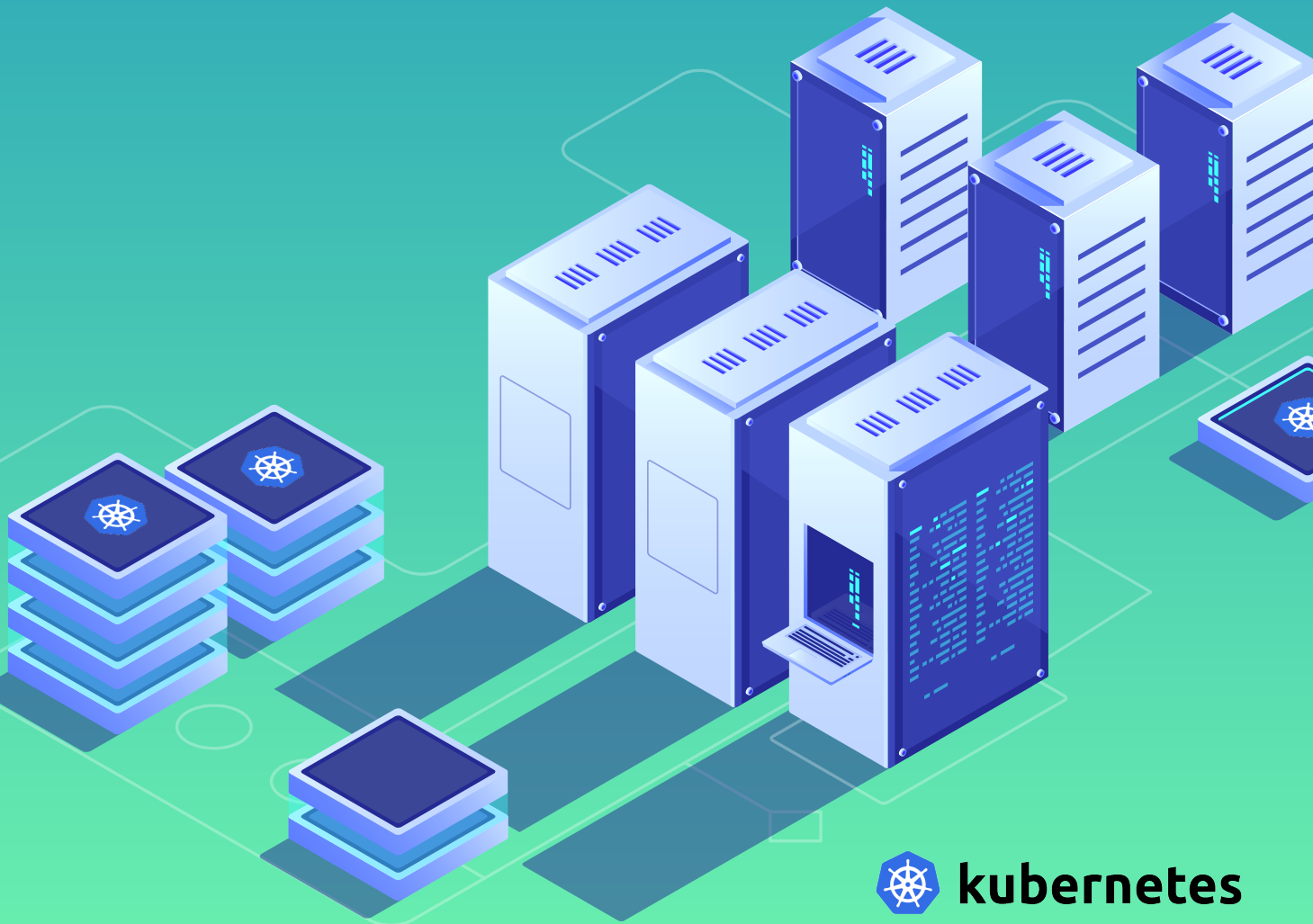
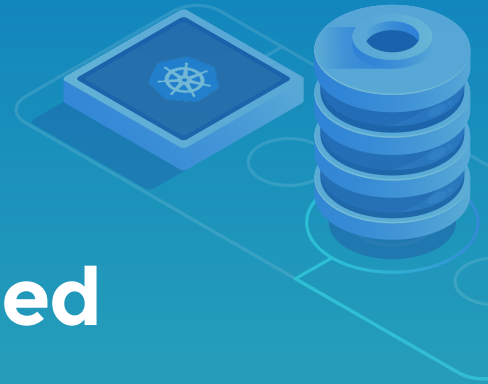




CloudEvolution

Running Kubernetes on Dell EMC Hyperconverged Infrastructure:

Accelerating the Shift
to Cloud Native



Kubernetes empowers developers by automating the provisioning and operations of cloud infrastructure using containers. This new strategy creates more time to focus on building applications vs. managing the infrastructure to enable them.

In an era of increasingly agile development and geographically distributed teams, code and data, containers enable innovation and rapid response. Containerized apps rely on orchestration tools, like Kubernetes, to manage multiple containers in production, yet Kubernetes is one component of an all-encompassing change in infrastructure.

So, cloud native development comes with challenges beyond a decision to use Kubernetes. Site Reliability Engineers own responsibility for the containers, workload portability, development tools, and the overall infrastructure. Building and managing that infrastructure involves new costs, learning curves, security concerns, and policy management. These factors are delaying deployment of Kubernetes—and stalling adoption of cloud native development.

