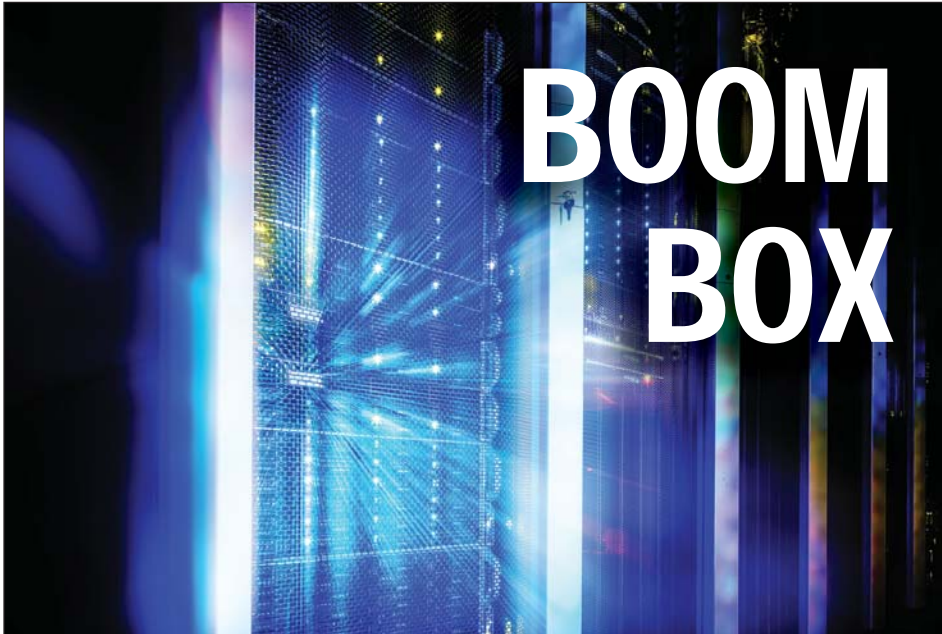


Tech Outlook

May 2016

PROSYS
A PIVOT COMPANY



VxRail hyper-converged appliances shake up traditional thinking about IT infrastructure.

Technology infrastructure tends to evolve organically, growing on a box-by-box basis with devices added as needed, configured independently and managed manually. *Spoiler alert:* This approach doesn't end well.

Years of continually responding to evolving business needs by adding more gear has resulted in IT environments too complex and inefficient to properly handle today's workloads. High maintenance costs, poor resource utilization, server sprawl, and space

and energy requirements all strain IT personnel and budget limits. What's more, much of that gear is now outdated — studies show that more than half of all business network devices are aging or obsolete.

For organizations considering a refresh, hyper-converged infrastructures have emerged as attractive alternatives to traditional server and storage architectures. These systems combine storage, compute and virtualization functions in a single box, flattening IT architectures and setting the stage for increased automation. According to research and analyst firm IDC, the worldwide hyper-converged systems market is expected to grow at a nearly 60 percent compound annual growth rate through 2019, reflecting the popularity of these solutions.

“Modern business transformation goes nowhere without agile, scalable infrastructure,” said Technology Business Research analyst Christian Perry. “Aging, complex IT environments are giving way to new breeds of infrastructure designed to ease deployment and management. Hyper-converged is leading this charge with ferocity.”

Fast Time-to-Value

EMC and VMware are taking hyper-convergence to the next level with VxRail, a family of jointly engineered appliances designed to handle modern workloads with increased agility, simplified operations and lower risk. Launched by EMC's VCE con-

continued on page 2

TECH OUTLOOK

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verged infrastructure division, VxRail combines EMC's rich data services and leading systems management capabilities with VMware virtual SAN, vSphere and vCenter software running on a commodity white-box server. It is the only fully integrated, preconfigured and pre-tested VMware hyper-converged appliance family on the market.

"Most organizations are already very familiar with the VMware software suite, so VxRail provides faster time-to-value than other hyper-converged systems," said Jon Chappell, Business Development Manager, ProSys. "With this familiarity, VxRail appliances create fast-track solutions for a variety of use cases, such as bringing up private clouds, deploying virtual desktop infrastructure or creating large-scale compute clusters."

VxRail appliances are fully loaded with mission-critical data services, including replication, backup and cloud tiering. EMC RecoverPoint for Virtual Machines provides per-VM replication and automated disaster recovery for critical workloads. Virtual SAN active-active stretch clusters provide site-level, zero-data-loss protection. Integrated vSphere Data Protection provides backup and recovery using existing tools and can optionally back up to EMC Data Domain for centralized storage and management.

