VERITAS

Accelerate Secure Cloud Mobility

How to manage and strategically plan for moving data and applications between clouds.

White Paper | September 2023

In recent years, organizations have increasingly turned to cloud services to enhance operations and improve efficiency. Cloud mobility—the ability to move data and workloads to the cloud and between cloud environments—has become an essential component of many IT strategies. But moving data and workloads has risks, including data breaches and loss.

The mishandling of data can lead to steep consequences beyond data loss, reputational damage, and legal fines. New regulations such as the European Union's Digital Operational Resilience Act (DORA) establish that you remain the rightful owner of the data you migrate, store, or process in the cloud. To mitigate risk and ensure data protection, it is important to develop a strategy around controlled cloud mobility.

Moving data and applications from on-premises data centers to public cloud service providers (CSPs) can present myriad challenges. These can range from technical difficulties to potential security risks. It is vital that you establish a strategy for controlled cloud mobility to address these challenges effectively, while ensuring data protection and minimizing risks.

Flexibility

The complexity of the migration process is a primary challenge. Data centers often have intricate systems and applications with dependencies on specific hardware or software configurations.

In recent Enterprise Strategy Group (ESG) research, Multi-Cloud Application Deployment and Delivery Decision Making, 86% of respondents reported that they regularly migrate applications and/or data from on-premises locations to the public cloud.

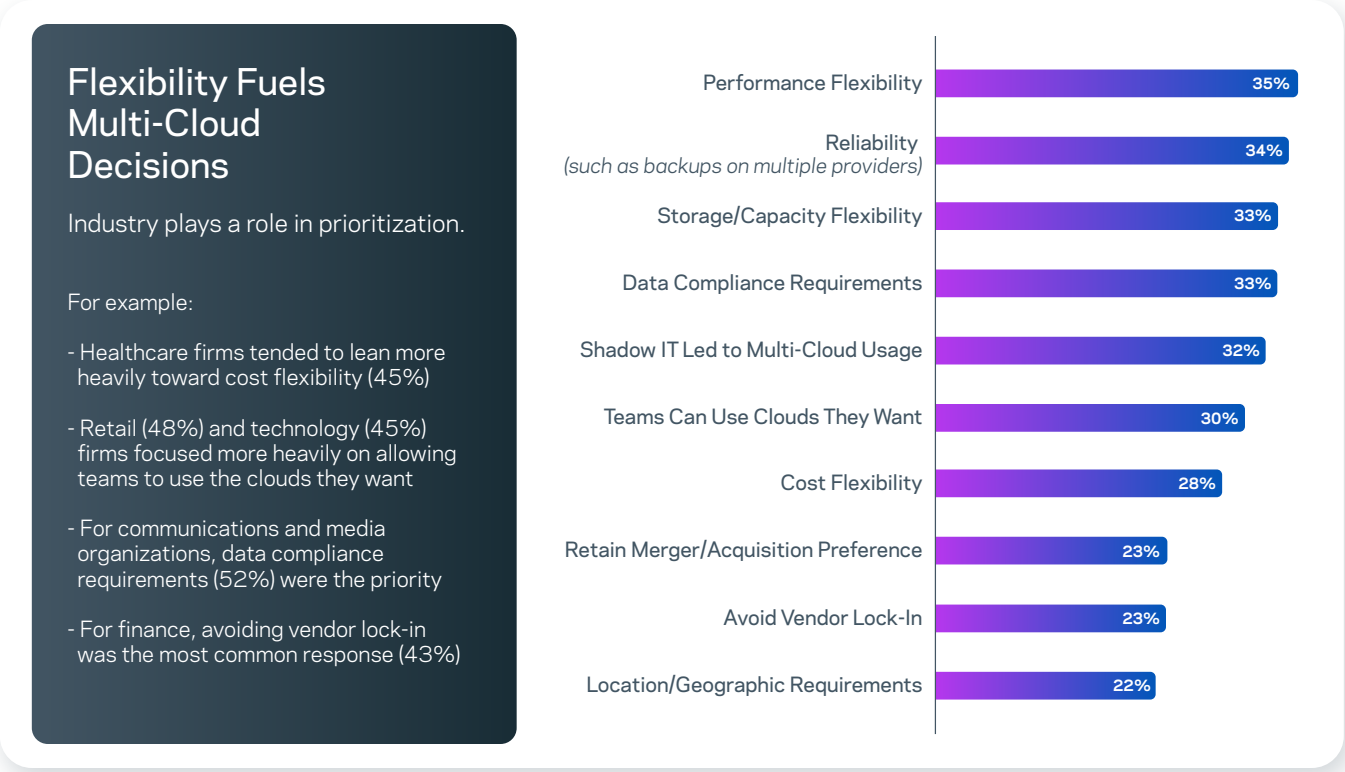

Figure 1. Why is your organization using more than one public cloud infrastructure provider?[1]

