VERITAS

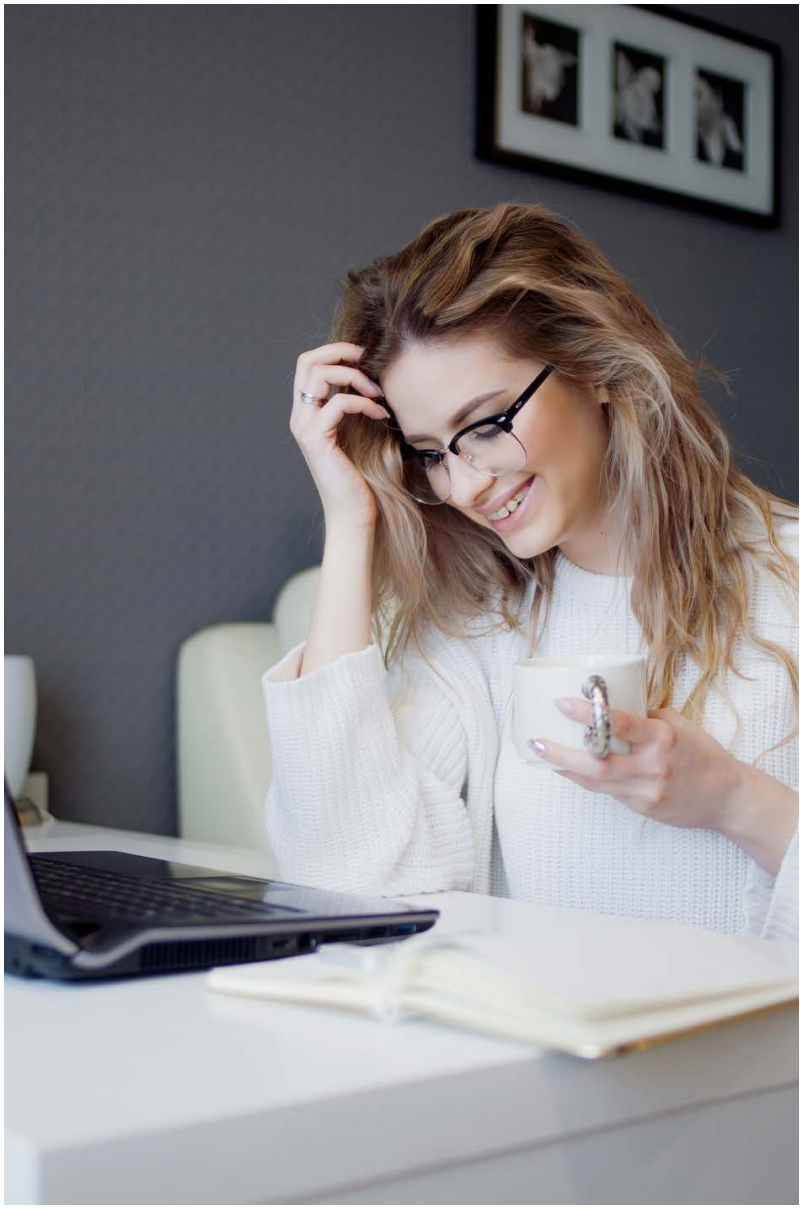
Microsoft

# Azure and Veritas: Evolving SAP to the Cloud

# AZURE AND VERITAS: EVOLVING SAP TO THE CLOUD

SAP HANA has enjoyed stellar success as a platform, driving thousands of mission-critical applications for a customer ecosystem that spans the globe. If that includes your organization, and if you are still running most or all your SAP workloads on premises, it is past time to empower those SAP workloads with the scale, security, and processing capabilities that only the cloud can deliver. Enabling these capabilities is a must-have for modern enterprise workloads, which is why according to a recent study by market research firm Statista, 37 percent of Chief Information Officers (CIOs) maintain that digital transformation and cloud migration remain at the top of their to-do list.