These delays impact time-to-market and competitiveness for the enterprise. The entire business must pause to calculate the costs, time, risks and talent of a cloud native environment.

In response to these challenges, Dell EMC offers a portfolio of integrated solutions with Kubernetes to accelerate cloud native adoption.

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Introduction

In IT, Kubernetes has become a household name as the open source container-orchestration system for automating application deployment, scaling and management. For Site Reliability Engineers, it decouples, builds, and scales cloud native applications.¹ But, for all its possibilities, enterprises that adopt Kubernetes still must determine how to deploy it, manage it across an infrastructure, and keep it patched and secure.

For the enterprise planning to adopt Kubernetes, one long-time leader in infrastructure, Dell EMC, has a portfolio of proven solutions. By engineering a range of integrated infrastructures, Dell EMC delivers multi-cloud and cloud native solutions with Kubernetes in ways that address some of cloud native development's most critical barriers. At the forefront of innovations in servers and virtualization, Dell EMC now leads the market in hyperconverged infrastructure (HCI), multi-cloud infrastructure, and specifically, Kubernetes.



The Dell EMC story is one of formulating leading-edge infrastructures that put leading-edge technologies to use in practical, immediate ways. By validating and supporting the newest technologies, Dell EMC and its partners lower barriers to entry, making deployment, management, and scalability more rapid and reliable.

Dell EMC once again innovates ways to quickly deploy container-based architectures with Kubernetes—speeding the organizing of hybrid clouds and enabling scale across a variety of high-demand environments. Alongside Pivotal Platform, Google Anthos, VMware, and Microsoft Azure, Dell EMC's family of solutions for Kubernetes embodies, in a word, agility.

¹ [TheNewStack.io](#). "10 Key Attributes of Cloud Native Applications." July 2018.

² [Cloud Native Computing Foundation](#). "Kubernetes Is First CNCF Project To Graduate." Cloud Native Computing Foundation Blog, Mar. 2018.

³ [RedMonk](#). "Cloud Native Technologies in the Fortune 100." Sept. 2017.

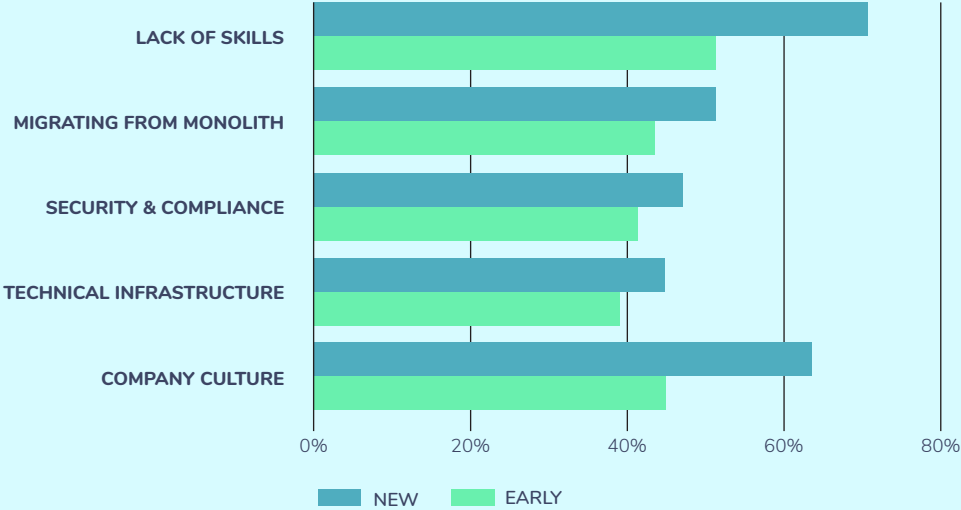
Cloud Native: Challenges & Opportunities

Cloud native technologies are used to develop applications built with services packaged in containers. Deployed as microservices, they are intended to be managed on an elastic and scalable to enable agile methodologies. For continuity of delivery—as workloads unexpectedly rise and fall—the infrastructure’s flexibility and scalability are essential characteristics. Containers are central to this model.

Barriers to the adoption of containers, however, challenge the enterprise. The rate of adoption of Kubernetes and container services outpace the broader market’s ability to supply the right people and solutions to deploy them. The five leading barriers to early adoption continue to be:

- **Skills**—finding people the abilities to implement and manage the stack.
- **Culture**—creating momentum to adopt a model.
- **Migration**—time and focus to move from a monolith to microservices.
- **Security**—new policy and security in an already busy organization.
- **Infrastructure**—adding and preparing new network, compute and storage for containers.⁴

BARRIERS TO CONTAINER ADOPTION ⁴



⁴ [Diginomica.com](https://www.diginomica.com). "Kubernetes Evolving Enterprise-Friendly Platform, But Challenges Remain." July 2019.

The leader among the five—and the underlying root cause—is demand exceeding supply for people having the necessary skills. The shortage means that enterprises struggle with learning curves in the face of rapid change in cloud native technologies, challenging security, and perhaps above all achieving scale and automation across complex architectures amidst all of this.

However, without a doubt, the embrace of Kubernetes by Dell EMC has brought a platform approach to these problems, ranging from turnkey solutions to validated reference architectures. These coordinated solutions feature well supported stacks of software, hardware and services.

This approach of tested and validated solutions, coupled with Dell EMC's market leading HCI family, provide the enterprise with flexible options that accelerate time to market.



