

White paper

Modern business: get your organisation future proof with **VMware Cloud Foundation**



Introduction

The rise of modern apps and the growth of business application landscapes bring new challenges. Modern cloud technology asks a lot of your IT infrastructure and ecosystem, especially since the permanent availability of business and mission critical applications has rapidly become the common standard instead of a luxury.

When enterprises build, deploy, and manage modern apps, many of them use containers, Kubernetes and microservices architectures. However, those modernised components are often obliged to work with existing non-containerised applications and stateful workloads such as databases. In addition, many modern companies use multiple clouds with drastically different infrastructures and operations. Managing such heterogeneity while at the same time adhering to enterprise policies is a complex task for both IT operators and developers.

VMware Cloud Foundation alleviates your troubles and makes it a lot easier to manage hybrid cloud environments and complex application landscapes. But what is VMware Cloud Foundation and how does it help your business? And what are the best practices when it comes to using and managing this hybrid cloud platform? Read on to find out.

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What is VMware Cloud Foundation?

VMware Cloud Foundation is an advanced hybrid cloud platform for both enterprise applications and container-based modern apps. The platform utilises a comprehensive software-defined stack that, among others, consists of vSphere, vSAN, vRealize Suite and VMware NSX-T Data Center. This leads to a comprehensive and hybrid cloud solution that provides you with a complete set of secure software-defined services for compute, storage, network security, Kubernetes management and cloud management. Cloud Foundation also harbours built-in automated lifecycle management to simplify the administration of the hyperconverged infrastructure (HCI) stack.

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How does it help your business?

Now that we have explored what VMware Cloud Foundation is, it's time to delve a little deeper into the practical ways in which the platform benefits your business. Read on to find out why adopting the platform deserves serious consideration.

1. Unified visibility

Keeping the overview is difficult in complex cloud environments that contain a lot of applications, infrastructural components, microservices, containers and VMs. Delivered through VMware Tanzu editions, Cloud Foundation delivers unified visibility of virtual machines (VMs), containers and Kubernetes clusters. A global control plane allows you to centrally and consistently manage all of your Kubernetes clusters.

The Kubernetes concept of a namespace is integrated into vSphere and becomes the central unit of management. By grouping resource objects such as VMs and containers into logical applications via namespaces, virtual infrastructure (VI) admins who previously managed thousands of VMs can now manage just dozens of application namespaces, resulting in a massive increase in scale, but at the same time a serious reduction in cognitive load.

2. Improved security

In today's cybercrime-infested digital universe you need strong watchdogs to keep your cloud environment secure. VMware Cloud Foundation comes with an impressive array of advanced and enterprise-class QoS, security and access control solutions for containers as well as VMs. The platform enables your admins to define quality of service (QoS), security policies, firewall rules, encryption settings, and availability and backup rules. Cloud Foundation also provides access control rules at namespace level. This significantly reduces the time that you need to manage and troubleshoot applications.

3. Productivity boosts

VMware Cloud Foundation also boosts developer productivity. It allows admins to manage at the namespace level, allowing them

to set policies, quota and role-based access to a namespace. Developers can then self-service into the namespace within the predefined boundary.

With the help of Kubernetes, developers are able to create and consume cloud resources such as Kubernetes clusters, volumes and networks with VMware Cloud Foundation services using Kubernetes and RESTful APIs that they are familiar with. This reduces the time and effort that you spend on infrastructure provisioning and scaling so that developers can focus on building apps. The result? App teams can access cloud resources they are already familiar with through industry standard APIs, which not only results in better workflows and pipelines, but also a shorter time-to-market.

4. Improved infrastructure lifecycle management

Cloud Foundation also offers automated lifecycle management on a per-cluster or workload domain basis. This allows admins to purposely target specific workloads or environments to perform updates that are independent from the rest of the (cloud) environment. This makes lifecycle management a lot easier, less time-consuming and more efficient.

5. Flexible deployment options

VMware Cloud Foundation also grants you flexible deployment options. You can access a broad range of deployment options across both private and public clouds and choose from several self-managed and as-a-service options for HCI. Freedom of choice is self-evident when you run your deployments in Cloud Foundation. The large and diverse set of deployment options also allows you to curb CapEx, OpEx and lower TCO costs.

Four best practices and benefits

As we have seen, VMware Cloud Foundation delivers a lot of exciting features that allow you to efficiently fine-tune cloud management to your specific business needs and IT environment. But if you really want to get the best out of Cloud Foundation, it is wise to follow a couple of best practices. Let us take a quick look at four best practices and benefits.

1. Figure out why you are deploying Cloud Foundation

The first thing you want to consider is why you are deploying VMware Cloud Foundation. What are you trying to achieve? Which services do you want to deploy? Who should have access? Where are these services deployed? And what about availability zones, different data centers and cloud extensions? Asking these questions before you start and designing your VCF installation based on services first is the smart way to begin building your Cloud Foundation infrastructure.

2. Determine your physical hardware needs

Also take a critical look at your physical hardware needs before you implement VMware Cloud Foundation. How do you want to lay out clusters? Can your physical hardware deal with the demands and technical specifications of Cloud Foundation? How many failures can you tolerate? Design your hosts so that you can have a host in maintenance mode and also have a failed host. You should also design your fault domains accordingly and appropriately to the number of racks you have.

3. Make good use of vSphere 7

With vSphere 7, VMware brought significant innovation to Cloud Foundation, adding native containers, Kubernetes, vMotion/DRS enhancements and hardware accelerated performance. Using vSphere 7 with Tanzu is the fastest way to get started with Kubernetes workloads on existing infrastructure and modernise the more than 70 million workloads now running on vSphere.

4. Security and disaster recovery

Security and disaster recovery are also important aspects of the Cloud Foundation equation. Be sure to back up critical components of the VCF ecosystem such as vCenter, SDDC Manager and NSX. Cloud Foundation's SDDC Manager is the central managing tool and center of truth for protecting accounts. Use APIs for updating and rotating passwords and create automation to use and rotate the APIs for your vault.

“Asking yourself the ‘why’ question is a smart way to begin building your Cloud Foundation infrastructure.”

How does Global Knowledge help?

Would you like to explore the fascinating and multifaceted universe of VMware in a more comprehensive fashion? In that case, Global Knowledge is more than happy to help you. Our three-day course '[VMware Cloud Foundation: Management and Operations](#)' explains the architecture of VMware Cloud Foundation and covers the following topics: licensing, certificates, VMware vSAN, maintenance and multi-instancing. The course also provides an in-depth focus on workload domains, workload migration, availability and troubleshooting.

You can also read the Cloud Foundation dataset to learn more about the basics, features and business benefits of VMware Cloud Foundation. For further questions, additional course information or expert advice you can contact us at 0118 912 1929 or info@globalknowledge.co.uk.

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