Gain Control of Your Hybrid Multi-Cloud Environment

Executive Summary

The adoption of cloud first strategy has increased exponentially in the last two years and continues to grow at a rapid rate as businesses adapt to changes in the market. With multiple cloud services and features available today, businesses are increasingly adopting hybrid multi-cloud strategies to optimize their applications and services around the best features each public cloud vendor has to offer. In addition to public cloud options, some organizations may choose to use a combination of public, private, and on-premises resources and services depending on regulations or SLA requirements. As a result of this multi-cloud or hybrid infrastructure for apps and services; data security, data sprawl, and out of control cloud costs are quickly becoming major risks and challenges for organizations.

Veritas provides enterprise data solutions that help deliver IT applications and services with maximum visibility, availability, protection, mobility, and optimization—in the cloud and on-premises. Veritas offers a unique integrated approach to hybrid multi-cloud operations that has several advantages, while supporting your part of the shared responsibility model:

- Flexibility to run applications on any platform with the agility to move applications between platforms to optimize costs and functionality

- Automated availability management for complex, multi-tiered business applications

- Intelligent cross-cloud data visibility and analytics, designed to help improve application performance, reduce costs, and increase efficiency

- Data protection that supports a broad range of applications and platforms, with multi-cloud recoverability

This solution overview will inform you of the Veritas strategy for designing and managing intelligent hybrid multi-cloud environments for any type of application or IT service. The software-defined approach to integrating Veritas data protection, analytics, and application availability management solutions acts as the foundation for running your business technology with confidence in a hybrid multi-cloud model using a single, unified strategy.

Solution Overview

By integrating data protection, high availability (HA) and analytics technology, Veritas provides a single source of availability, protection, and operational intelligence based on advanced integration between the following solutions:

- Veritas InfoScale™—A software-defined optimization solution for mission-critical applications that abstracts applications from their underlying hardware and software resources. That abstraction enables enterprise-grade optimizations around business continuity, performance, and infrastructure agility across physical, virtual and cloud environments. InfoScale provides advanced software-defined storage and availability management for mission-critical applications that need to be always-on.

- Veritas NetBackup™ powered by Cloud Scale Technology—The only enterprise data management solution that combines automation, artificial intelligence, and an elastic architecture to improve agility and data security across any cloud, at any scale. With 100 exabytes of information currently under management, no other solution comes close.

- Veritas NetBackup SaaS—A cloud-based secondary storage platform for enterprise organizations to centrally protect, analyze, search, and manage all types of SaaS application data at any scale.

- Veritas NetBackup IT Analytics—Delivers unified data backup and storage insights for heterogeneous IT environments across on-prem and cloud services. Provides actionable insights through a single-pane of glass for enterprise data wherever it resides.

- Veritas NetBackup Recovery Vault—A cloud-based data retention service that provides a seamless, fully managed secondary storage option for NetBackup users. With NetBackup Recovery Vault, an organization can be confident its data is secure in the cloud, plan for disaster recovery, meet compliance and governance requirements, and prevent data loss from ransomware.
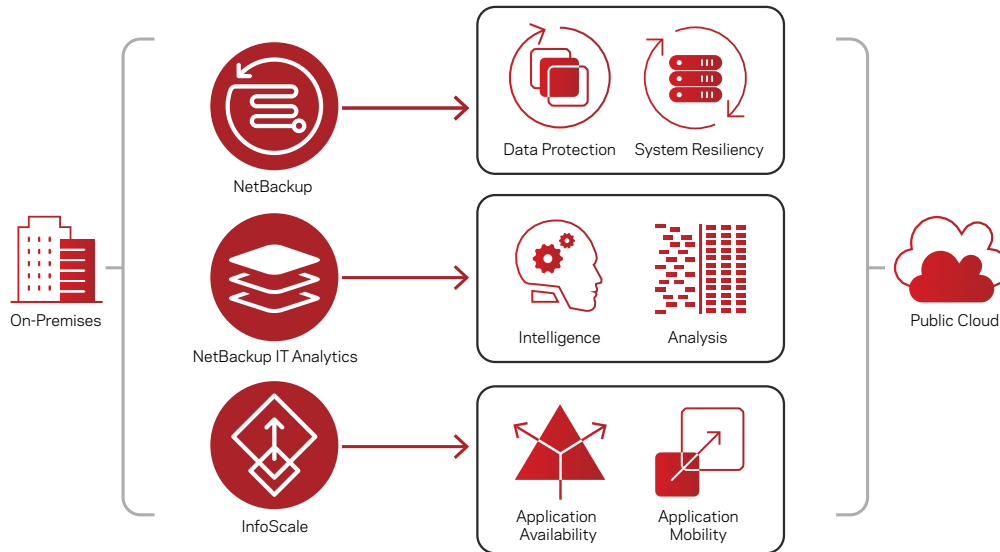

