IDC PERSPECTIVE

In a World Where Speed Matters, NetApp HCI Provides Ducati with an Edge on the Track

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Ducati Hyperconverged Infrastructure Buyer Case Study

The software-defined nature of hyperconverged solutions helps simplify overall workload and datacenter management, allowing IT departments to place their clouds on-premises or in hybrid environments — or, in certain use cases such as Ducati's, at or near the "edge" – as a strategy either to enhance or modernize their existing infrastructure. IDC recently talked with Ducati's IT team to learn more about its use and deployment of NetApp hyperconverged products and their impact on business operations and outcomes.

Key Takeaways

- An initial deployment of NetApp hyperconverged solutions has enabled Ducati to implement a mobile datacenter as part of its standard race day operations, which is a first of its kind among competitor teams in Moto GP.

- NetApp HCI offered the right balance of storage and compute power, under tight physical requirement constraints, to support rapid data collection and analysis to enable onsite data-driven decision making. This translated into more rapid iteration of bike setup by race engineers based on local conditions.

- Ducati plans to implement NetApp HCI as part of a longer-term on-premises and cloud reshuffling strategy, starting with remote subsidiary locations, that will allow the company to save on future costs.

Recommended Actions

- Find advantageous situations for deployment, especially when trialing platforms previously unused by the organization. Can an enterprise gain a first-mover advantage? If so, risk tolerance may be higher, allowing teams to either succeed and establish proof points or to fail fast and apply new learnings.

- Understanding and defining the specific parameters of a deployment, including who will manage the system and physical or atmospheric constraints, are critical to success. These seem like simple questions, but deploying outside the core datacenter requires thoughtful and deliberate planning.

- Trialing new technologies and methodologies in a high-visibility, yet siloed environment allows enterprises to better understand how things will operate. This represents a good first step toward an overarching rethink of core infrastructure.

Source: IDC, 2019

SITUATION OVERVIEW

Introduction

Hyperconverged infrastructure (HCI) is a new generation of converged systems that provides core compute and data services in a clustered, scale-out architecture that is built on x86 servers. Hyperconverged infrastructure leverages software-defined storage technologies to provide the core data services normally found on discrete shared storage systems. A key characteristic of hyperconverged systems that differentiates them from traditional converged infrastructure is their ability to provide all compute, storage, and networking functionalities through the same server base or nodes. These nodes are usually deployed as clusters with three or more nodes per cluster, although some solutions do support two-node clusters. Each node within a cluster contributes all of its resources to an abstracted pool of capacity, memory, and compute resources. This pool of virtualized resources provides the foundation for all server-centric workloads (e.g., VM, hypervisor, and applications) as well as storage-centric workloads (e.g., data persistence, data management, replication, snapshots, and deduplication).

Hyperconverged systems have become increasingly popular in the marketplace, with their numerous offerings from both small and larger IT vendors, driving double-digit market growth over the past few years. Hyperconverged infrastructure consolidates server and storage components, helping optimize service levels within private and hybrid clouds while simultaneously reducing the complexities associated with managing multiple infrastructure components. The benefits of hyperconverged infrastructure have challenged IT decision makers to rethink long-standing practices of the procurement and management of their datacenter assets. Many are now turning toward hyperconverged solutions as an alternative to traditional, discrete server and storage architecture, particularly when resource constraints restrict options.

Earlier this year, Ducati signed on with NetApp as its hyperconverged infrastructure provider. For Ducati, this represents the company's first time implementing hyperconverged technologies within its IT infrastructure. NetApp — widely known as a market leader in storage systems — has been able to leverage its partnerships and expertise in storage devices as it begins to grow its presence in the hyperconverged market and bring on new customers such as Ducati that are entering hybrid cloud and multicloud spheres. Ducati's experiences using NetApp hyperconverged products are highlighted in this document. Many of the benefits such as enhanced operational efficiencies and reduced cost savings that are mentioned in relation to this technology — both important drivers of market growth — mirror successful use cases of other enterprises and are discussed further in this document.

