

# MODERN STORAGE FOR MODERNISED INFRASTRUCTURE

How organisations leveraging container-based infrastructure can overcome volume provisioning challenges to improve speed, agility and business outcomes.

EBOOK



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## THE CHANGING FACE OF IT INFRASTRUCTURE

As a business, you know how rapidly markets are evolving, and that competition is fiercer than ever. The ability to respond to change is a much sought-after commodity today. Whether it's to keep up with industry shifts, customer demands or competitor activity, organisations must bring innovative new applications and services to market faster, unlock new levels of efficiency and boost productivity, all while delighting customers and reducing their operating costs.

### But what does this agility mean in practice?

Most organisations immediately look to technology. It's a great place to start and one that can drive significant change.

The adoption of containers, for example, is becoming increasingly popular, with **87%** of IT pros surveyed in 2019 using container technologies, with **90%** running them in production<sup>1</sup>.

And the numbers continue to rise. Containers transform the way applications are built, deployed and managed, helping businesses overcome the limitations of legacy infrastructure and keep pace with digitally enabled rivals. But technology alone isn't the answer.

To truly harness the benefits of modern infrastructure, traditional mindsets and ways of working must also be modernised.

## MODERN THINKING AND CONTEMPORARY PROCESSES

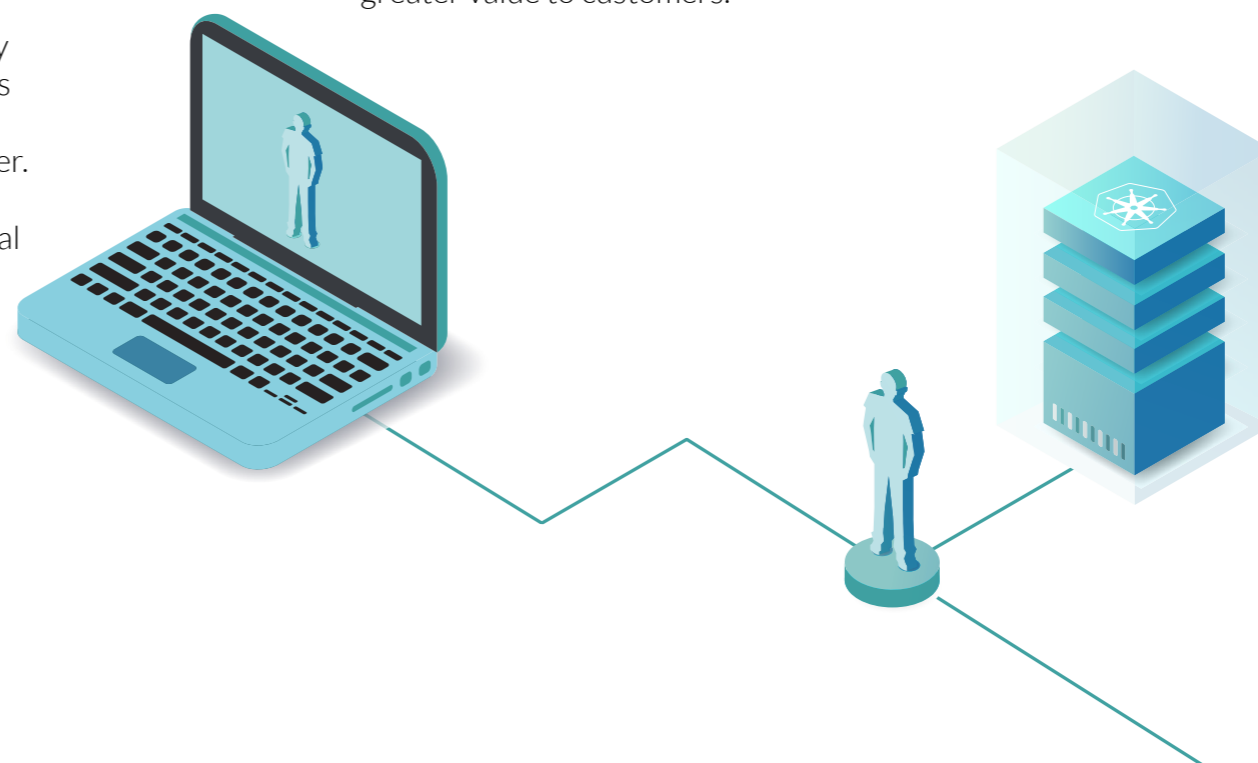
Embracing and benefiting from distributed applications over their traditional, monolithic counterparts isn't just a technology shift.

