VXFLEX ANTHOS READY VALIDATED SOLUTION

Simplicity in delivering managed Kubernetes across public cloud and on-premises data centers

Faster Time to GKE On-Premises™

- Pre-architected solution complete with compute and persistent storage
- Granular expandability
- Built for availability, scale and performance
- Pre-engineered and lifecycle sustained

VxFlex integrated rack is jointly validated for Google Cloud's Anthos solution optimized to power the managed Google Kubernetes Engine (GKE) on-premises operating environment.

Organizations are trying to figure out what applications should move to the cloud, what to keep on-premises, how to modernize old applications and create new applications with containers. What may sound like a daunting task doesn't have to be difficult with the right solution. Now Dell EMC and Anthos can be your strategic enabler of Kubernetes in the data center and the cloud.
Whether your preference for on-premises infrastructure comes from WAN connectivity, data gravity, regulatory requirements, or operational efficiency, VxFlex provides an excellent solution.

As digital transformation projects move to production, VxFlex provides an industry proven solution to ensure you have the proper production ready infrastructure to host your Anthos deployments.

The modular scale out, high performance VxFlex platform makes an ideal architecture that keeps up with your growth needs as more applications move to containers. You can always add more compute and storage capacity as needs change without having to re-architect the system. VxFlex offers asymmetrical options for separate compute and storage needs that future-proofs your scaling needs regardless of ephemeral or persistent storage requirements. VxFlex also provides a means to work with your existing Windows or Linux VM workloads for optimizing your efficiency on the same infrastructure without physical portioning.

Growing container popularity

The container market continues to gain traction. Organizations are moving to it faster than ever because of its agility. A big part of trying to implement a container framework is trying to determine what applications (new and old) should be part of the transition. Having an infrastructure to simplify the entire process and intelligently determine what lives on-premises or off-premises further increases the benefits.

Containers are an abstraction at the application layer, also called "operating system virtualization." These containers package software into a standard lightweight format (e.g., Docker) and bundles everything an application requires to run successfully (source code, runtime, system tools, system libraries, environment variables, and so on). This also makes the container portable. Containers help lower the barrier of entry to developing microservice based applications. This enables developers to spend less time worrying about runtimes, dependencies, and differences between test/dev and production environments and more time innovating to meet the demands of today's dynamic business environment. Container Orchestrators (COs), like Kubernetes, make running containers at production scale possible by handling the complexity of managing hundreds, and even thousands, of containers at any one time.

Financial services

- Banking in a box service platform
- Improved governance and customer engagement

Retail and hospitality

- Edge IoT, "cluster in every store", agile governance
- Supply chain efficiency
- Modernization of website

Healthcare

- Batch workloads
- Data protection
- Machine Learning

Media and telco

- Edge IoT, connected content (TV)
- Transcoding video content to support many devices

Public sector

- Benefits calculator modernization with jurisdictional challenges
- Multi-cloud

Manufacturing

- IoT - detecting defects on production lines

What is Anthos

Anthos enables the building and managing of modern hybrid applications across environments. Powered by Kubernetes and other industry-leading open-source technologies from Google, Anthos transforms the architectural approach, allows focus on innovation, and enables organizations to move faster than ever without compromising security or increasing complexity. IT can now become a strategic enabler of the business by modernizing new and existing applications with containers, microservices architecture, and a service mesh delivered, and managed, by Google across the data center and the cloud.

The Anthos integrated platform transforms how you develop, secure, and operate hybrid cloud and cloud-native environments across the Google Cloud Platform (GCP) and your on-premises data center. The Anthos platform is built on open-source technologies pioneered by Google, including Kubernetes, Istio, and Knative, enabling consistency between cloud and on-premises environments like VxFlex integrated rack. Google Kubernetes Engine (GKE), GKE On-Prem, and Anthos Config Management are the core building blocks of Anthos. In addition, Anthos comes included with GCP Marketplace and integration with platform-level services such as Stackdriver, Cloud Build, and Binary Authorization.

Organizations get the benefit of managed services provided by GKE, but the choice to run their own infrastructure on-premises, in the GCP public cloud, or hybrid. For many organizations, a hybrid solution provides the best of both worlds.