Organization Overview

Ducati, based in Bologna, Italy, has been in business for over 90 years and is known for its manufacturing of high-performance motorcycles as well as other racing and superbikes. Currently, Ducati operates as a standalone division of the Italian automotive manufacturer Lamborghini, which itself is owned by Lamborghini via Audi and, ultimately, public parent organization Volkswagen AG. Ducati employs roughly 1,600 people worldwide, has major subsidiaries located globally in the United States and Thailand, and reported annual sales revenue of about €700 million in 2018.

Ducati has 23 IT employees, most of whom are based within or near its Bologna, Italy, headquarters. The IT staff also supports Ducati's 12 worldwide subsidiaries. The overall IT department is divided into four teams that are organized by the primary lines of business that they serve, which include digital marketing, sales, and R&D; production; infrastructure architecture and security; and other applications.

There is no dedicated IT staff to help with race day mobile datacenter operations and, as such, this must be entirely operable by its onsite engineering team.

Challenges and Solutions

The initial challenge that led to Ducati's engagement with NetApp can be tracked back to a use case of its motorbike race team. The IT team was tasked with finding a solution that could collect and analyze real-time racing data and telemetry workloads within an on-track datacenter. The solution was required to be easy to use and fully operational by race team engineers, eliminating the need to have dedicated IT technicians onsite. This meant that the solution also needed cloud-like configuration and automation capabilities that support a quick start-up and shutdown process in order to integrate seamlessly into race day operations. As a result, irrespective of the technology, the vendor selected must have the professional services background to both setup and troubleshoot on demand any issues that would arise.

Performance demands on the system would be relatively high — with Ducati's MotoGP bikes incorporating over 60 sensors and generating in excess of 20GB of data per race, the team required a platform capable of ingesting, computing, and analyzing data from test runs at speeds fast enough to effectively operate Ducati's telemetry software application while allowing engineers to tune the bike between practice sessions. Given Ducati is the only MotoGP team with a trackside datacenter capable of providing this type of analysis, it represents a significant technical advantage. In addition, the platform needed to be able to communicate with the legacy infrastructure residing at the Bologna, Italy, headquarters following events so that the data could be analyzed in context of the broader data repository kept from the company's long racing history.

This all represented a challenge to IT purchasing decision makers, given that running the telemetry software presented moving infrastructure bottlenecks as it frequently required more storage or compute power depending on the specific operation being performed. These workloads performed by the software are mission critical to race day operations, given that changes and modifications made to the bikes are heavily impacted by the data collected and analyzed. Finally, there were physical constraints given the form factor of the datacenter itself, where power, heating/cooling, and physical space all impacted the solution types the company could deploy.

Previously, the Ducati team used its telemetry software in combination with local HPE workstations and a handful of Dell servers during races, but its impact was significantly hindered by performance limitations of the existing and aging infrastructure. Finding the right solution that could achieve Ducati's goal would give its racing team a distinct advantage over its competitors — to be able to make real-time, data-driven changes and modifications to its motorbikes without the need to reroute the data through a separate location for processing and analysis after the completion of the weekend's event.

Ducati's unique set of physical and workload requirements for its onsite datacenter drove the configurations that would be best fitted to meet its needs. Compared with other three-tier and virtualized infrastructure environments, hyperconverged infrastructure comes at an up-front cost premium but ensures compute standards and the very high availability that are mission critical for advanced enterprise workloads while minimizing the power and physical space required to deploy it — particularly important given the very limited space allocated for infrastructure. For Ducati, these factors were considered vital benchmarks in its purchasing decision, making hyperconverged technologies the right choice for the company. In addition, being able to specify the number of compute versus storage nodes at the time of purchase was highly attractive.

Ducati reviewed the costs and benefits of a few other hyperconverged systems before deciding on NetApp. The company also considered solutions from the Lenovo and Nutanix portfolios, but ultimately chose NetApp given the performance, availability, and functionality benchmarks that governed the purchase of its solution. At the time, Ducati had not previously done business with NetApp, so NetApp's customer support and quality of service guarantees were viewed as major value propositions, given the sensitivity and complexity of the Ducati's software package and its importance to the racing team's track operations.