Unlike adding more processing power or increasing bandwidth, you can't simply 'switch on' modern infrastructure and expect to see improvement right away.

To leverage the opportunities containers and microservices afford, an operational transformation must also take place. Existing slow-moving practices must be exchanged for more nimble DevOps approaches to software development, greater use of automation, common toolsets, and improved collaboration between once siloed teams.

As the name suggests, DevOps brings together two functions, **development teams** and **IT operations**, as a harmonious whole.

As a result, agility and operational efficiency can be increased, and apps and services can be deployed and updated far faster, delivering greater value to customers.



1. Entersprisers Project

## THE POWER TO PROVISION

A prime example of the difference in approach between development in containerised environments and traditional monolithic approaches is how storage is deployed and managed. To operate at the speed required for modern business, developers must run code into production whenever they need to, which requires access to storage volumes on demand.

However, in the monolithic world, platform deployment isn't a speedy process, nor is it a priority. Legacy storage technology normally comes with longer lead times that don't match the fast pace of DevOps.

In a traditional setting, a developer will request the storage they require from IT or a storage administrator, who will then approve the request and deliver the storage within a designated timeframe. It may also involve multiple layers of sign-offs from senior management and back down to the ops team, or the raising of service tickets, further slowing the process.

For a developer that needs a friction-free development environment in which to not only write and release but test new code at speed, this isn't an ideal way of working.

The same is true for the operations and storage teams; they don't want to add constant provisioning of storage to their existing workload, nor the associated cost implications and potential for waste that comes from ensuring storage is available the moment developers need it.

In addition to highlighting a common challenge those moving from traditional to container-based environments will encounter, this scenario also illuminates the value of cross-team collaboration as part of a DevOps approach.

But how do you go about overcoming this challenge, keeping both parties happy and accessing the speed and agility your business requires?



## STORAGE ON DEMAND

Whether you've already begun using modern infrastructure, are dipping a toe in the water with some test projects or are simply planning to make a move, support and guidance from an experienced partner is essential.

Offering expertise in containerised environments and a fresh pair of eyes to help your business navigate the often-tricky path to modern infrastructure, external support enables you to remain focused on your goals while accessing the skills required to achieve them.

An added advantage of leveraging the experience of a partner is their understanding of the tools and technologies that work best in different scenarios, providing you with recommendations as to the right investments for your organisation's needs.

Such suggestions should include a storage solution, a crucial aspect of your project to get right early, that enables you to overcome the bottlenecks that will occur if you stick with traditional provisioning methods.

It must be compatible with the infrastructure you choose, whether that's on-premises, in the cloud or a hybrid environment, and it must deliver storage that's both flexible and available at speed to reduce headaches for both developers and IT operations teams.



### What is Persistent Storage?

In containerisation, persistent storage refers to storage volumes that remain available beyond the life of individual containers.

Persistent storage volumes can be contrasted with ephemeral storage volumes that live and die with containers and are associated with stateless apps.

## AN EXPERIENCED PARTNER

Conoa enables businesses to utilise the power of modern infrastructure by overcoming storage challenges in containerised environments. Offering consultancy combined with hands-on expertise, we act as a trusted advisor and service provider whether you are just getting started or looking to take your modernisation initiatives to the next level.

As we work to understand your business and develop a unique roadmap and strategy, storage will be one of our key considerations, especially for organisations moving from traditional software development to an agile or DevOps approach.

Our vast experience of container ecosystems and the specific demands of automating persistent storage enable us to help you move beyond traditional provisioning for a more seamless approach.

We assess the environment and needs of every organisation we work with and recommend the best solutions for the job. For storage, we typically recommend **NetApp ONTAP with Trident**.

By combining our skills and experience with container-native storage from NetApp ONTAP with Trident, we help to build and integrate persistent storage for container platforms, delivering automated storage provisioning to avoid traditional delays.

## NetApp ONTAP AND TRIDENT

By combining our skills and experience with container-native storage from NetApp, we are able to build and integrate highly effective persistent storage for container platforms.

