Dell EMC Hyperconverged Portfolio: Solutions that Cover the Use Case Spectrum

Broad Portfolio that Meets the Wide Variety of Customer Use Cases

By Terri McClure, ESG Senior Analyst
January, 2017
Contents

The Data Center Modernization Movement ................................................................. 3
Building a Private Cloud: Why Hyperconverged Makes Sense ................................ 3
The Dell EMC Hyperconverged Portfolio ............................................................... 5
The Need for Appliances and Rackscale Systems ..................................................... 5
The Bigger Truth ....................................................................................................... 7
The Data Center Modernization Movement

Enterprises of all sizes are undergoing massive data center modernization initiatives. They are looking to leverage newer technology to cut costs and drive competitive advantage. At the core of many of these transformations is an effort to reengineer IT delivery models to enable cloud-like flexibility of resources and reduce both capital expenditures and operational overhead. That is giving rise to the private cloud movement. Indeed, private cloud adoption is accelerating and maturing. IT organizations are looking to the private cloud for the elasticity it can provide to add or remove resources as required, measured services for tracking and billing purposes, and on-demand resources for their developers (see Figure 1)—in other words, to provide the same benefits they see from a public cloud, but with the greater control of hosting some (or all) of the environment in house.¹

Figure 1. Most Important Hybrid Cloud Capabilities

<table>
<thead>
<tr>
<th>Capability</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid elasticity (i.e., ability to add or remove IT resources as needed)</td>
<td>35%</td>
</tr>
<tr>
<td>Measured service (i.e., usage-based tracking/billing)</td>
<td>25%</td>
</tr>
<tr>
<td>On-demand self-service</td>
<td>19%</td>
</tr>
<tr>
<td>Resource pooling</td>
<td>19%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2%</td>
</tr>
</tbody>
</table>

The movement is under way. ESG’s research reveals that more than three-quarters of organizations would classify their private cloud deployment as either an advanced internal cloud or a basic internal cloud. Those organizations that have virtualized at least half of their production applications are more than twice as likely as their more physical infrastructure-dependent counterparts to categorize their environment as a complete IT-as-a-service operating model.

Building a Private Cloud: Why Hyperconverged Makes Sense

The data in Figure 2 reveals that 85% of IT organizations have deployed or are planning to deploy a hyperconverged system, and for good reason.

¹ Source: ESG Research Report, The Cloud Computing Spectrum, from Private to Hybrid, March 2016. All ESG research references and charts in this white paper have been taken from this research report, unless otherwise noted.
When it comes down to it, IT organizations can derive numerous benefits from the convergence movement. When planning to deploy solutions, the most often-cited benefit IT organizations are seeking from convergence is improved service and support. But there are more reasons IT organizations cite for going down the hyperconverged path. IT organizations say they are looking for greater scalability, agility, and the ability to deploy resources faster—a modern data center can’t have infrastructure provisioning take weeks or months and expect to stay competitive.

And convergence pays off. While users primarily adopt convergence for improved service and support, when it comes to the benefits that organizations realized post-deployment, more than one-quarter (26%) cited faster deployment times (see Figure 3). Other commonly identified benefits included both service and support and scalability improvements, as well as reduced management overhead. So whether it’s for elasticity through faster deployment, or capital and operational expenditure reduction, hyperconverged systems just make sense at the core of data center modernization efforts.
It is clear that hyperconverged platforms enable IT to create an environment that looks and acts like a public cloud—including reducing the management overhead associated with traditional IT approaches that require IT to separately source, manage, and maintain servers, storage (including the SAN), virtualization software, and networking. Hyperconverged platforms are software-defined solutions that help get IT the agility it needs to rapidly add or remove resources as necessary, which is a core capability that more than one in three organizations are looking for from their private cloud.

However, not all application environments are the same. They differ in terms of scale, performance, resiliency, and throughput requirements, so it is important to understand the variety of solutions available. A small number of vendors have a comprehensive hyperconverged portfolio, and Dell EMC is one of them. It offers enough choices to cover the broad spectrum of needs, but not so many options that building the solution is complex and painful. In fact, if the environment in question is very complex and needs such planning, it probably isn’t a good hyperconverged fit in the first place—better for converged or traditional approaches, and Dell EMC can meet that need as well.

## The Dell EMC Hyperconverged Portfolio

### The Need for Appliances and Rackscale Systems

It is not, and won’t likely ever be, a one-size-fits-all world. That’s why the Dell EMC portfolio includes three product families targeting distinct environments. It is a matter of cost, scale, hypervisor support, and performance.

The hyperconverged portfolio includes a number of solutions based on Dell EMC PowerEdge servers. Dell EMC server platforms bring a myriad of benefits to the hyperconverged portfolio. They:

Source: Enterprise Strategy Group, 2017
Maximize operational effectiveness by delivering optimal performance per resource unit through streamlined management, power savings, and density advantages.