For those CIOs, Microsoft Azure creates a total paradigm shift from their traditional on-premises approach. Because it offers dynamically scalable options for Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), and Software-as-a-Service (SaaS), Azure can quickly meet rapidly changing business requirements. Breaking down the key benefits of an SAP migration to Azure yields:



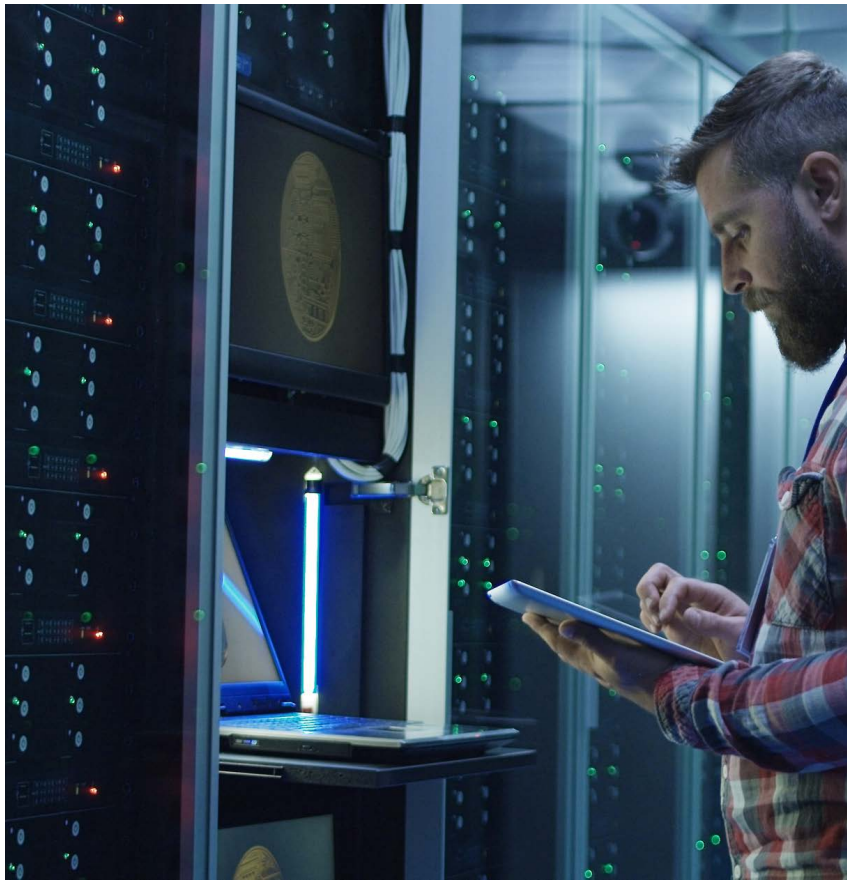
**Data protection –** Microsoft Azure's storage acts as a data protection foundation by focusing on two primary areas: resiliency and security:

- Resiliency comes from not only storing your data across multiple physical datacenters, but by incorporating it into an abstracted and software-defined fabric that also accesses multiple Azure data services.
- Security comes from Azure's data security measures that span several layers, including Distributed Denial of Service (DDoS) protection, Network Security Groups (NSGs) that only allow permitted traffic to access data and virtual machines (VMs), and storage-side encryption (SSE) that uses 256-bit encryption via Microsoft-managed keys.

**Business continuity –** Because Azure's cloud fabric extends to over 90 datacenters around the globe and uses easily replicated VM infrastructure, it is a perfect environment for building a highly redundant and immediately available disaster recovery solution, especially for advanced, multi-tier workloads like SAP. This includes capabilities directly beneficial to SAP workloads, such as live database and application snapshots.

**Elastic cloud storage –** Server and storage infrastructure in Azure is virtual. To leverage this, Microsoft has built in Azure a foundation layer of tiered, software-defined storage able to scale to exponential data growth, called StorSimple. These key benefits are what make an Azure migration so compelling for any CIO handling complex, enterprise SAP workloads. However, implementing them, even after a successful migration, is complex with significant hurdles around in-cloud versus hybrid architecture, application-layer deployment, data protection and resiliency, high availability for applications, and effective day-to-day health and performance management.

Organizations looking to overcome these challenges quickly and cleanly need higher-level solutions that address not only the migration process and the protection of cloud applications, but are also purpose-built to enhance hybrid application performance for all SAP platforms, including NetWeaver, S/4HANA, and SAP HANA.  Enterprise-class solutions like InfoScale and NetBackup from Veritas dramatically simplify and improve cloud migration and management of SAP workloads.