The VxFlex Anthos Ready Validated Solution

Working closely with Google Cloud, the Dell EMC VxFlex integrated rack engineered system is configured and optimized to power the full Anthos stack including GKE On-Prem operating environment enabled by Anthos. The VxFlex integrated rack has been jointly validated for Anthos. Now organizations can make the move to Anthos knowing VxFlex integrated rack provides an operationally efficient, lifecycle managed and scalable option for deployments on-premises.
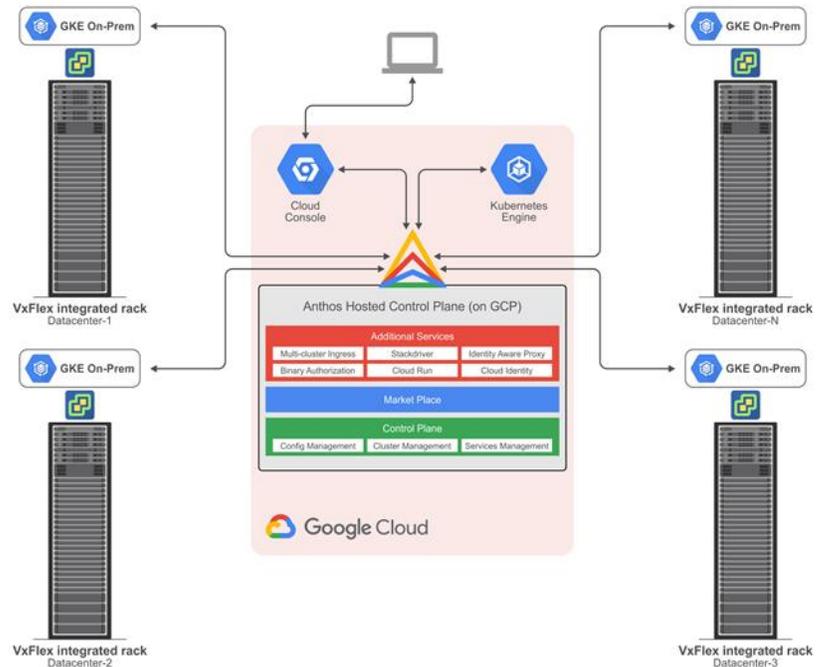
**Control geographically dispersed
GKE On-Prem clusters on VxFlex integrated rack**

Solution benefits

Ability to mix workloads: Other hybrid cloud solutions may lock down the environment, so you are limited to the workloads running on it. The VxFlex and Anthos solution allows other workloads to run next to each other without fighting for resources. This unique ability allows Windows and Linux applications along with new container platforms, to run side by side on the same VxFlex system. Complete flexibility means adopting new applications is easy while having no change to legacy applications.

- Deploy HCI, storage-only and/or compute-only nodes for workload diversity
- Mix and match nodes – not just at initial purchase, but anytime
- Shareable storage in the same physical deployment – no need to segment clusters or "bolt on" external shared storage arrays
- Single infrastructure capable of deploying a choice of any Kubernetes distribution(s)

High performance: VxFlex delivers the performance you need for any high-performance database and application. VxFlex OS is the virtualization software that enables VxFlex systems and it can deliver millions of IOPS at consistent sub millisecond response times. Every node in the VxFlex cluster is used in the processing of I/O operations, making all I/O and throughput accessible to any application within the cluster. Such massive I/O parallelism eliminates performance bottlenecks. Throughput and IOPS scale in direct proportion to the number of nodes added to the system, improving cost/performance rates with growth. High performance is desired for container applications, but it is also a key factor when rebuilds and rebalances are needed. These all occur in the background with minimal to no impact to applications and users. These unique VxFlex features are why the most discerning and competitive businesses rely on VxFlex for their mission critical databases and applications.

- Greater efficiency in reaching performance levels – VxFlex OS reaches higher performance in less rack space
- Proven/certified to support the most demanding ISV applications (SAP HANA, SAS Analytics, Epic, etc.)

Compute and storage can scale independently: As the deployment of containers reaches scale, having a non-disruptive path to add/change the properties of the system is important. Containers may start with little need for persistent storage, but over time this can shift to needing additional storage when applications like databases come into the container deployment. Being able to non-disruptively and independently scale compute and storage to best fit the environment is a powerful advantage. If you need more compute, add compute nodes. If you need more storage, add more storage nodes.

Single pane of glass for GKE and GKE on-premises with VxFlex

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Start small and scale big: Moving to container deployments, can introduce the challenge that the starting environment will not adequately perform as it scales. As more and more workloads are added, the ability to incrementally grow without architectural re-composition and without losing performance can be a key factor. VxFlex can start with as few as four nodes and easily scale to over a thousand nodes without architectural challenges and performance degradation. No matter how big or small, 6x9's of reliability is available for all workloads.

Summary

Engineered together with Google Cloud team, the Anthos and VxFlex hybrid cloud solution provides the best in class hyperconverged, composable, infrastructure from Dell EMC and managed Kubernetes by Google Cloud. Leverage scale-out capabilities of GKE On-Prem for container-runtime and VxFlex integrated rack for scale-out infrastructure, with enterprise class reliability. Add storage and/or compute on the fly with no downtime to achieve cloud-like scale and flexibility on-premises.

This solution streamlines operations and provides portability between on-premises and cloud through a managed Kubernetes service, GKE On-Prem. The high-availability of VxFlex integrated rack combined with the high availability of the GKE On-Prem, results in a best-in-class solution.

Additionally, the private repositories allow different teams to leverage them between the two environments for their development, testing and production deployments as needed. This simplifies operations and leverages the same Kubernetes tooling on-premises and in the cloud, includes CI/CD, configuration management, service-mesh, and monitoring and logging.

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