Infrastructure Integration



Validated, pre-configured,
certified solutions



Security



Data protection at
the infrastructure level



Deployment



Integrated Kubernetes solutions for
popular platforms: Pivotal Platform,
VMware, Google Anthos,
Microsoft Azure

Paths to Adoption of Kubernetes

Whether deploying on virtual machines or bare metal, the biggest obstacles to container adoption are their management, security and finding people with the right skillsets. Researching and choosing the right hardware and software options, then integrating those into a working solution, can be time consuming. Dell EMC's holistic vision for its Kubernetes on HCI solutions is to accelerate the path to production—and maintain strong arguments in any internal debates over the costs of buy-vs-build.

Once implemented, Kubernetes helps developers spend less time dealing with runtimes, dependencies, and differences between test/dev and production environments. Operating on a microservices platform also means teams are able to work independently of each other. This presents a challenge, too, taxing developer experience and workflows. So, adoption comes down to focusing on what will enable innovation—and leaving behind as many low-value administrative tasks as possible.

Dell EMC's HCI portfolio for Kubernetes takes a decidedly turnkey approach to deployment and self-management. These can reduce or eliminate the top challenges, particularly a top-ranking current ill, which is the creation of an integrated infrastructure. Enterprises need an infrastructure solution that manages compute, storage, and networking, not to mention the ongoing patches and upgrades of open-source Kubernetes itself.

Core principals behind Dell EMC's Kubernetes solutions include:

- 1. Security:** Ensuring hardened security at the infrastructure level for today's cloud native architecture.
- 2. Rapid time-to-market:** Accelerate the adoption of hybrid clouds with Kubernetes via HCI turnkey solutions and validated and tested reference architecture solutions.
- 3. Scalability:** Integrate cloud native infrastructures holistically to enable performance at scale.

Before delving into Dell EMC's HCI for Kubernetes portfolio, decisions typically begin with the "buy vs. build" discourse on the adoption of Kubernetes. Urgency to start or scale cloud native development, availability of skilled resources, and the costs and time to stitch together the entire stack all weigh into the equation.

Dell EMC proposes that IT teams can think through buy-vs-build in terms of ecosystems, like Anthos or Azure, while looking at what is required in the layers of the stack to run these cloud native applications. This may include the underlying cloud infrastructure and cloud native platform layers. IT teams also can determine for itself what day-to-day management the enterprise wishes to own in these layers.

Certainly, this approach does not lock out IT teams from customizations, creativity, or cost-savings opportunities. What Dell EMC's approach inherently suggests is a pragmatic look at overcoming the challenges to first-order change.

By arriving with integration, validation, and security on deck, Dell EMC's proposition is straightforward. Get the enterprise underway faster, and realize efficiencies and gain business leverage where it matters most: development output supported with lean management.

Buying Kubernetes

- *For enterprises seeking a separate, cloud native app development platform, featuring automated processes and resource allocation.*
- *Fast time-to-market with services for tested, validated Kubernetes on a hyperconverged infrastructure.*

While rooted in the Google legacy, Kubernetes is an open-source framework. An enterprise may decide that the time, expertise, and operational cost needed to implement Kubernetes represent too much delay and risk. No matter how skilled IT may be, implementing a new architecture may be viewed as outside of the organization's mission or capacities.

For these enterprises, Dell EMC transformed Kubernetes and its deployment from a leading edge infrastructure service into a ready-to-work platform that can be easily tailored to the needs of IT teams.

That said, traditional wisdom is that the "buy" path is the most costly. Dell EMC's long-standing partnerships with Pivotal and VMware, however, serve as examples of gaps often missed when new technologies get adopted. The three partners integrated and tuned Kubernetes into a solution for IT teams—rather than another infrastructure project. Does the enterprise have strong resident expertise across multiple areas, like security, architecture, HCI, and so on? If not, Dell EMC's version of what it means to "buy" should be considered as a matured, comprehensive solution set for a program having complex, ever-changing requirements.

Dell EMC's "buy" design speeds attainment of the end-goal while mitigating risks and delays. IT quickly achieves the agility of a self-managing hybrid cloud stack and inherits answers to the challenges of integration, security, and self-management. If Google Anthos or Microsoft Azure are what the enterprise wants, Dell EMC has validated these configurations on HCI for Kubernetes, making them available as readily deployable infrastructure.

Building Kubernetes

- *For enterprises invested in cloud native development and production, where the infrastructure represents a core competitive advantage.*
- *Internal competencies in infrastructure and architecture central to the enterprise's strategy, innovation and growth.*

For well-resourced enterprises, a "build" approach can leverage Dell EMC's relationships with VMware and Pivotal. Additional add-ons from Dell Technologies let IT teams pick and choose what battles they wish to execute and own within their cloud native ecosystem.

In a "build" framework, Dell Technologies brings the reference architecture for Kubernetes and hybrid clouds. The marketleader in this space, Pivotal teamed with VMware to offer Enterprise PKS, a solution based on years of engineering investments and proven design tenets. Enterprise PKS deploys, runs and manages Kubernetes, speeding adoption while managing and automating Kubernetes infrastructure deployment within an integrated Dell EMC stack.