Figure 1. An example of the Veritas intelligent hybrid multi-cloud strategy.

Veritas supports more than 60 cloud technologies, more than 800 data sources and more than 1,400 storage targets. And with the addition of our extensive API sets and Ansible playbooks offered for our solutions, we can interface with practically any technology.
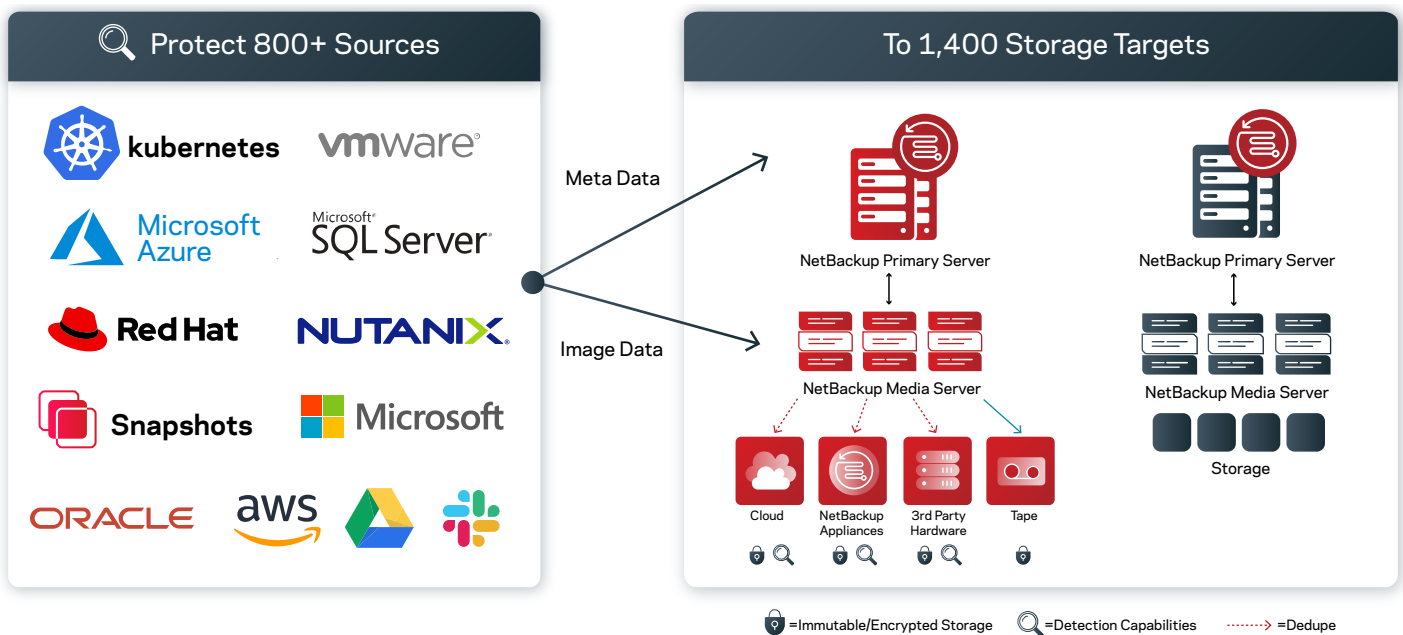

Figure 2: Overview of comprehensive integration with technology ecosystem solutions.