Optimize flexibility at any scale. PowerEdge server platforms and management architectures are designed for consistency across the product line, extensive scalability, and maximum versatility to enable IT departments to adapt on the fly to deliver new applications without interruption due to platform or infrastructure changes.

Ensure availability. The evolution of applications, expectations, and BYOD delivery means that 8 am-5 pm availability is no longer good enough, so PowerEdge server platforms are designed to enable 24x7x365 operations.

With these as a foundation, Dell EMC’s ownership of the end-to-end hyperconverged stack including compute and storage layers, and a co-engineering relationship with VMware, Dell EMC can deliver even more customer value by innovating faster.

The Dell EMC Hyperconverged family includes:

- **VxRail Appliances**, optimized for traditional and cloud-native workloads running on VMware, with integrated servers and storage, and deep VMware ecosystem integration.

- **XC Series appliances**, bringing agility, efficiency, and reliability to the data center through a hyperconverged appliance solution for Microsoft Hyper-V and Linux KVM environments.

- **VxRack Systems**, optimized for traditional and cloud-native workloads running in mixed environments whereby customers need hyperconvergence at extreme (or rack) scale. These solutions are optimized for greater than six to eight appliances, and thousands of VMs, with rack-scale networking built in.

There are variations within the product families. On the **VxRail** front, there are multiple configurations available featuring Dell EMC server platforms to meet a variety of use cases. These include:

- **Storage-optimized** (2U/1N based on PowerEdge R730xd): This is just as it sounds: dense nodes configured for storage-heavy environments like Microsoft Exchange or big data environments.

- **GPU-optimized** (2U/1N based on PowerEdge R730): This is optimized for graphics-heavy environments that benefit from faster rendering time, like VDI.

- **ROBO** (1U/1N based on PowerEdge R630): A cost-optimized option that gives Dell EMC a lower entry point for smaller remote and branch offices.

On the **VxRack** front, there are two configurations: the highly customizable VxRack System with FLEX, and VxRack SDDC.

- **VxRack System with FLEX** offers an integrated Dell EMC ScaleIO storage layer to support a wide variety of workload types. These come in two configurations (1U/1N based on PowerEdge R630 and 2U/1N based on PowerEdge R730xd), both offering options for all-flash, storage only, or hybrid. The all-flash nodes dramatically improve economics and performance for I/O-intensive workloads, including providing application acceleration through a full integration with SanDisk DAS Cache. This accelerates the speed of storage input-output operations and reduces latency, resulting in improved performance of I/O-intensive applications such as Microsoft SQL. The ScaleIO integration enables traditional HDDs, SSDs, and PCIe Flash cards to be combined into a virtual pool of block storage with varying performance tiers. The ScaleIO solution is designed for the modern cloud data center, and supports
multiple tenants, quality of service, thin provisioning, and snapshots. ScaleIO supports physical and virtual application servers and is hardware-agnostic.²

- **VxRack SDDC** is engineered for environments that have standardized on VMware. It natively integrates vSAN, vSphere, and NSX and works with VMware SDDC Manager for full lifecycle automation. Like VxRail, VxRack SDDC has deep integration with VMware’s software stack, inclusive of Horizon, vRealize, and NSX. VxRack SDDC also allows customers to provision a subset of the infrastructure for multi-tenant isolation and security.

VxRack System and VxRail customers of all shapes and sizes—from midmarket through enterprise to service providers—can take advantage of the broad Dell EMC portfolio delivering appliances and rack-scale hyperconverged solutions for traditional and modern applications.

**The Bigger Truth**

Dell EMC owns both the compute and storage portions of the stack, enabling it to build out a compelling hyperconverged portfolio. It allows the company to deliver more value choices for customers via investment protection, faster innovation, supply chain advantages, and, ultimately, the cost advantages and savings it can pass on.

Dell EMC has an incredibly broad portfolio—from low-end to high-end—of storage, servers, networking, and now converged and hyperconverged systems. That is why 65% of ESG research respondents indicated that they expected to benefit from more complete and innovative solutions from a combined Dell EMC, while 53% of those surveyed indicated that having a “one stop shop” for end-to-end technology solutions would be a benefit, and 50% reported looking forward to simplified vendor management.³ And that is what the hyperconverged movement is all about: simplifying the IT stack, and gaining the benefits that come with that, including faster time to value and a more agile IT environment.

It is important to note that it is still the early days of hyperconverged solutions overall. However, Dell EMC’s hyperconverged portfolio is a major example of the synergies and benefits of the companies coming together—more value, more choice, and maintained investment protection for customers. ESG views Dell EMC’s strong innovation and product push to be just the beginning; we expect much more goodness for customers and partners still to come.

---

² For more information: ESG Lab Report, *Optimize Hyper-converged Infrastructure with Dell EMC ScaleIO Software-defined Storage*, October 2016.
