Tech Mahindra

Whitepaper

Evolution of Data Protection-as-a-Service with the Emergence of Cloud Solutions



Connected World. Connected Experiences.



Abstract

Many organizations have adopted a cloud-driven IT approach that leverages hybrid and multiple cloud environments. As a result, data is stored across multiple environments, which can create a variety of data protection challenges. Application downtime, ransomware attacks, legacy backup tool failures, and multiple management tools can put the organization's planned journey to the cloud at risk. Customers can mitigate this risk and accelerate their cloud journey by planning and implementing the required protections for workloads running in both hybrid and multi cloud environments by implementing a modern data protection solution.

Key Takeaways

01

Hybrid and multi cloud data protection

03

Simplified management

05

Security and compliance

07

Cost optimization

02

Cyber-attack protection

04

Fast and reliable disaster recovery

06

Operational efficiency improvement



Introduction

Data protection is a top priority for organizations today. Unprotected data carries increased risk of cyber-attacks, data loss, application downtime, financial or reputational loss. There are a wide array of data protection challenges and associated risks that legacy backup tools and techniques are not capable of addressing. To adequately respond to these threats and their associated disaster recovery challenges, IT organizations need to adopt modern data protection solutions.

Industry Landscape

Data is sprawled across various locations such as on-premise data centers, multiple cloud locations with PaaS or SaaS platforms, edge, or branch locations. Additionally, data is stored as structured or non-structured, in various types of databases and new technologies such as container microservices. Organizations must take control of these data sources and protect them. Cyber-attacks are on the increase and target even larger numbers of enterprises. The damage caused by such attacks can be extremely disruptive to business operations and not easily quantifiable. Bad actors commonly target backup copies to prevent data recovery. Such backup data must be adequately protected against attack for organizations to mitigate business disruption and provide reliable and fast recovery. Organizations are familiar with

the need for a comprehensive, cost-effective business continuity, and disaster recovery solution. While it is accepted that natural disasters, application outages, and human error can cause very high financial, reputational, brand, and compliance breach losses, building an active disaster Recovery site is very expensive. Hybrid and multi cloud environment usage is increasing, and legacy backup tools can't seamlessly integrate with them. Data protection tools therefore need improved integration with the variety of cloud environments in the market to be able to take advantage of the benefits of cloud elasticity and cost optimization. Organizations must also consider building for compliance with regulatory requirements to manage, govern, and secure data in the cloud.

Data Protection with Rubrik and Microsoft

Tech Mahindra's Infrastructure and Cloud Services cover the entire infrastructure stack and supports new age technologies that can help enterprises embrace a truly digital transformation. With our strong alliance ecosystem, we help deliver comprehensive solutions tailored to the unique business needs of our clients.

Tech Mahindra has partnered with Rubrik and Microsoft to provide a holistic modern data protection solution that meets customer's needs. Rubrik has been named a leader for enterprise backup and recovery software solutions by a leading analyst firm. Microsoft Azure is a leader in 2021 for cloud infrastructure and platform services, a platform that can seamlessly integrate with modern enterprise backup and recovery solutions.



Reference Azure Hybrid Cloud Deployment Scenario

The reference solution has single on premises data center site. They also have two Azure regional datacenter sites with various applications workloads. The on-premises data center is connected with Azure cloud data centers with good network connectivity.



Figure 1: Reference Architecture - Hybrid Cloud Data Protection with Microsoft Azure and Rubrik

Deployment Scenario

The reference deployment scenario has Azure hybrid cloud, on-premises data center site, multiple cloud region sites, cloud native backup, replication using Azure cloud, as long-term retention

- Organization has a single on- premise's data center site with application workloads and local storage. There are two Azure cloud data center regional sites, Azure cloud region 1, Azure cloud region 2, and on premises data center site. All data center sites are connected with good network connectivity.
- The on-premises workloads are backed up using a local Rubrik 'Brik' server. The backup copies are replicated to Azure cloud data center Region 1 and Azure cloud data center Region 2
- The Azure cloud data center workloads are backed up using Rubrik cloud cluster enterprise storage (CCES) at each cloud region data center site and backup copies are replicated to another remote Azure region. Rubrik security cloud platform provides centralized management for overall hybrid cloud data protection.



Why is it Beneficial to Consider the Rubrik Solution Components in the Deployment Scenario?

The deployment scenario has workloads running in on-premises environment and various Azure cloud regional data centers. The modern data protection solution components defined below addresses protection of on premises datacenter workloads as well as cloud native workloads. Using capabilities of backup data replication and archival, it also addresses the fast reliable disaster recovery in case of data center failures. All these assets are managed and protected using single unified console efficiently.

