Digital and IT Transformation with Dell EMC Converged Infrastructure Systems and Software

Featuring Interviews from Two Real-World Deployments

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Digital and IT Transformation with Dell EMC
Converged Infrastructure Systems and Software

Executive Introduction
While just about everyone is writing about how IT and the businesses it serves need to be transformed, the actual industry answers to both digital and IT transformation remain unclear at best. Are transformational initiatives all about analytics and big data? Or are they about the move to cloud in all its varieties? Support for mobile? More agile ways of working and developing software? Or are they actually all about crafting teams to promote more proactive dialog between the business and IT?

The truth is, of course, digital and IT transformation depend on all of the above and more. They also depend on a resilient infrastructure that’s easily adapted to changing business priorities without requiring long hours spent on maintenance, updates, and addressing problems of service availability. But making all this work clearly and cohesively is far beyond the purview of almost any solution today—whether from a software management perspective or from a hardware infrastructure perspective.

This report highlights a unique approach to enabling IT to succeed in the digital age—a fully engineered converged infrastructure with richly supported capabilities for management, updates and configuration, security, and overall resilience. In particular, this report targets Dell EMC’s distinctive leadership in converged/hyper-converged infrastructure, while highlighting the many compelling benefits achieved in two real-world deployments: an enterprise and a global service provider.

How and Why IT Organizations Must “Transform”
IT is being pushed toward a new way of working and optimizing data center performance and efficiencies. Some of the more salient factors driving change are the following:

- **The growing role of digital transformation** – EMA research shows that IT organizations and their business partners are becoming more proactive in seeking ways for IT to not only support business needs, but to also promote new levels of business effectiveness—which increasingly includes brand-new business models optimized for digital services. However, data shows that there are many roadblocks and obstacles to doing this, as IT organizations all too often remain mired in siloed ways of working rather than focusing more creatively on business requirements and opportunities.

- **Agile software delivery and Dev/Ops** – Digital transformation typically requires much more frequent introductions of application functionality, but without sacrificing application quality, relevance, or performance. Doing this well requires a truly cross-domain (i.e., cross-silo) approach to optimizing the application infrastructure.

- **Cloud in all its forms** – Hybrid cloud—most notably public/private and non-cloud environments all need to work together if the promise of cloud for cost and value optimization can ever be realized. However, once again this requires a cross-domain approach in which systems, network, storage, and application interdependencies can all be understood and managed cohesively. Like agile IT, cloud is also demanding more real-time currency, as traditionally rigid interdependencies have become far more real-time in the virtualized world.

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• **The empowered mobile end user** – The “journeys” to cloud, agile, and digital transformation might still be more akin to donkey rides than rocket trips were it not for dramatic changes in end-user expectations, and in particular the growing role of mobile in changing how people live and work. Expectations for speed and choice of digital service are consistently outrunning what the market can deliver, while businesses retreating into traditional ways of working can soon expect to be extinct. Mobile requires seamless support across endpoint management (including integrated endpoint asset management), application performance and delivery, user experience management, and appropriate back-end data center and infrastructure-wide efficiencies.

**Some of the Key Challenges Today**

As IT goes through its own “transformation,” traditional ways of working and managing data centers are colliding with more innovative options. Siloed approaches to investing and managing infrastructure with poorly integrated insights into hardware and software investments are causing significant issues. These include:

• Service degradations and poor performance due to change-related disruptions, including upgrades and hardware and software component changes. EMA consulting estimates that at minimum 60% of service performance issues are change-related, while in many environments the percentages are as high as 80% or even 90%.

• When asked where transformational initiatives were least effective, respondents strongly indicated that they stumbled most when trying to overcome obstacles associated with configuration and change management.

• Inventory and asset management continue to be ongoing struggles in many IT organizations, at huge OpEx and CapEx costs. This is due to toolset fragmentation, imperfect data collection, often even more imperfect data reconciliation, and, once again, siloed approaches to ultimately cross-domain requirements. Just a few data points serve to underscore these problems:
  ◦ Recent EMA research shows that the average IT organization has at least seven different tools for asset-related discovery and inventory, and 18% have more than 20.
  ◦ Most asset-related data still resides in spreadsheets.
  ◦ The average IT organization spends more than 10 hours a week resolving data accuracy issues for asset and financial data.
  ◦ In parallel, the average IT organization spends more than 30 hours a week preparing for asset or compliance-related audits.

