



## HYBRID CLOUD STARTS WITH A HYPERCONVERGED INFRASTRUCTURE

Opinion White Paper





## Hybrid Cloud starts with a Hyperconverged Infrastructure

Today's digital economy is powered by the cloud. Whether it's your own private cloud on-premises or public cloud services from the hyperscalers, every business' cloud looks different. Increasingly, organisations are realising that workloads work best when the host infrastructure is carefully chosen, and this isn't always within your own cloud. They also won't always be in the same place, depending on the factors important to your business. In fact, at the rate of which data is growing, harbouring all of it on-premises is cost prohibitive and impractical. Instead, you need to know you have sufficient capacity available on-demand that won't cripple your CAPEX spend, both today and into the future. But that doesn't mean you need to put all of your eggs into one basket and go all-in with public cloud either.

**85%**

of IT decision-makers consider hybrid cloud the ideal model for their organisations<sup>1</sup>



After all, no one cloud alone can meet every workload's needs. You should be harnessing the best of both worlds by bursting workloads into the public cloud from your on-premises environment as and when you need to or even pulling workloads back on-premises when certain criteria are met. That's why 85% of IT decision-makers consider hybrid cloud the ideal model for their organisations<sup>1</sup>.

## WHY HYBRID CLOUD?

Hybrid cloud offers organisations all of the economies and flexibility made possible by public cloud alongside the data security assurances of an on-premises solution. It ensures that all workloads and data, regardless of compatibility or sensitivity, are catered for. Because of this, hybrid cloud helps businesses realise a multitude of benefits:

- **Greater operational control**
- **Security without compromise**
- **Enhanced agility**
- **Impressive elasticity**
- **Significantly reduced cost**

But moving to a hybrid cloud is no small task. To truly make hybrid cloud work, you need to make the transition to a Software-Defined Datacentre (SDDC). An SDDC abstracts every layer of your

infrastructure, from your network to servers to storage, using virtualisation and therefore makes porting workloads between your on-premises environment and the public cloud much easier. Many organisations are already familiar with part of this journey having virtualised server resources using virtual machines. Virtualising the other components, especially concerning network and security, can be a big change to the fabric of your IT environment, creating complexity in the early days and taking time to successfully achieve. Therefore, when making the switch, it's of vital importance to consider what kind of on-premises infrastructure will most successfully support, and enrich, your move to SDDC. It's not necessarily a given that your existing infrastructure will be ready to support the new functionality you'll be asking of it. This consideration becomes even more critical if you're considering going one stage further and looking to build a multi-cloud infrastructure.



## Hybrid cloud vs multi-cloud - what's the difference?

Multi-cloud has the potential to offer even greater flexibility, choice, and control over where workloads reside. While hybrid cloud harnesses both the benefits of public cloud and private cloud and ensures these are completely integrated for a unified experience, multi-cloud consists of any combination of multiple public, private, or hybrid clouds which can be all interconnected or not. Like hybrid cloud, the preference for multi-cloud all comes down to optimising the placement of workloads, and seeing that these are distributed into the most appropriate cloud possible.

### Private Cloud



A cloud that resides on-premises within a company's own environment to offer greater data security

### Public Cloud



A cloud hosted and supported by a third-party company, such as AWS or Microsoft Azure

### Hybrid Cloud



A mixture of both private cloud and public cloud that offers businesses the best of both worlds

### Multi-cloud



Multiple different clouds for different purposes that could be any combination of private, public, or hybrid clouds



However, choosing multi-cloud doesn't come without its complications. It presents many additional considerations than a hybrid cloud alone. Because a multi-cloud environment will be composed of many different clouds simultaneously as opposed to the traditional two of a hybrid cloud, it requires much greater control over the entire cloud estate, and so can lead to increased operational overhead for your IT team without tools that offer both visibility and automation. It also goes without saying that the more clouds you use, the more complex your cloud environment becomes. Just as with hybrid cloud, planning for multi-cloud demands a critical evaluation of the on-premises host infrastructure you use, and the solutions deployed in concert, to achieve the end-to-end operational control that makes workload migration simple.



### Your cloud should be ready for the future

As well as ensuring the right workloads are assigned to the right clouds, the on-premises infrastructure you choose to deploy needs to be ready to support your business into the future. As technology advances, the makeup of your infrastructure is changing all of the time, including how your workloads are hosted and how your apps and services are run. Up until now, virtualisation has ruled the roost as the best way to break the dependency between apps and host hardware thanks to the introduction of virtual machines (VMs), but more recently it's been containerisation that's gained a lot of interest and traction.

