Chart the Ideal Path to Your Multicloud Future

Mid-market businesses are increasingly adopting multicloud infrastructures and need solutions that are tailored to their unique scale, growth and budget requirements. Dell Technologies brings together hardware, software, and services to unleash new efficiencies and capabilities with reduced risk.

As organizations face new growth and productivity challenges, IT decision makers have set their courses to adopt transformative technologies and operating models that enable them to effectively compete. As a result, many have adopted multiple cloud technologies from different providers that inadvertently add complexity to their IT landscape. Gartner reports that 81 percent of public cloud adopters use multiple technology providers.[1] Rather than choosing a single vendor for their current and future needs, these organizations often have a mix of technologies that can be more effectively integrated and managed to optimize their cloud environment.

In tandem with this adoption of multiple public clouds, architects are addressing a related set of challenges to determine whether a given workload is best suited to run on-premises inside the data center (private cloud) or on a public cloud. Such factors include performance considerations for the workload or application, as well as security, compliance, and cost concerns. The following examples provide a baseline for the long list of considerations in this area:

- **On-premises cloud infrastructure** gives IT greater control over the environment and supports real-time operation by eliminating the transfer latency associated with passing data to and from an off-premises cloud. Many organizations also prefer to keep highly regulated and/or sensitive data in-house, and they benefit from the predictable cost structure of on-premises cloud infrastructure.

- **Public cloud infrastructure** offers open-ended elasticity for variable or growing workloads, without the need for CapEx to build out dedicated infrastructure. Subscribers also benefit from the expertise of major providers in tuning and securing the environment, which implements cutting-edge technologies without IT effort.

Considering the advantages of both private and public cloud, a flexible approach to multicloud prevails, including on-premises private cloud and multiple, subscription-based public cloud services. When strategically executed, a multicloud strategy drives agility and efficiencies—cost or otherwise—across the business. Yet, key to this is ensuring that all cloud deployments can interoperate to provide a secure, coherent and holistically managed environment.

In this Paper

- A true multicloud strategy extends beyond ensuring that all of an organization's cloud deployments can interoperate.
- Mid-market businesses need to operate their multicloud environment in a secure, coherent and holistically managed environment.
- Dell Technologies provides the products and resources mid-market organizations need to take advantage of multicloud.
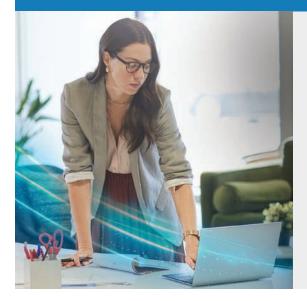
EXECUTIVE BRIEF

eWEEK

Dell EMC VxRail: Streamlined Path to Multicloud

In their quests to capture all the agility and flexibility that multicloud infrastructure has to offer, IT architects must find ways to build on-premises cloud infrastructures with minimal disruption and risk, fast time to deployment, and the ability to start with a small implementation that can scale up or out cost-effectively as demand grows. Hyperconverged infrastructure (HCI) is well suited to these requirements, and 87 percent of respondents in a study by ESG confirm that the implementation of HCI has made their organizations more agile.[2]

Dell EMC VxRail is a transformative HCI building block that organizations can use to streamline their path to multicloud infrastructure. Based on PowerEdge servers and jointly developed with VMware, VxRail is a purpose-built substrate for cloud infrastructure based on VMware vSphere and vSAN technologies. Building blocks that include VMware Cloud Foundation and vRealize suite provide natively integrated software-defined services for compute, storage, network, security, and management.

Built from the ground up for the broadest range possible of cloud workloads and functions, VxRail offers nodes that are configured with millions of potential combinations, based on different levels of compute power, memory, and cache resources. That flexibility reflects the core design premise that VxRail HCI provides a robust and cost-effective means to match infrastructure resources to varied and expanding customer needs, as they evolve.

Delivered as a set of fully integrated, preconfigured, and tested components, the VxRail hyperconverged appliance extends the full range of business workloads to a multicloud environment. All-flash models accelerate data throughput with ultra-low latency suited to demanding usages, such as real-time analytics, artificial intelligence, and high-performance computing. On-board encryption, backup, and file services extend the platform's flexibility further, while compression, deduplication, and erasure coding drive up efficiency.