In addition to being the best solution for persistent storage, Conoa recommends NetApp to our customers for a variety of other reasons, starting with the company's legacy. Originally providing physical storage, NetApp has evolved with changing technology and customer needs, just as your business and ours has, and understands both on-premises and cloud-based operations.

The software and data-driven products NetApp provides today are mature and proven across a wide range of clients and well ahead of competing products.

As one of the first container-native storage solutions, Conoa has deployed NetApp ONTAP and Trident for many organisations and understands the benefits these solutions provide as well as the opportunities available to expand existing NetApp investments.

For example, clients already using NetApp ONTAP can leverage existing storage and internal knowledge to make enabling persistent storage far easier. They simply need to add Trident. Clients with no existing NetApp investment are also able to quickly implement its hardware or software-defined solutions on top of their existing environment or as part of a new infrastructure deployment.

Furthermore, NetApp is a developer and cloud-focused business that is prominent and highly active in the developer community, which means, in addition to Conoa's expertise, organisations and their developers have access to an ongoing source of support.



## THE ULTIMATE STORAGE SOLUTION

But what really makes NetApp ONTAP with Trident the best choice for your modern infrastructure? The number one reason is the way it makes application testing and deployment easier and faster, with the needs of developers, storage administrators and the business in mind.

NetApp Technical Marketing Engineer Andrew Sullivan put it best when he said:

“Storage is not a resource I should just have to tolerate, sulking down to the storage team’s desk and begging for more capacity. I don’t want to provision storage. I don’t want to consume storage the same way that I did in 1989.”

Traditional storage provisioning goes against the ideals of containerised architecture in that it isn’t on-demand and readily available in the way today’s developers require.

NetApp Trident was designed for containers and enables developers in Kubernetes environments to dynamically provision persistent volumes just by requesting a storage class from a virtual pool of underlying storage.

The same experience is available on-premises or in any hybrid or public cloud, with the storage provided not dependent on the cloud vendor you choose, nor are you locked to a specific platform. This means you are not only free to work in a familiar way across all environments but can delay strategic decisions until you’re completely sure of the platform you need.

For example, you could start your journey by experimenting on-premises before seamlessly moving your applications and their storage to the cloud at a later date.

From a data protection and business continuity perspective, the data replication features of ONTAP enable organisations to quickly and effectively replicate all their data on a secondary system to provide redundancy in the case of disruption or natural disasters.



### Benefits for developers

Storage provisioning at speed. Developers no longer need to wait for storage requests and service tickets to be approved; they simply consume storage as they need it using familiar code interfaces.



### Benefits for IT and storage administrators

More time doing, less time administering. Instead of rushing to keep up with numerous requests for storage, IT and storage administrators can enjoy more automated infrastructure scaling, a simpler way to monitor resources and more predictable storage consumption without waste.



### Benefits for the business

With developers and IT or storage teams catered for, new apps and services can be brought to market faster, helping to delight customers and maintain competitive advantage. Significant time and resource savings can also be achieved thanks to the avoidance of over and under-provisioning of storage for maximum efficiency.

### Efficiency features

NetApp Trident also includes on-demand access to NetApp storage efficiency features like Snapshot™, enabling developers to:

- ✓ Commit data using Snapshot to go back to a point-in-time copy of data
- ✓ Fork data by creating clones of Snapshots to use in another scenario or application
- ✓ Rapidly recover data for fast iteration when testing code
- ✓ Save on storage capacity using Snapshot copies or clones



Wherever you are in your journey, talk to Conoa about how we can accelerate your IT modernisation to drive business success.

### Where do you want to start?



#### TAKE A TEST DRIVE

Evaluate NetApp Trident for free by quickly and easily self-provisioning persistent storage using the native Kubernetes command line, plus discover how to:

- ✓ Create a Persistent Volume (PV)
- ✓ Create a Snapshot and Clone a PV
- ✓ Resize a Persistent Volume Claim (PVC)



#### ACCESS EXPERT ADVICE

Contact us for a one-to-one session to receive expert advice on modernising your IT infrastructure or accelerating existing projects and find out how you can:

- ✓ Store, protect and secure your data in a cloud-native infrastructure
- ✓ Enjoy the benefits of containerised architecture for your business
- ✓ Find out which technologies will enhance your infrastructure

### REACH OUT

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Find out more about Conoa: [www.conoa.se](http://www.conoa.se)  
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