

Migrating and Protecting Microsoft workloads on AWS with APN Storage Partner Solutions

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Abstract

Amazon Web Services (AWS) offers a broad set of global compute, database, application, and deployment services that either use or are designed to work with Microsoft technologies. These services help organizations move faster, lower IT costs, and scale applications.

This whitepaper covers Amazon Partner Network (APN) Storage Partners that offer migration and data protection solutions for Microsoft workloads in enterprise environments, including Windows Server, Microsoft Exchange, Microsoft SQL Server, and Microsoft SharePoint. Leading APN Storage Competency Partners, including Veritas, Commvault, Veeam and Druva, are covered in this paper.

Introduction

Most small and large IT shops have Microsoft applications running in some capacity. Some have standardized completely on using Microsoft technologies, whereas others choose to use a mix of Microsoft and non-Microsoft applications. Common Microsoft Applications found in enterprise environments include Microsoft Windows Server, Exchange, SharePoint and SQL Server.

Microsoft on AWS Platform

Amazon Web Services (AWS) provides a flexible, scalable, secure and cost-effective infrastructure for businesses to run their Microsoft workloads. Benefits include:

- Availability of wide variety of instance types and Amazon Machine Images (AMIs) for most Windows Operating systems and applications
- Ease of application and infrastructure deployment via tools like AWS Elastic Beanstalk and AWS CloudFormation
- Automatic scalability via auto-scaling features to expand and shrink infrastructure on demand
- Shift capital expense to operating expense with pay-as-you-go pricing
- Bring your existing on-prem Windows licenses to AWS to save on software licensing costs
- 2x faster performance for workloads like Microsoft SQL Server, when compared with next largest cloud provider ¹

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in AWS. Amazon EC2 running Microsoft Windows Server (2003 R2, 2008, 2008 R2, 2012, 2016 and 2019) is a secure, reliable, and high-performance environment for deploying Windows-based applications and workloads, including most versions of Microsoft Exchange, SharePoint, and SQL Server.

APN Storage Solutions

AWS Partner Network (APN) Advanced Technology partners, including Commvault, Veeam, Veritas, and Druva, support data protection and migration of Windows workloads to AWS.

Commvault, Veeam, and Veritas are customer-deployed solutions and the architecture typically consists of agents deployed on Windows application servers to capture application consistent state, Media Servers that help move the data from the application to storage targets such as Amazon S3, and finally a Master Server to centrally manage the data protection environment.

Amazon Web Services – Migrating and Protecting Microsoft workloads on AWS with APN Storage Partner Solutions

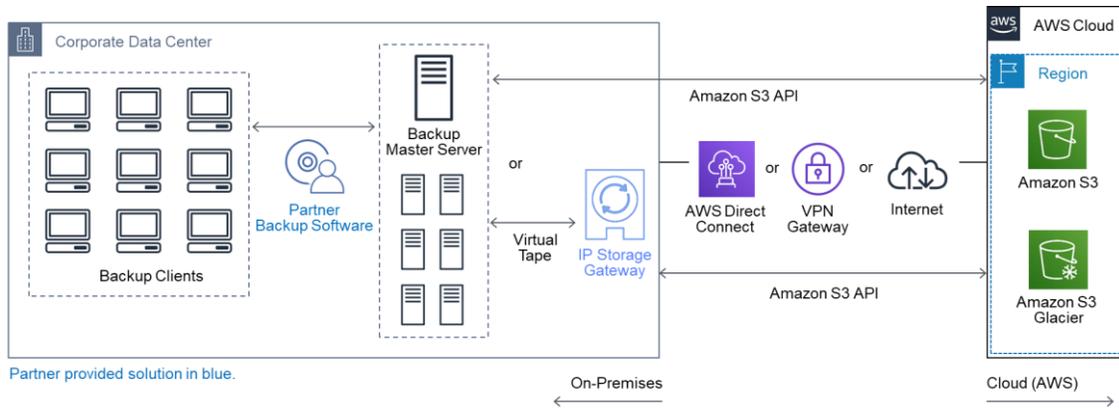


Figure 1 – Customer-deployed partner solution

Druva runs as a SaaS service on AWS with agents deployed on Windows application servers that need to be protected.

