Dell Technologies empowers DevOps teams
Build modern, cloud-native environments

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Empowering DevOps Teams

DevOps teams are a big part of successful digital IT transformations through the adoption of modern and cloud-native applications. These teams accelerate software development, automate delivery processes, and release competitive product innovation to their respective markets faster.

Cloud-native applications stem from microservices, containers and orchestration platforms such as Kubernetes. These modern applications increase the speed, efficiency and portability of application development and deployment. As a result, it also creates rapid data growth which in turn can create unintended risks such as shadow IT and management siloes and increasing costs in management overhead. By integrating Dell Technologies infrastructure solutions for DevOps, teams can efficiently corral and manage unintentional shadow IT instances through consistent, scalable, and secure enterprise options.

Dell Technologies empowers DevOps teams to design and operate their cloud-native environments while accelerating in lockstep with their growing business demands. In addition to the benefits of cloud-native, these teams require seamless, non-disruptive and reliable mechanisms to quickly onboard applications. With Dell's broad portfolio designed for modern IT, customers can deploy end-to-end storage, data protection, compute and open networking solutions supporting rapid cloud-native adoption. As a result, Dell infrastructure offerings are fundamentally and intrinsically designed to move modern applications and workloads to production.

As part of the cloud-native community, Dell Technologies contributes to the CNCF (Cloud-Native Computing Foundation) SIG (Special Interest Group), fostering collaboration between developers and IT strategists to assure that the applications being delivered are meeting the standards and expectations of the open-source community. The acceleration of technologies such as containers can lead to uncertain management overhead costs, even if orchestrated by Kubernetes.

DevOps teams create synergies between developers and IT operations, allowing them to integrate IT best practices for these modern applications by relying on accessible open-source tools across bare metal, virtual and containerized platforms. By leveraging Dell's offerings , they can achieve their development goals in real-time across container and Kubernetes platforms while supporting their own design needs against their organization's IT strategies.

Aligning DevOps with Traditional IT Strategy

While DevOps creates their strategy to expedite software development life cycles and provide quality outcomes, partnering alongside IT administrators (Backup, VMware, Security, etc..) can open a range of easy traditional IT best practices that provide seamless experiences and are available through the following portfolio offers.
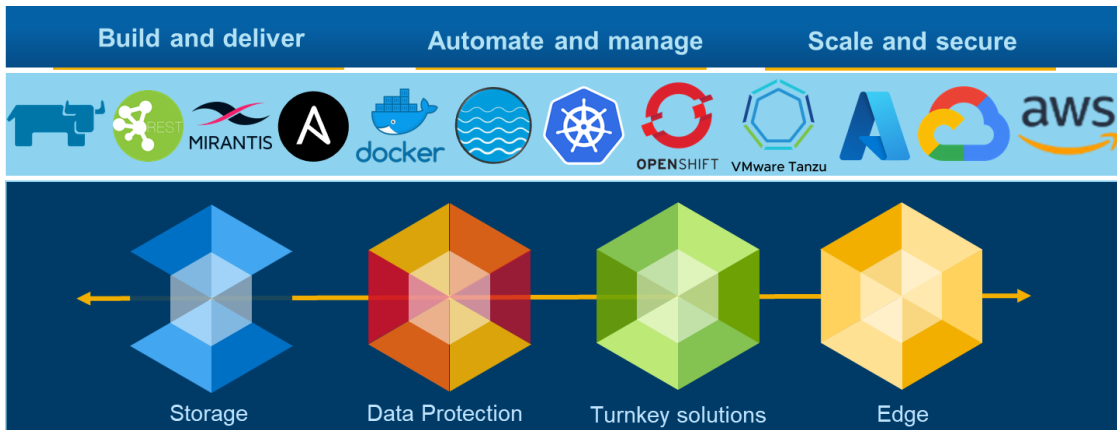
Modern Storage

Part of a modern IT strategy is automating data center operations and developing an infrastructure-as-code environment. With Dell's infrastructure and software tools, DevOps teams can incorporate their company's IT best practices and create environments that provide frictionless storage consumption and agile data services. Container Storage Modules delivers software modules for storage management provide developers with the ability to build automation for enhanced IT needs and other critical enterprise storage features such as data replication across data centers, role-based access control (RBAC) authorization, observability and resiliency for disaster recovery and avoidance. Additional functionality includes automated volume placement that analyzes required capacity for Kubernetes workloads and snapshot capabilities such as group/crash consistent snapshots with referential integrity. Inherent to CSM are Container Storage Interfaces (CSI) which are standardized APIs for container orchestration platforms, and in turn talk to storage plugins such as persistent storage. Developers can use CSI plugins storage platforms to enable new and legacy applications to be deployed for containerized applications.