In the same survey, 88% agreed that there are strategic benefits to using multiple public cloud providers. The ESG research team dug into why organizations use more than one public cloud. The reasoning varies by industry (Figure 1). Industries with more regulation and governance, such as healthcare and finance, look at cost flexibility and avoiding vendor lock-in. Retail and technology want more flexibility for teams within their organizations.

While flexibility sounds convenient, it can create complexity as well as vulnerability to security risks. Implement a technology strategy that allows smooth management of managed multi-cloud environments. You will also need a data protection strategy that balances usability and flexibility with data protection, incident recovery, and other typical data recovery requirements.

With controlled cloud mobility, you can benefit from the flexibility and scalability of the cloud while maintaining control over data and workloads. Optimize resource allocation, reduce costs, and enhance performance by strategically moving data and workloads between clouds.

With a proper strategy, the migration process can be smooth and manageable to limit risks. Be sure to consider data security, compliance regulations, performance requirements, and cost implications.

Shared Responsibility

Protecting data at any point during a data center or cloud migration requires you to factor in security and data protection of the target location. When moving from one managed data center to another, you have control of the source and target locations. But when migrating to or from a CSP, it is important to factor in the *shared responsibility model*.

Under the shared responsibility model, you share responsibility for security and data protection with the CSP. The specific division of responsibilities often varies depending on the type of cloud service (Figure 2), such as infrastructure as a service (IaaS), platform as a service (PaaS), or software as a service (SaaS).

