

## White Paper

# Kyndryl: Maximizing Hyperscaler Advantages Amidst Increasing Modernization Needs

Sponsored by: Kyndryl

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## IDC OPINION

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VMware's virtualization software portfolio is a dominant force in enterprise IT today, as it has been for years. Containerization is growing quickly in popularity thanks to the rise of Kubernetes and its burgeoning ecosystem, and VMware has responded by adding support for containers through its Tanzu software family.

Many VMware customers are seeking to migrate their VMware estates out of datacenters they own or lease and into hyperscale public cloud environments. Native services for VMware are available on AWS, Microsoft Azure, and Google Cloud and offer similar functionality and performance to each other in IDC's view, although VMware Cloud on AWS is the most widely used and mature service.

Thus VMware customers pondering how best to move their workloads to a hyperscaler have overarching questions to address, namely which hyperscaler (or hyperscalers) will be the ideal fit. That is because AWS, Microsoft, and Google bring different advantages and approaches to the table outside of their VMware offerings. (As one example, Google is known for its robust set of big data and analytics services.) Ideally, moving VMware customers to a hyperscaler is a chance to leverage VMware's technology with complementary hyperscaler services for the creation of cloud-native applications and functionality.

It could be that multiple hyperscalers should be involved, depending on the customer's goals and requirements as part of its multicloud strategy. VMware customers will also need help understanding how Tanzu, which is still a somewhat new product portfolio, can benefit them and help migrate VM-based workloads to containers as deemed beneficial. Even though VMware's Tanzu application platform is new, this unified platform seeks to enhance both developers' and operators' experience for modernized applications.

All of this makes it critical for VMware customers to enlist the help of a trusted managed services partner in their journey to hyperscale cloud.

In this white paper, IDC discusses the top considerations for VMware customers while considering or planning a move to hyperscale environments and takes a deep dive into Kyndryl's approach to delivering related services and advising VMware customers on this important journey; this white paper also considers and describes the most common and important use cases.

## SITUATION OVERVIEW

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Enterprises have multiple choices for running VMware workloads natively in the public cloud, including AWS, Google Cloud, and Microsoft Azure. While these vendor offerings have many points of parity, there are some key differences as well as advantages to using one platform or another due to the relative strengths of adjacent native services and other differentiating factors. Each VMware service is examined in the sections that follow.

### VMware Cloud on AWS

First launched in 2016, like competing offerings, VMware Cloud on AWS uses VMware's Cloud Foundation software suite – which includes the vSphere server virtualization suite, vSAN storage area network, and NSX networking – on bare metal AWS instances. It integrates with native services from AWS via the cloud platform's Elastic Network Interface. Customers can integrate the use of services from AWS within their virtual private networks along with ones accessed through public API endpoints.

AWS touts its deep relationship with VMware as an advantage. This relationship includes the fact that AWS is VMware's preferred public cloud provider, and that the companies have conducted joint engineering for several years since the launch. Being a jointly engineered solution, VMware Cloud on AWS has the agility needed to deliver software updates with greater speed to market. In addition, VMware Cloud on AWS is the only such service operated and supported by VMware itself, AWS notes.

VMware Cloud on AWS is available in 23 of AWS' 30 regions, providing good but not yet optimal global coverage. However, it has more than 600 certified AWS partners and greater than 300 ISVs supporting it, according to AWS.

The offering is sold through VMware in multiple ways, including on demand, one- or three-year standard subscriptions, and one- or three-year flexible subscriptions. On-demand contracts are billed at the end of each month, whereas standard and flexible ones allow for prepayment up front in exchange for as much as 50% in savings, VMware says. As a managed service provider (SP), Kyndryl can source all cloud services to simplify billing under one SLA.

### *IDC Comment*

AWS is a natural choice for running mission-critical VMware workloads given it is the world's largest hyperscaler in terms of infrastructure availability and scale, as well as native services, with more than 200 at present. AWS has strong capabilities in data management, AI/ML, and many other areas that complement core VMware implementations. It also has the most robust third-party marketplace for software and services.

However, AWS' sheer size and breadth of offerings can make it challenging to work with effectively. Many customers continue to share frustrations with IDC around pricing and billing complexity. The company's relentless pace of innovation can also make it difficult for busy enterprise IT teams to keep track.

Meanwhile, IDC does not discount the "preferred partner" status of AWS for VMware. This is a high-profile offering with many benefits for AWS outside of the revenue it receives directly from VMware, given the opportunities it provides to attach additional spending on native services. AWS is highly incentivized to aid its continued success in the market.

VMware, as the primary product owner, is equally motivated to deliver a strong experience for customers. The company has also done an excellent ongoing job of delivering transparency around pricing and road map details for VMware Cloud on AWS.