• Security issues are becoming a growing concern across all of IT, knocking at the walls between operations and security professionals that made the relationship more of a brawl than a ballet. While these issues still remain primarily cultural, they are beginning to be addressed by innovative approaches in analytics, workflow, and, as we see here, converged and hyper-converged infrastructure.

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What’s Needed to Move Forward

These challenges suggest a short list of top-seeded requirements for moving forward—a list that includes:

1. Cross-domain (e.g., compute, storage, and network) insights into performance, change, and security with real-time currency
2. Strong requirements for fully integrated data sources across infrastructure domains that aren’t at odds with each other in support of this need for current, cross-domain insights. This became consistently prevalent as a requirement for IT and digital transformation.
3. Integrated asset, capacity, and cost optimization without time lost to IT planning and accounting. These insights should support the full data center/application infrastructure in virtualized, cloud, and non-cloud environments.
4. Data center upgrades that proceed fluidly and cohesively without disrupting service performance or/and without causing weeks, months, and sometimes even years of planning and delay for IT.

The Converged/Hyper-Converged Infrastructure

“Revolution:” How it can make a difference

A truly converged and hyper-converged infrastructure can dramatically minimize IT’s vulnerabilities in adapting to changing business and technology needs. Here’s how:

• The siloed infrastructure (network/systems/storage) becomes a single system, not a fragmented series of parts. This single system is optimized to support business outcomes and business needs. The practice of buying pre-engineered solutions rather than building infrastructure creates a brand-new way of approaching data center planning. Converged infrastructure allows IT to invest in a single, guaranteed, and road-tested car, as opposed to having to purchase the car in separate pieces (engine, chassis, brakes, etc.).
• This approach also enables IT to invest in a single point of infrastructure delivery with an associated single point of accountability.
• As will be shown later in this report, a converged infrastructure approach can deliver unique values in terms of:
  ◦ OpEx efficiencies in deployment, administration, DevOps, and ongoing service management
  ◦ Integration compatibility across hardware and software investments
  ◦ Unique security and compliance advantages
  ◦ Striking advantages in infrastructure stability, infrastructure optimization, and application/infrastructure performance
  ◦ Integrated management across the entire data center with relevant, current, and holistic insights on health, capacity, and utilization
  ◦ Dramatically improved levels of automation to reduce repetitive tasks and improve overall responsiveness to incidents and performance and upgrade needs
• These, in sum, help to free up IT to become more proactive and business-aligned rather than silo-constrained.

Converged Infrastructure Takes Center Stage

Dell EMC provides converged infrastructure and converged management arising out of the creation of VCE. VCE was a relatively recent addition to the broader IT market, formed when Cisco Systems, EMC Corporation, and VMware unveiled a joint partnership in November 2009. Following that, EMC acquired a controlling stake in VCE in October 2014, and Dell acquired EMC in 2016. In the last six years, what is now rebranded as Dell EMC has already made a dramatic impact on the industry with more than 3,500 deployments.

Dell EMC's five converged infrastructure principles say a great deal about both the direction and intention of the solution set overall:

1. **Engineered** – Hardware, firmware, and software (across Dell EMC, Cisco, VMware, and Intel components) are engineered together as a single converged/hyper-converged platform.

2. **Manufactured** – an ISO-certified manufacturing process assimilates hundreds of physical and logical components into a single “road-tested” product. This isn't just a single source of truth—it's a single source of query, support, and commitment.

3. **Managed** – Configuration, health and lifecycle management software are embedded in all systems with unique advantages in cohesive visualization, automation, and proactive insights.

4. **Sustained** – Dell EMC’s Release Certification Matrix (RCM) and processes deliver dramatic advantages when firmware and hypervisor release upgrades are issued throughout the full lifecycle of the investment.

5. **Supported** – Dell EMC offers a single source of support for all of its systems with a dedicated, trained staff available 24x7x365.

Dell EMC Converged and Hyper-Converged Systems

Core Components and Building Blocks

Dell EMC solution options reflect a distinctive breadth of functionality, versatility in choice, and a full commitment to the five principles stated above.

