# BEYOND DIGITAL TRANSFORMATION:
BECOMING CLOUD NATIVE

The race to modernize application development is on, fueled by the demand for compelling new applications that accelerate business processes and the cloud-native tools that help developers and operators deliver on that demand.

This year, the Cloud Native Computing Foundation reported that 84% of organizations that have adopted containers are using them in production environments.[1] However, as businesses of all kinds strive to modernize their applications, they are discovering that creating a production-ready environment to support modern tools and strategies can present some formidable challenges.

This paper discusses how the application environment is evolving, including a look at five key challenges organizations are facing, and offers guidance on how to plan for a cloud-native modernization strategy.
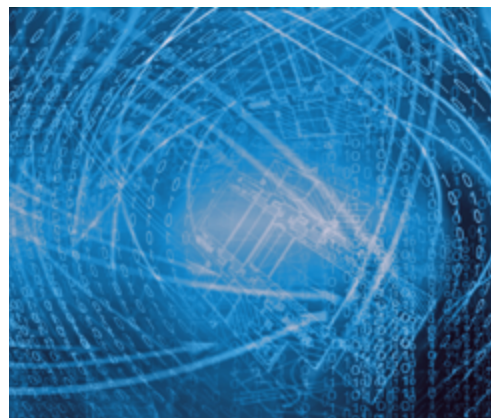
THE MODERNIZATION IMPERATIVE

The pace of technology change continues to accelerate. Machine learning and artificial intelligence, the Internet of Things and the data deluge enterprises are awash in all put increasing pressure on IT to deliver more applications, faster applications, better applications. To meet that demand, organizations are increasingly adopting agile methodologies and DevOps as well as new tools like containers, microservices and Kubernetes orchestration to increase development agility and accelerate time to value for new software.

Although the next generation of tools will be crucial to rolling out new, compelling applications, surprisingly, adoption is not proceeding as fast as it should in many organizations.

KEY CHALLENGES TO OVERCOME

What is hindering adoption? There are five key challenges enterprises must face on their road to cloud-native, modern applications.

1. Day zero need to stand up a new environment

Although the demand for modernization may be evident, it is quite difficult for organizations to design, procure and deploy the required infrastructure needed for the transformation. Downloading and integrating all the open source modules can be daunting, and very few organizations have the skill sets necessary to build and integrate a new Kubernetes environment.

1 "2019 CNCF Survey Results Are Here: Deployments Are Growing in Size and Speed as Cloud Native Adoption Becomes Mainstream," Cloud Native Computing Foundation, March 4, 2020

2. Technology estate inertia

Assuming day zero challenges have been met, there is still the issue of the existing inventory of applications that needs to be maintained and the infrastructure that goes along with that.

Legacy applications must be supported while the enterprise pivots to modern, cloud-native applications, which means existing skills and knowledge continue to be valuable to the organization and must be maintained. New skills, including the ability to support cloud-native technologies, are hard to find and keep.

3. Day 2 operations

Next is the issue of optimizing the operations of modern application infrastructure. Organizations will need to automate manual processes, like standing up new clusters and managing the lifecycle of the components. They will also need to ensure that persistent storage is available for containerized applications, that service-level agreements are in place, and that data protection, business continuity and disaster recovery plans are documented, to protect mission-critical data and applications from potential failure, compliance challenges and data loss.

Keeping operating software "fresh" is a challenge. There are frequent Kubernetes releases and even more frequent patches, and just tracking updates for all the open source components can be a job in itself.

4. Adopting cloud consumption

Enterprises increasingly want to consume IT using an as-a-service consumption model, meaning they must reexamine and reset the methods they use to acquire and pay for private cloud infrastructure. Common goals are to move from a Capex model to an Opex one and provide elastic capacity to stay in sync with how the infrastructure is actually used.

5. Successful multi-cloud

Organizations are widely relying on multiple cloud providers to meet their business goals, as a July 2018 Forrester study found, with 86% of respondents identifying their IT environment as multi-cloud.[2] However, it is no simple task to integrate on-premises and multiple public cloud components.