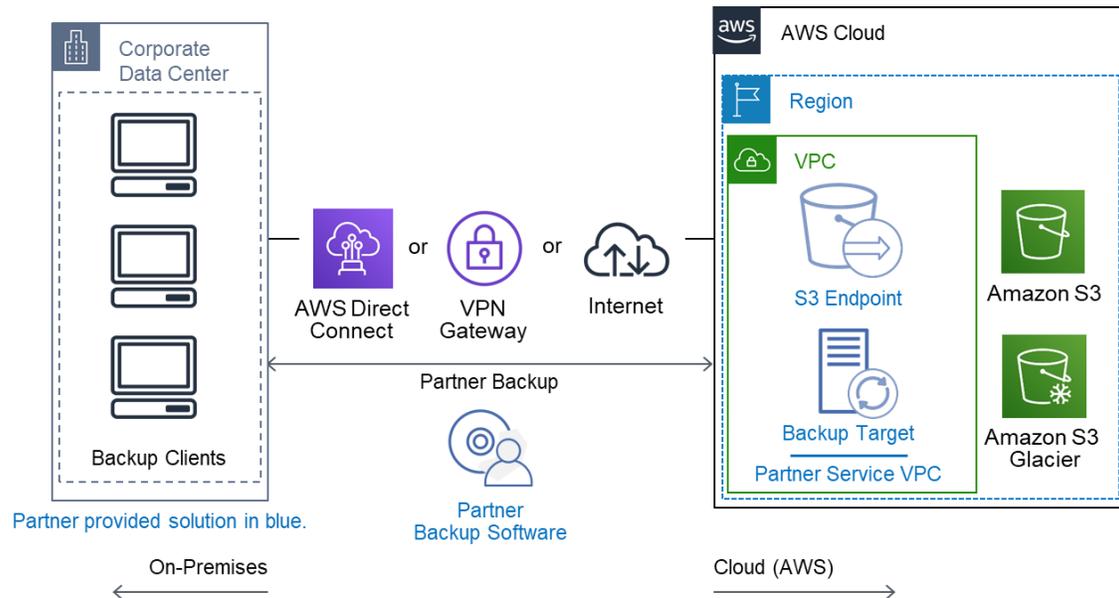


Figure 2 – Backup as a Service partner solution

Commvault

Commvault, an APN Advanced Technology and AWS Storage Competency partner, is an enterprise data management company offering solutions in the area of data protection and workload migration. Commvault's⁵ solution provides comprehensive support for most enterprise Windows applications, including Exchange, SharePoint, Active Directory, SQL Server and Oracle on Windows. It has advanced recovery capabilities to restore data backed up from on-prem applications directly on AWS. It supports workload migration via feature like LiveSync

⁶ that automate the task of spinning up Amazon EC2 instances in AWS and restoring application data.

Commvault supports source-side and global deduplication with forever incrementals for fast, efficient and storage optimized data protection. It supports all current Amazon S3 storage classes in AWS including Amazon S3 Standard, Amazon S3 Standard-Infrequent Access, Amazon S3 One Zone-Infrequent Access, Amazon S3-Intelligent Tiering, Amazon S3 Glacier, and Amazon S3 Glacier Deep Archive.

Druva

Druva, an APN Advanced Technology and AWS Storage Competency partner, provides a unique software as a service (SaaS) solution for both on-premises to-AWS and on-AWS backup needs. Druva can back up a myriad of clients and devices without the need to manage any physical server or storage infrastructure as part of the backup environment. For Virtualized environments, Druva supports agentless method for crash consistent backups where Druva agent, deployed on a single proxy VM, can protect data on all VMs running on the hypervisor. For application consistent backups, agents need to be deployed on the application servers, but all other components of the backup environment run on Druva's AWS account. Druva offers three backup services: Druva Phoenix ⁸, which provides data protection for both physical and virtual servers, Druva InSync ⁹, which protects endpoint devices and clients, and Druva CloudRanger ¹⁰, which provides data protection for cloud-based workloads running in AWS. Source side deduplication along with Global deduplication are built into the solution for fast, efficient data transfers along with providing an optimal storage footprint.

Veeam

Veeam, an APN Advanced Technology Partner, offers a comprehensive solution for backup and recovery of virtualized windows-based workloads, running on-premises and on AWS. Veeam Availability Suite ⁷ supports migration of Windows workloads to AWS, for one-time migration or for ongoing migration for use cases like disaster recovery. Veeam provides an agentless mechanism along with global deduplication for fast, efficient and cost-effective data protection. Veeam also provides advanced application level recovery for Microsoft Exchange, Active Directory, SharePoint, SQL Server and Oracle.

Veeam solutions support Amazon S3 as an archive tier and Amazon S3 Glacier through AWS Storage Gateway, providing a cost-effective repository for long term data retention.

Veritas

Veritas, an APN Advanced Technology and AWS Storage Competency partner, is an enterprise software data management company that offers three solutions: Veritas NetBackup ² for enterprise data protection, Backup Exec ³, offering data protection for Small and Medium Business (SMB) and mid-market customers and Cloudpoint ⁴, a relatively light-weight product designed for snapshot management of workloads running on-prem and on the cloud.