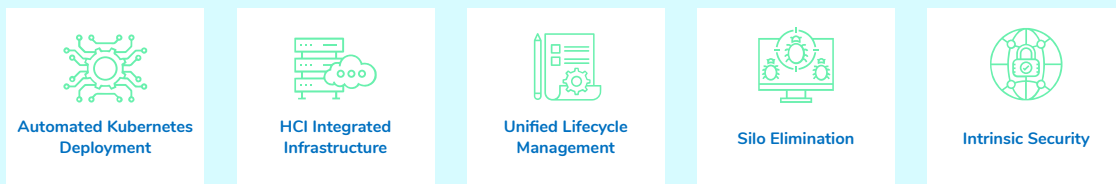
As mentioned, the Dell EMC portfolio includes validated reference architectures for Google Anthos and offers a solution approach for Microsoft Azure. For those favoring Anthos, the reference architectures are essential to successful deployment of Kubernetes within the bigger picture of achieving an integrated infrastructure tailored to IT teams.

Flexibility with Dell EMC

The enterprise can leverage Dell EMC with Kubernetes for environments that range from one monolith to suites of ever-changing apps. Whether buying or building, Kubernetes must be deployed within a seamlessly integrated stack, one that is validated, and simplifies ongoing operations. Only by checking these boxes can cloud native become an efficient strategic point of differentiation.

The enterprise inherits well-established performance with Dell EMC infrastructures and integrations of Pivotal, VMware, and Google Anthos or Microsoft Azure. No matter what requirements for the hybrid cloud may be, Dell EMC serves up the newest technology as a true solution—including reference architecture—on a secure, automated, and validated foundation.

TIME-TO-MARKET: DELL EMC FOR KUBERNETES



Strategy: Kubernetes on an HCI Platform

Every workload has its own needs, which results in an organization making workload-specific decisions and finding itself with multiple cloud deployments. Over 90 percent of Dell Technologies customers run two or more clouds—and a majority have five different clouds.⁵

The proliferation of clouds provide agility. But what often creeps in with multiple clouds are siloed processes and applications. Because every cloud environment tends to feature its own operational and management tools, silos are inevitable but inflict rigidity. This reminds us how Kubernetes supports the internal adoption of DevOps—that an integrated infrastructure goes beyond any one component, like Kubernetes, inside that ecosystem.

Dell EMC's answer is to integrate and stand up readily deployable hyperconverged infrastructures (HCI) that suit the needs of the enterprise now and its future-state cloud native strategy.

For example, if your Cloud Native strategy requires Anthos, then Dell EMC offers a validated HCI with Kubernetes for Anthos on its VxFlex HCI platform. This can be configured and validated for virtual machines to manage multiple containers regardless of which clouds are deployed in any geography.

⁵ [ZDNET](#). "Dell Technologies Backs VMware's Kubernetes." April 2019.

WHY HCI VS. TRADITIONAL SERVERS?

Hyperconverged infrastructure provides a smaller footprint and higher ROI than traditional servers as it brings together and virtualizes compute, storage, and data services seamlessly, allowing enterprises to consolidate their data center.

These systems are powered by a distributed architecture (file system and/or object store), clustering multiple systems to create a shared resource pool and enable high availability, workload mobility, and efficient scaling of performance and capacity. Managed through a single management framework or orchestration tool, businesses can leverage a consistent policy definition and activity execution at the VM/container level. It is the combination of being fully virtualized, clustered, and scalable that helps drive greater IT agility.

This allows enterprises to embrace digital transformation quicker and scale as their business needs dictate. HCI usually comes with a level of operational automation and lifecycle management that can help reduce the burden on IT resources so they can focus on higher-value tasks that support the business.

Agility is a key element to accelerating IT transformation. Hyperconverged is a key contributor to enabling agility. A recent survey by industry analyst firm ESG shows that 87% of those adopting HCI become more agile. They deploy HCI across a wider variety of workloads with most running 20% or more of their apps on HCI.⁶

Why Dell EMC HCI?

The Dell EMC HCI portfolio is built on the pillars of modern IT: flash, cloud-enabled, scale-out and software-defined technologies. Built on industry-leading PowerEdge servers, they deliver cloud-like agility, scalability and simplified IT management with data protection built-in. Dell EMC VxRail invests in the complete lifecycle, including advanced automation, making it easier from day one forward, allowing the enterprise to simplify IT infrastructure and operations.



VxRail systems on next gen PowerEdge servers are refined, optimized and robust platforms that help simplify the IT lifecycle—from deployment and management, to scaling and maintenance. Powered by Intel's 2nd Gen Xeon scalable CPUs, they deliver industry leading, workload optimized performance with built-in AI acceleration. This provides a seamless performance foundation to help speed data's transformative impact across the multi-cloud. VxRail currently leverages Intel's Optane technology built on an architecture that allows memory cells to be individually addressed in a dense, transistor-less, stackable design, as high-density persistent memory modules and SSDs with data closer to the processor for fast caching or fast storage of hot and warm data.

Dell EMC also provides flexible deployment options with HCI systems provided as individual nodes or within integrated rack systems, further reducing the burden on IT resources. And as a trusted partner, these systems are backed with comprehensive, single point of contact support for hardware, hypervisor and software.

For more information, visit <https://www.delltechnologies.com/en-us/converged-infrastructure/vxrail/index.htm>.

⁶ [ESG-GLOBAL.COM](https://www.esg-global.com). "ESG Tech-Truth: HCI and IT-as-a-Service." December 2017.

VMware Cloud Foundation on Dell EMC VxRail

Another option that arrives on a developer-ready Kubernetes platform? VxRail is an integrated, pre-configured, pre-tested solution with VMware Cloud Foundation (VCF).