Porting apps from on premises to Azure, Amazon Web Services or Google Cloud is not trivial. Yet, IT agility requires workload placement flexibility to accommodate business, technology, operational and financial considerations.

And each cloud—public or private—typically uses a fundamentally different set of tools for management and maintenance. An efficient and secure multi-cloud environment must overcome these operational challenges, expose and knock down silos, and thus eliminate the need for expertise in each platform the enterprise uses.

---

2 "Multi-cloud Arises from Changing Cloud Priorities," Forrester, 2018

WHAT IS AT RISK?

Organizations that cannot deliver value in a compelling online experience and keep it fresh often struggle in the marketplace. Many industries are now being disrupted by new players that have made this realization and are capitalizing on it to the detriment of the competition.

Laggards may see customers defecting to competitors and a potential revenue loss, and they may lose the ability to capitalize on new markets due to a lack of flexibility and agility.

Today, technology advances so quickly that organizations must either be the change agent or be reactive. In either case, what is needed is the right tools to adapt. The old waterfall-ITIL method—taking months or years to release software and change control boards with endless sign-offs—just does not work for today's agile application demands and an IT landscape that is in a constant state of evolution.

WHAT THE ENTERPRISE WANTS

When looking for a new platform for agile, modern, cloud-native development, certain attributes must be considered. Organizations should seek out:

> **Today, technology advances so quickly that organizations must either be the change agent or be reactive.**

- The flexibility to deploy every application in its "right" cloud, meaning the ability to place workloads where it makes sense based on business and technology factors.

- A solution that integrates with existing tools and infrastructure, greatly reducing the need for training and education.

- A pragmatic approach to IT that does not "throw out the baby out with bath water" by ignoring existing applications and infrastructure, but rather allows and encourages coexistence between new and old so the best of existing applications can be preserved and extended with new functionality.

- More efficient resource utilization through resource pooling across workload types. IT infrastructure is expensive, and having stranded capacity across multiple incompatible environments is wasteful.

- Automation that eliminates toil (undifferentiated heavy lifting), so that environments can stay up to date and replace slow, ticket-based support with self-service resource provisioning.

- Preservation of key skills and processes, since it is impractical, if not impossible, to hire an entirely new staff to add new capabilities. Look for a solution that takes advantage of existing skills, not just because they're there, but because knowledge of existing systems needs to be exposed in new ways for new use cases.

- Frictionless workload mobility between all environments that eliminates the application-rework tax.

- A consistent set of tools—including operations management, service provisioning and resource governance—and operations that enable control of every workload, wherever it is, with complete visibility, including the ability to easily manage chargebacks.

THE DELL-VMWARE DIFFERENCE

Dell Technologies and VMware have partnered to deliver all of the above.

There is no need to download and install huge swaths of open source code. Dell and VMware deliver a turnkey system that is integrated out of the box and works from the moment it is powered up.

By bridging old with the new, the Dell-VMware partnership exposes the hidden value in legacy applications so organizations can get new life and benefits from old applications and data.

Dell delivers an enterprise-proven data protection portfolio that supports old and new applications in a holistic, integrated manner, so everything is secured regardless of its provenance or age. Dell is the only choice for new, integrated IT solutions.

WHY DELL?

Dell has become the preferred vendor of enterprises worldwide, thanks to its ability to provide everything organizations need for all their IT needs—in a single place. With deep integration between Dell EMC and VMware, Dell can deliver a broad portfolio of products that are tested and validated together and that use a single support organization, one that knows your entire environment from top to bottom.

When it comes to modernization, Dell automates better than anyone, providing a single environment that supports traditional virtualized and emerging containerized applications, an environment that simplifies cloud-native modernization across the enterprise, and supports a broad range of agile and DevOps tools and frameworks.

Dell's approach enables the extension of existing and new applications with verified open source technology that features full-stack integration of hardware and software. Dell simplifies multi-cloud operations with consistent, conformant Kubernetes everywhere, uniting Dev and Ops around the shared goals of fast releases and superior application availability, saving time and effort in modernization.

NEXT STEPS

Visit Dell Technologies to learn more.

This content was commissioned by Dell Technologies and produced by TechTarget Inc.