Following Rubrik and Microsoft solution components are used



Rubrik Security Cloud (RSC) SaaS platform

Rubrik delivers its services through a cloud-based central management interface. RSC provides cloud-native protection for IaaS and SaaS workloads. Using RSC and Microsoft API, VM snapshots, and relevant meta-data can be backed up to Azure Blob storage.



Rubrik Cloud Cluster

Rubrik Cloud Cluster is a software instance in the public cloud. It is deployed as software in Azure virtual machine for data protection activities such as backup, recovery, archival, and replication Rubrik Cloud Cluster protects cloud-native workloads including databases and file sets.



Rubrik Brik

Rubrik Cloud Data Management Standard flash appliances available in various models, based on CPU, memory, network, and storage specifications. The on-premises plug-and-play appliances that securely delivers backup, recovery, analytics, and compliance across data centers and clouds.

Most organizations operate in cloud, however there is some footprint on-premise. A modern data protection solution with Rubrik and Microsoft provides hybrid, multi cloud data protection capabilities. Using modern data protection solution with Rubrik and Azure cloud, following data protection use cases are achievable:

Azure Hybrid Cloud Data Protection Use Cases

Efficient Backup and Recovery

This can be done using Microsoft API, VM snapshots, and relevant meta data backed up with Azure Blob storage. It helps in instantly searching and restoring data in the cloud, on-premises environment, including files, folders, file sets, VMs, and database instances.

- In case of on-premises physical server or virtual machine application failure, quick search, instant file, and virtual machine application can be recovered using on-premises local backup copy
- In case of cloud virtual machine or application failure instant recovery can be done using cloud cluster elastic storage

Backup Replication and Disaster Recovery

Application workloads backup data replicated within Azure cloud regions.

- During disaster if one of the Azure cloud regions fail, disaster recovery can be established from other Azure cloud region
- In case of on-premises data center failure, cloud region data center site can be used for backup recovery, using secondary backup copy available, with additional compute and storage provisioning.

Cost Effective Archival and Disaster Recovery

Modern data protection solution seamlessly integrates with cloud to provide cloud storage as long term retention, instead of tape backups used in legacy backup solutions. Long-term retention in the cloud with intelligent data tiering saves time and costs. It also helps to address the regulatory requirements

- During disaster recovery, it helps in instantly locating a file with predictive search from archival backup copy and download to restore in any location.
- Conversion of the VMware or Hyper-V into a VHD file to launch an Azure virtual machine in the cloud, prevents the need for any data to exit the cloud region, saving both bandwidth and egress

Application Restore to Cloud

Instead of using a dedicated disaster recovery site, during on premises data center failure, application instances can be instantiated in Azure cloud, using backup copy replicated to cloud, with additional compute and storage provisioning. Rubrik solution can convert application data (VHD) into an Azure virtual machine on demand.

Migrating Test/Dev to Microsoft Azure

On premises application can be migrated to cloud for test/ development purpose using backup copy replicated to cloud. Rubrik solution can convert application data (VHD) into an Azure virtual machine on demand.

How TechM Provides a Competitive Edge with its NXT.NOW[™] Framework

Multi cloud environment has emerged new data protection challenges. Data stored in various locations; formats increased data management complexity. The data loss risk has increased with malware attacks and disaster scenarios. IT leaders have recognized the need for addressing these challenges using modern data protection solution.

Using a combination of the Rubrik and Azure cloud platform services, Tech Mahindra is equipped to address modern data protection requirements with following benefits :

Ransomware Protection

Ransomware attacks are increasing on a daily basis. Legacy systems rely on insecure storage and can therefore be vulnerable to cyberattacks. Rubrik Zero Trust Data Management stores data in an immutable format so that no external client can read, modify, or delete it. Rubrik Data Security Command Center proactively analyses behavioral patterns and flags any unusual activity. As ransomware attacks are now targeting backup copies to make recovery impossible, using the Azure Cloud to provide an "air gapped" copy of the data provides a secure and reliable source for data recovery.

Business Continuity, Disaster Recovery, and Cost Optimization

Natural disasters such as flood, earthquakes, tsunamis, and storms can cause extensive damage to organizations. When such scenarios occur and failover is required, supporting infrastructure can be rapidly provisioned using the on-demand capability of the Azure cloud. This on-demand cloud capability provides significant cost savings as compared to setting up "Hot-DR Site" infrastructures. Rubrik Zero Trust Data Management can perform data protection, replication, orchestrated application recovery, and application migration across hybrid IT environments. Intelligent recovery from disaster helps reduce both time and cost significantly. Implementing business continuity and disaster recovery in the cloud using a modern data protection solution like Rubrik Zero Trust Data Management can help organizations realize tangible cost savings.