VCF on VxRail, the foundation for Dell Technologies Cloud Platform (DTCP), is a transformative solution that provides a platform for both legacy and cloud native application deployment and management, with consistent infrastructure and operations across public and private clouds. Dell EMC VxRail transforms HCI networking and enables VMware cloud adoption to meet most any HCI use case—including high-demand workloads and applications.

This provides an automated, turnkey hybrid cloud—and the only HCI system jointly engineered with VMware with full stack integration and automated lifecycle management. Both the HCI infrastructure layer and the VMware cloud software stack are managed through SDDC manager, reducing risk and increasing IT operational efficiency. With the addition of Enterprise PKS, organizations can develop, test, and run cloud-native containerized applications alongside virtualized traditional applications. This approach preserves investments in existing enterprise architectures while solving for the cloud native skill gap by enabling VMware administrators to become Kubernetes administrators.

In addition, virtualized networking through NSX-T delivers automated provisioning and security across containers, providing a solution to a typical challenge in production-ready Kubernetes environments. NSX-T can apply micro-segmentation to Kubernetes pods with predefined label-based rules and Kubernetes network policy. VMware PKS then uses the provided variables to automate the configuration, deployment, and lifecycle of NSX-T objects when PKS deploys Kubernetes clusters.



Arriving as a unified HCI solution, the HCI infrastructure and VMware Cloud Foundation are managed as a single lifecycle. This creates an automated, turnkey hybrid cloud that reduces the delays and risks of adoption while delivering greater operational efficiencies.

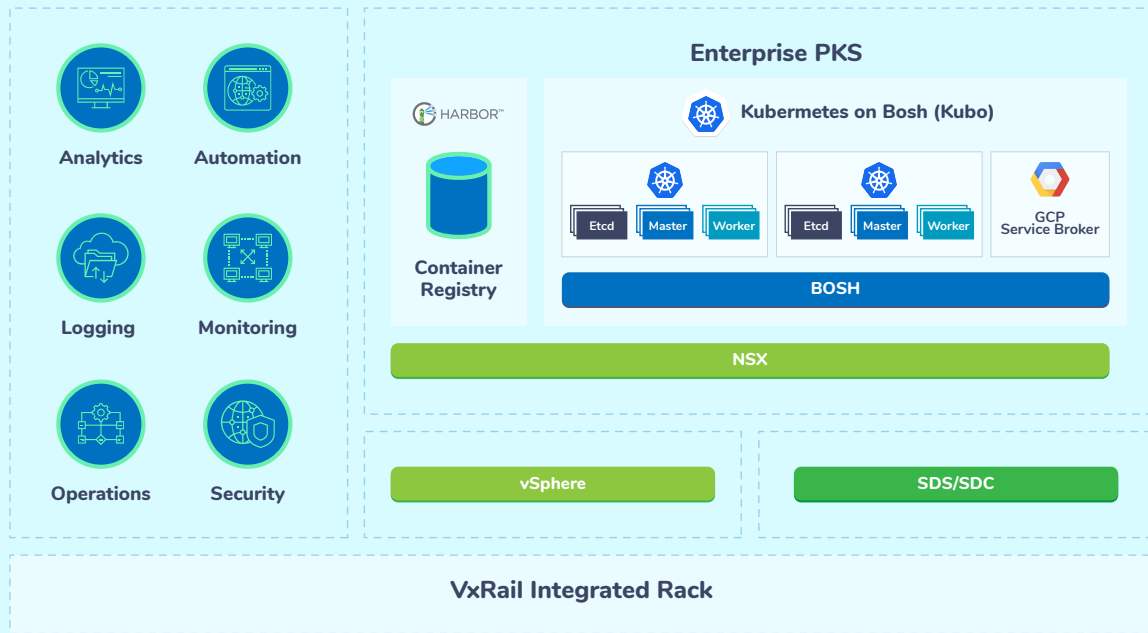
Widely deployed and proven, Dell EMC VxRail can instantaneously stand up a validated, automated Kubernetes infrastructure. It can manage container deployment and operations for multitudes of Kubernetes clusters; its VMware components can run and manage the containers at scale on private and public clouds with advanced networking and lifecycle management.

The “quick wins” with this solution come from the efficiencies of its validated integrations and pre-configurations:

- **Rapid deployment.** Kubernetes container orchestration on-premises and in public clouds.
- **On-demand scaling.** Optimizes resources, scaling up and down the cluster capacity.
- **On-demand patching.** Centralizes and speeds patches and updates to multiple Kubernetes clusters.
- **On-demand provisioning.** Accelerates Kubernetes deployment, eliminating manual steps for deploying Kubernetes clusters.
- **Auto health check and self-healing.** Proactive monitoring of all nodes, ensuring responsiveness of the application services.
- **High availability.** Monitoring and creating VMs as needed.
- **Simplified networking, persistent storage.**
- **Enhanced security** along with scanning and auditing.

The Dell EMC VxRail solution stack delivers greater leverage and agility to the enterprise with rapid time-to-market. It answers the issues of integrated infrastructure, deployment and intrinsic security. As an enterprise-ready Kubernetes solution, the Dell EMC VxRail platform eliminates silos and unifies the architecture into a highly scalable, more future-proof state.