Challenges with the acceleration of cloud first strategy:

Cybersecurity

Cloud is the #1 ransomware attack vector for cyber criminals in 2022[1]

Cost Reduction

$480 BILLION

End-user spending on public cloud services expected to exceed $480 billion next year[4]

Data Sprawl

58% of Senior IT Leaders have an unclear data footprint and lack clarity on what technology their organization has introduced since 2020[2]

45% of applications are spread across multiple clouds[3]

Cybersecurity—Reduce Your Risk and Protect All Your Data, From All Sources

In modern, fast-changing hybrid multi-cloud environments, organizations need a new approach to data protection to ensure all applications are protected without limiting their recovery options. NetBackup reduces complexity, scales with growth, and creates a foundation for hybrid multi-cloud data management. NetBackup also provides advanced data protection for hybrid multi-cloud environments, with a focus on:

- Cloud Storage—NetBackup ensures workloads are fully protected with optimized data transfer to cloud storage, encryption, network throttling, and metering to monitor data transfers. Cloud-agnostic granular recoverability provides the architectural freedom needed in a hybrid multi-cloud model.

- Scalability—With the ability to support large, multi-petabyte data footprints, NetBackup provides enterprise-level scalability with unlimited retention. Integrated data immutability features protect data against corruption and ransomware attacks.

- Workload Support—NetBackup provides data protection for an industry-leading range of workloads, including SaaS applications, commercial and custom applications, relational and NoSQL databases, and big data solutions—on-premises, in the cloud, and in hybrid multi-cloud environments.

- Auto Identification of Threats, with Event-Driven, Automated Malware Scanning—NetBackup uses AI-powered anomaly detection to identify potential malware threats in backup data. When it detects anomalies, NetBackup can automatically initiate malware scans and alert administrators before a threat disrupts business.

- Recovery Orchestration and Rehearsals—Reduce downtime and optimize for flexible, rapid, and hybrid recovery from object level to entire cloud data centers, on demand. Be prepared with non-disruptive, cost-effective recovery rehearsals.

When you enable NetBackup, you are in control of your multi-cloud and can rest easy knowing that you are meeting your end of the shared responsibility model.
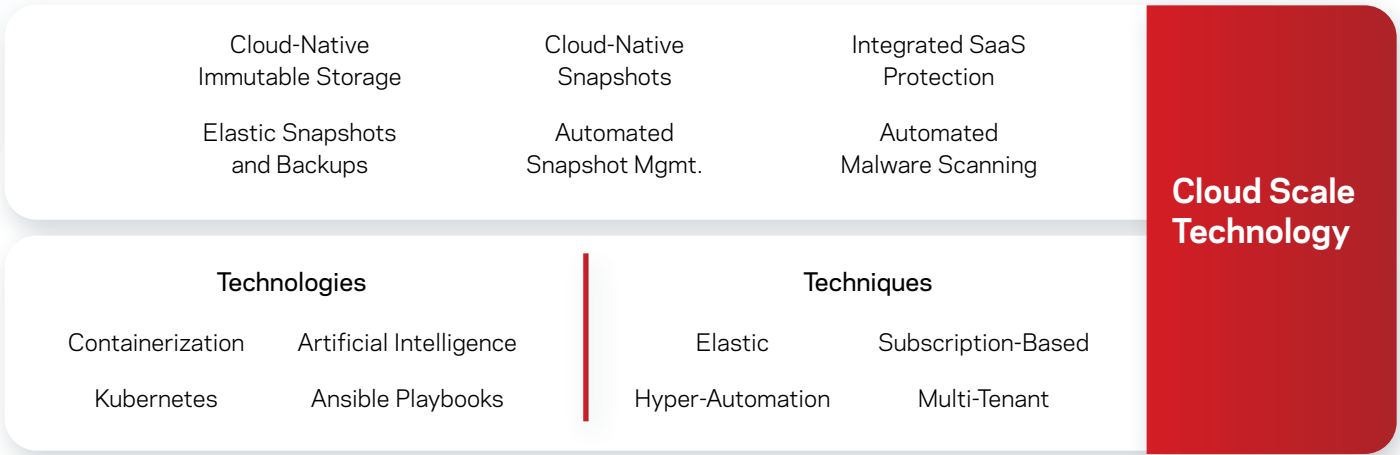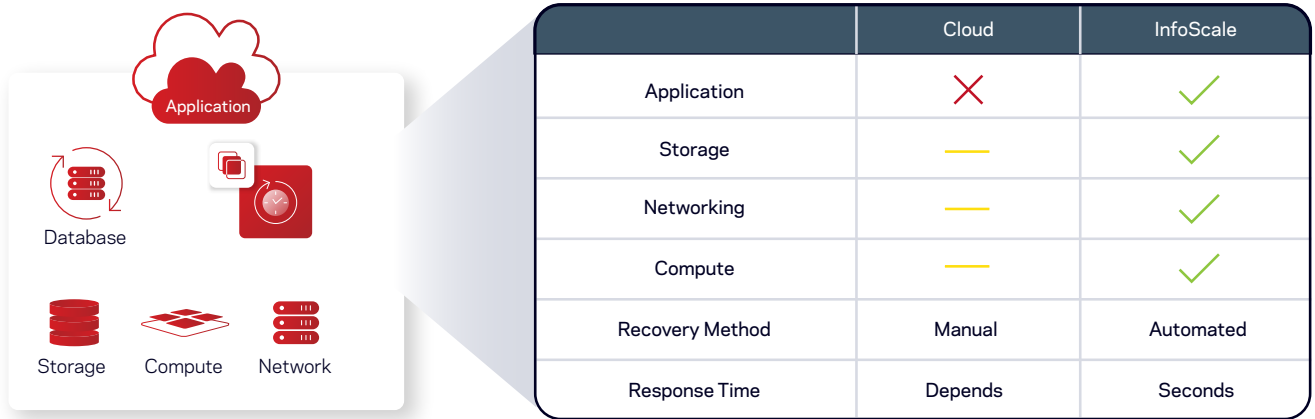
NetBackup™
Powered by Cloud Scale Technology