# AZURE AND VERITAS: DELIVERING A HARMONIOUS CLOUD FOR SAP

## Managed hybrid Azure migration

Single, aggregated management console for migration and management across the entirety of Azure's infrastructure and storage fabric

## Fast, customized recovery

Fast recovery and data management for global and physical-to-cloud deployments

## Real-time hybrid resiliency

Hybrid resiliency and data protection via customized redundancy; physical and digital disaster recovery; managed access security

## High availability and performance

High availability and significant SAP performance enhancements with lower application management costs

## READYING THE CLOUD FOR SAP WORKLOADS

While a bullet-proof migration plan is essential to successfully running your SAP application on Azure, an even more important initial step is understanding exactly which Azure capabilities are must-haves for your workload. Aside from the top-level capabilities mentioned above, more granular application-specific benefits include:

- Unrivaled SAP data protection and business continuity
- Higher availability for SAP workloads
- Meeting SAP high performance and management challenges

# UNRIVALED SAP DATA PROTECTION AND CONTINUITY

Data protection and reliable disaster recovery are two of Azure's most compelling advantages. However, those capabilities come from Azure's underlying virtual infrastructure layer. According to the Microsoft Shared Responsibility Model, data protection and reliable disaster recovery at the application level remain the customer's responsibility. That is where Veritas NetBackup comes in.

Scalable to any sized workload, NetBackup provides administrators with a single, aggregated view not only through the migration process but for ongoing day-to-day management duty as well. This lets administrators easily visualize and build multi-tiered data protection and business continuity architectures that directly leverage Azure's considerable storage resources.

NetBackup integrates into SAP Studio and lets information technology (IT) staffers see directly into all aspects of an SAP environment on Microsoft Azure. This single management window contains enterprise-grade data protection features that allow you to intelligently design and manage those abilities for your Azure-deployed SAP workloads.

In other words, NetBackup provides the same protection controls in Azure that your administrators have on premises and lets them manage those features the same way.

NetBackup is also the backbone of Veritas' business continuity solutions, addressing not only catastrophic physical disasters, but digital events as well, such as ransomware attacks—something that is difficult to mitigate using Azure resources alone. The solution maintains your digital integrity using sophisticated measures, including identity and access management, data encryption in transit and at rest, and indelible storage security controls. These help your backed-up SAP data remain safe and untouched by any threat without incurring the complexity and lengthy learning curve required to achieve such results solely using Azure-native tools.

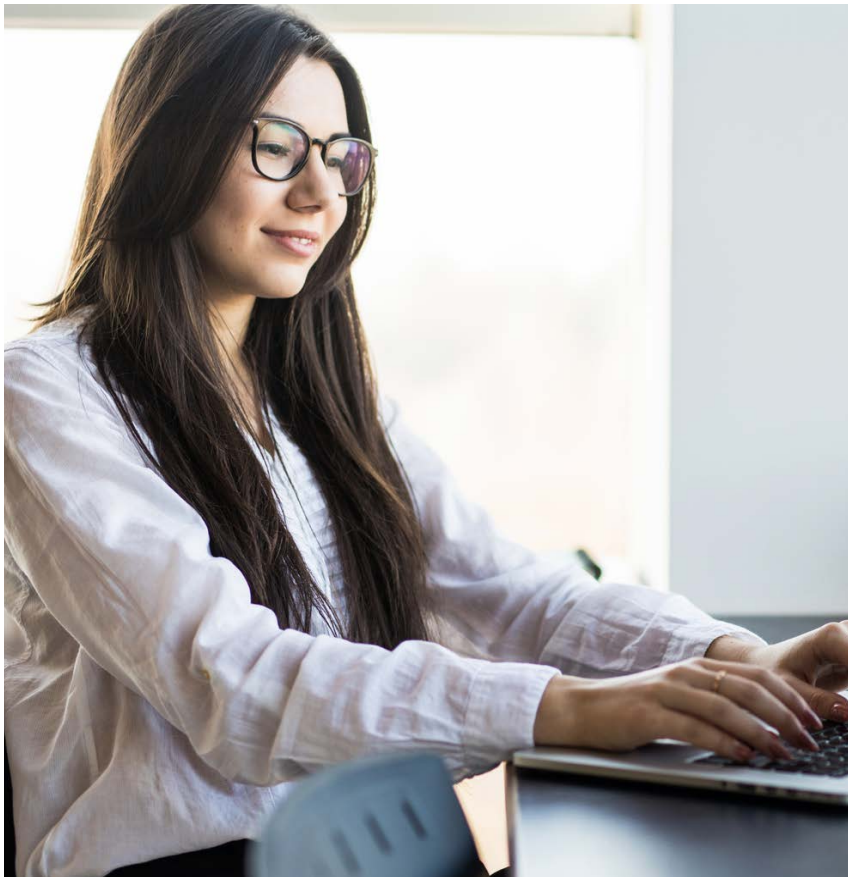
## HIGHER AVAILABILITY FOR SAP WORKLOADS