A brief introduction to core Dell EMC solution options includes:

- **Dell EMC VxBlock Systems** (and previously branded Vblock Systems) are Dell EMC’s converged infrastructure systems that simplify IT by seamlessly integrating enterprise-class compute, network, storage and virtualization technologies. These systems are designed for predictable performance, scalability, and reliability and support mixed workloads ranging from SAP, Oracle, Microsoft business applications, multivendor VDI solutions, hybrid cloud applications and applications that rely on hardware-based resilience and data services. The systems include the Cisco Unified Computing System (UCS), a server platform with inbuilt switching; Cisco Nexus local-area network switches and MDS storage-area network switches; Dell EMC storage devices (Unity, XtremIO, VMAX, VNX) and Isilon network attached storage; Dell EMC data protection (Avamar, Data Domain, RecoverPoint, VPLEX); and VMware vSphere virtualization software. The VxBlock Systems also support both Cisco Application Centric Infrastructure (ACI) and VMware NSX software-defined networking (SDN).

- **Dell EMC VxRack Systems** are hyper-converged systems based on server nodes and are also optimized for mixed workload applications and hybrid cloud services, as well as fast-growth environments, such as Hadoop big data or Dev/Ops and agile development-centric needs.
Rather than having physical storage arrays and blade chassis resiliency (as in VxBlock Systems), VxRack System storage/compute resources and resiliency are based on Dell PowerEdge Servers with software-defined virtual storage area networking and can start small with a few nodes and scale out incrementally to massive proportions. There are two types of VxRack Systems. VxRack FLEX supports VMware as well as other vendor hypervisors, and VxRack SDDC is focused on the VMware hypervisor. Each VxRack System has a unique approach to virtualizing storage.

- **Dell EMC VxRail Appliances** are hyper-converged infrastructure stackable appliances for small and mid-tier enterprises and enterprise remote offices. These software-defined appliances are also based on Dell PowerEdge Servers and are fully loaded with VMware hypervisor and virtual storage area network software, plus Dell EMC and VMware data services software for replication, backup, and cloud tiering. These are optimized for virtualized mixed workloads and virtual desktop computing.

- **Dell EMC XC Series Appliances** are designed to bring efficiency and reliability to data centers through a converged storage and compute solution optimized for Microsoft Hyper-V and KVM-based environments. XC Series has scale-out offerings with robust storage management capabilities, including tiering, thin provisioning, snapshots and replication, and compression and deduplication. Its fault-tolerant architecture is designed for high levels of availability.

- **Dell EMC Vscale Architecture with its Vscale Fabric** provides a flexible framework that enables resource-sharing and scalability by allowing Dell EMC Systems to connect via a common Cisco-based spine-leaf LAN and/or core-edge SAN fabric with consistent and predictable performance.

- **Dell EMC Technology Extensions and Dell EMC Vscale Fabric Technology Extensions** respectively add compute, storage and data protection resources directly connected to a specific converged system or to the network fabric as a shared resource by multiple systems.

### Dell EMC Release Certification Matrix

The Release Certification Matrix (RCM) is a unique service for system upgrades. It offers fully tested and fully vetted integrations across multi-vendor hardware and software components. The RCM guarantees that all upgrade-related planning and testing is done for the customer, not by the customer.

Dell EMC does this through a dedicated team of engineers who run base regression tests to verify each existing component’s interoperability, while creating new tests to evaluate and ensure new functionality. But even before the components are selected, the engineers review recommendations for the content of new RCM releases from a variety of different sources. These include the component manufacturers (e.g., Cisco, VMware, etc.) and Dell EMC Product Engineering Groups that are supplying the firmware, software upgrades, and patches, as well as Product Management, Quality Assurance Services, and Support teams. Moreover, Dell EMC continuously tests new releases from its various technology sources to ensure that incompatibility won’t become an issue.