VxRail, which replaces the EMC VSPEX Blue product launched a year ago, ships with either hybrid or all-flash storage configurations. A 2U four-node appliance can hold up to 76TB of storage and 112 CPU cores in an all-flash configuration, and 40TB and 80 cores in a hybrid configuration. With the power of a whole SAN in just two rack units, these appliances provide a simple, cost effective solution for a wide variety of applications and workloads.

Beyond VDI

Hyper-converged systems such as VSPEX Blue initially found success by eliminating the complexity, expense and latency often associated with SAN-based storage. In particular, these attributes help ease virtual desktop infrastructure (VDI) implementation by providing centralized management, high levels of scalability and efficient resource utilization.

While VDI projects remain the most common workload within the hyper-converged market, VxRail offers significant improvements that will allow organizations to handle far more diverse workloads. VxRail was specifically designed to be more modular and flexible than other hyper-converged systems, enhancing the ability to add CPU cores, cache and

memory, run different storage configurations, and use a wider array of hardware options.

Enhanced automation is another key feature of VxRail. Expansion is as simple as plugging in another node or appliance — VxRail will automatically discover and self-configure the new units. More than 200 wizard-based automated workflow processes help non-technical employees assign resources, restructure user pools, move workloads, build out clusters, evaluate performance, activate software updates and more.

"That level of automation and scalability has people really excited about VxRail appliances," said Chappell. "You can see beyond VDI and cloud deployment to a greater range of data center workloads. VxRail can become a building block for the software-defined data center."

Enabling Programmability

In traditional hardware-centric data centers, infrastructure is purchased and configured to match particular applications and workloads. Storage networks are sold separately and run on different hardware than the servers running VM hypervisors. Specialized staffing skills are required to manage everything.

Hyper-converged appliances such as VxRail introduce a high degree of automation through software while also dramatically streamlining hardware deployment. This flattened infrastructure allows IT organizations to easily match workloads with the right kinds of computing and storage resources. Networks become flexible, programmable platforms with the intelligence to allocate resources dynamically, the scale to support enormous data centers and the virtualization needed to support dynamic, highly automated and secure cloud environments.

"There's been a lot of buzz about the software-defined data center for the past couple of years, and for good reason," said Chappell. "There's almost unanimous belief that the traditional model for running IT is not sustainable. We can't keep buying and managing different hardware for server, storage, networking, virtualization, backup, disaster recovery and cloud. We also can't expect IT staff to effectively manage all these different devices from different vendors.

"Software-defined strategies create the potential for tangible benefits such as enhanced efficiency, agility, flexibility and provisioning. VxRail provides the simplification, scalability and automation that can make that all happen."

VxRail was specifically designed to be more modular and flexible than other hyper-converged systems.

News Briefs

IT Pros Oppose Encryption Bypass

Close to two-thirds (63 percent) of global IT professionals oppose giving governments backdoor access to encrypted information systems, and similar numbers (59 percent) feel that privacy is being compromised in an effort to implement stronger cybersecurity laws. The survey by global IT and cybersecurity association ISACA of 2,920 members in 121 countries also reveals marked skepticism about the likelihood of organizations sharing data breach information voluntarily as called for by the recently passed U.S. Cybersecurity Information Sharing Act of 2015.

ISACA's January 2016 Cybersecurity Snapshot shows mixed attitudes toward sharing information after a data breach. Eighty-three percent of those polled favor regulation requiring companies to notify customers within 30 days of the discovery of a data breach – a 10-point increase in little more than a year. Nearly three-quarters (72 percent) of U.S. respondents say they are in favor of the Cybersecurity Information Sharing Act of 2015, which encourages cyber threat information sharing between the government and the private sector. Yet, only 46 percent believe their own organization would do so voluntarily if it experiences a data breach.

"Cybersecurity has become a high-stakes, boardroom-level issue that can have crippling consequences for any C-suite executive who lacks knowledge about the issues and risks," said ISACA President Christos Dimitriadis, Ph.D. "Strong public-private collaboration and ongoing knowledge-sharing are needed to safeguard our organizations from cybercriminals."

Email Security Lacking, Survey Finds

Nearly two-thirds of businesses say they are ill-equipped to defend against email-based cyberattacks, according to a new survey by Mimecast. Although 83 percent of 600 IT security professionals identify email as a common attack vector, one out of 10 report not having any kind of email security training in place.

"It's very disconcerting to see that while we might appreciate the danger, many companies are still taking too few measures to defend themselves against email-based threats in particular," said Peter Bauer, chief executive officer, Mimecast. "As the cyber threat becomes more grave, email attacks will only become more common and more damaging."