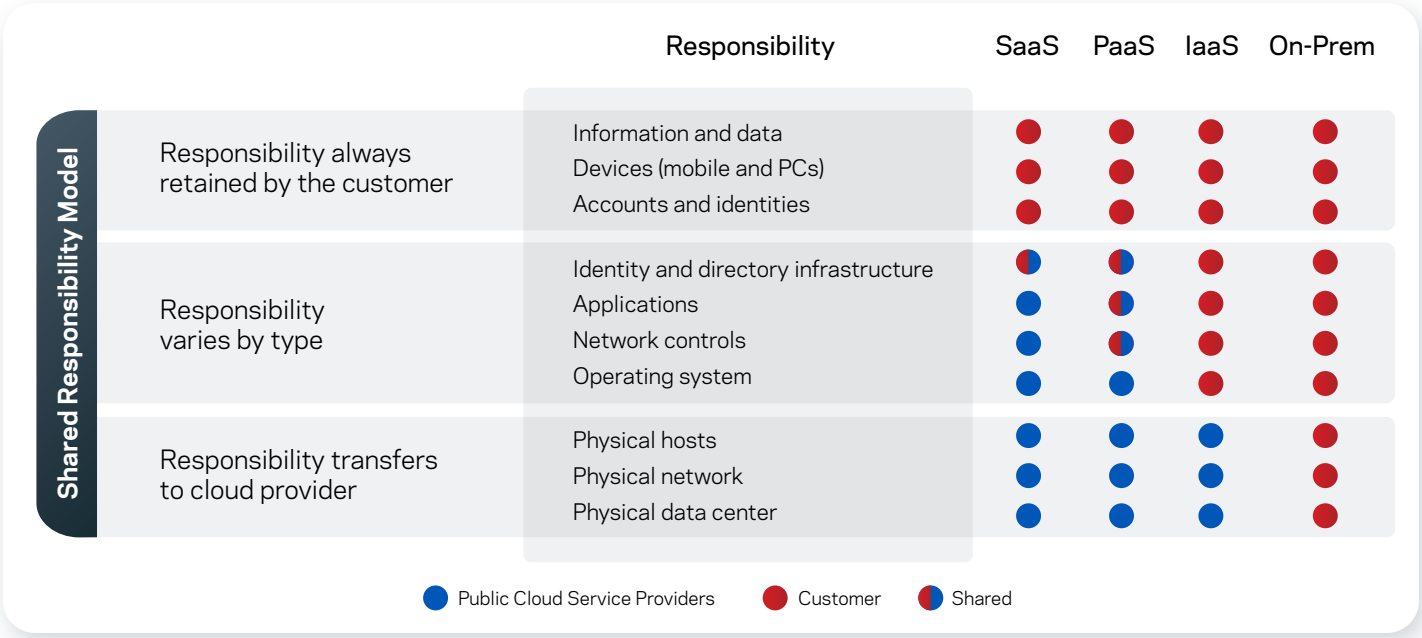

Figure 2. Division of responsibilities in the shared-responsibility model.

When it comes to cloud mobility, understanding the shared responsibility model is crucial to manage risks and ensure data protection.

- CSPs are responsible for securing the underlying infrastructure and ensuring the availability of the cloud services. This includes physical security, network security, and maintaining the platform security.
- You are responsible for securing your data and workloads within the cloud environment. This means implementing appropriate access controls, encryption, and monitoring mechanisms to protect sensitive information.

When moving data and workloads between clouds, you need to understand and uphold your responsibilities around data availability, security, and protection. As a best practice, review your selected CSP data protection contracts prior to data migrations and identify any gaps that need resolution.

Dependencies

A multi-cloud strategy provides flexibility and resiliency. At the same time, it can be very complex and time-consuming to migrate and configure a multi-cloud environment in a way that accounts for your application requirements and dependencies.

Transferring data from one storage system to another is much like moving homes. You need to pack up everything from your current residence. You could just throw everything into one large truck. Or you could carefully box and label content by rooms and functions, so it's easier to unpack and move into your new residence.

Cloud Mobility with Veritas

Veritas recognizes the need for seamless integration between on-premises and cloud environments, and provides solutions that enable you to embrace hybrid and multi-cloud architectures, while maintaining control over your applications and data. Veritas cloud data management solutions simplify managing applications and data across various cloud platforms, ensuring data availability, protection, and security.

Visibility and Observability

To start the cloud migration process, you ideally need complete visibility into the state of your applications so that you can manage infrastructure requirements properly. Respondents to the ESG study agree: 77% identified that, "Our application deployment planning is hindered by a lack of visibility into specifics on spending for public cloud services."

Migrating applications between clouds can introduce latency and impact application performance. It may be beneficial to prioritize the migration of high-value or business-critical applications while using a more cost-effective cloud environment for less critical or infrequently accessed data.

Veritas IT Analytics provides unified insights across hybrid and multi-cloud environments. A global dashboard provides a single source for all data information—current alerts, history, and critical trends—so you can resolve issues quickly.

Cost implications are another critical consideration when developing a plan for controlled cloud mobility. Moving data and workloads between clouds can incur additional costs, including data-transfer and storage fees in the target cloud environment. Use IT Analytics to understand exact costs across distributed infrastructure; rightsizing and optimizing to reduce costs wherever possible.

Pre-Migration Efficiency Improvement and Cost Reduction

Once you have a clear view of your hybrid and multi-cloud data footprint, you can take a few more proactive steps before migration. Granular application-level visibility is coupled with improved workload performance by maximizing the benefits of ephemeral, instance storage volumes.

Veritas data protection includes deduplication technology that eliminates redundant data while identifying, compressing, and encrypting the necessary data. Benefits of deduplicating data at the source include:

- **Bandwidth optimization:** Reducing the amount of data transferred can minimize the impact on network resources and ensure a smooth, efficient migration process
- **Faster backup and recovery:** Eliminating duplicate data means you can complete backups faster and reduce storage requirements
- **Cost savings:** Reducing the amount of data for the target cloud environment helps optimize storage resources and lower cloud storage costs

Data Protection Across Distributed Infrastructure

Seamless integration between on-premises and cloud environments is critical. Veritas enables you to embrace hybrid and multi-cloud architectures while delivering protection, continuous uptime, and rapid recovery of your enterprise systems. From backup and recovery to data migration and workload portability, Veritas Alta™ data management solutions simplify managing data across cloud platforms, ensuring data availability and security (Figure 3).