Results

Looking back, Ducati's decision to integrate NetApp's hyperconverged solutions into its IT portfolio posed some initial implementation challenges to the team, but was ultimately deemed successful. Ducati was able to deploy its fully configured, on-track mobile datacenter earlier this year and is already seeing some initial benefits accrue from switching over to hyperconverged products. While larger material changes to bikes have not been made post implementation, the Ducati team notes reduced time of many of its calculations while using its racing software. In addition, the datacenter is more agile than its predecessor technology, powering on in about 15 minutes and powering off in another 10 minutes without the need to have dedicated IT staff present. Ducati mentions that this in large part is because of the training and service provided by NetApp to help the IT team create standardized checklists and procedures for operating the equipment.

Impressed with the results, Ducati chose to continue engaging with NetApp to implement hyperconverged solutions in other IT environments outside of its headquarters, leading with those located in the United States and Thailand, as well as for some of its other motorbike teams. In those locations, the solutions are planned on being deployed in local datacenter rooms in a multistage process. First, the HCI environments will be deployed as replicas of existing on-premises infrastructure before being ultimately being deployed as the foundation of hybrid cloud infrastructure solutions. Ducati expects hyperconverged solutions to be the preferred method of both on-premises system refreshes as well as for net-new deployments. Given the various locations in which these solutions would be deployed, whether at the track or at a primary datacenter, building infrastructure that behaves and automates like cloud, while fitting into the company's long-term hybrid cloud strategy, is critical. Ultimately, the company expects to move various enterprise workloads between on-premises locations and the cloud in order to continue to optimize overall performance and find the right mix of on-premises and off-premises infrastructure to control IT costs.

ADVICE FOR THE TECHNOLOGY BUYER

The hyperconverged market is evolving rapidly and will continue to be a key infrastructure technology for organizations that are looking to modernize and enhance their infrastructure – or in the case of Ducati, not only to create and move deployments closer to the edge but also to update the infrastructure of its more remote datacenters. By doing so, this can help free up existing human IT capital to deliver increased business value. The benefits of hyperconverged solutions tend to stem from four common improvement principles: eliminate, simplify, standardize, and automate. These four common principles are helping drive fundamental improvements over traditional, external shared storage, and companies such as Ducati have taken notice.

For Ducati, ease of deployment, simplicity of data migration, and disaggregation of storage and compute resources were key features of interest in their hyperconverged deployment, offering the automation and flexibility needed to provide reliable, easily deployable infrastructure to support highly

specialized enterprise workloads. Use cases such as Ducati's should serve as a compelling example of how hyperconverged systems can help businesses consolidate infrastructure while still ensuring support for advanced workloads, even in remote locations. Despite slowing overall infrastructure investments for on-premises server and storage systems in 2019, hyperconverged infrastructure remains an area of double-digit growth, underscoring end users' view of the value proposition that these systems provide enterprises.

LEARN MORE

Related Research

- *Worldwide Converged Systems Market Grows 10.9% Year Over Year in the Second Quarter of 2019, According to IDC* (IDC #prUS45548719, September 2019)
- *Understanding Hyperconverged Infrastructure and Buying the Optimal System* (IDC #US45276419, June 2019)
- *Self-Operated Hyperconverged Infrastructure the Preferred Option for Public Cloud Customers Deploying a Private Cloud* (IDC #US44835719, February 2019)
- *Worldwide Software-Defined Storage Forecast, 2018-2022: Strong HCI Growth Leads Continued SDS Market Expansion* (IDC #US44519218, December 2018)

Synopsis

This IDC Perspective provides an overview of the discussion IDC recently had with Ducati's CTO Konstantin Kostenarov regarding the company's purchase and deployment of NetApp HCI in support of the company's race day operations.

"Hyperconverged infrastructure is often viewed in the context of its core datacenter applications," said Sebastian Lagana, research manager, Infrastructure Platforms and Technologies. "This unique environment highlights how HCI can support mission-critical applications at the edge via mobile datacenter deployment, in this case, providing a competitive advantage in an environment where timely processing of actionable data is paramount."

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