VMWARE ENTERPRISE PKS ARCHITECTURE










Pivotal Ready Architecture

As an enterprise moves to multi-cloud strategies, it quickly learns it needs to simplify how clouds get built. In response, Dell EMC VxRail includes Pivotal Ready Architecture, a tested, validated reference architecture to deploy an enterprise-grade developer platform. Built on VxRail, PRA automates lifecycle management of the infrastructure, addressing issues of in-house IT teams expertise and overhead.

PRA simplifies deployment of private clouds and infrastructure services, arriving as a fully software-defined infrastructure and tuned for “always on” high availability. The central management console streamlines administrative tasks and troubleshooting. These and other features help the enterprise to boost developer productivity by combining application services, discovery, container management, and orchestration—along with plug-ins for developer tools. PRA also enhances cloud solution portability and agility, because the enterprise does not get locked into public cloud APIs.

Enterprise PKS platform can come integrated with Dell EMC VxRail to serve as a vital cloud native infrastructure component. Jointly developed by VMware and Pivotal, Enterprise PKS delivers Kubernetes-based container services for multi-cloud enterprises and service providers.

TIME-TO-MARKET: DELL EMC FOR KUBERNETES

 Production-ready	Enterprise PKS monitors and manages Kubernetes clusters to ensure high availability. Includes automated load balancing, updates and health checks.
 Networking and security	Integrates with VMware NSX-T to provide pod-level container networking, load balancing, and security policies.
 Secure container registry	Secures container workload images by performing vulnerability scans.
 Multi-tenancy	Control access privileges to all Kubernetes containers.
 Persistent storage	Deploys Kubernetes clusters for stateless and stateful workloads.
 Instant provisioning	Enables quick creation of Kubernetes clusters on-demand.
 Management console	Simplified interface for management.

As part of Dell EMC's integrated stack, Enterprise PKS can be added to enable the organization to deploy and operate containerized workloads demonstrating high availability with security-rich features.

The design of this solution within the Dell EMC framework enables infrastructure administrators the ability to rapidly standup production-grade Kubernetes clusters. The Kubernetes clusters arrive as an integrated stack from Dell EMC and Pivotal—anticipating the enterprise's networking, security, compute, and storage needs.

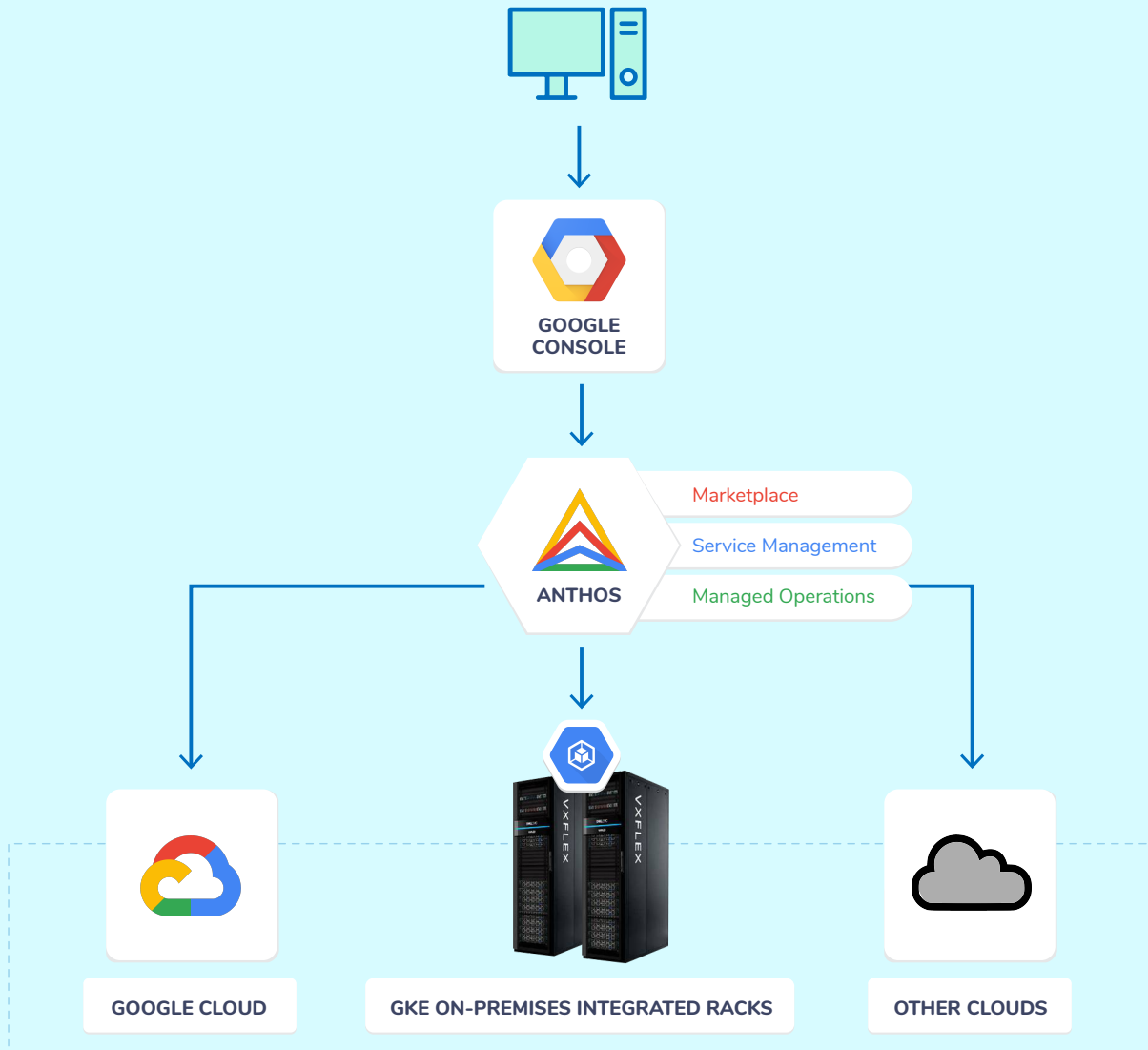
This creates operational freedom for IT teams both short- and long-term. Under constant pressures to speed development and deployment, the solution eliminates having to prop up one new production environment after another by enabling an on-demand model that offers both greater security and self-management.