RCM releases are available every month, however major RCM releases are targeted for September/October of each year. Addendums are offered for new functionality on an occasional basis and then rolled up into the next release.
Converged Infrastructure System | Minimum Tests | Test Cases | Typical Test & Validation Time
--- | --- | --- | ---
Small Configuration | 220 | 450 | 160 – 240 Hours
Medium Configuration | 306 | 540 | 160 – 280 Hours
Large Configuration | 356 | 600 | 160 – 320 Hours

Additional investment includes:
- 80 hours release planning and validation
- 400-500 hours upgrade-to-existing-systems testing
- Lab systems for testing

Figure 1: Dell EMC Vision firmware/software interoperability testing and validation practices

**Dell EMC Vision Intelligent Operations Management Software**

Vision software delivers a single monitoring pane for all converged system components to provide unified, multisystem visibility. As will be seen in the interviews included in this report, this unified visibility can promote dramatic OpEx efficiencies and enable improved data center upgrades with more consistent and more business-optimized performance. The software delivers accurate and complete insights into the health, configuration, and security of the converged system investment. Vision Intelligent Operations capabilities include the following:

- **Lifecycle management/RCM updates** – This is done through RCM compliance audits, which can be either on-demand or scheduled. These audits take advantage of rich converged architecture intelligence and can be done through the Vision multi-system management dashboard. This capability includes RCM content prepositioning—the downloading of releases from the Dell EMC Customer Support portal to users’ converged systems—to reduce time-to-upgrade and to ensure that upgraded firmware/software release consistently remain fully compatible with Dell EMC engineering standards.

- **Health management** – Vision does health checks of a single system or across multiple systems through standard local-area and wide-area network connections. Run across logs, events, and other data, these checks can be either on-demand or scheduled and deliver “Calculated Health Scores” and performance/capacity metrics to make it easy to assess any issues as well as overall status. Vision health assessments are fully integrated as well with Dell EMC customer support processes.
• **Security** – Vision provides two flavors of on-demand or scheduled security assessments. First, Dell EMC Customer Support sends Security Alerts to users to inform them of newly discovered security vulnerabilities (e.g., the Heartbleed and Shellshock bugs), and Vision uses those alerts to assess the vulnerability of the users’ systems and provides the associated patches to eliminate the bug. Second, Vision assesses systems’ compliance with security policy, which is defined by default security configurations set in the factory build or by users’ modification of those default security configurations.

• **Technical defect remediation** – Dell EMC also emails Technical Alerts to users to inform teams of newly discovered defects with system components. Vision assesses customers’ systems for any issues and assists in remediating them by downloading patches, firmware, or advice from the company’s customer support portal to the users’ systems.

• **Integrations** – To monitor and perform actions, Vision software is integrated with system’s components and element management system software through a RESTful API, SNMP, and other protocols. Integration with third-party IT management tools is enabled by the RESTful API. The company also offers a free software development kit (SDK) and simulators for customers and partners seeking to develop third-party integrations. Dell EMC provides a free integration between Vision and VMware vRealize Operations Manager for converged system analytics, alerting and capacity management in VROps dashboards.

• **Unified dashboard** – The dashboard delivers a number of distinct advantages by leveraging the Vscale Architecture to visualize, manage, and optimize systems and shared resources for health and capacity across a common network fabric. For core health and configuration insights, the Vision dashboard can work across third-party wide-area connections as well, providing the full advantages of a cross-domain, integrated capability for analysis and visualization to multi-site IT environments.
The Power of Dell EMC Customer Support

Not surprisingly, the power of Dell EMC Customer Support came up in both of this report’s customer interviews. Not only is Customer Support 24x7x365 to serve both global and business-critical IT environments, but it saves IT professionals from having to search for answers across a complex set of vendor options. They are able to resolve 90% plus of customer inquiries directly and escalate the remaining issues so that they can be handled transparently for customers. Vision Intelligent Operations software is integrated with Customer Support to facilitate the downloading of firmware and patches to users’ block and rack systems to maintain RCM and security compliance.
Interview: Architect/Consultant at a Global Communications, Hosting, Cloud, and IT Services Company

Would you share some information about your background and your current role?

“I ran a SaaS-hosting organization for about 10 years and then served as the director of data center operations for a provider of enterprise mobility management. In the course of this work, I had the experience of trying to support a hybrid cloud implementation with Cisco and EMC components, but we struggled some to make this a reality. From that experience, I began looking toward a more engineered solution, and that was the direction we wanted to go in when I joined my current company about a year ago.

“In my current role, I’m focused on supporting one of our clients in travel and hospitality with Dell EMC solutions. I serve as the client’s architect, advisor, and advocate within my current company. We have two Vblock instances, each of which is hosted in one of my company’s data centers—one on the East Coast and one on the West Coast [of the U.S.]. This particular client actually has a global locations in more than 100 countries, but I’m resident in one of our client’s data centers in the U.S.”