NetBackup provides source-side and global deduplication for fast and efficient data transfers and storage savings. NetBackup and Backup Exec currently support all Amazon S3 storage classes as backup repository for regular backups and long-term archives.

Let's explore these APN Storage Partner Solutions and see how they can help move and manage your Microsoft workloads on AWS.

Microsoft Workloads

Microsoft Windows Server

Commvault

Commvault provides rich integration with Microsoft workloads. Commvault agents, deployed on Windows server hosts running either on-prem or on AWS, support both file and block-based technologies to protect data. It integrates with Windows VSS to capture crash- and application-consistent copies of data. Built-in cataloging helps users search and recover files and folders at granular level. Source-side and global deduplication help speed up backups by transferring only the changes and reduce storage costs. Commvault also supports agentless technology to protect virtualized platforms, including VMware, Hyper-V, and Amazon EC2.

Commvault's LiveSync technology supports migration of on-premises Windows servers to AWS, where Amazon EC2 instances are automatically instantiated and data restored, for use cases like workload migration, business continuity/disaster recovery.

Druva

Druva supports backup of Windows servers running on-prem via Druva agents. It also supports agentless backups of Windows servers running on VMware and Hyper-V. As it is a SaaS solution, customers only need to deploy the agent component of Druva, which backs up data to the Druva Cloud running on AWS. Source-side and global deduplication helps reduce the network bandwidth and saves on storage costs. Data can be restored back, either to on-prem sources or can be restored in customer's AWS account via the DR feature. Granular file and folder level as well as machine level recovery, along with conversion of on-prem virtual machines to Amazon EC2 instances is supported.

Veeam

Veeam provides agentless backup technology for Windows servers running on virtualized platforms including VMware and Hyper-V. Through Veeam Agent for Microsoft Windows, it also can support data protection of physical and cloud servers. Veeam supports file- and block-level backups with crash- and application-consistent data capture options, along with granular file-based recovery via restore time agents. Windows servers can be migrated to AWS via the Veeam Availability Suite.

Veritas

Veritas Backup Exec and NetBackup offer comprehensive support for Windows Server protection and migration. Both products support file- and block-based data protection of

Windows servers running on-prem and on AWS. Integrated source-side and global deduplication help reduce network traffic and save on storage costs. Integration with Windows's Volume Shadow Copy Service (VSS) captures crash- and application-consistent copies of data, that can be recovered at a granular file and folder level.

For Windows servers running on virtualization platforms, NetBackup can provide automated DR to Amazon EC2 instances.

Veritas Cloudpoint offers an agentless snapshot-based backup and recovery mechanism for Windows Server running on Amazon EC2 instances. It also supports cross AWS region snapshot replication for Disaster Recovery.

Microsoft Exchange

Commvault

Commvault fully supports data protection and migration of Microsoft Exchange Servers. Exchange data can be backed up at both database and mailbox level, with support for granular mailbox, mail, calendar and contact level recovery. Integrated source-side and global deduplication help reduce network traffic and save on storage costs. Integration with Windows VSS for Exchange captures application consistent copies of data. Commvault also supports content indexing of data within emails to make the content searchable via keywords without having to restore the data. Commvault's email archiving solution for Microsoft Exchange optimizes space and reduces cost of managing email by moving older emails from data stores hosted on primary storage to secondary.

Exchange applications running on-prem can be easily migrated to AWS by backing up data at database level and restoring it back to Amazon EC2 instances.

Veeam

Veeam provides image-based backup and replication for Microsoft Exchange running on VMware and Hyper-V environments ¹¹. Data is captured in application consistent format via integration with Windows VSS for Exchange. Granular restore capabilities help restore individual emails, calendar items and contacts. Veeam also provides search capabilities to search individual items within backups.

Exchange applications running on-prem can be easily migrated to AWS by backing up data at the database level and restoring it back to Amazon EC2 instances.

Veritas

Veritas Backup Exec and NetBackup offer comprehensive support for Microsoft Exchange Server protection and migration. Both products support Exchange Server database and mail level backups. Integrated source-side and global deduplication help reduce network traffic and save on storage costs. Integration with Windows VSS for Exchange captures application consistent copies of data. Both products support Granular Recovery Technology to recover individual mailboxes, mailbox messages and public folders from Exchange database backups.

Exchange applications running in on-prem environments can be easily migrated to AWS by backing up data at database level and restoring it back to Amazon EC2 instances.

Microsoft SharePoint

Commvault

Commvault offers reliable protection, rapid recovery, easy access and efficient storage management for Microsoft SharePoint both on-premises and in the cloud. Commvault's SharePoint Agent supports coordinated farm, database and granular data backup and recovery operations. Integration with Windows VSS for SharePoint captures application consistent copies of data.