Dell EMC VxFlex for Google Cloud Anthos

Anthos provides a consistent platform for building and managing applications across hybrid infrastructures, so developers are more productive across all environments. Anthos provides the mechanisms to bring code into production reliably and securely with reduced risks. This changes IT into a strategic enabler of the business, nimbly accommodating applications with containers, microservices architecture, and a service mesh. This mesh is managed by Google across the data center—and is cloud-agnostic to public and private clouds.




Built on open-source technologies pioneered by Google Cloud, including Kubernetes, Anthos enables consistency between cloud and on-premises environments, including Dell EMC VxFlex integrated rack. Core building blocks to Anthos include Anthos GKE, Anthos on VMware, Anthos Config Management, Anthos Service Mesh, GCP Marketplace for Anthos, Cloud Run for Anthos, and Migrate for Anthos. By Dell EMC's hand, the solution includes reference architecture to relieve DevOps from a range of deployment and management tasks.

DELL EMC VXFLEX FOR ANTHOS



Working with Google Cloud, Dell EMC engineered an integrated VxFlex rack system that is optimized to power the Anthos stack, including GKE for on-premises operating environments. The VxFlex integrated rack was jointly validated, and the result is a solution that is operationally efficient, featuring automated lifecycle management and scalability for on-premises or cloud deployments.

DELL EMC VXFLEX FOR GOOGLE CLOUD ANTHOS

 Independent scaling	Secures container workload images by performing vulnerability scans.
 Run side by side	Windows, Linux and container platforms on same system.
 Shareable storage	No need to segment clusters or bolt on arrays.

Del EMC's formulation of VxFlex for Google Anthos goes a few steps further. Scaling encompasses policy and security as well as portability to make moving or converting workloads easier.

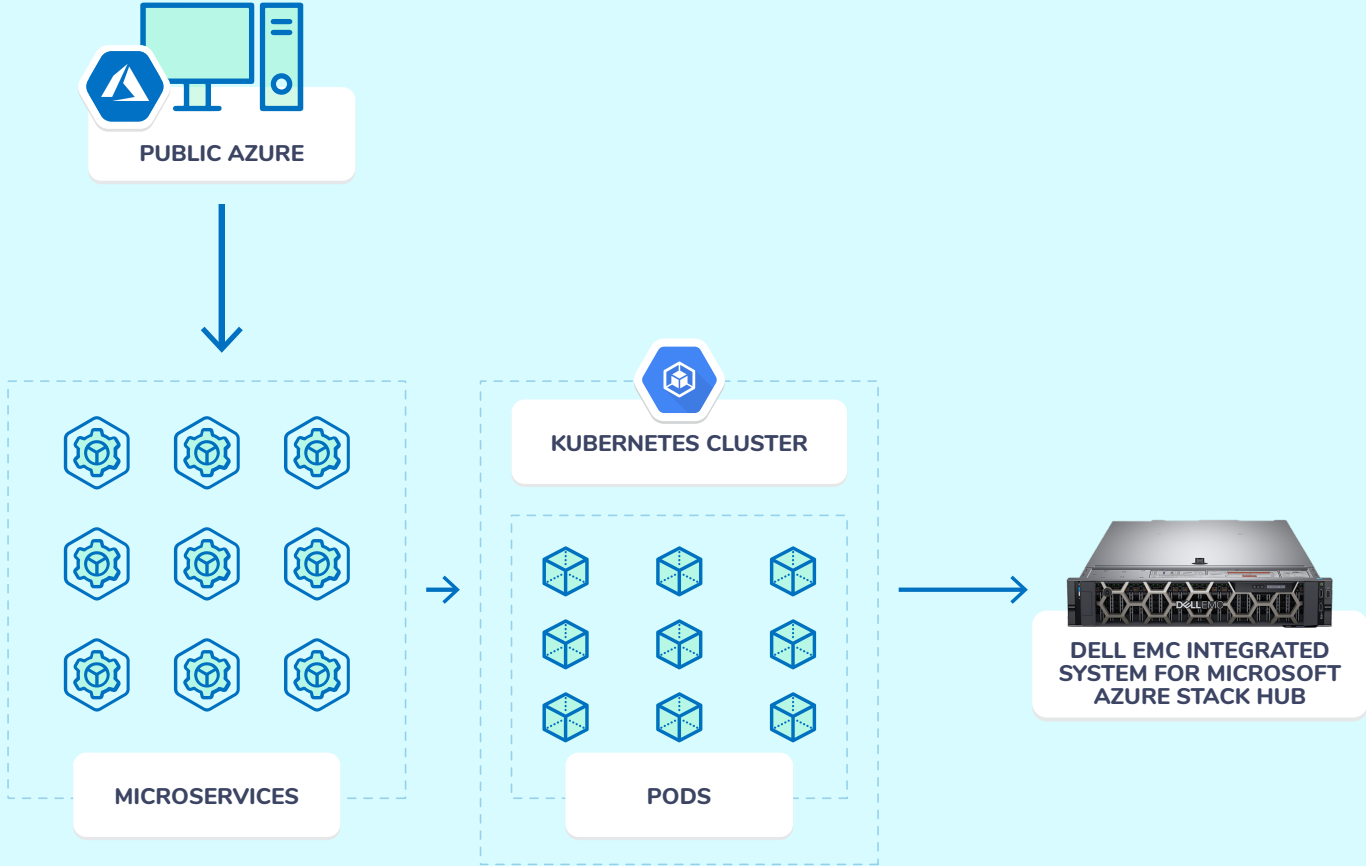
The ultimate win is that VxFlex for Google Anthos enables the enterprise to run workloads next to one another without having to compete for resources. This addresses many of the fundamental barriers to adoption of hybrid clouds for those having on-premises or mixed needs.

