Technical Deep Dive Into Hyper-Convergence & Learn How it Can Simplify IT

Kiran Sreenivasamurthy
Maxta Inc.
Agenda

✓ Maxta at a Glance
✓ Hyper-Convergence and its Benefits
✓ Architecture and Key Features
✓ Deployment Models – Appliance, RA, Software-Only
✓ Use Cases
✓ VDI Use Case Explained
✓ Summary
Maxta at a Glance

Maxta Maximizes the Promise of Hyper-Convergence

Any Server
Any Hypervisor
Any Storage Device
Any Data Service

✔ Founded in 2009
✔ 18+ Months of Paying Customers
✔ Funded by Tier 1 VCs
  - Andreessen Horowitz
  - Intel Capital
  - Tenaya Capital
✔ Intel Development Partner
✔ Hyper-Converged Solutions
  - Hyper-Convergence: MaxDeploy
  - Software-Defined Storage: MxSP
Hyper-Convergence Defined

✓ The melding together of previously disparate data center resources
  - Converges Applications and Storage on Industry Standard Servers

✓ Provides Shared Storage Capabilities

✓ Supports High Levels of Scale-out

✓ Supports Physical and/or Virtualized Environments
Benefits of Hyper-Convergences

✓ Streamlined infrastructure deployment processes
✓ Simplified IT operations
  - No more complex storage environment to manage
✓ Granular Lego-like scalability
  - Scale by adding more blocks
✓ Significant performance improvements over typical legacy infrastructure
  - Flash storage is leveraged judiciously
✓ Ability to leverage commodity hardware
  - Low cost hardware bound together by powerful software
Maxta Storage Platform Architecture

Enterprise-class Data Services
- Global Namespace
- Snapshots
- Clones
- Capacity Optimization
- Data Integrity & High Availability

Performance
- SSD – Write-back/Read/Metadata caching
- Dynamic Auto Tiering
- Data Locality
- Align application and storage block size

Multi-hypervisor support

Virtualization UI

2015 Data Storage Innovation Conference. © Insert Your Company Name. All Rights Reserved.
Maxta Storage Platform Features and Functionality

- **Data Integrity**: Automatically detect and fix data integrity issues due to hardware failures
- **Simplicity**: Manage VMs not Storage
- **Data Protection**: Protect your application simply and effectively
- **High Availability**: Minimize application downtime, Support for Stretch Storage Metro Cluster
- **Capacity Optimization**: Thin Provisioning Snapshots & Clones, Compression, Deduplication
- **Performance & Scalability**: Eliminate tradeoffs between performance and cost, Linear on-demand Scalability
Maxta Solutions

MaxDeploy

- Reference Architectures for a Hyper-Converged Infrastructure
- Peace-of-Mind
  - Interoperability
  - Flexibility
  - Predictability of Performance
  - Ease of Ordering
- Channel Integration

MxSP

- Software-Defined Storage
  - Software Only
  - Perpetual License & Subscription
- Flexibility
  - D-I-Y: Your Choice in Hardware
  - Works with Existing Infrastructure: No forklift upgrades
- Full Featured
  - Enterprise Class Data Services
  - 1st to Run on Intel Xeon E5-2600 v3 processors (Grantley)
Provides Organizations Choice in Hyper-Convergence and Peace of Mind
Through Pre-Validated Reference Architectures

✔ Benefits

- Tested and validated configuration
- Predictable performance
- Scale-up and Scale-out
- Provide choice
Use Cases

- Primary Storage
- Remote/Branch Office
- Virtual Desktop
- DR Storage
- Test and Development
- Managed Service Providers
MaxDeploy VDI Reference Architecture Design

Management Network (1 GbE)

Virtual Desktop Pool
- 456 Windows 7 VMs
- 1.5 GB Memory
- 2 vCPU

MxSP Aggregated Storage Pool
- 16 TB (4x8x500GB) HDD Datastore
- 1.6 TB (4x400GB) SSD cache + Metadata

Maxta Global Namespace

4 Compute + Storage Nodes
- Intel Grantley S2600WTT
- 8 (4x2) Intel Xeon E5-2699 v3 @ 2.30 GHz
- 768 GB (4x192 GB) Memory

Infrastructure
- vCenter Server
- VCSA
- 8 GB Memory
- 4 vCPU

AD/DNS/DHCP
- Win 2k8 R2
- 4 GB Memory
- 1 vCPU

VDI Services
- Connection Server
- Win 2k8 R2
- 16 GB Memory
- 4 vCPU

Login VSI Infrastructure
- 20 Launchers
- Win 2k8 R2
- 4 GB Memory
- 2 vCPU

Maxta Storage Network (Mellanox SX1012 10 GbE)
### MaxDeploy VDI Reference Architecture Delivers Linear Scalability

**Maxta Storage Platform (MxSP)**

<table>
<thead>
<tr>
<th>Number of Desktops</th>
<th>100</th>
<th>300</th>
<th>456</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Nodes (ESXi hosts)</td>
<td>2+1*</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Number of stuck or unresponsive desktops (Sessions)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Controller VM configuration (CVM)</td>
<td>4vCPU/8GB Memory</td>
<td>4vCPU/8GB Memory</td>
<td>4vCPU/8GB Memory</td>
</tr>
<tr>
<td>Performance Metrics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum response time (VSIbase)</td>
<td>877 ms</td>
<td>843 ms</td>
<td>843 ms</td>
</tr>
<tr>
<td>Average response time (VSI max Average)</td>
<td>960 ms</td>
<td>984 ms</td>
<td>995 ms</td>
</tr>
<tr>
<td>Maximum response time (VSI max Threshold)</td>
<td>1878 ms</td>
<td>1843 ms</td>
<td>1844 ms</td>
</tr>
</tbody>
</table>

**Benefits**
- Linear Scalability
- Small footprint
- Consistent Performance

---

* 2 Hyper-Converged Compute and Storage Nodes + 1 Compute-Only node
Maxta Value Proposition

Maximize the Promise of Hyper-Convergence

- Maximize Choice
  - Any Server, Any Hypervisor
  - Any Storage, Any Workload

- Maximize IT Simplicity
  - Manage VMs, NOT Storage

- Maximize Cost Savings
  - Standard Components and Capacity Optimization

Provide High Levels of Data Resiliency, Availability, and Protection
Maximize the promise of hyper-convergence

Think outside the storage box