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An Ecosystem-Driven, Full-Stack Approach to Multicloud Adoption

Dell EMC VxRail hyperconverged infrastructure accelerates the path to multicloud infrastructure, with a technology stack co-engineered by industry leaders:

- **Dell EMC PowerEdge servers** provide server innovation to modernize IT, with highly scalable architectures, intelligent lifecycle automation, and integrated security.

- **VMware Cloud Foundation** streamlines multicloud deployment and operation with integrated compute, storage, networking, security, and management services.

- **Intel® architecture** powers the solution with Intel Xeon® Scalable processors for high performance at flexible scale, plus Intel® Optane™ SSDs for enhanced throughput and application responsiveness

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Data Center-as-a-Service: Zero-Touch On-Prem Cloud

As businesses work to make running the on-premise portions of their multicloud infrastructures as effortless as possible, many consider the public cloud's ability to take infrastructure completely out of IT's hands to be ideal. In addition to outsourcing tasks of deployment and maintenance, these organizations seek the public cloud model's ability to shift CapEx to OpEx. At the same time, they also need to have elements of their cloud infrastructures on-premise to meet their full spectrum of requirements.

Dell Technologies provides a consistent experience consuming resources across private and public clouds by means of its data center-as-a-service offering, VMware Cloud on Dell EMC (not available in all geographies). In this model, the customer configures and orders VxRail hyperconverged appliances, according to its specific requirements, using a dedicated online portal. Dell Technologies delivers, installs, maintains, and supports the infrastructure at the customer's premises. From the customer's point of view, this approach offers infrastructure as a service while placing the physical resources that underlie the cloud at their local data center.

VMware Cloud on Dell EMC makes the customer experience for deploying on-premise cloud resources as close as possible to the simplicity of spinning up resources on a public cloud, while retaining the flexibility and security of VxRail HCI. At the same time, the organization benefits from the combined experience of VMware and Dell Technologies in building thousands of data centers for customers with with huge and varied sets of requirements.

This approach frees up IT resources so they can focus on strategic initiatives and value-added innovation instead of routine maintenance tasks. Developers have a simple environment to code for, taking advantage of VMware Cloud Foundation's robust container infrastructure across this internal infrastructure and any VMware-based cloud services offered by VMware Cloud Verified Partners. And security organizations gain the ability to treat on-premises and public cloud resources as a single entity, which both elevates the organization's security posture and simplifies operations.

The turnkey approach of data center-as-a-service supports infrastructure from the core data center to edge locations, with workloads across these locations centrally configured and monitored using VMware's hybrid cloud control plane and robust, familiar management tools.

Granular Security, Inseparable from the Workload

As an organization plans its transformative path to multicloud, significant concerns are often raised about the security implications of this shift. In fact, as many as 66 percent of IT professionals report that security is their most significant concern on their cloud journey.[3] After all, the new exposures may be unfamiliar, and security risks can have immediate and significant financial consequences; for midmarket organizations, the typical hourly cost of downtime is $30,000 per hour.[4]

At the same time, security concerns do not spring from inherent weaknesses of the cloud models and architectures themselves. Gartner analyst Jay Heiser warns, "CIOs need to ensure that their security teams are not holding back cloud initiatives with unsubstantiated cloud security worries."[5] Instead, organizations must adjust their security postures appropriately to the cloud operating context, just as security measures must evolve more generally.

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"Extending backup and recovery to take advantage of the scalable, elastic storage resources of the public cloud should be part of the data protection strategy for every organization."

Cloud workloads operate within some combination of containers and VMs that are uncoupled from the hardware they run on, in the sense that they are portable across multiple environments, both inside and outside the data center. The new normal includes workloads passing freely in and out of the internal network, as well as multi-tenancy, where workloads share hardware with unknown third parties. Likewise, hardware-oriented protections are impractical for workloads that migrate freely among hardware environments.

VMware Cloud Foundation supports this reality with the ability for organizations to build cyber security postures that no longer focus on protecting the perimeter. Instead, security must be based in software and integrated into each workload. Here, all the rules and other security apparatus associated with a given workload are placed within the actual container or VM. Distributing security across the environment in this way means that security moves with the workload wherever it goes, regardless of whether it is inside the data center or on a third-party network or public cloud.