**OVER 75%**

of global organisations will be running containerised apps in production by 2022<sup>2</sup>



## What is containerisation and why does it matter?

Where VMs are a virtualisation of multiple physical machines that each contain their own virtualised operating systems (OS) and require a hypervisor to interact with their underlying hardware, containers only virtualise the hardware's OS and share this between them. This makes them much more lightweight, portable, and easier to scale-out than VMs. What this ultimately means is the number of apps able to run can be maximised across minimal servers. For example, you could have twice, or even three times as many containerised apps running within a single physical machine than you could using VMs. For DevOps in particular, this offers far greater agility when pushing apps into production.

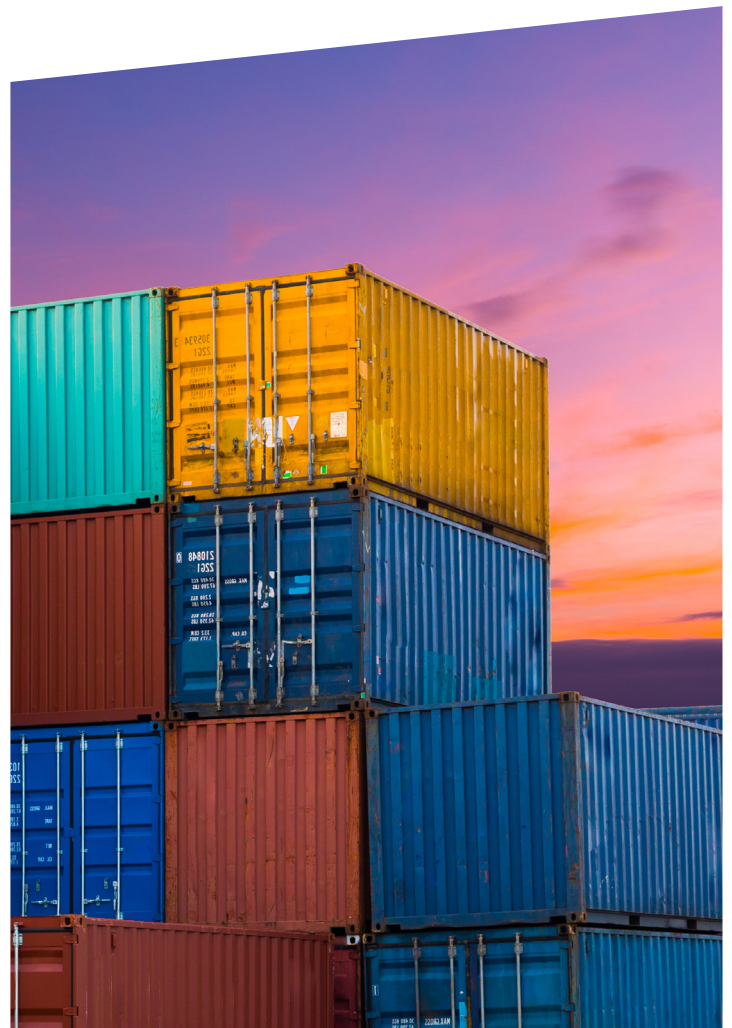
Containers began as an open-source platform which has gathered momentum over recent years. The growth in popularity of Kubernetes, an enterprise-hardened version of the platform, has made containerisation attractive for businesses, especially because of its ability to easily deploy, automate, and manage containerised apps. As containerisation is predicted to overtake virtualisation as the software of choice, you need a solution that's built to support this when you're ready to adopt it.

### Why choose containerisation?

- A more lightweight app package
- Easier to scale than VMs
- Portable across multiple environments
- Great for DevOps

## Hyperconverged infrastructure has the answer

Whatever your preference, hybrid or multi-cloud, at least some of your infrastructure will need to remain on-premises in a private cloud. This on-premises environment should help streamline your transition to SDDC and be fully prepared for whatever the future might hold, whether that's containerisation or otherwise. It needs to possess new functionality that allows it to effectively and seamlessly connect and interact with the public cloud(s) you choose to harness, so you enjoy a consistent experience regardless of the cloud you're using. Implementing a hyperconverged infrastructure (HCI) that's purpose-built to be the cornerstone of a hybrid or multi-cloud environment will simplify and accelerate your journey.





### What is a hyperconverged infrastructure and how does it work?

Based on industry-standard x86 components, a hyperconverged infrastructure consolidates compute, network, storage, virtualisation, and management into a single appliance. Entirely software-defined, HCI brings cloud-like simplicity and elasticity to on-premises infrastructure, enabling businesses to run and maintain mission-critical workloads effortlessly. Offering uncomplicated centralised management that spans both private and public cloud resources, it unifies cloud operations and provides extraordinary end-to-end visibility. Highly scalable, it maximises capacity and minimises the physical footprint of your business' IT environment, vastly reducing energy consumption and lowering the total cost of ownership (TCO).