Simplicity and Manageability

The ability to have a single view and ability to manage data protection across multiple environments and platforms can greatly reduce management overhead. Rubrik Zero Trust Data Management provides modern data protection for workloads and services running in multiple cloud platforms. Customers can eliminate scheduling and maintaining backups across multiple different clouds and services. IT organizations can save time by simplifying and automating policy management with a single SLA policy engine operating at cloud scale. Admins can perform instant recovery and unify backup / recovery under a single control plane for global management and visibility across their cloud, applications, and data centers.

Operational Efficiency and Compliance

A modern data protection solution reduces admin effort through increased backup automation, replication, fast recovery, and archival which helps to achieve operational efficiency and compliance. Modern data management automates backup jobs reducing management complexity, creating policies quickly by selecting desired backup schedule, retention, and replication. It can also orchestrate service level agreements (SLAs) across the entire data lifecycle. Through this solution, IT teams can improve operational efficiency, and increase speed, while maintaining data securely in the cloud and providing increased organizational compliance with regulations such as HIPPA and GDPR.

Data Protection for Multiple Platform Support

Rubrik Zero Trust Data Management supports data protection for industry leading platforms. Multi hypervisor support such as VMware vSphere (ESXi), Microsoft Hyper V, and Nutanix AHV. Broad support for industry leading databases across on premises, cloud including Microsoft SQL Server, Oracle, SAP HANA, MongoDB, Cassandra, and DataStax. Comprehensive support for physical servers / virtual machines running Windows, Linux, and Unix (IBM AIX and Oracle Solaris) operating systems to provide a single, consolidated solution for all NAS technologies.

Microsoft 365 Protection

This helps in ensuring that critical Microsoft 365 data is secure, easily discoverable, and always accessible with air gapped backups for data protection. It also enables secure setup in minutes, policy based management at scale, instant search, and restore.

High Performance NAS Backup

Overcome the challenges of legacy backup and archive solutions with a single, consolidated solution for all NAS technologies. Manage petabytes of file data between on premises systems and the cloud. Unlock policy-driven simplicity, cost savings, and high performance at scale across all NAS and any cloud. Simple, rapid data mobility across all file infrastructure for storage freedom to any on-premises or cloud NFS/S3 target. Real-time indexing and powerful search for up-to date file visibility and analytics across your unstructured data

Modern Database Protection

Unify-backup, recovery, archival, replication, search, analytics, compliance capabilities, and management of self-service clones into a single platform. Delivers broad support for industry leading databases across on-premises, cloud including Microsoft SQL Server, Oracle, SAP HANA, MongoDB, Cassandra and DataStax. Automate database discovery and manage protection of large-scale database environments.



With digitization in business, organizations are deploying or migrating applications to the cloud. While some applications are still required to be run on premises the modern data protection solution is an essential requirement to protect all these assets in hybrid and multi-cloud environments, using (backup, replication, archival) to recover data from disasters like service outages, natural calamities, and data loss. The modern data protection solution approach helps in protecting data during the entire lifecycle of the data, from creation to expiration, with better performance, scale, and achieving operational efficiency at lower cost.

Authors



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Guru Prasad C P has an experience of over 22 years with over 8 years specifically in the public cloud working in Asia, ANZ, Europe and the US. His experience includes, setting up practice teams aligned to industry verticals and horizontals, analyst interactions for positioning the offerings, hiring the right talent, involving in strategic exercise mergers and acquisitions, organization building, creating frameworks and IP's. At Tech Mahindra he is responsible for practice and competency development which includes alignment with OEMs for solutions, offerings and adoption of new technologies, customer interfacing where he acts as a trusted advisor in providing unbiased views/opinions and aligning with organization goals at the same time, value creation, developing practice areas deal making, solution support for large deals, and carve out deals from azure and hybrid cloud perspective.



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Milind Dhuri is a Principal Solution Architect in Tech Mahindra, has vast experience close to about two decades in public, private and Hybrid cloud solutions. His experience includes enterprise cloud strategy, presales, architecture design, consultancy. At Tech Mahindra as part of Azure Cloud Practice, his role involves various tools and product's evaluations including third party / cloud native solutions. In Data Protection solutions areas, work with partners and OEMs on joint solutions offerings. He comes from a Multi / Hybrid cloud background which help customers to provide pointed solutions such as backup / recovery, BCDR and ransomware protection.





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