The survey found a big gap in the level of executive involvement among the most- and least-prepared respondents. Among those who feel most prepared, five of six say that their C-suite is engaged with email security. However, of all IT security managers who were polled, only 15 percent say their C-suite is extremely engaged, while 44 percent say their executives are only somewhat engaged, not very engaged or not engaged at all.

Additionally, the survey found that the least-confident IT security managers are more likely to be using Microsoft Exchange Mail Server 2010, which ended mainstream support in January 2015. The most-confident managers are more likely to use the up-to-date Exchange Server 2013.

Tech Outlook

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**Unified
communications
platforms can help
contact centers
meet new demands.**

AT YOUR SERVICE

The contact center is the focal point for customer interactions in many organizations, and thus a critical factor in optimizing the customer experience. That experience has evolved from a simple phone call to a complex interplay of communications channels — the so-called “omnichannel” experience.

However, organizations are increasingly finding they lack the IT manpower, expertise and infrastructure to adequately deal with the increasing traffic across non-voice channels such as email, text, chat and social applications. Keeping up with demands requires a new approach to contact center technology — one most analysts say will require a greater emphasis on unified communications (UC) solutions.

Deloitte’s 2015 global contact center survey of 300 businesses in 12 industries across 14 countries on five continents found that

contact centers are expanding to meet customer service demands, with strong growth occurring across all communication channels. Additionally, these businesses report that nearly three-quarters of customers will use three or more different channels for each interaction.

Integration Needed

These omnichannel engagements are creating challenges for IT staff — just 18 percent said they are prepared to meet these new demands. In many cases, this is because IT has been tasked with integrating “bolt-on” contact center applications with the enterprise phone system. Most of the organizations surveyed said creating a fully integrated IT solution was a priority for their contact center operations.

“If all channels are growing, then it falls upon CIOs to cost-effectively provide the right enabling technologies for the business and, im-

portantly, to integrate them,” said Andy Haas, director and customer operations practice leader with Deloitte.

IP-based UC systems that unite telephony, email, voice-mail, messaging, mobility, conferencing and more into a single integrated platform offer a number of compelling benefits in the contact center. They minimize the total cost of telephone services, reduce network management costs, provide consolidated reporting across all media types, eliminate the need for multiple databases and create the ability to build geographically dispersed contact centers that satisfy “follow-the-sun” business-hour coverage and assure business continuity.

Most important, UC can boost customer satisfaction. UC’s all-in-one architecture enables organizations to route calls, emails, web chats and social media interactions using a single queue so agents can respond faster and more consistently to customers — regardless of the communications channel the customer chooses.

Satisfied Customers

When integrated with CRM software, UC systems can also collect relevant data about existing customers and push that information to the agent through screen pops, allowing more personal and effective service. Click-to-call or instant messaging functionality within consumer-facing web pages simplifies initial contacts, and gives agents contextual information about the caller before a conversation actually begins. Armed with the upfront knowledge of the product or service the customer is interested in, agents can find the right information quickly and improve the odds of a first-call resolution.

Improving customer satisfaction is a high priority in light of numerous studies that illustrate the frustration with customer support channels. A 2015 study conducted by Consumer Reports found that 57 percent of consumers were so frustrated with their customer service experiences that they hung up the phone without a resolution. An Arizona State University survey found that customers need an average of four contacts to resolve issues, largely because of ineffective interactions with automated-response menus.

Customers aren’t the only ones who experience improved satisfaction through UC in the contact center. UC enables the virtual contact center, in which calls can be routed to agents working at home. Various industry studies show that home-based agents have a far lower turnover rate than office-based agents. Leveraging a home-based workforce also drives down the real-estate costs of brick-and-mortar operations.

You only get one chance to make a first impression. By facilitating multimedia communications, providing customers with a better experience and improving information flow, UC-driven contact centers provide organizations with a powerful edge in their quest to deliver better customer service and cement customer satisfaction.



Take Your Contact Center to a New Level

Enhance contact center efficiency and deliver engaging, omnichannel customer experiences with Cisco® Unified Contact Center Express. This easy-to-deploy and easy-to-use customer interaction solution supports up to 400 agents and is designed for midmarket companies or enterprise branch offices. Secure and highly available, it supports powerful agent-based services and fully integrated self-service applications, including automatic call distributor (ACD), interactive voice response (IVR), and computer telephony integration (CTI).

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Network Insight



Robust monitoring solutions provide commanding view of network operations.

In ancient Norse mythology, the god-king Odin presided over the universe from a magnificent golden throne — a towering perch with a view of the entire cosmos, which allowed him to see everything that happened among gods, giants, elves, dwarfs and men. Today’s IT administrators oversee their realms from simple ergonomic swivel chairs, but with the right monitoring tools and services they can gain almost mythic visibility into the network universe.