Other hybrid cloud solutions may lock down the environment, limiting the workloads running on it. The unique ability of this solution is that it allows Windows and Linux applications, along with new container platforms, to run side by side on the same VxFlex system. New applications can be pursued while having no impact upon legacy applications.

Dell EMC Integrated System for Microsoft Azure Stack Hub

Now two years into general availability within the Dell EMC portfolio, the Dell EMC Integrated System for Azure Stack Hub is an on-premises hybrid cloud platform for delivering Azure-consistent infrastructure and platform-as-a-service (PaaS). It offers Azure-consistent Kubernetes management through the Azure Kubernetes Service (AKS), an integrated continuous integration and continuous delivery (CI/CD) experience through Azure DevOps or Azure DevOps Server, and enterprise-grade security and governance. Whether on-premises at the core or edge, Dell EMC's approach includes end-to-end, update automation, rigorously engineered appliances, and options to integrate natively with other Dell EMC products such as Isilon or Data Domain.






DELL EMC INTEGRATED SYSTEM FOR MICROSOFT AZURE STACK HUB



Dell EMC Integrated System for Azure Stack Hub is an engineered appliance designed to support the Azure Stack ecosystem. In keeping with Dell EMC's time-to-market philosophy, the solution accelerates hybrid cloud adoption for enterprises aiming for on-premises consistency with Microsoft Azure.

The stack is powered by best-in-class Dell EMC network and server hardware, designed to support the Microsoft Azure Stack Hub ecosystem. The platform delivers enterprise-grade performance and resiliency, along with optional enhanced data protection and security, leveraging Dell EMC's software portfolio.

DELL EMC INTEGRATED SYSTEM FOR MICROSOFT AZURE STACK HUB

 Data-encrypted at rest	Guarding against data theft.
 Accelerated deployment	For traditional and cloud native apps.
 Hybrid cloud platform	Full component lifecycle management.
 Backup and recovery	Tailored to virtual environments and cloud.
 Automated private and public cloud	One consistent model on premises and in the public cloud.
 Lifecycle automation	Consistent integration and deployment with Azure-native tooling.
 Self-service catalog	Delivering resources on-demand.

Expertise with Global Reach

Going beyond hardware and software, Dell EMC serves as an end-to-end solution provider worldwide. In addition to its Kubernetes and HCI portfolio, Dell EMC adds other expertise and support services to the equation.

Services include Dell EMC CloudLink, a data encryption and key management solution for data-at-rest in public, private and hybrid cloud environments. The company also offers data backup and recovery, like PowerProtect for Kubernetes, and storage options. Allied with VMware and its Pivotal Labs, customers can upgrade their legacy systems to cloud-native platforms. The average customers realize an 82% increase in software development production, reports Pivotal.⁷ Dell EMC's portfolio of services include:

- Strategic planning, architecture, data protection, storage.
- Data protection and enhanced data-encryption/security.
- Consulting and implementation.
- Operations and ongoing support.

To best optimize and expand the enterprise's hybrid cloud platform, specialists from Dell EMC and its network can help by developing and customizing service catalogs, enabling identity and access management systems, and extending monitoring and metering systems. Other services include data protection enhancements for Kubernetes and incorporating best of breed, external storage solutions as needed.

Conclusion

The fast pace of the cloud native development and its technologies will continue to challenge how IT teams can adopt, manage, and remain agile. Through a portfolio of Kubernetes solutions geared for turnkey deployments, Dell EMC answers the leading challenges of security, deployment, and infrastructure integration. Featuring validated, integrated stacks with Kubernetes, Dell EMC demonstrates a mature vision that can be leveraged for rapid time-to-market.

Already a leader in infrastructure, including HCI, Dell EMC also offers the worldwide footprint of a top-tier provider for global enterprises. Leveraging its engineering alongside key strategic partners, Dell EMC is enabling cloud-native deployments faster on more sustainable, scalable hyperconverged infrastructures. These HCI and Kubernetes solutions can position an enterprise to stay ahead of the curve in the rapidly evolving areas of cloud-native infrastructure.

⁷ [Pivotal.io](#). "Why Pivotal." February 2020.

ABOUT CLOUD EVOLUTIONS

Cloud Evolutions is an Austin, TX-based consulting and product engineering services exclusively focused on solutions for Information Technology, software development and related fields. Specializations include the optimization of infrastructures, application delivery and migration strategies.

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