Cloud-Native Immutable Storage	Cloud-Native Snapshots	Integrated SaaS Protection
Elastic Snapshots and Backups	Automated Snapshot Mgmt.	Automated Malware Scanning

Cloud Scale Technology

Technologies		Techniques	
Containerization	Artificial Intelligence	Elastic	Subscription-Based
Kubernetes	Ansible Playbooks	Hyper-Automation	Multi-Tenant

Figure 3: An overview of NetBackup and Cloud Scale Technology architecture

Resiliency in the Cloud

Unlike point solutions, our resiliency strategy supports your existing IT infrastructure, whether it's physical, virtual, cloud, or container-based. We mask the complexity between applications and the underlying platforms to create a solution that enables your business to be highly available and agile.

Veritas InfoScale in the Cloud provides enterprise-class software-defined storage management, application-aware high availability, and disaster recovery (HADR) for your applications running in cloud, hybrid-cloud, and multi-cloud environments. With 83 percent of organizations using manual processes for cloud migrations[5]. InfoScale can automate the migration process and enable you to run your business technology in the cloud with several advanced features.

	Cloud	InfoScale
Application	✗	✓
Storage	—	✓
Networking	—	✓
Compute	—	✓
Recovery Method	Manual	Automated
Response Time	Depends	Seconds

✓ High availability monitoring & automated recovery   — Basic infrasctruture monitoring & resiliency   ✗ No native high availability or DR

Figure 4. An overview of InfoScale's cloud infrastructure integrations.

Veritas InfoScale has customized cloud agents for mission-critical applications that ensure your IT services have the highest possible uptime in the cloud. InfoScale can also intelligently manage HADR for cloud, hybrid-cloud, and multi-cloud environments as a fully automated process. There are several key benefits InfoScale provides in the cloud:

- Availability: Eliminate single points of failure and latency in cloud-native services that can negatively affect your end user's experience. InfoScale's intelligent application clustering provides more advanced application availability than cloud provider load balancing services and can respond to application failures in cloud environments instantly. InfoScale can failover an IT service to other zones, regions, or even other cloud providers, and on-premises data centers.

- Performance: Easily configure high-performance shared storage in cloud networks using native cloud block storage services. InfoScale's intelligent data caching process keeps frequently accessed data on cloud instance ephemeral SSDs, which are used in conjunction with direct-attached cloud block storage services for maximum performance in the cloud, while reducing operating costs.

- Resiliency: InfoScale supports a near-zero recovery time objective/recovery point objective (RTO/RPO) for mission-critical applications data, and can move data between clouds and on-premises data centers with zero data loss. Integrated fencing and input/output (I/O) shipping technologies protect your data from hardware and software failures in the underlying cloud infrastructure, and provide more secure and reliable storage than NFS-based cloud services.

