Azure VMware Solution

Rapid and cost-effective cloud solutions for business stability, continuity, and resiliency

Cloud adoption continues to grow at a rapid rate

By 2023, the IaaS market is expected to double to more than USD500 Billion

Recent economic pressures have further accelerated cloud-based digital transformation

Many organizations recognize the need for cloud to help them thrive in the future. However, their readiness can still be hindered by disruption to the business, a lack of cloud competencies, and the initial cost and complexity of refactoring an application in the cloud.

Identifying a path to the cloud that lowers the barriers to entry, reduces the impact of change, and can speed up time to value can be crucial. This is particularly important for enterprises with large investments in on-premises technology, skills, and processes. Azure VMware Solution empowers organizations to seamlessly extend—or completely migrate—their existing on-premises VMware applications to Azure without the cost, effort, or risk of re-architecting applications or retooling operations.

Integration with other Azure services across security, data, artificial intelligence, and management capabilities provides the benefits of cloud efficiency and enables organizations to innovate at their own pace. In addition, Azure VMware Solution allows existing Windows Server and SQL Server customers to take advantage of cost savings through Azure's unique Hybrid Benefits and Extended Security Updates.
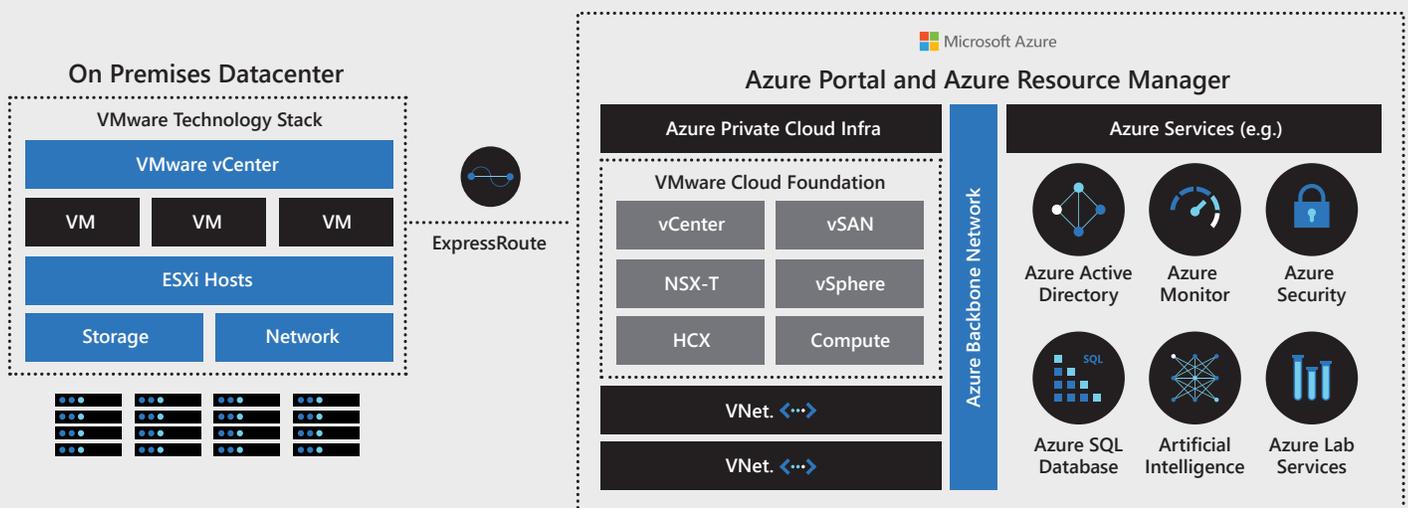
Solution Overview

Microsoft Azure delivers infrastructure services to support a broad range of workloads regardless of where an organization may be in their cloud journey. Azure VMware Solution is a first-party Microsoft solution that runs VMware workloads natively on Azure with minimal change. Microsoft provides and supports the management systems, networking services, operating platform, and backend infrastructure required to run VMware environments at scale in Azure, enabling organizations to:

Deploy VMware workloads on a dedicated, high-performance, single-tenant environment on Azure

Continue to operate a VMware environment on Azure using the same skills and tools you have in place today

Leverage Azure to provision, expand, and shrink VMware resources on demand without rearchitecting your existing applications

Modernize and enhance applications on a self-designated schedule

The Azure VMware Solution is cloud verified and endorsed by VMware.

VMware and Microsoft have a long-standing partnership and a shared heritage in supporting our customers. Now more than ever it is important we come together and help them create stability and efficiency for their businesses. The new Azure VMware Solution gives customers the ability to use the same VMware foundation in Azure as they use in their private datacenters. It provides a consistent operating model that can increase business agility and resiliency, reduces costs, and enable a native developer experience for all types of applications.