When it comes to high availability for your SAP application, InfoScale not only handles that challenge but can also deliver significant performance benefits for workloads running on SAP's HANA database. This goes for applications running entirely on Microsoft Azure or in a hybrid deployment.  With InfoScale, you can improve SAP application performance and availability while reducing your overall application management costs.

Veritas InfoScale can provide this level of high availability through InfoScale's deep analysis of SAP data and application interdependencies. InfoScale's high-availability agents for Azure are custom designed to provide maximum uptime and flexibility for applications running in Azure. These agents make it easy to build high availability and disaster recovery architectures across all your SAP workloads, including those built on NetWeaver, S/4HANA, and SAP HANA databases. They help improve application performance and protect availability for all layers in cloud or hybrid SAP environments, covering:

- Databases, including SAP HANA
- Central Services Instance
- Enqueue Replication Service
- Primary Application Server
- Additional Application Servers

Veritas InfoScale gives your administrators the ability to design their own, custom high availability schemas because it allows them to delve much deeper into Azure's storage fabric and do so through a single, cohesive management interface. This software-defined storage management enhances Azure Storage, allowing for flexible storage clusters and other hybrid resources that increase storage efficiency and availability.



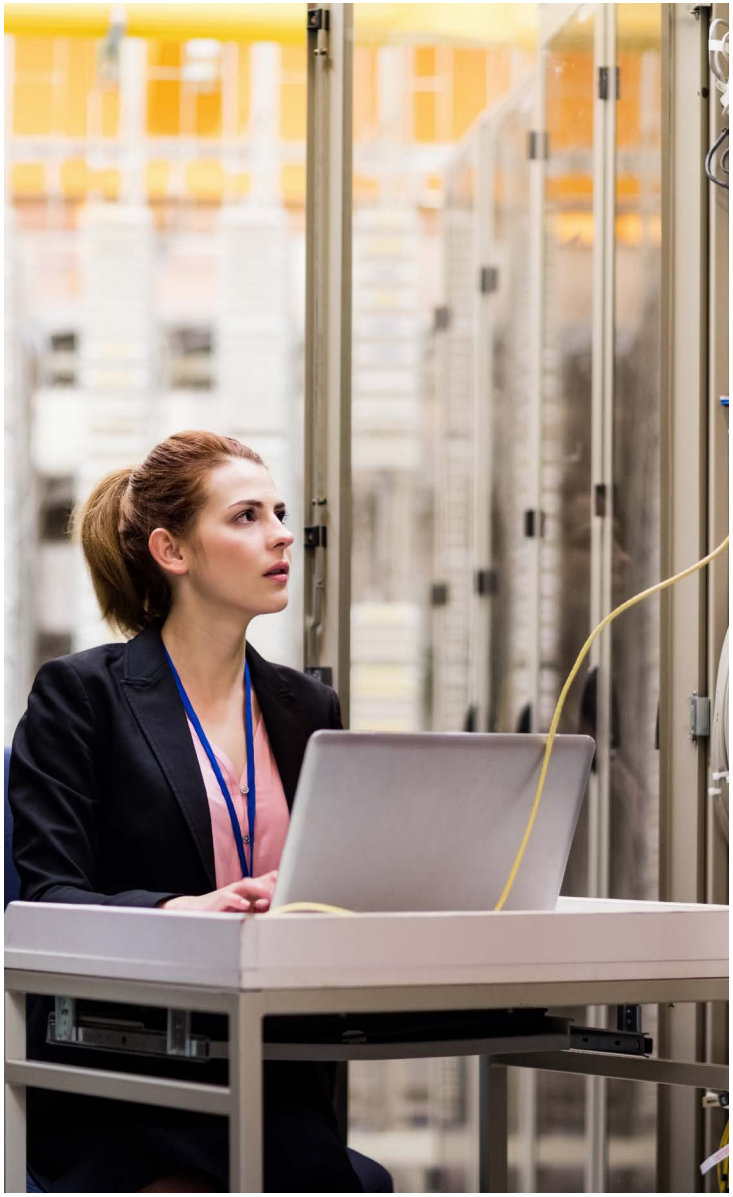
Because Veritas InfoScale is a software-defined solution, administrators can integrate it directly with applications. This enables high availability and disaster recovery for critical business services, including SAP databases and the applications that rely on it, especially those that are customer-facing or multi-tiered. InfoScale delivers a common availability platform that manages high availability across the entirety of your new, hybrid SAP architecture, from any on-premises resource all the way to Azure.