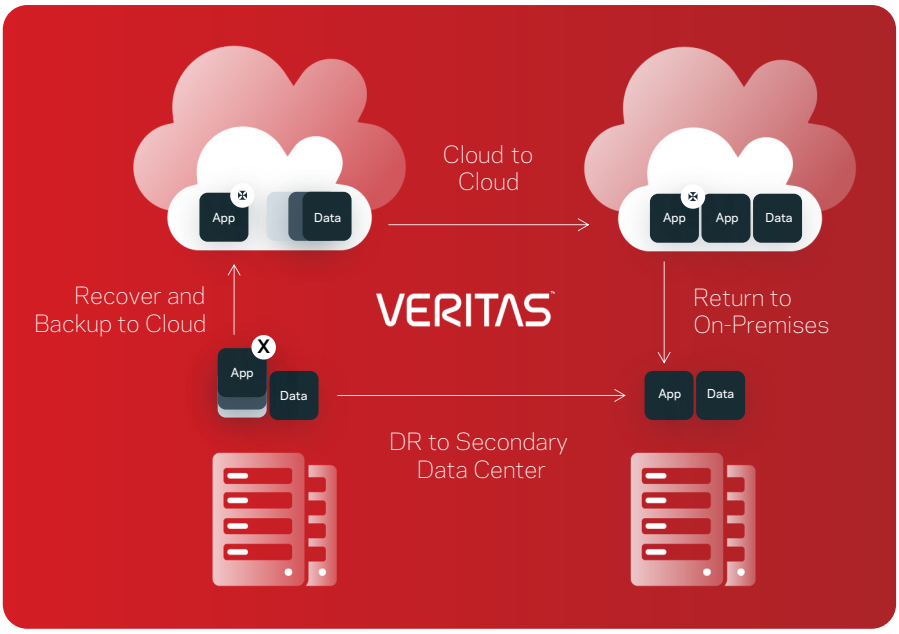

Figure 3. Veritas data protection across a distributed infrastructure

Veritas has a long-standing history as a market-leading data protection company. Data protection is a significant component of how we support your cloud mobility strategy. With the Veritas Resiliency Platform—now integrated directly into Veritas NetBackup™ and Veritas Alta™ Data Protection—we deliver multi-cloud automated resiliency at scale.

You can evolve from reactive resiliency operations to proactive resiliency risk remediation, while easily and efficiently managing your data across multiple locations. Create customized protection policies and storage lifecycle policies. Be sure they include automated rehearsals and cleanups to ensure resiliency and recovery readiness for your managed infrastructure. And you can automate recovery from backups using the latest image or another image from a previous time range, if needed. Most importantly, you can configure automated recovery orchestration to, in, and across clouds including—and between—different zones and regions in the cloud.