What provoked the move to the Dell EMC Converged Infrastructure System?

“The Vblock was in the wheelhouse of exactly what we wanted to do. We wanted to have an engineered solution so that instead of 27 different upgrades we could move toward a single, integrated managed offering that would be clean and consistent with no finger-pointing. An engineered solution that is a ‘one-throat-to-choke’ deliverable, so to speak. And so far we've been very happy with it.

“We started going down this path with a very progressive CIO at the client location. His vision and direction are promoting a faster, more agile way of working. This client wanted to be able to evolve more quickly with faster cycles for bringing services to customers and speeding up internal business processes.

“I should point out that my company also has other Dell EMC deployments for other clients in other locations. One of our larger manufacturing clients, for instance, is using multiple Dell EMC platforms. I would estimate that there are a total of about 30 Vblock deployments in support of our clients if you include co-located Vblock deployments.”

How is your client currently leveraging the Dell EMC Converged Infrastructure solution?

“Prior to Vblock, my company provided this particular travel and hospitality client with a managed data center service, but now all that’s been migrated to Vblock. The vision was to make any service available anywhere through Vblock, whether it was Google Analytics, applications to manage royalty and procurement, Office 360, or the customer portal for ordering unique hospitality and reservation services. The customer portal also supports full trip logistics, such as giving their customers a roadmap and timetable for airports, car rentals, etc. There is, in fact, a whole host of business services made available through a catalog with supporting orchestration all residing within Vblock currently. Having said that, there are still a few services that reside for now outside Vblock on legacy infrastructure, such as our Oracle database.

“Finally, I should add that our client’s development team and Q/A Test is also using Vblock—which is helping them achieve a more agile and business-aligned set of outcomes.”
Could you comment on Vision Intelligent Operations management software?

“Vision software gives us a single management pane for all the components in the system. For one thing, it gives me faster health check access. Instead of looking in 97 different places, I can immediately see where the pain points are and act accordingly. It also helps us to evaluate where we are and where we need to go in terms of upgrades. For instance, what do I need to do if I want to move to VMware 6? It’s all a unified view through Vision software without having to search across multiple websites and assess what’s relevant on a piecemeal basis. This also enables far more effective self-service and greater speed in evolving our Vblock investments.”

What third-party management-related integrations pertain?

“We’ve integrated with ServiceNow for IT service management, and we integrate with Puppet and Chef to support active configuration management. We also have application performance management solutions residing on Vblock, all brought together at a central point for easy access. It’s also easy to swap out existing management solutions and replace them with others if, for instance, [we] want to improve the level of reports or visualization.”

How important is Dell EMC support?

“Customer Support offers managed escalation that’s available 24x7x365. That consistency offers unique advantages and time efficiencies when you’re dealing with a global organization such as ours. We have Vblocks in Europe and Asia. So you can get follow-the-sun support for your Vblock requirements across different groups. For that reason and others, I would say that Customer Support is a critical service. Not to have anything like it would be a deal breaker in my opinion.”

What’s been your experience with the Release Certification Matrix (RCM)?

“With the RCM upgrade, we can dramatically accelerate the time that it takes to go through an upgrade. In the past, for instance, moving through 27 different components and versions would have limited us to, at best, annual upgrades. Now we are targeting two upgrades a year, delivered to us by Dell EMC with integrated testing and compliance for OS, firmware, and all of the hardware challenges along the way. That’s where the RCM really comes to the fore and shows value. If there are problems, Dell EMC has a lab environment, and they own it end-to-end. There is no finger-pointing, and they’ll catch it quickly and effectively.”

Can you provide some specifics relevant to your RCM experience this year?

“Well, as I mentioned, I have two Vblock instances—one on the East Coast and one on the West Coast—for my particular client. We are moving from RCM 4.5.4 to RCM 5.0.8. In both environments we are moving to VMware 6 this year from VMware 4. Across both we have ordered 256 Cisco UCS blades. For LAN switches we have ordered four Cisco Nexus 3048s, three Nexus 5000s, and two Nexus 7710s, and these include Fiber Channel support. We have 90 instances of VMware hypervisor software across both environments right now, and we’re adding another 72 instances this month. Our storage capabilities are centered on two instances of Dell EMC VNX 5800, one for each location, with four Dell EMC Data Protection instances in the upgrade. Our only hardware change was to add memory to some of the blades, which was done easily and efficiently.

