MONITORING
   - In addition to UCS Director, SmartStack offers InfoSight for storage sizing, and proactive management and monitoring enabling lower management OpEX and ensuring business resiliency
SmartStack for Oracle Solutions
SmartStack for Oracle with Cisco

- **Oracle Validated Configuration**
  - Oracle Database 11gR2 or 12c
  - Oracle Linux 6 with Unbreakable Enterprise Kernel
  - Oracle VM 3.3
  - (2) Cisco UCS B200 M4 Blades
  - (2) Cisco UCS 6248 Fabric Interconnects
  - (1) Nimble Storage CS-Series Arrays for iSCSI and Fibre Channel*

- **Nimble Storage SmartStack delivers:**
  - High performance for OLTP and OLAP workloads
  - Optimized for database environment
  - Better data protection for backup and recovery
  - Affordable disaster recovery
  - Rapid and space efficient deployment for Oracle test & development environments

*FC in progress

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Validated Configuration Traffic Report
Reporting Date: Q1FY2015 (06/01/2015-08/31/2015)
Resources:
- **Validated Configuration Website**
- **Oracle Linux Test (OLT) Kit**

Top 5 Most visited Validated Configurations in Q1FY2016:
- Cisco Unified Computing System B200 M4 + Oracle Linux 6 Update 5 x86_64 + Nimble Storage CS Series + Oracle Database 11g Release 2 (11.2.0.4)
- HP ProLiant DL380p Gen8 + Oracle Linux 6 Update 5 x86_64 + HGST FlashMax II 1.1TB + Oracle Database 12c Release 1 (12.1.0.1.0)
- HP ProLiant BL460c Gen8 + Oracle Linux 6 Update 4 x86_64 + HP EVA4400 (HSV390) + Oracle Database 12c Release 1 (12.1.0.1.0)
- Lenovo ThinkServer RD640 + Oracle Linux 7 Update 1 x86_64 + LenovoEMC px12-450r + Oracle Database 12c Release 1 (12.1.0.2.0)
- HP DL380G6 + Oracle Linux 6 Update 6 x86_64 + Huawei OceanStor V3 Series + Oracle Database 11g Release 2 (11.2.0.3)
SmartStack for JD Edwards

- **Solution Components:**
  - Cisco UCS Mini (4 blades)
  - Nimble CS300
  - Oracle VM 3.3, Oracle Linux, Oracle 11gR2 Database, JD Edwards EnterpriseOne 9.1
  - Oracle VM Template for JD Edwards EnterpriseOne (E1 Tools Rel. 9.1.3 and E1 Application Rel. 9.1)

- **Collateral**
  - Solution Brief
  - Cisco best practices deployment paper
  - Customer Presentation

"With this solution, organizations can rapidly upgrade to or deploy the latest version of JD Edwards EnterpriseOne while meeting high-performance demands."
Customer Case Study: Wynit Distribution

LEADING INTERNATIONAL DISTRIBUTOR OF PRODUCTS

- Needed scalable, cost-effective storage platform to replacing aging SAN infrastructure
- Keen to reduce complexity and overheads associated with storage management

SmartStack w/Oracle Apps

60% Reduced EDI processing times

6x Accelerated Storage Provisioning for new DBs

Every Hour Cut Business Critical RPO from 1 week to 1 hour for Oracle

“In all cases our expectations were met, and in many instances, they were far exceeded. I don’t provide those kinds of reviews and references for IT products very often, but Nimble and Cisco have clearly earned the high accolades.”

Tom Uva, Chief Information Officer, WYNIT Distribution

“The combination of Nimble and Cisco partnering together and coming up with a tightly integrated converged infrastructure platform has placed our company on a safe path for many years going forward.” Tom Uva, Wynit CIO
Inside the datacenter, Virtacore designed and built an industry-leading infrastructure including an Intel® Xeon® processor-based Cisco UCS servers, Cisco Nexus and Catalyst switches, as well as VMware vCloud Director (VCD) hypervisor software. This powerful, world-class hardware and software solution required an equally robust storage platform. “When it came to storage, we wanted best in class.”

Virtacore used the Nimble Storage arrays for the largest and most demanding business intelligence (BI) applications, Oracle and SQL databases.

**Phil Lawson-Shanks, CTO Virtacore**

- Accelerate new client onboarding
- New infrastructure to allow rapid scalability to accommodate business growth
- Consolidate multiple datacenters

**LEADING WORLD-CLASS CLOUD SERVICES PROVIDER**

Virtacore Standardizes on Cisco, VMWare, and Nimble Storage to Deliver World-Class Public and Private Cloud Services

**Highest Client Satisfaction**

Dramatically reduced client onboarding time, increasing client satisfaction and accelerating revenue recognition

Achieved Compression Ratio, reducing DataCenter footprint and power consumption 2:1
### Summary: Nimble Storage for Oracle Deployments

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefits</th>
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| **Cost-effective Performance**       | • Boost Oracle performance with Adaptive Flash  
                                         • In-line Compression: Reduce Oracle Data Volume capacity significantly (30-75%) |
| **Integrated Data Protection and Cloning** | • Eliminate backup windows  
                                         • Increase retention periods  
                                         • Streamline quality assurance, test & development, and reporting |
| **Scale-to-Fit**                     | • Scale performance linearly/ independently  
                                         • Seamless scalability eliminates forklift upgrades |
| **Easy to Manage**                   | • Simplify provisioning with a few clicks with pre-built performance policies  
                                         • Automatically diagnose and remedy even the most difficult issues with InfoSight  
                                         • Enterprise level capabilities: *including Volume Level Encryption, FIPS Compliance* |
Resources

- **SmartStack**
  - **Nimble website:**
    - [www.nimblestorage.com/solutions/smartstack](http://www.nimblestorage.com/solutions/smartstack)
  - **Cisco website:**

- **SmartStack 3D Demo:**
  - [http://m.kaon.com/c/ns](http://m.kaon.com/c/ns)

- **Contact Nimble Solutions Team**
  - Solutions-core@nimblestorage.com