Sanjay Poonen
Chief Operating Officer, VMware

On Premises Datacenter

VMware Technology Stack

VMware vCenter

VM	VM	VM

ESXi Hosts

Storage	Network

ExpressRoute

▦ Microsoft Azure

Azure Portal and Azure Resource Manager

Azure Private Cloud Infra

VMware Cloud Foundation

vCenter	vSAN
NSX-T	vSphere
HCX	Compute

VNet. ‹···›

VNet. ‹···›

Azure Backbone Network

Azure Services (e.g.)

Azure Active Directory

Azure Monitor

Azure Security

Azure SQL Database

Artificial Intelligence

Azure Lab Services

Solution Benefits

The Azure VMware Solution allows users to maintain operational consistency while leveraging the scale and performance of Azure. VMware can be run natively on dedicated Azure infrastructure, capitalizing on existing VMware investments, skills, and tools. Here are the solution benefits:

Built-in continuity, speed, and scale with modern, well-managed infrastructure

- Fast provisioning for a fully featured VMware Private Cloud environment

- Elasticity with the ability to seamlessly add and remove capacity (compute and storage resources) on demand

- Instant high availability, disaster recovery, and backup services

- High-speed, low-latency connectivity to Azure and on-premises, delivered through networking Azure ExpressRoute connections

- Dedicated, isolated, private domains in Azure on bare-metal, hyperconverged, all flash, infrastructure; Robust hardware infrastructure capable of running demanding workloads

- Integrated management with Azure Resource Manager (ARM)

- Support for high levels of security and encryption
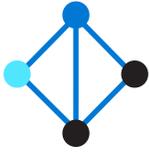
Leverages existing VMware investments in skills, and tools

- Redeploy, extend, and run VMware workloads in Azure without rearchitecting the environment or converting vSphere VMs

- Full compatibility with VMware tools including vCenter, vSphere Client, vMotion, vRealize Operations, Power CLI, and more

- Native support with built-in VMware vSphere, vSAN 6.7 Enterprise, and NSX-T 2.5 Advanced

- Fully featured networking stack supports existing VMware environment networking capabilities
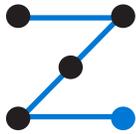
Seamlessly modernize apps overtime with Azure services

- Seamless Azure Portal experience for unified management of infrastructure and virtual machine (VM) resources that support hybrid environments

- Modernize applications with the ability to connect them to Azure services (e.g., Azure AD, SQL managed instances, and analytics)

- Use Azure built-in management and monitoring tools to operate VMware environments

- Leverage Azure-native public cloud capabilities for Disaster Recovery, Backup, and more

- Broad access to the Azure ecosystem, including Azure services (e.g., Azure Active Directory, AI, and Analytics)

- Highly secure, high-speed, low-latency connectivity to Azure, including Azure ExpressRoute and VPN services

Most cost-efficient way to run Windows Server and SQL Server

- Centralized billing and support

- 3 years of free Extended Security Updates (ESU) for Windows Server 2008 R2 and SQL Server 2008 R2 (valid for customers transitioning to Azure including Azure VMware Solution)

- Azure Hybrid Benefit (AHUB) for both Windows Server and SQL Server allows users to bring existing licenses to Azure at reduced costs

- 1-year or 3-years Reserved Instance discounts for Azure VMware Solution without cancellation fees

Customer use cases

These use cases illustrate some common scenarios for utilizing an Azure VMware Solution:

Datacenter expansion, reduction, or retirement

An IT team wants to reduce the datacenter footprint via a "one-time redeployment" of VMware-based virtual machines while decreasing the overall on-premises infrastructure. The Azure VMware Solution enables users to "lift and shift" vSphere-based workloads to Azure in a non-disruptive, automated, scalable, highly available fashion without changing the underlying vSphere hypervisor or the network, security, or data protection policies.

Disaster recovery and business continuity

An organization is updating its disaster recovery plan to ensure they are fully protected against a network failure. The VMware stack deployed in Azure can be used as a primary (or secondary) on-demand disaster recovery site for on-premises datacenter infrastructure.

Speed and simplification of migration and hybrid scenarios

An organization wants to accelerate migration of their VMware-based workloads to Azure while staying within budget. They should review the licensing and extended support for their existing Windows and SQL server on-premises footprint.

Application modernization and enhancement

Application developers need to modernize their applications. The Azure ecosystem enables them to do so without refactoring existing VMware-based workloads.