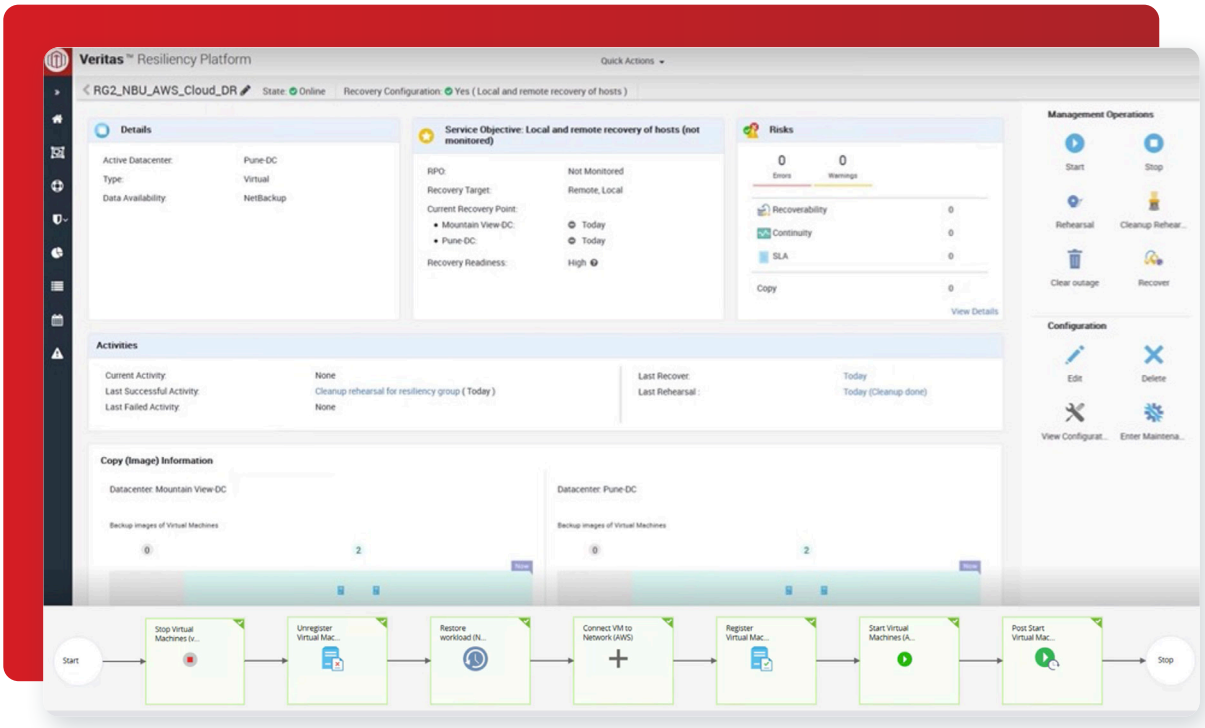

Figure 4. Example of a recovery operation for virtual machines in an on-premises data center to the cloud (in this case, an AWS instance)

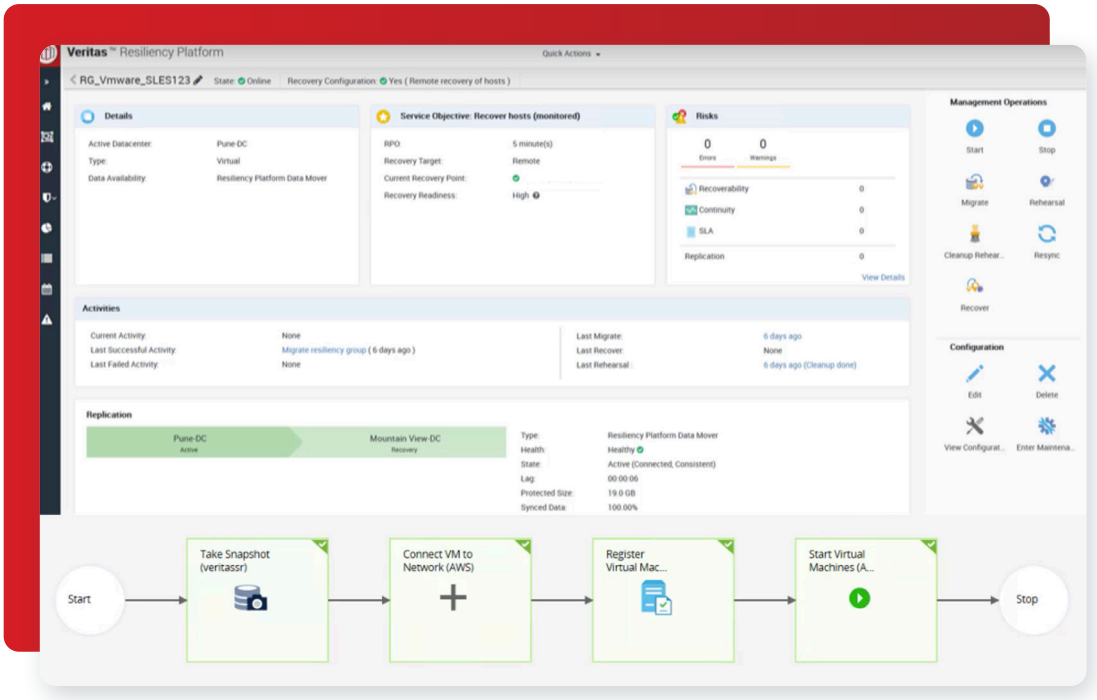

Figure 5. Example of a recovery operation using Data Mover for virtual machines in an on-premises data center to the cloud (in this case, an AWS instance)

Veritas Alta Data Protection optimizes backup copies of cloud snapshots to reduce the cost of storing protection points in the cloud. Once it is stored in a CSP, there is no need to rehydrate the deduplicated data. You can maintain the optimized data footprint and more easily move data to less expensive storage tiers. It also enables you to move copies to different clouds, or back to the data center.