“To sum up, the really amazing things about the RCM upgrades are the speed and peace of mind you get in working with Dell EMC. And speed is exactly what IT is most concerned about when it comes to adapting to business pressures and business needs.”

“With the RCM upgrade, we can dramatically accelerate the time that it takes to go through an upgrade.”
Interview: IT Director at a Major North American University

Can you provide a little background on your role and the mission of your IT organization?

“At the time of evaluating Vblock, I was the IT Director of Systems and Infrastructure for a small but elite graduate school in the communications field. My IT organization was a small, dedicated team of about 14 people. We also relied on outside consultants supporting areas such as infrastructure, business applications, security, and research computing.

“Our university had more than 12 graduate schools and more than 24 graduate programs on campus. The PhD graduate program I supported was one of the very top in the country in communications and research. We placed a heavy emphasis on technology with support for big data, social media, and unique areas of research such as healthcare. Our students and our faculty collaborated with other faculties worldwide. Government policy was also an area of interest, as many of our graduates become involved in matters of public policy. In addition to these types of needs, our computing infrastructure supported publishing requirements for research journals.”

What led you to move to a converged solution?

“Two years ago we were using another vendor primarily for our data center requirements, and I got an investment to do a data center refresh. Our prior data center wasn’t able to measure up in supporting our compute-intensive needs. Our team was spending a lot of time just to keep everything up and running, with long hours spent on maintenance as well. We were also suffering from unacceptable levels of downtime from both performance and maintenance issues. And there was never a ‘convenient’ time to schedule maintenance. To minimize the impact, in IT we would work on weekends and holidays when we’d rather have been home with our families. For example, during the Christmas holidays we tried to upgrade our storage and systems hardware and software, and we had longer delays than ideal.

“At that point, I realized we needed a better solution where we wouldn’t be constantly pulled into maintaining our infrastructure so we could be more focused on our faculty and student requirements. I wondered, ‘Why do we have to test firmware before applying it to our servers and storage? Let’s find a product that won’t require us to spend days performing this type of maintenance.’ Then I asked myself, ‘How can we automate?’

How did you end up selecting Dell EMC Converged Infrastructure Systems?

“We evaluated Dell EMC systems along with other converged infrastructure solutions, such as NetApp, and Dell EMC was the hands-down winner. The other offerings that billed themselves as ‘converged infrastructure’ still required us to order different components, and they weren’t broad enough to support a full data center option.

“Dell EMC’s Release Certification Matrix updates and its Vision management capabilities were among the things that completely set it apart. Most importantly, with Dell EMC we knew we were buying a standard—a true plug-and-play solution.”

How did your Dell EMC Converged Infrastructure System deployment go?

“Most of our time was spent in assessing our overall design requirements, not in racking and stacking the equipment. Within 30 days after the Vblock was on site, it was fully up and running. Some of the components in our Vblock included Cisco Nexus and Cisco MDS fiber channel switches, Cisco UCS blades, and Dell EMC VNX 5600 storage with two terabytes of flash and storing multi-terabytes of data. We also have a second Vblock system that we use for disaster recovery.”
“For our endpoint support, we had already moved to a largely virtual desktop infrastructure (VDI) with strong support for remote access. The organization is currently using VMware Horizon for VDI deployed on our Vblock system.”

What were some of the benefits you received from Dell EMC Converged Infrastructure System?

“We moved to zero downtime for our business applications, and our virtual desktop infrastructure delivered significant improvements in accessibility and performance for our end users, as well as in system performance overall.”

Can you describe your application software environment?

“Most of our software is Microsoft-based. About 70%. The other 30% is LAMP or Linux, Apache, MySQL, and PHP.”

What are some of the management capabilities, such as Vision Intelligent Operations, that stand out?

“We used Vision Intelligent Operations more for reporting than anything else, and it provided us with insights into overall systems health. I didn’t have to go look at every single component to get a complete health report. Moreover, Vision provided a health score for each Vblock system so that I could immediately tell if I had any issues. We also broadened our Vision to support security requirements as well as health. We used to spend 10-15 hours a week on things like health checks. With Vision it only takes an hour or two.