Rather than implementing hardware appliances for services such as firewalling, traffic scanning, and intrusion detection, these security components are implemented in software. The software-based measures are spun up in tandem with each container or VM and persist alongside the workload until being discontinued at the same time as the rest of the container or VM.

Because these measures are intimately tied to the workload, they are decoupled from the hardware in the same way that the

workloads themselves are. This approach enables security to be independent of any specific operating environment, which is an essential aspect of achieving portability while providing uninterrupted protection for sensitive data.

Realizing the Value of Cloud-Ready Data Protection

Rapidly expanding data volumes and application diversity that continues to grow without pause place new strains on data backup and recovery processes. IT organizations need powerful, scalable tools that integrate across their environment, increase the effectiveness of resources through automation and provide data-reduction capabilities to increase storage efficiency.

Extending backup and recovery to take advantage of the scalable, elastic storage resources of the public cloud should be part of the data-protection strategy for every organization. To balance cost with ease and speed of access, tiered storage consists of on-site resources for recent, often-accessed data as well as cloud resources for long-term storage of seldom-accessed data. For long-term retention, this approach is simpler and more cost-effective than backup with magnetic tape, and recovery is far faster. In addition, those data stores can be leveraged by disaster recovery (DR) capabilities that are orchestrated in the cloud, enabling dramatic cost savings over maintaining physical DR sites.

"Flexible payment solutions can help spread costs over time."

Tailor-made for the needs of mid-market businesses, the Dell EMC Integrated Data Protection Appliance (IDPA) DP4400 is a turnkey solution available in capacities from 8 to 96 TB, fully integrated with public cloud storage and providing search and analytics. The IDPA DP4400 also provides deduplication at an average rate of 55:1, reinventing storage economics by effectively allowing for the protection of about 5 PB of logical data using a 96 PB appliance, or up to 14.4 PB of data incorporating a cloud tier for long-term retention. The appliance integrates with Amazon Web Services or Microsoft Azure for disaster recovery, offering failover and failback in just a few clicks.

The IDPA DP4400 is designed for easy customer installation and upgradeability, with growth in place using license keys and no hardware changes. It is highly optimized for VMware environments, providing for seamless management along with the rest of the multicloud infrastructure.

Dell Financial Services[6] Provides Payment Solutions for Technology You Need

To put technology acquisition on the schedule that best meets your business needs, Dell Financial Services provides a range of payment and consumption solutions for hardware, software, and third-party IT. That flexibility helps lower costs and free up budget for other purposes, while also helping eliminate the perils of obsolescence. By transitioning from large up-front CapEx expenditures to smaller, recurring OpEx charges, organizations can increase their agility while reducing the financial impact of technological change.

Flexible payment solutions can help spread costs over time. Ultimately, Dell Financial Services offers IT decisionmakers the ability to optimize ongoing IT spend, with flexible consumption models and "pay-as-you-grow" flexibility that enables them to

pay only for what they use. As a result, IT spend on the whole moves closer to being a predictable monthly cost per seat. And knowing what to expect in advance makes it easier to accurately plan spending within budget constraints.

Conclusion

Medium-sized businesses are increasingly adopting multicloud infrastructures to increase their potential agility and financial advantages from multiple public clouds. Dell Technologies offers purpose-built and multicloud enabled solutions for the mid-market, which are integrated with VMware's industry-leading cloud platform. Designed for rapid, streamlined deployment, Dell Technologies infrastructure makes it simple to deploy hybrid and multicloud operating models that optimize operational efficiency, security, scalability, and agility, for a future where your business is free to innovate.

Learn more about cloud solutions for the mid-market from Dell Technologies at https://www.delltechnologies.com/en-us/midmarket-solutions/hci.htm.

Contributor: Matt Gillespie is a technology writer based in Chicago. He can be found at www.linkedin.com/in/mgillespie1.

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6   Payment solutions provided and serviced by Dell Financial Services L.L.C. or its affiliate or designee ("DFS") for qualified customers. Offers may not be available or may vary in certain countries. Where available, offers may be changed without notice and are subject to product availability, credit approval, execution of documentation provided by and acceptable to DFS, and may be subject to minimum transaction size. Offers not available for personal, family or household use.