- Mobility: Easily manage hybrid-cloud and multi-cloud environments with support for migration and full HADR architectures that eliminate service provider lock-in and help mitigate the effects of cloud service outages.

InfoScale's enterprise HADR capability for cloud environments also includes an integrated feature allowing application tiers to be grouped together in a way that represents the entire business service that the application provides. This is known as a Virtual Business Service (VBS). A VBS represents a multi-tier application as a single consolidated entity. Using VBS, you can completely automate the recovery or migration of a complex multi-tier application in cloud, hybrid-cloud, and multi-cloud environments—which helps eliminate downtime.

Since the cloud shared responsibility model leaves application HADR to the end user, it is critical for organizations to have a proven enterprise-grade solution to manage application uptime in the cloud. InfoScale's application-aware clustering and high-availability services ensure your applications are always online. If an application goes offline, InfoScale can bring the application back online or move your application to a different system, so it stays online. InfoScale ensures that your applications are highly available within cloud, hybrid-cloud, and multi-cloud environments.
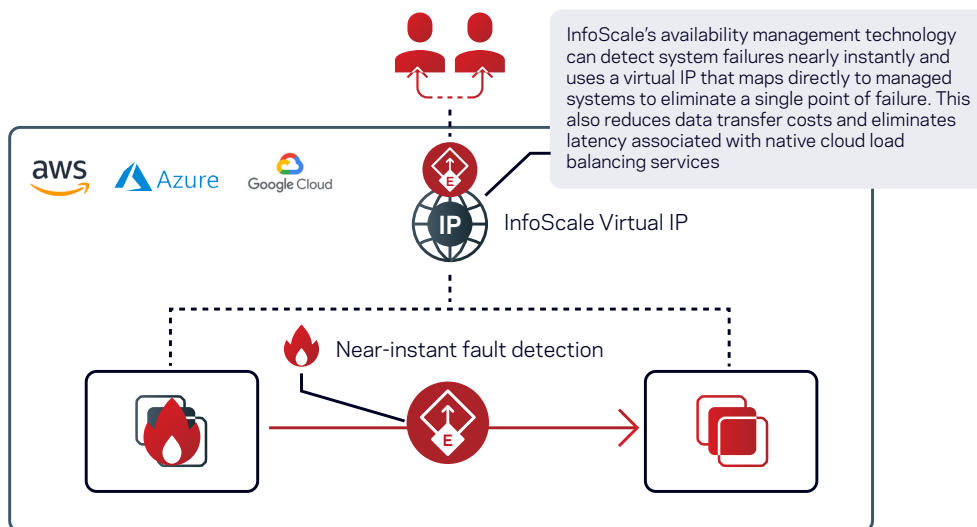

InfoScale's availability management technology can detect system failures nearly instantly and uses a virtual IP that maps directly to managed systems to eliminate a single point of failure. This also reduces data transfer costs and eliminates latency associated with native cloud load balancing services

InfoScale Virtual IP

Near-instant fault detection

Figure 5. InfoScale's application-aware clustering and high-availability services.

Resiliency of data and applications go hand-in-hand. When you combine NetBackup SaaS and NetBackup Flex Appliance, you get fortified data protection for your critical SaaS applications; and immutable, flexible storage your way.

Veritas NetBackup SaaS protects customers' SaaS application data, allowing them to meet their part of the shared responsibility model. Customers who adopt NetBackup SaaS Protection are seeing the following results:

- Complete backup and archiving of all of their SaaS application data

- Fast and flexible data recovery

- Decoupling of data from the storage layer as well as from the SaaS provider's platform

- A data management engine that supports legal discovery, compliance, and data privacy

NetBackup SaaS integrates seamlessly with leading SaaS applications such as Microsoft 365, Google Workspace, Box, and Slack—with enterprise-level hardened security, including:

- Data Encryption

  - In-transit—Ensures your data is being sent to authenticated environments and is protected while in transit. This solution leverages Veritas or customer-provided TLS 1.2 certificates, with 2048-bit+ key support to ensure data transport encryption during transit.

  - At-rest—If attackers are successful in getting to your data, having it encrypted protects it from being exploited. Veritas offers AES 256-bit, FIPS 140-2 certified cryptography with our own key management, while allowing you to leverage your preferred key management using the Key Management Interoperability Protocol (KMIP).