Extending Cloud Data Protection to SaaS Applications

What if you already have some presence in the cloud through your use of SaaS applications? While the data might already be in the cloud, it is typically managed separately. And that adds complexity and risk to your overall data protection strategy.

With Veritas Alta™ SaaS Protection, you can expand your cloud data protection to include your existing SaaS applications, including:

- Box
- Google Drive
- Microsoft 365 (Exchange Online, SharePoint Online, OneDrive, Teams)
- Salesforce
- Slack

Veritas Alta SaaS Protection also provides data protection for the most-used PaaS platforms, including:

- Azure Blob Storage
- Azure Files Storage
- Amazon S3

By incorporating your SaaS data into your cloud mobility strategy, you can simplify your storage target management to recover SaaS data. This also adds flexibility for you to give your users the ability to do self-service restores of their own data.

Compliance while Migrating to the Cloud

Compliance and regulatory requirements are another critical challenge to cloud mobility. Depending on your industry and region, you must adhere to specific data protection regulations and privacy laws. Consequently, your cloud mobility strategies must comply with these regulations to avoid legal repercussions and reputational damage.

The integrated approach delivered by Veritas Alta™ Archiving and Migration Services ensures compliance through the data migration process. Optimize data retention and locate relevant data quickly for discovery, supervision, privacy, and legal challenges. Benefit from advance remediation of items that fail to migrate with full pre- and post-migration auditing for every item moved.

Cloud Mobility Services

There are many elements to consider when planning and executing a controlled migration to a cloud environment. It used to be that you had to host business-critical applications on-premises to meet business service level agreements (SLAs). CSPs are now more capable of supporting business-critical SLAs. The Veritas Application Mobility Service is designed to automate application migration and help get you to the cloud with confidence.

By automating the full cloud migration process, the Application Mobility Service simplifies migrating applications with several benefits:

- **Mobility:** Eliminate error-prone and time-consuming manual steps and processes with the option to reverse course and move out of the cloud if needed
- **Availability:** Ensure that your applications are always online during migration and are deployed in a highly available configuration once they're migrated
- **Predictability:** Customize plans and fully automate the migration process, ensuring predictable results while delivering more efficient cloud resource utilization