Solution components

Azure Dedicated Infrastructure

Azure's infrastructure is designed for end-to-end, high availability with disaster recovery and backup capabilities delivered through the global reach of Azure datacenters. The underlying compute infrastructure for Azure VMware Solution features Azure bare-metal servers equipped with Intel Xeon Gold 6140 2.4 GHz processors. Each node offers up to 36 physical cores, up to 576 GB of RAM, up to 3.2 TB of NVMe cache, and up to 11.25 TB of flash storage per cluster. There is a minimum of 3 nodes. This can be scaled up to 16 nodes in a cluster, and up to 64 nodes in a private cloud. Customers can also use third-party tools provided by vendors such as Zerto, Veeam, and others. Microsoft guarantees a 99.9 percent SLA.

Management

You can continue to use the same standard suite of VMware tools that you are using today to manage your VMware on-premises environments. The service includes vCenter 6.7U3 and NSX 2.5 Advanced with direct access to the system via UI, Power CLI, or API calls. Manage the environment using tools such as vRealize Automation, Service Now, or others. In addition, there is support for key features, such as access control, audit logging, alerting, and metrics management, as well as Azure Monitor. You can also use VMware native capabilities for migration. We support vSphere 5.5 or earlier. For large-scale migrations, VMware HCX R139 Advanced is included as part of the service.

Storage

The storage infrastructure is based on hyperconverged vSAN, which features all-flash SSD-based persistent primary storage and NVMe cache storage (2 x 1.6 TB). Easily expand storage by adding more nodes. Use Azure Storage for vSphere templates and other similar content. Access Azure services, including Azure storage, directly from your VMware Virtual Machines. Dynamically grow or shrink storage capacity in minutes, as vSAN enables high availability and reliable storage (8 x 1.92 TB SSD). Fully configured, all-flash vSAN storage, local to the cluster; All vSAN storage policies are fully supported. Receive support for key management system (KMS) encryption solutions. Azure Backup can be used in conjunction with the Azure VMware Solution. In addition, customers can continue to use existing VMware or third-party tools such as Commvolt, Veritas, and Veeam.

Azure Backup, combined with the Recovery Services vault for VM backup and recovery, is a cost-effective, scalable approach to backup. Geo-redundant, longer-term, off-site storage satisfies compliance requirements and addresses short-term retention needs for restoring data.Optimize storage for VMs running on Azure VMware Solution with integration with Azure NetApp Files and Azure File Share and integrate with Azure SQL services as you modernize application storage strategies.

You can continue to use the same standard suite of VMware tools that you are using today to manage your VMware on-premises environments.

Security and encryption

Connect Azure Security Center and Azure Sentinel with Azure VMware Solution VMs to strengthen your security posture and protect against threats. Also provides a streamline method for applying advanced practices to your environment.

You can encrypt data at rest and in transit using preferred methods. HyTrust, a decentralized KMS that allows you to encrypt data at rest, is supported in addition to other VMware compatible KMSs.

Networking

Azure VMware Solution offers a private cloud environment accessible from on-premises and Azure-based environments or resources. Services such as Azure ExpressRoute and VPN connections deliver the connectivity. These services require specific network address ranges and firewall ports for enabling the services.

When deploying a private cloud, private networks for management, provisioning, and vMotion get created. Use these private networks to access vCenter and NSX-T Manager and virtual machine vMotion or deployment; NSX-T 2.5 Advanced is built in. ExpressRoute Global Reach is used to connect private clouds to on-premises environments. The connection requires a virtual network with an ExpressRoute circuit in your subscription.
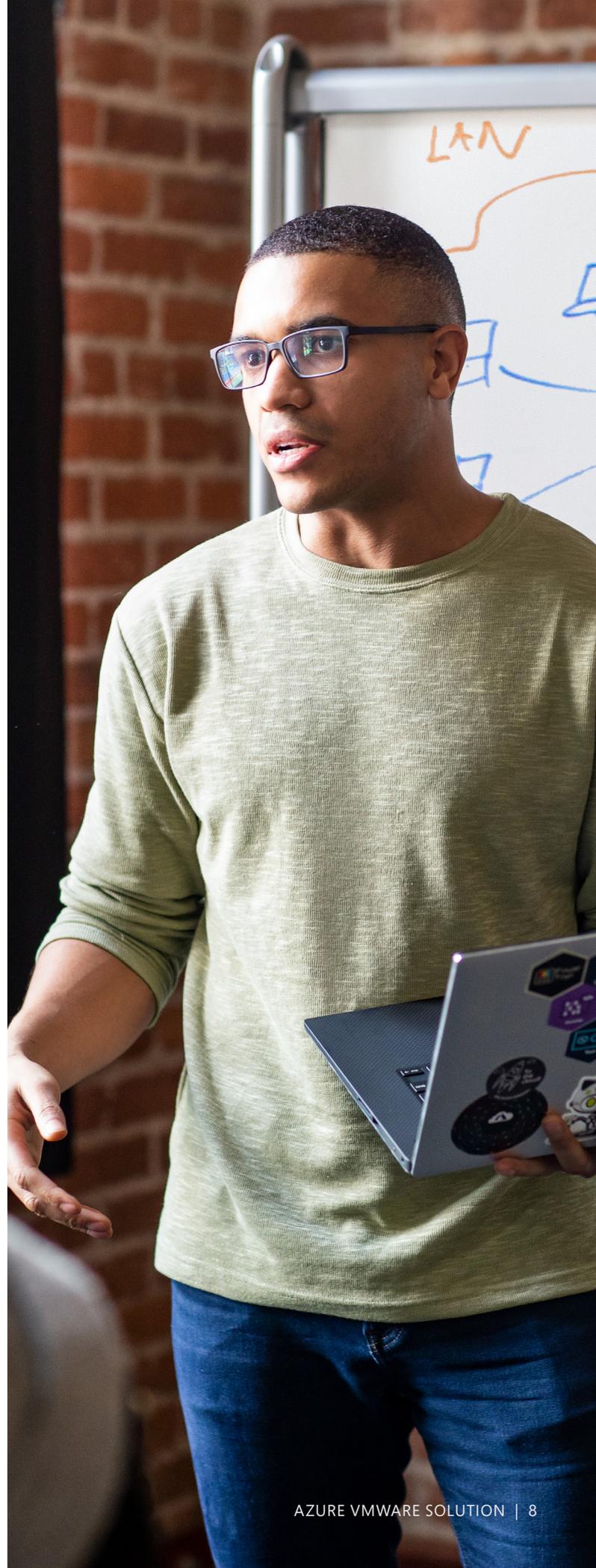
Growing partner ecosystem