### Why hyperconverged goes hand-in-hand with hybrid cloud

There's no doubt about it - orchestrating the flow of your workloads between your private and public clouds, and back again, is a complex and arduous process. It can be difficult to know what belongs where and when, and understand whether it would be more advantageous for a workload to be hosted in a public cloud or on-premises. A hyperconverged infrastructure takes this headache away and does all of the hard work for you. By automating both routine and complex workload management based on rules you define, it helps you achieve the performance, economic, and functional outcomes you seek.

#### Why HCI for hybrid cloud?

- Intelligent automation frees up IT resources
- Easy to scale on-demand
- Increased agility and elasticity
- Integration with multiple cloud environments
- Move to cloud at your own pace
- Ready for Kubernetes and containerisation



# HOW HCI SIMPLIFIES THE JOURNEY TO HYBRID CLOUD

HCI and hybrid cloud have a lot in common. It's no wonder they're two of the main technologies being adopted by businesses as they seek to further the modernisation of their IT. Together they offer significant benefits:

## Free up IT resources

By ensuring everything is made accessible through a single pane of glass, HCI removes the burden of administration, enabling IT teams to overcome the challenges of managing siloed compute, storage, and network resources. With the difficult task of workload orchestration taken care of thanks to intelligent automation, teams are free to redeploy their time on harnessing the new environment they have created.

## Easy to scale and operate

Purpose-built to work with minimal setup, HCI is a node-by-node architecture, making it easy to deploy new infrastructure to scale your private cloud resources up or out as needed. And because HCI architecture is so similar to cloud environments, agility and flexibility are also increased, making it far easier to move applications and automate workloads at will.

## Awesome integration

HCI is software-defined by design, so integration across multiple cloud environments is both fast and seamless. This is particularly advantageous if you're considering a multi-cloud solution, as HCI easily connects with different clouds at scale.

## Move to the cloud in stages

Easy to deploy, scale, and integrate, HCI makes it possible for you to approach your move to the cloud in manageable chunks rather than going all-in from the get-go. You could even start by exploring the benefits of a single public cloud, then expand to more as you see fit.

## Built for the future

The right HCI should offer an easier, faster route to embracing containerisation with an environment that is ready for Kubernetes, so that regardless of the workload being moved between clouds, whether VM, container, or a mixture of both, it works exactly the same every time.

Although a hyperconverged infrastructure radically simplifies the path to hybrid or multi-cloud, it is not a quick-fix alternative to determining cloud strategy. Your on-premises infrastructure only represents a fraction of the considerations that need to occur when making the move to a hybrid cloud. It's still essential to have a fully formed cloud strategy that has properly evaluated all on- and off-cloud options to settle on the right mix of performance, function, and value that you seek from your entire environment.



## Hybrid Cloud starts with a Hyperconverged Infrastructure

### Dell EMC HCI makes cloud work for your business

The world leader in hyperconverged systems, Dell EMC's broad portfolio of software-defined HCI solutions help you leverage the very best of cloud. No matter what your ambition, whether a hybrid or multi-cloud environment, Dell EMC's HCI products are designed to increase your agility, mitigate the risk of migration, and enable you to plan for the future with confidence. What's more, they work with over 4,900 cloud providers, including hyperscalers, so you know your choice of cloud is covered.



#### Dell EMC HCI benefits at-a-glance

- Up to 59% lower OPEX costs
- Up to 42% better app performance
- 98% less unplanned downtime<sup>3</sup>
- Consistent management experience across clouds
- Impressive scalability
- Exceptional automation
- Built-in data protection
- Future-ready infrastructure

### Cloud without the chaos

Dell EMC's cloud-enabled HCI solutions create a frictionless path to hybrid and multi-cloud:



#### Streamlined operations

To ensure that operations and management remain consistent across your cloud environment, Dell EMC takes a single-vendor approach to your infrastructure. Deep integration with the VMware Cloud Foundation (VCF), the leading hybrid cloud platform for orchestrating VMs and containers, means their HCI solutions are able to provide a single operational hub that spans all of your different clouds. This forms the Dell Technologies Cloud Platform and sees you enjoy a completely unified, integrated cloud management experience.



#### Astounding automation

Together, Dell EMC HCI and VCF allow workloads and data to be seamlessly migrated to and from VMware environments, offering impressive portability across multiple clouds. Taking this orchestration off your IT team's hands sees they spend more time innovating and less time keeping the lights on, which could help reduce your TCO by up to 47%<sup>4</sup>. By automating the entire lifecycle of your cloud infrastructure stack, updates become nondisruptive and rapid with one-click patches that offer effortless upgrades and more streamlined operation thanks to the VMware SDDC Manager.



## Designed with VMware for VMware to enhance VMware

Because VMware is the world's most widely adopted virtualisation platform, Dell EMC's HCI solutions are based on best-in-class VMware software-defined architectures. This enables easy access to any next-generation VMware cloud capabilities, allowing businesses to deploy the cloud infrastructure they need today while maintaining compatibility with any new innovations that may emerge tomorrow.