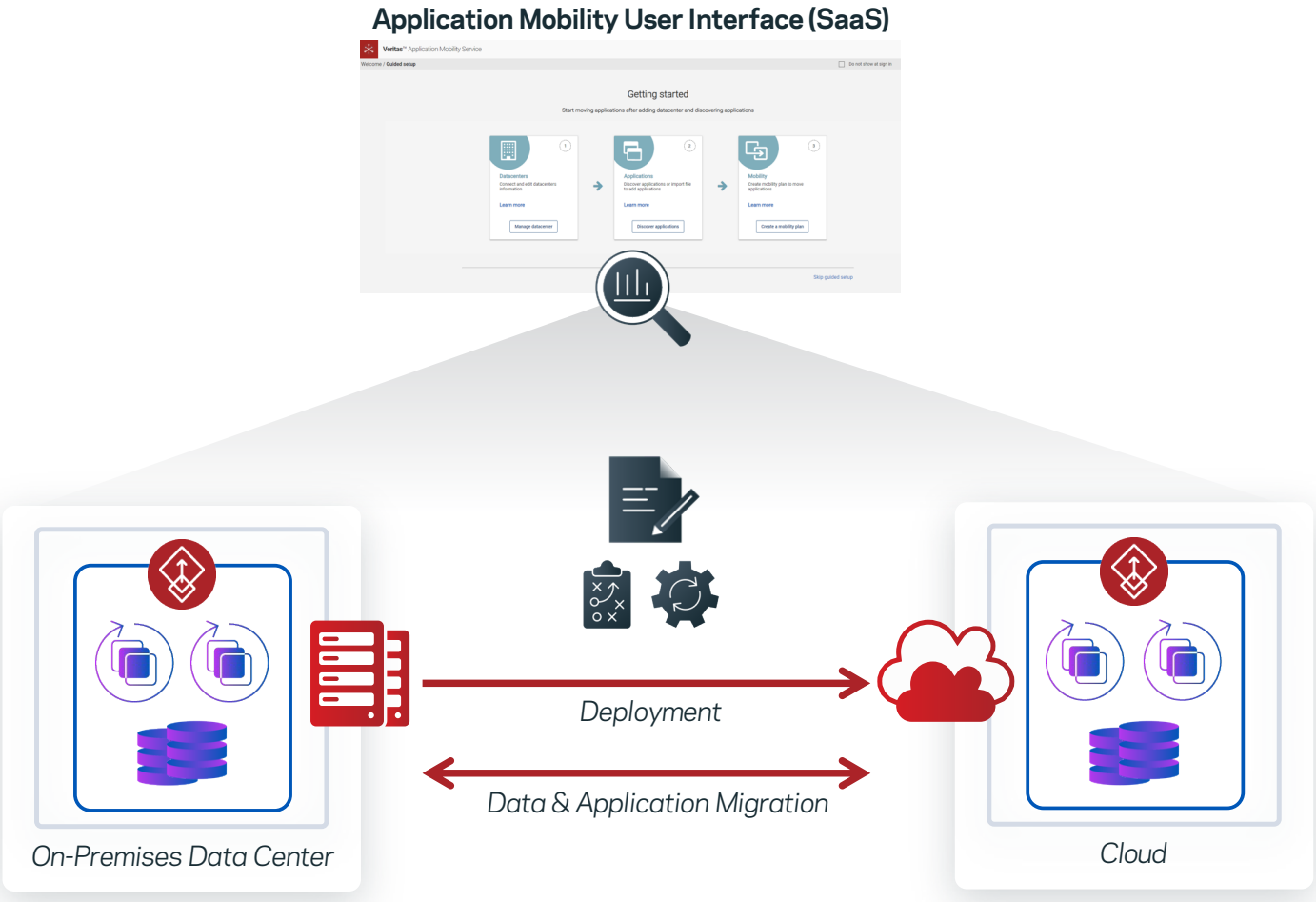

Figure 6. Automated application discovery and migration to the cloud

Once you've migrated to the cloud, Veritas Alta™ Application Resiliency gives you the agility to move critical workloads between CSPs. Doing so can increase application availability, resiliency, and flexibility while preventing you from becoming locked into a single cloud provider.

Veritas Autonomous Data Management

Veritas provides the most secure data management, with the least management overhead. Benefit from optimal data management that self-updates, self-optimizes, and self-provisions in multi-cloud environments.

- Self-updates include the ability to predict, identify, and repair service errors or performance issues
- Self-optimization uses AI and ML to adapt and adjust data protection and management policies and services
- Self-provisioning assigns appropriate protection and management policies; it also deploys the correct data management applications and services without human involvement

Veritas Cloud Scale Technology is a containerized, AI-powered architecture that provides autonomous and unified data management services in the cloud with native functionality to assist with backup-driven cloud migrations. It empowers you to perform self-service data recovery and protection, and free up IT staff to focus on strategic and transformational activities.