When you move applications and workloads from your current datacenter, and extend existing VMware workloads from on-premises to the cloud, we recognize the need for supportability. Microsoft works closely with key partners that are integral to your IT environment, including leading solutions for backup and disaster recovery, as well as other enterprise services that run on-premises today.

Zerto

"With Azure VMware Solution, customers can use Zerto to replicate and protect VMs into the cloud and within the cloud, with the same seamless experience they have on premises. Users can replicate and recover into Azure VMware Solution in under two hours, providing the ability to implement a real-time, enterprise DR solutions."

Gil Levonai, CMO and SVP of Product, Zerto

VERITAS

"Veritas Technologies and the Microsoft Azure teams are mutually invested in our ongoing partnership to solve the most important customer needs in Azure VMware Solution. We worked very closely together in early testing and certification to deliver a level of protection and recovery that surpasses VMware admin's expectations in Azure VMware Solution. Veritas data protection solutions ensure that no matter where VM data resides, it meets the enterprise data protection requirements of storage reduction, and automated intelligent policies. Veritas's continued support for the next version of Azure VMware Solution further illustrates our strong partnership and aligned commitment to helping our joint customers in their ongoing adoption of hybrid cloud, including their VMware estate. VMware admins no longer have to choose between local or hosted when it comes to their workloads and can rest easy knowing their data is protected and recoverable from anywhere, to anywhere with Veritas NetBackup."

Doug Mathews, VP Product Management, Enterprise Data Protection and Compliance, Veritas

COMMVAULT

"Using Microsoft Azure has been a critical component of the success of Commvault's solutions and we are happy to add support for Azure VMware Solution as part of a customer's heterogeneous, enterprise-wide data environment. In leveraging Microsoft's Azure infrastructure, our joint customers gain the benefits of ease, scalability, security, and cost reduction seamlessly combined with leading features of our products, making it a winning combination for customers."

Randy De Meno, VP/CTO, Microsoft Products & Solutions, Commvault

JetStream SOFTWARE

"Partnering with Microsoft Azure enables us to provide a robust and cost-effective solution for disaster recovery and business continuity. It's an ideal combination: the JetStream DR software brings continuous data protection to enterprise VMware environments, Azure Blob Storage provides a cost-effective means of maintaining recovery assets, and the Azure VMware Solution provides a highly available, reliable VMware platform that can scale to meet customers' recovery and failover requirements."

Tom Critser, Co-Founder and CEO, Jetstream

veeAM

"Veeam currently supports the backup of Azure-native virtual machines via Veeam Backup for Microsoft Azure. Now, Veeam support for Azure VMware Solutions makes it possible to easily backup and replicate vSphere workloads to and from Azure. Through Veeam Availability Suite, simple workload protection and portability is possible across on-premises VMware, Azure VMware Solution, and Azure-native VM workloads. As the leader in Cloud Data Management, Veeam strives to partner with our 375,000 customers and help them achieve their business objectives. Our day one support for Azure VMware Solution is not only a testament to our customer commitment, but also in our investment and strong, long-term relationships with VMware and Microsoft."

Danny Allan, Chief Technology Officer and SVP of Product Strategy, Veeam

Microsoft