## Intrinsic security

Built-in data protection makes certain your business-critical data stays safe at every layer of the cloud infrastructure stack, giving you added peace of mind that your chosen cloud is always secure. The unified experience made possible by the Dell Technologies Cloud Platform also greatly reduces security risk, enabling you to confidently identify, respond to, and recover from cyber threats in a heartbeat.

## Ready for the future

Dell EMC HCI vastly minimises IT sprawl by facilitating the orchestration of both traditional VMs and cloud-native container-based apps, helping you accelerate their development and deployment. Important integration with VCF offers a simple and direct path to deliver Kubernetes at cloud scale, thanks to a production-ready environment prepared for when you choose to make the switch to container-only, or introduce them alongside your VMs. This automated Kubernetes infrastructure means faster time-to-value for developers, dramatically reduced OPEX, and security that's ready for almost any application.

**Hyperconverged infrastructure could  
help reduce your TCO by up to<sup>4</sup>**

**47%**

### References

<sup>1</sup>Nutanix, (2019), 'Enterprise Cloud Index' <sup>2</sup>Gartner, (2019), 'Best Practices for Running Containers and Kubernetes in Production' <sup>3</sup>IDC White Paper, sponsored by Dell EMC, (2017), 'The Business Value of Modernizing Infrastructure with Hyper-Converged Systems' <sup>4</sup>IDC White Paper, sponsored by Dell EMC, (2019), 'Benefits of the Consistent Hybrid Cloud: A Total Cost of Ownership Analysis of the Dell Technologies Cloud'





### START YOUR JOURNEY WITH DELL EMC HCI

Achieving the right hybrid cloud or multi-cloud solution for your business simply isn't possible unless your private cloud infrastructure is up to the job. While the benefits are massive, it's a hugely complex and sophisticated method of creating an IT environment that functions consistently, with the same cloud-like attributes no matter where each workload is running. For companies plotting a path to hybrid cloud, a careful examination of their on-premises environment is critical, otherwise at worst you won't achieve a hybrid cloud, at best the environment will be hobbled by its weakest component - in this case your private cloud.

Hyperconverged infrastructure presents an out-of-the-box cloud-compatible solution that has the potential to cut cost and reduce the risk of going hybrid. The end-to-end single vendor experience and deep VMware integration offered by Dell

EMC's innovative portfolio of HCI solutions provide additional reassurance, astonishing simplicity, and the promise of agile, world-leading tech that IT teams will already be familiar with. Purpose-built to accelerate your journey to hybrid cloud, Dell EMC HCI is ready to support you in crafting the cloud solution that's right for your business.

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## SERVIMUM AND DELL

We've been partners with Dell EMC for over a decade, a relationship that has seen us accrue years of experience delivering and supporting their HCI solutions for a multitude of different environments. Our extensive knowledge of their entire HCI portfolio means we're fully equipped to help you on your journey to hybrid or multi-cloud, seeing us de-risk and streamline your migration by designing a cloud strategy based on your business' individual needs. We even go one step further by complementing your chosen cloud with game-changing technologies and solutions from the industry-leading innovators that make up our partner community.



If you would like to better understand how Dell EMC's HCI products could help your journey to hybrid cloud, why not try out their solutions for yourself?

Book a personalised technical demo today by contacting your Account Manager, emailing us at [hello@servium.com](mailto:hello@servium.com), or speaking to one of the team on +44 (0)303 334 3000.

## ABOUT SERVIMUM

Servium is dedicated to creating great IT experiences - we seek to win the hearts and minds of IT strategy-makers, professionals and users. Our attitude is that no challenge is too big, no detail too small. We tackle both the ordinary and the extraordinary with the same focus and originality of thought that ensures solutions make a difference. It means we're one partner ready to assemble all the technology and know-how every medium to large organisation relies on. Matched by straight-talking, real-world experience and amazing service, our customers enjoy exceptional value; the product of the best innovation, latest thinking and a thriving ecosystem of technical experts.

# Servium

Hybrid Cloud and Hyperconverged Infrastructure



## WE'RE READY WHEN YOU ARE

Get in touch at [www.servium.com/contact](http://www.servium.com/contact)

call **+44 (0)303 334 3000**

or drop us a line at [hello@servium.com](mailto:hello@servium.com)

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### CHESSINGTON

Trident Court  
1 Oakcroft Road  
Chessington  
Surrey  
KT9 1BD



### WARRINGTON

The Genesis Centre  
Garrett Field  
Birchwood Park  
Warrington  
Cheshire  
WA3 7BH

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+44 (0)303 334 3000 | [www.servium.com](http://www.servium.com) | [hello@servium.com](mailto:hello@servium.com)