Given the critical nature of today’s data networks, monitoring solutions play an all-powerful role in operational efficiency. They deliver real-time visibility into network performance and infrastructure, making it possible to identify warning signs of potential problems before they disrupt business operations.

“Despite the challenges faced by organizations with rapidly growing and complex network environments, the ability to capture network data has never been more important,”

said Bob Laliberte, senior analyst, Enterprise Strategy Group. “Network outages have proven to be disastrous from the cost of downtime alone. Organizations need to ensure they have effective monitoring solutions in place that will enable them to maintain network availability in the face of increasing data center complexity.”

Growing Challenges

For years, basic network monitoring solutions involved gathering data from agents running on network devices. Using a network protocol such as SNMP, agents would transmit information about a variety of performance metrics such as availability, throughput, bandwidth utilization and latency. When these metrics approached a threshold that would indicate a problem, an administrator would be notified. While those capabilities remain at the core of network monitoring, new technologies with bigger workloads are making it difficult to identify issues and trigger rapid responses.

“The Internet wasn’t built to handle the traffic and data loads that exist today — failures are inevitable and reliability needs to be planned for,” said Mohit Lad, CEO of Thousand-Eyes, which develops monitoring tools. “Finding and resolving the problem, no matter where it resides, has become a mission-critical requirement for modern businesses.”

Technologies such as software-defined networking, virtualization, cloud infrastructure and mobility add to network workloads and complexity. At the same time, organizations of all sizes increasingly require the ability to monitor, analyze and optimize performance across both wired and wireless networks, and public, private and hybrid cloud resources.

VoIP and unified communications (UC) platforms also create monitoring challenges. With data traversing corporate backbones, the Internet, and wired and wireless networks, VoIP service degradation has become tricky to troubleshoot. Traditional VoIP monitoring solutions track quality metrics, but often fail to pinpoint exactly where in the network a problem is located or to correlate performance to underlying network changes.

The newest generation of network monitoring tools are designed to ease the strain by delivering reliable network visibility, proactive management and forensic analysis to protect corporate assets and maximize application delivery. These tools can scale to millions of objects, using dozens of different protocols to monitor the entire network, server, storage, cloud and virtual infrastructure with no practical limits.

Detailed reports can be generated almost instantly, no matter how large the network. In addition to typical metrics, the latest solutions can identify resources that are operating far below thresholds for CPU usage, memory and other metrics — giving organizations the ability to recognize and reuse underutilized resources for improved cost efficiency.

New dashboard interfaces allow administrators to not only troubleshoot problems, but disconnect devices or throttle bandwidth if necessary. These dashboards often feature Google Maps-like overlays to provide visualization of network paths, which is particularly useful in identifying routing problems that affect VoIP call quality.

Creating Value

The business value of effective monitoring and management has never been greater. Monitoring tools can help en-

sure the successful launch of new technologies and services by determining if the network is capable of supporting the modification without disruption. Network monitoring can also contribute to improved customer retention and loyalty by ensuring that the network performs optimally and delivers the best possible customer experience.

Most important, rigorous monitoring delivers significant bottom-line benefits by reducing the risk of disruption and speeding the discovery of outages when they do occur. According to a new study by IHS, network interruptions are the leading cause of downtime for information and communication technology, resulting in aggregate losses of \$700 billion a year for North American organizations. In the survey of 400 midsize to large organizations, respondents reported an average of five downtime events each month, resulting in losses ranging from \$1 million a year for a typical midsize company to more than \$60 million for large organizations.

Network monitoring can also be a powerful weapon in the fight against malicious intruders. Collecting data and reporting on security systems such as firewalls and virus scanners helps organizations recognize and quickly remediate problems with security resources, greatly reducing the risk of malware attacks.

However, gaining the full value of these tools does require a significant level of in-house expertise. For some organizations, it can make more sense to outsource network monitoring to a managed services provider who has already made investments in monitoring tools that are managed by a team of

IT professionals. Outsourcing can provide not only reliability and budget relief, but ensures that tools are consistently upgraded to match growing network complexity.

Knowledge is power, as the saying goes, and Odin relentlessly pursued it — the Norse myths say he invented writing and poetry, and sacrificed an eye for a chance to drink from the Well of Knowledge. At a time when increasing network complexity can obscure visibility into critical infrastructure and operations, IT organizations must also tirelessly pursue information. In-depth information about devices, applications, connectivity, traffic and bandwidth utilization is necessary to ensure network performance, employee productivity and customer satisfaction. Network monitoring tools and services can deliver just that type of insight in real time, while also boosting security and protecting the bottom line. All in all, that’s the stuff of legends.



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