That makes InfoScale a common availability platform across physical, virtual, and cloud infrastructure. It also lets your administrators monitor and provide failover protection for entire complex, multi-tier applications from on-premises physical and virtual layers to Azure's cloud and hybrid cloud application deployments.

By adding features like SmartIO, Dynamic Multi-Pathing, storage tiering, deduplication, compression, thin reclamation, and local and remote replication, InfoScale gives you significantly more agility and availability when designing your SAP storage architecture. This adds performance and overall cost savings to what would otherwise be a rigid and expensive SAP setup.

Pushing the hybrid concept even further, Veritas InfoScale Flexible Storage Sharing (FSS) allows you to create high performance, highly available shared storage clusters in a hybrid-cloud model by combining Azure storage resources with Direct Attached Storage (DAS) deployed on premises. This not only saves on overall cost, but it can also boost storage performance and availability by up to 4 times.

InfoScale boosts storage performance and availability by up to **4x**



# MEETING SAP HIGH PERFORMANCE AND MANAGEMENT CHALLENGES

Microsoft Azure provides several layers of performance-enhancing features that simply cannot be matched in on-premises deployments, beginning with virtualization. Converting on-premises server farms to Azure VMs provides the ability to pool compute, disk, and network capacity and then intelligently parse those resources to the application layers that need them most.

However, while this means that Azure provides both high-performance and some degree of application performance management, those benefits are both complex to implement and do not always extend to up-level applications, like SAP.  Veritas InfoScale and NetBackup both address these challenges on Microsoft Azure.

In terms of IT's need for better infrastructure and storage management, NetBackup provides seamless workload and data portability, including Azure Stack to Azure Stack and Azure region-to-region with orchestrated disaster recovery using Veritas Resiliency Platform integration. It also lets you manage your data dynamically without the need to micromanage siloed data separately.

This single data protection platform allows you to define those needs at a high level and then automate service-level objectives (SLOs) specific to your infrastructure. NetBackup also provides enhanced data management by integrating with Veritas APTARE IT Analytics. That means your IT administrators gain the visibility that is essential to identifying badly configured, unindexed, or underutilized IT resources. They can then repurpose them to achieve significant cost savings.

InfoScale addresses cloud workload management largely through InfoScale Operations Manager. This platform lets IT leaders use Azure to meet the challenges of heterogeneity, scale, and management agility. InfoScale Operations Manager builds a role-based, graphical management framework on top of Microsoft Azure resources. This not only gives IT professionals an easy-to-use interface, but also adds more value to those resources through automated application health and management, centralized visibility and control, comprehensive reporting and analysis, and application-level risk management and troubleshooting.

The challenge of leveraging and improving upon Azure's high-performance application features starts with NetBackup. It is highly scalable and elastic, which means it can leverage those