### **How Kyndryl Helps**

Kyndryl has developed a cross-functional team of experts spanning its own staff as well as VMware and AWS. Kyndryl couples this expertise with a set of migration templates and automation assets geared toward swift project outcomes over the entire services life cycle. These services include self-service automation tools, ThinOps for cost optimization, agile delivery for infrastructure or application development and delivery, digital workflow management services, and monitoring platforms for hybrid cloud operations. In addition, a Terraform-based Kyndryl automation accelerator asset, leveraging the VMware Cloud on AWS Terraform provider (v1.7), can be used for automated, faster deployment and configuration of SDDC infrastructure using the resources supported by VMware Cloud on AWS. This Terraform automation module combined with Ansible automation allows for deployments in a single availability zone or multiple zones depending on the client's needs.

Kyndryl views VMware Cloud on AWS as a central pillar in an enterprise's journey to the cloud, not a one-off project. Consequently, it offers a wide range of post go-live services, including for application modernization using VMware's emerging Tanzu portfolio of container-centric tools in conjunction with VMware Cloud on AWS through unique assets that differentiates it in the industry.

### **Google Cloud VMware Engine**

The Google Cloud VMware Engine is a first-party service operated by Google on isolated bare metal servers in 14 regions around the world, providing global availability and higher workload density than VMware Cloud on AWS. The company emphasizes speed to value in its messaging around Google Cloud VMware Engine, claiming the deepest cloud-native integrations that enable users to deploy private VMware clouds in minutes as well as leverage Google Cloud's 100Gb global networking infrastructure. Google Cloud VMware Engine also uses all-flash storage.

As a native Google Cloud service, Google Cloud VMware Engine is integrated with native services and further with key offerings such as the BigQuery data warehouse and its Cloud AI suite. Storage-only nodes are available for customers seeking to reduce costs. Google handles all infrastructure along with patches and updates for the VMware software stack; Google posits its single point of support as one of its unique differentiators.

Google notably positions Google Cloud VMware Engine for industries, particularly retail. This is clearly a competitive allusion to the fact that AWS is owned by Amazon, the world's largest ecommerce provider. Many retailers have shied away from using AWS for this reason. However, beyond those concerns, Google underscores its broader platform's strength in data management, analytics, and AI/ML as having appeal for retailers that want to better understand customer behavior, pricing, and other factors affecting their business.

The service is available via on demand and one- and three-year term commitments, which carry discounts. Google also offers a single-node private cloud for pilot testing that can be used for up to 60 days or extended if the customer expands it to three nodes.

## *IDC Comment*

Google Cloud under the leadership of CEO Thomas Kurian, a longtime former Oracle executive, has sought to attract more large enterprise business. Google Cloud VMware Engine, which became generally available about two and a half years ago, is a clear nod in this direction and critical to Google Cloud's enterprise ambitions. Google Cloud has also aggressively gone after SAP customer workloads; given the broad synergies between that market and VMware's, on balance Google Cloud has many reasons to give Google Cloud VMware Engine the resources and attention it needs for continued customer success.

## *How Kyndryl Helps*

Kyndryl has invested in learning how best to work with Google Cloud services by aligning its migration methodology with Google Cloud Architecture Framework. It has almost 5,000 Google Cloud-related certifications and is a Google Cloud Premier Partner. Kyndryl is developing a center of excellence around Google Cloud (Google Cloud Academy for Kyndryl) to further its expertise, with a goal of achieving several thousand more certifications.

Kyndryl is not attempting to be all things to all workloads when it comes to Google Cloud. Rather, it is focused on industry-specific digital transformation leveraging data analytics and AI/ML, along with edge computing and data services. It also has a focus on migrating SAP to Google Cloud. Beyond project work, Kyndryl plans to create new managed services on Google Cloud for industries, such as financial services, as well as enterprise-centric edge solutions.

## **Azure VMware Solution**

In April 2019, Microsoft launched a service using technology from a start-up called CloudSimple, which had developed a way to run the VMware stack natively on Azure infrastructure.

Microsoft continues to offer and support Azure VMware Solution by CloudSimple, but Microsoft has been working on its own native offering, which uses a similar architecture. However, Microsoft's version remains in preview at the time of writing this white paper. The company says customers that wish to transition from the original version to the new version can do so with little difficulty once it is production ready.

On both services, customer workloads run on single-tenant, bare metal Azure infrastructure. Microsoft has created tight integrations between VMware's tooling and the Azure portal for a unified experience. It also highlights the availability of ExpressRoute, its high-speed private fiber interconnect service, enabling rich hybrid cloud capabilities in conjunction with on-premises workloads. ExpressRoute is often a requirement for compliance-heavy industries, of which Kyndryl serves many. Microsoft also emphasizes the natural affinity between VMware and itself, given how many VMware workloads run on Windows environments.

Like AWS and Google, Microsoft also has a wide array of native data management, AI/ML, and analytics tools that complement common VMware workloads. These include Azure Kubernetes Service, Azure Machine Learning, Azure Data Factory, Azure Data Lake Service, and Azure Synapse Analytics.

## *IDC Comment*

It may be tempting for some to say Microsoft's commitment to native VMware lags behind the competition, but the reality is that it must balance selling its own popular virtualization platform, Hyper-V, with VMware's stack.