“Dell EMC’s 24x7 customer support was another huge plus. It allowed us to deliver smooth service continuity over holiday maintenance windows, for instance, with virtually no downtime.”

What about the Release Certification Matrix (RCM)?

“My RCM experience was fairly simple and straightforward. We leveraged RCM twice or three times a year. It became a kind of cookbook for our system. Everything was configured with redundancies automatically so that there were no service disruptions, and it was a guided process so we never really had to worry about a thing because Dell EMC had done all the firmware and hypervisor release compatibility testing for us.

“Typically we spent three or four days in planning for an upgrade. But the time for actually physically installing the equipment was only eight to 12 hours. This included not just the hardware but also the firmware and the software, or in one case an upgrade from vSphere 5 to vSphere 6. This would have taken many months of planning and maintenance in the past when we had to worry about every single component separately. In fact, manual work for firmware updates and patches has mostly gone away. It used to take five days and 12 hours of downtime for system updates. But when we managed them through Vision with the RCM, we could complete the RCM process in one day with zero downtime.

“In terms of specifics, we upgraded our Cisco UCS blades, Cisco Nexus 5000 Series switches, and Dell EMC VNX F-5000 storage. We also leveraged Dell EMC RecoverPoint Disaster Recovery. All this was configured in a fully populated rack.

“Overall, I would say that the Release Certification Matrix is an innovative and collaborative solution that delivered great value to us.”

“We moved to zero downtime for our business applications, and our virtual desktop infrastructure delivered significant improvements in accessibility and performance for our end users.”

“The Release Certification Matrix is an innovative and collaborative solution that delivered great value to us.”
Is there anything you would like to add to sum up?

“What I like best about Dell EMC is their overall approach to the entire project. They deliver a full solution without forcing you to get involved in mountains of documentation. And they deliver advanced levels of support from day one across the full data center infrastructure. You don’t have to fragment your support calls to Cisco or Dell EMC or VMware.

“I should add that I am now actively evangelizing Dell EMC’s systems. This was the first Vblock deployment on our university campus, and I’m committed to promoting more.”

EMA Perspective

Dell EMC converged infrastructure systems’ compelling advantages should be clear from the two customer interviews featured in this report. Some of the benefits mentioned include:

• A fully engineered solution that doesn’t require fragmented documentation, tortured upgrade plans, or protracted maintenance across many multiple components. Data center infrastructure firmware and patch updates in one case going from five days with 12 hours of downtime to one day with zero downtime.

• More efficient management for health and security—in one case reducing health checks from 10 – 15 hours a week to two hours a week.

• Fully responsive customer support on a 24x7x365 basis that can enable follow-the-sun requirements for global enterprises and provide unique advantages to all customers.

• Easy integration with third-party management sources.

• A fully integrated resource to support critical business applications with more consistent uptime and improved performance.

• Support for development, agile and DevOps requirements to speed delivery of new application services to the business.

• A solution differentiated by its completeness in both cross-domain capabilities and fully integrated management and support from all other brands seeking to promote converged and hyper-converged infrastructure.

• A single responsible source for support, planning, health, upgrades, and security updates. In other words, a “standard” true “plug-and-play” solution.

Dell EMC is continuing to target enhancements for Vision software, such as expanded integrations with VMware vRealize Operations software and monitoring of new Dell EMC system components as they become available (e.g., the expanding line of all-flash storage devices in the VxBlock System and Dell PowerEdge Server-based nodes in hyper-converged systems). Even so, the company leads the market in providing a truly “engineered” and “converged” approach to investing in IT infrastructure and management, one designed to help IT become more proactive and business-directed, and hence an approach uniquely well-tuned to the demands of digital and IT transformation. As such, Dell EMC is defining a new route to value, not just for converged and hyper-converged infrastructure, but for IT as a whole.
About Dell EMC
As a member of the Dell Technologies unique family of businesses, Dell EMC serves a key role in providing the essential infrastructure for organizations to build their digital future, transform IT and protect their most important asset, information. Dell EMC enables its enterprise customers’ IT and digital business transformation through trusted hybrid cloud and big-data solutions, built upon a modern data center infrastructure that incorporates industry-leading converged infrastructure, servers, storage, and cybersecurity technologies.

For more information, go to www.dellemc.com/ci

About Enterprise Management Associates, Inc.
Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA’s clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook, or LinkedIn.