- Role-Based Access Control (RBAC)

  - NetBackup SaaS Protection includes an RBAC layer that offers the flexibility to manage permissions by active Directory (AD) users and groups, along with the concept of customizable roles. Access to NetBackup SaaS Protection is account-based and must pass a Veritas authorization layer, including all requests from users and applications, any of the NetBackup SaaS Protection installable software components that may connect to your tenant, and any application that leverages NetBackup SaaS Protection APIs.

- SOC Compliance

  - Veritas maintains SOC 2 Type II compliance with security and availability trust service principles for NetBackup SaaS Protection.

- Single-Instance Deployment Architecture

  - By default, the SaaS backbone of your NetBackup SaaS Protection tenant is provisioned as a single-tenant, providing the best possible foundation for a secure environment, since your tenant is isolated and running on dedicated resources (no commingling of your data as in multi-tenant SaaS, or competition for resources with other customers).

- Azure AD Identity Provider

  - Veritas relies on Azure Active Directory (AD) as its identity provider for authentication. For greater clarity, Veritas does not manage passwords of the users signing into the service. With Azure AD handling all sign-in to your NetBackup SaaS Protection tenant, features such as multi-factor authentication (MFA) and single sign-on (SSO) can be enabled to work for your instance.

- Directory Synchronization Option

  - For a completely integrated identity and access experience, Veritas offers the option of directory synchronization with your own Azure AD.

- Limited Attack Surface

  - While your NetBackup SaaS Protection tenant can consist of multiple cloud resources, there is only one entry point to the tenant for any user or application requests to the NetBackup SaaS Protection app service (also referred to as the Web App). The key takeaway is that all virtual machines, Azure SQL instances, and other resources within the NetBackup SaaS Protection tenant configuration are not externally accessible, except for blob storage accounts in certain circumstances where security is restricted via time-limited SAS tokens issued after authentication, and authorization to specific items for a specific operation.

Veritas NetBackup Recovery Vault is a cloud-based data retention service that provides a seamless, fully-managed secondary storage option for NetBackup users. It securely retains data in the cloud without compromising crucial security or compliance policies. NetBackup Recovery Vault is designed to simplify your new cloud storage provisioning, and reduce the risk to your data. With its seamless integration with NetBackup, you can scale your protection across your hybrid cloud environment while controlling your costs, so you can:

- Eliminate being blindsided by big cloud bills from unexpected data ingress and egress fees

- Streamline operations with automation and consolidated management

- Only pay for what's used, with a pay-as-you-go subscription service

- Minimize costs while improving service license agreements (SLAs) with client-side compression and deduplication that reduces the amount of data sent, stored, and retrieved from the cloud—saving money and time

For additional data security, Veritas offers NetBackup Flex Appliance solutions bringing together the power of NetBackup software with state-of-the-art servers and storage technology that is proven ransomware resilient. This is an extra layer of safeguards that you can deploy to supplement your hybrid cloud environment, providing the following benefits:

- Multi-Layer Security—NetBackup Appliances strengthen your organization's Zero Trust strategy. NetBackup software provides anomaly detection, policy-based image retention, and KMS encryption. NetBackup Flex, NetBackup Flex Scale, and NetBackup Access Appliance add additional layers of security including immutable storage to provide ransomware protection, integrated container isolation, and a security-hardened OS. Multi-layer security is a proven architecture that helps prevent data loss due to malware infiltration and ransomware attacks, while allowing you to recover more efficiently.

- Easy to Deploy—NetBackup appliances are fast to deploy and ensure end-to-end support of the complete data protection solution. You won't need to load, install, test, integrate, optimize, manage and support multiple components such as a server, storage, operating system, application software, and network connectivity. There's no need to integrate with solutions from other suppliers.

- End-to-End Lifecycle Management—Veritas NetInsights Console is a unified, SaaS-based platform that helps manage your data protection solution through its complete lifecycle. The platform leverages millions of data points from product telemetry, support diagnostics, and the analysis power of the Veritas Predictive Insights engine to deliver actionable recommendations and tailored insights for software and appliance solutions—all within a single interface for a cohesive experience. Veritas provides end-to-end technical support. There's one phone number to call if you need assistance.