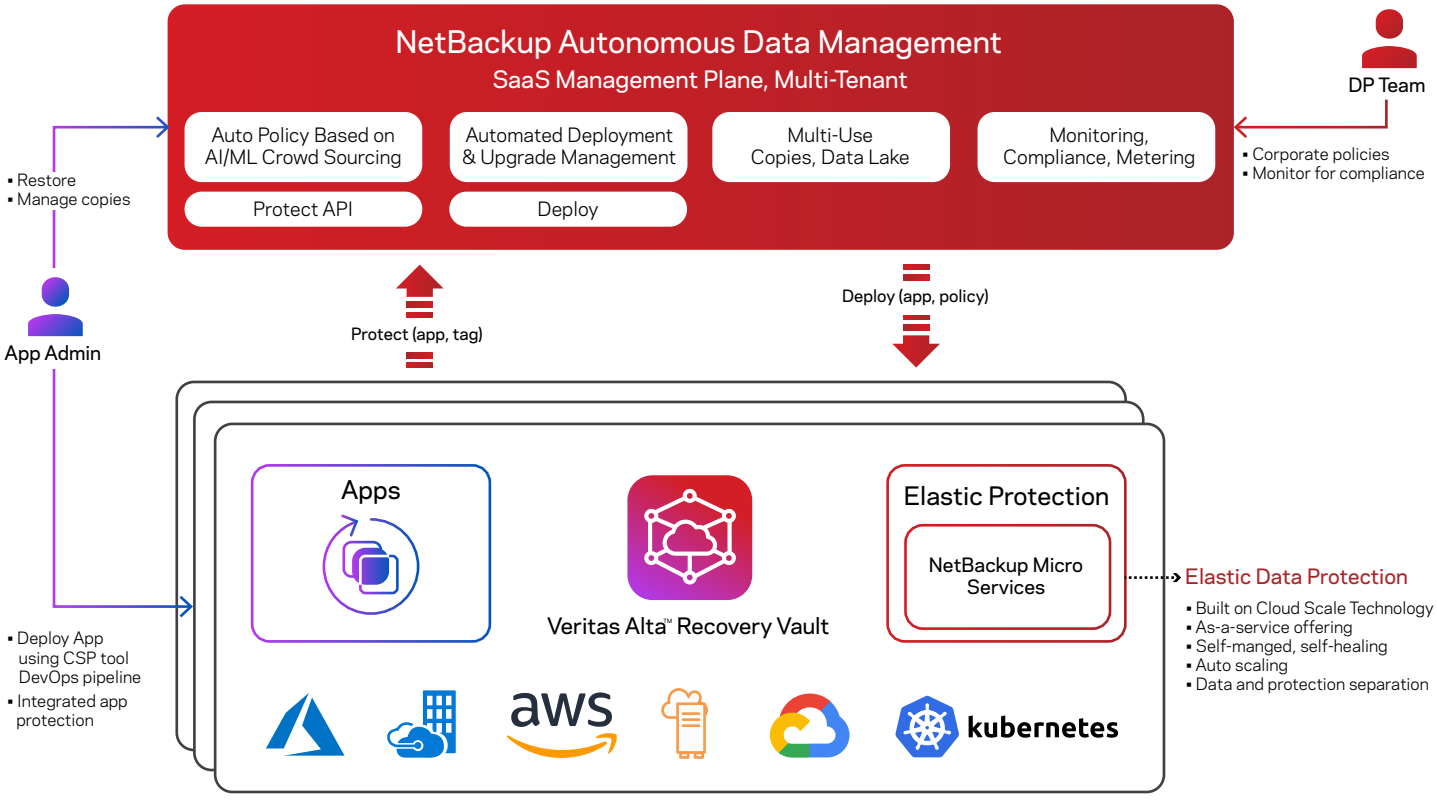

Figure 7. Veritas Autonomous Data Management

Veritas intelligent groups are an example of evolving toward autonomous data management. Backup admins need to efficiently protect assets as they are created, especially when managing complex environments that change at a high rate, such as Kubernetes. Intelligent groups automatically protect assets based on criteria you specify (queries) or labels. It automatically stays up to date with changes in the environment.

Veritas offers Veritas Alta™ Backup-as-a-Service (BaaS)—an easy-to-use, fully hosted enterprise data protection solution. Use it to reduce complexity, vulnerabilities, and cost of self-managed infrastructure. It's coupled with Veritas Alta™ Recovery Vault cloud storage-as-a-service—a fully-managed, cloud-based data-retention service. Veritas Alta Recovery Vault simplifies data retention and streamlines oversight for provisioning, data management, monitoring of cloud storage resources, and compliance with retention policies.

Enterprise data management must meet the needs of emerging multi-cloud infrastructures because that's where customers and companies have their critical data. Veritas delivers a cloud-native, elastic solution for maximum availability, protection, and performance—regardless of where your cloud migration journey takes your data.

Learn more about **hybrid cloud and multi-cloud solutions**. →

[1]. Enterprise Strategy Group Research Report, Multi-cloud Application Deployment and Delivery Decision Making, June 2023.

About Veritas

Veritas Technologies is a leader in multi-cloud data management. Over 80,000 customers—including 91 percent of the Fortune 100—rely on Veritas to help ensure the protection, recoverability, and compliance of their data. Veritas has a reputation for reliability at scale, which delivers the resilience its customers need against the disruptions threatened by cyberattacks, like ransomware. No other vendor is able to match the ability of Veritas to execute, with support for 800+ data sources, 100+ operating systems, 1,400+ storage targets, and 60+ clouds through a single, unified approach. Powered by Cloud Scale Technology, Veritas is delivering today on its strategy for Autonomous Data Management that reduces operational overhead while delivering greater value. Learn more at www.veritas.com. Follow us on Twitter at @veritastechllc.

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

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

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