Enhanced data and resource management

Comprehensive reporting, analysis & troubleshooting

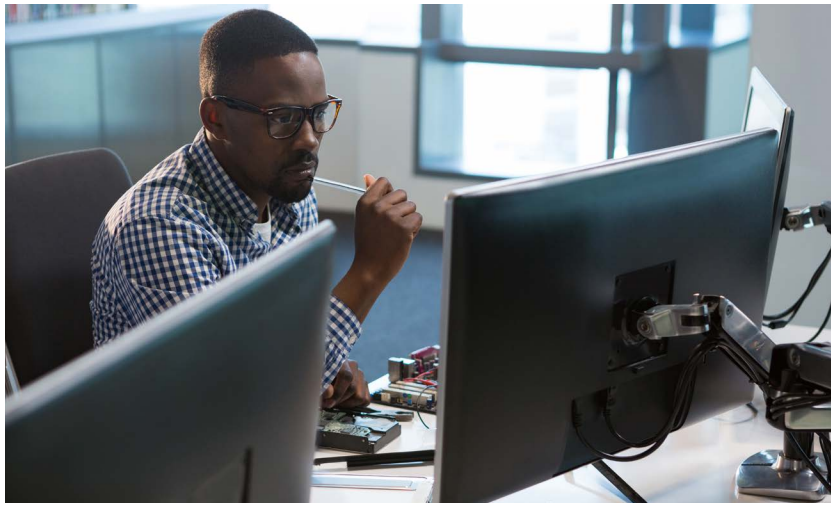
Unified data protection and storage

core capabilities in Azure and apply them directly to the high-performance requirements of your SAP application. It also adds a centralized data management layer that is based on a flexible, multi-tiered architecture so it can adapt to dynamic business needs. This one-platform, one-console approach unifies data protection and global virtual and physical storage, then applies those benefits directly to your SAP workloads.

Veritas InfoScale builds on that foundation by ensuring application performance and resiliency for your SAP workloads both in an "all-Azure" configuration as well as in hybrid deployments. InfoScale intelligently optimizes all forms of Azure virtualization for every hybrid layer. Because InfoScale is designed as a software-defined solution, it can abstract your application from underlying hardware and software dependencies and apply the best form of Azure virtualization for your application.

Should your SAP application benefit from high-performance computing (HPC), Azure's virtualized infrastructure layer is already optimized for this scenario. However, Azure's HPC provisions are aimed mainly at its infrastructure fabric. It has no view into your SAP workload layer, which is where the HPC challenge really resides for IT administrators.

Veritas InfoScale Enterprise directly addresses this challenge with features like Veritas Cluster Server (VCS) and Cluster File System (CFS). The VCS Intelligent Monitoring Framework (IMF) manages your entire virtual cloud ecosystem through a single pane of glass. CFS provides VM clusters with a highly available, accessible-in-parallel filesystem that you can use not only for failovers but to address high performance and scalability needs as well.



## FIND OUT MORE

For customers already tapped into the power of NetWeaver and SAP HANA, the benefits of moving those workloads to the cloud are undeniable, with advantages for every layer of the application stack. Trusting those enhancements to a mature and market-leading platform, especially Microsoft Azure, provides access to a host of features and capabilities that simply cannot be had any other way.

But parsing the complexities of your applications and matching those to Azure's long list of SAP-enabled features is a difficult challenge for any administrator. By engaging with a partner like Veritas, you can meet that challenge quickly and with maximum effect. Solutions from Veritas assure a smooth migration; an exact match between your application's needs and the supporting features in Microsoft Azure; and an unrivaled long-term management window that addresses every aspect of your application's performance, including health, management, data protection, and continuity.

You can access NetBackup and InfoScale easily as solution templates in the Azure Marketplace, which makes them the ideal foundation for your mission-critical applications. For mature or highly complex SAP applications, Veritas' strong partner ecosystem can help you quickly customize both your SAP application and your Azure instance no matter what your vertical or customization requirements.


## About Veritas

Veritas Technologies is a global leader in data protection and availability. Over 80,000 customers—including 87 percent of the Fortune Global 500—rely on us to abstract IT complexity and simplify data management. The Veritas Enterprise Data Services Platform automates the protection and orchestrates the recovery of data everywhere it lives, ensures 24/7 availability of business-critical applications, and provides enterprises with the insights they need to comply with evolving data regulations. With a reputation for reliability at scale and a deployment model to fit any need, Veritas Enterprise Data Services Platform supports more than 800 different data sources, over 100 different operating systems, more than 1,400 storage targets, and more than 60 different cloud platforms. Learn more at www.veritas.com. Follow us on Twitter at @veritastechllcgoals associated with SAP, data and the cloud, guiding you to make the right enterprise-wide decisions and the right approach for your company.