## *How Kyndryl Helps*

Kyndryl positions Azure VMware Solution to run existing workloads in state while application modernization initiatives are conducted or as a general lift-and-shift target to promote cost reduction and datacenter retirement.

Kyndryl highlights its status as one of the world's largest existing VMware managed SPs, as well as its more than 14,000 Azure certifications, ongoing co-innovation work with Microsoft, and 3,000 patents related to topics such as cloud management, monitoring, and orchestration.

Kyndryl has a set of Azure Marketplace offerings specifically for Azure VMware Solution. These include migration, modernization, and managed services, addressing which VMware workloads should be moved to Azure VMware Solution deployment. The workloads can be modernized once there using native Azure services and when deemed appropriate, containerization through Tanzu Kubernetes or Azure's native container platform. Finally, Kyndryl handles operation and governance of the live environment.

## **CHALLENGES/OPPORTUNITIES**

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Kyndryl's spin-off from IBM created a new opportunity for the managed service provider around VMware public cloud workloads, given it is not beholden to one provider's related service. VMware customers are interested in leveraging the public cloud, but most have yet to make the move. Kyndryl's neutrality means the company can serve as a trusted partner for these enterprises while leveraging the fact its teams have some of the broadest industry experience concerning VMware.

That is not to say Kyndryl doesn't face challenges. It remains in the early days with its new brand and persona and must also learn how to compete with IBM itself, as the latter also has a global VMware practice and offers a mature VMware service on IBM Cloud. In addition, Kyndryl cannot claim the mantle of neutrality exclusively, given the many VMware practices offered by other leading systems integrators.

The VMware on public cloud market opportunity is quite vast. IDC estimates the company owns nearly 65% of the software-defined compute market, followed by IBM with just over 8%. Players with deep expertise and the ability to deliver VMware on any public cloud or clouds an enterprise wants are sure to find success.

Kyndryl's value proposition is aligned with VMware Sovereign Cloud, which is aimed at enterprises that must adhere to regulatory frameworks in various localities concerning data privacy and governance. Although the discussion around sovereign cloud today is loudest in the EU and Asia/Pacific, IDC expects more countries, including the United States, to increasingly adopt "native soil" deployments for sensitive workloads. Kyndryl is uniquely positioned to help build such VMware Sovereign Clouds with its deep expertise and knowledge of VMware infrastructure and solutions. VMware Sovereign Cloud today sees the company partnering with local hosting providers in the EU, including OVHcloud and Telefónica, which are certified for VMware's technology and learn to adopt a governance framework

that meets regulatory requirements around data sovereignty. This program could certainly expand to hyperscalers over time, especially given the rise in messaging hyperscalers are now delivering on sovereign cloud.

In addition, VMware's Tanzu portfolio, which centers on container orchestration and cloud-native application development, is already gaining traction with clients, according to VMware. Kyndryl provides a broad set of Tanzu services across the entire life cycle of services along with application modernization and managed services. This provides another opportunity for Kyndryl to guide customers along a path to vSphere and Tanzu co-existence as well as Tanzu on cloud-native platforms.

## CONCLUSION

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VMware's technology has its roots in the on-premises IT world, and many VMware workloads remain in traditional datacenter environments today. But the forward-looking path is clear: More VMware customers want to run workloads in the public cloud for its benefits of scalability, flexibility, and consumption-based pricing. However, many customers want to run their most mission-critical workloads in a VMware private environment. They also are seeking hybrid VMware deployments with the ability to move workloads to and from private and public locations easily and cost effectively.

Hyperscale providers have seen the opportunity and partnered effectively with VMware to create native services that maximize the cloud's potential while preserving existing VMware skill sets and tools. The challenge for customers is determining which public cloud or clouds are right for their VMware workload needs, aligned with not just a lift-and-shift mentality but also application modernization enabled by adjacent cloud services.

It is also a fact that cloud computing, as IDC sees it, is becoming less about a certain location as it is a general operating model for IT. Customers want the cloud's advantages over traditional infrastructure, such as scalability, elasticity, and the opex cost model in the datacenter and at the edge as well as the public cloud. Moreover, they want it delivered in a flexible way with interoperability among providers and the ability to move workloads easily and cost effectively as needed. The VMware ecosystem increasingly makes this possible but getting there is a complex journey. Kyndryl is well positioned to serve VMware customers along the way.

## MESSAGE FROM THE SPONSOR

Kyndryl is the world's largest provider of IT infrastructure services serving thousands of enterprise customers in more than 60 countries. Read more at: [investors.kyndryl.com](https://investors.kyndryl.com).

Kyndryl and VMware have a rich and diverse partnering history of joint solution architectures, common designs, and deep relationships. Read more at:

[www.kyndryl.com/content/dam/kyndrylprogram/cs\\_ar\\_as/Kyndryl\\_VMware\\_infographic2\\_FINAL.pdf](https://www.kyndryl.com/content/dam/kyndrylprogram/cs_ar_as/Kyndryl_VMware_infographic2_FINAL.pdf)

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