Data Sprawl—Eliminate Uncertainty with Data Visibility and Insights

Understanding how your IT resources are used is one of the most important factors in being able to effectively optimize your operations. NetBackup IT Analytics provides consolidated visibility into complex, multi-vendor environments that lets you increase data reliability and reduce costs (see Figure 6). In hybrid multi-cloud environments, NetBackup IT Analytics can provide visibility and analytics for multiple objects in public cloud services, which can help you understand and optimize several data points:

- Account information—Understand how resources are being used within your public cloud subscriptions and determine whether a particular cloud environment is providing the right features and benefits for a particular application or IT service.

- Usage information—Gain access to real-time data on system capacity and protection status with detailed information about cloud resource groups and any associated system, storage, and network resources being used by your IT applications and services. You can use this information to improve application performance, optimize costs, and allow for chargeback within your organization based on actual usage data.

- Comprehensive reporting—The modern and interactive user interface gives you access to drag-and-drop report design and customization. You can access reports on demand or schedule them, with automated distribution to key stakeholders.

This single platform provides you with full visibility into multiple data points—some of which can be unique to particular cloud operating environments. You can effectively architect your applications to take advantage of the cloud resources that are best able to deliver the services your applications require, regardless of which cloud provider is hosting the service.

Cost Reduction—Optimize Your Resources

When you employ the full Veritas solution, you gain better resiliency, powerful insights, and the added benefit of reduced total cost of ownership (TCO) for your hybrid cloud deployment.

Cost benefits from using NetBackup:

- Reduce cloud compute costs as much as 40 percent using elastic snapshots and backups. NetBackup automatically scales compute and memory resources to meet increasing demand during snapshot and backup operations and then releases those resources when demand subsides.

- Reduce storage costs as much as 99 percent by combining cloud-native snapshots with NetBackup's automated snapshot lifecycle management. NetBackup combines cloud-native services such as Azure snapshots with NetBackup data de-dupe technology and intelligent automation to seamlessly reduce the size of snapshots and store them on lower-cost storage.

- Reduce costs for cloud-native data protection by paying just for what you use, when used with NetBackup Elastic Cloud Autoscaling. By automatically provisioning the cloud compute resources and the NetBackup services to meet surges, the required performance demands are always achieved. Optimizing your data in the most cost-efficient and agile way possible is what we do best.

Figure 6: An overview of NetBackup IT Analytics dashboards for a NetBackup environment.

With less management time and a unified, agnostic view of your cloud environment providing the needed insights to optimize your data footprint, Veritas will help reduce your cloud spend and plan for the future.

> "
>
> *Having the Veritas and Microsoft Azure solution in place gives my team, and CTC's entire management team, greater confidence in our ability to recover, should ransomware or other disaster strike."*
>
> **George Kentas,**
> George Kentas, Infrastructure and Network Manager, CTC Plc

25%

reduction in spend on Microsoft Azure storage

Streamlined five different, highly-fragmented solutions into Veritas

Read the Case Study →

Veritas is uniquely equipped to help organizations of all sizes conquer the complexity of managing and protecting their business-critical data. Through our integrated product portfolio, we provide a unified data management experience that delivers unmatched performance and versatility—edge, to core, to cloud. You can rest easy knowing that Veritas enables you to meet and exceed your part within the shared responsibility model of the hybrid multi-cloud environment.

Learn More

Learn more about how you can get the most out of your cloud data management strategy while reducing costs. Visit veritas.com/solution/reduce-it-costs.

Veritas provides you with Cloud Control.

1 https://www.esg-global.com/ransomware

2 https://www.veritas.com/content/dam/Veritas/docs/reports/GA_ENT_AR_Veritas-Vulnerability-Gap-Report-Global_V1414.pdf

3 Flexera 2022 State of the Cloud Report (Cloud Migration Stats - 2022 Flexera State of the Cloud Report)

4 https://www.gartner.com/en/newsroom/press-releases/2021-08-02-gartner-says-four-trends-are-shaping-the-future-of-public-cloud

5 https://virtualizationreview.com/articles/2022/05/20/multicloud-report.aspx

About Veritas

Veritas Technologies is a global leader in data protection and availability. Over 80,000 customers— including 95 percent of the Fortune 100—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 @veritastechllc.

VERITAS™

2625 Augustine Drive
Santa Clara, CA 95054
+1 (866) 837 4827
veritas.com

For global contact
information visit:
veritas.com/company/contact