Modern Data Protection

As part of a complete IT strategy, modern applications must be backed up, secured, and protected. Dell EMC PowerProtect Data Manager is one of the first enterprise protection solutions for bare metal, containerized and virtual machine (VM) applications. This centralized UI provides comprehensive enterprise protection solutions for Virtual Machines (VMs), applications and Kubernetes workloads. Data Manager enables the discovery, protection, and management of production workloads in Kubernetes environments and protects dev/test workloads to ensure that the data is easy to backup and restore. Working alongside VMware, Dell engineering leverages the Project Velero architecture developed for Kubernetes environments and is integrated directly into the user interface. This integration provides scalable backups' simultaneously above Valero's standalone capabilities. Data and application owners gain the benefit of an intuitive, easy to use user interface (UI,) while IT Ops can take advantage of centralized governance separate from the development operations. Data Manager enables protection of the Kubernetes clusters namespaces and provides data owners the ability to restore and migrate across clusters via data movers. Additionally, the ability to create agentless application-consistent Kubernetes container protection and specify labels for their workspaces (PODs) is a key software differentiator with Data Manager. As multi-cloud environments become part of the IT infrastructure, having backup capabilities is also is a major advantage to DevOps. The ability to automatically deploy their workloads to AWS (AKS), Azure (EKS) and Google (GKE); providing them flexibility and resource efficiency through burst development, QA/Test in "production" as well as self-service backup and restores.

Secure your applications

Incorporating more security throughout the infrastructure is high priority for all IT and especially important as new DevOps initiatives begin to accelerate and challenge an organizations' need to transform. CloudLink is a product offering that secures critical data anywhere it resides by applying powerful policy-based key management. It can provide multiple data encryption options across the broad spectrum of operating platforms including bare metal, containerized and virtual.

Given that modern applications are API-driven and generate extensive network traffic they need to be encrypted, with CloudLink, it allows DevOps to secure, control, and monitor Kubernetes and containerized applications.

Turnkey solutions
Dell Technologies has created packaged offers and reference architectures designed to ease the implementation of IT infrastructure that supports application modernization. Several choices are available to accelerate and scale DevOps workflow. These offerings support many of the different Kubernetes distributions for which we have a solution such as Azure AKS, Amazon EKS, Google Anthos, Red Hat OpenShift, VMware Tanzu, and SuSe Rancher. Additionally, IT decision makers can onboard Kubernetes quickly with integrated systems such as VMware Tanzu on APEX Cloud Services, VxBlock or VxRail, as well as Azure Kubernetes Service on Dell EMC integrated system for Microsoft Azure Stack HCI.

Edge
As DevOps teams strive to reduce application development time and create programming models as well as access workloads at edge locations, Streaming Data Platform is an enterprise-ready, Kubernetes out-of-the-box software platform that can help them achieve their goals. In addition, they will gain data insights and give teams back time to focus on business needs. Designed to support on-premises ecosystems with powerful, scale-out high availability, Streaming Data Platform is built on open-source technologies, such as Apache Flink, Spark and Pravega, with connectors to applications such as Boomi and Kafka and accessibility to large array of capabilities and engines.

Summary
Leveraging Dell Technologies solutions to implement end-to-end lifecycle management processes that are scalable with intelligent sets of capabilities enables DevOps teams to advance quickly along their digital IT transformation. Enabling modern applications alongside a strong enterprise backbone will result in less management overhead, increase efficient resource availability, and allow organizations to be more competitive in their marketplace.

Customer References				
SwissTXT	Dell Digital	IAG	Utiity	Trintech

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