Supports granular recovery of individual SharePoint farms, documents, versions, templates, forms, views, lists libraries and sites. Integrated source-side and global deduplication help reduce network traffic and save storage costs.

SharePoint applications running on-prem can be easily migrated to AWS by backing up data at application level and restoring it back to Amazon EC2 instances.

Veeam

Veeam provides image-based backup and replication for Microsoft SharePoint running on VMware and Hyper-V environments 12. Data is captured in application consistent format via integration with Windows VSS for SharePoint. Granular restore capabilities provided via Veeam Explorer for Microsoft SharePoint helps restore sites, individual farms, contents, documents, lists from backups. Veeam also provides search capabilities to search individual items within backups.

SharePoint applications running on-prem can be migrated to AWS by backing up data at the application level and restoring it back to Amazon EC2 instances.

Veritas

Veritas Backup Exec and NetBackup offer comprehensive support for Microsoft SharePoint protection and migration. Integrated source-side and global deduplication help reduce network traffic and save on storage costs. Integration with Windows VSS for SharePoint captures application consistent copies of data. Both products support Granular Recovery Technology to restore sites, subsites, documents, images, lists and list items from database backups.

SharePoint applications running on-prem can be easily migrated to AWS by backing up data at application level and restoring it back to Amazon EC2 instances.

Microsoft SQL Server

Commvault

Commvault offers reliable protection, rapid recovery, easy access and efficient storage management for Microsoft SQL Server, both on-premises and on AWS running on Amazon EC2 instances. Commvault's SQL Server Agent supports database and transaction log level backups

of SQL Server (2005 to 2016). Integration with Windows VSS for SQL captures application consistent copies of data.

Commvault supports database level and transaction log based fast point in time recoveries. Integrated source-side and global deduplication help reduce network traffic and save storage costs.

Commvault also supports the capability to archive cold tables from production databases to storage repositories to save on costs.

SQL Server applications running on-prem can be easily migrated to AWS by backing up data at application level and restoring it back to Amazon EC2 instances. Commvault Live Sync feature supports one time or ongoing replication of SQL Server data from source SQL Server to destination SQL server running either on-prem or on AWS. This helps with use cases like cloud migration, and business continuity/disaster recovery.

Druva

Druva Phoenix supports backing up Microsoft SQL servers running on-prem via Druva agents. It also supports agentless backups of Windows servers running on VMware and Hyper-V. Because Druva is a SaaS solution, customers only need to deploy the SQL Server agent component of Druva, and data is backed up in Druva Cloud running on AWS. Phoenix supports database and transaction log level backups for fast point in time recoveries. Source-side and global deduplication helps reduce the network bandwidth and saves on storage costs. Data can be restored back, either to on-prem sources or can be restored to Amazon EC2 instances running SQL in customer's AWS accounts via the Disaster Recovery feature.

Veeam

Veeam provides image-based backup and replication for Microsoft SQL Server running on VMware and Hyper-V environments. Data is captured in application consistent format via integration with Windows Volume VSS for SQL. Data can be backed up at database and transaction log level for fast point in time recoveries. Granular restore capabilities provided via Veeam Explorer for Microsoft SQL Server helps restore databases and tables from image backups.

SQL Server applications running on-prem can be migrated to AWS by backing up data at the application level and restoring it back to Amazon EC2 instances.

Veritas

Veritas Backup Exec and NetBackup offer comprehensive support for Microsoft SQL Server protection and migration. Integrated source-side and global deduplication help reduce network traffic and save storage costs. Integration with Microsoft VSS for SQL captures application consistent copies of data. Data can be backed up at database and transaction log level for faster point in time recoveries.

Microsoft SQL server applications running on-prem can be easily migrated to AWS by backing up data at the database level and restoring it back to Microsoft SQL running on Amazon EC2 instances.

Veritas Cloudpoint supports consistent snapshot-based backups of SQL Server databases via integration with VSS for SQL Servers.

Summary

AWS provides a flexible, scalable, secure and cost-effective platform for businesses to run Microsoft Workloads. AWS runs twice the number of Windows workloads than the closest cloud competitor¹⁴.

APN Storage Partners, with tested and validated solutions, help easily move, manage and protect Microsoft workloads. This helps customers achieve all the benefits of the AWS platform for their Microsoft workloads.

Contributors

The following individuals and organizations contributed to this document:

- Girish Chanchlani, Partner Solutions Architect, Amazon Web Services

Further Reading

For additional information, see the following:

- [AWS Whitepapers](#)¹
- [Amazon Simple Storage Service](#)²
- [Backup and Recovery Approaches using AWS](#)³
- [Backup and Recovery Partner Solutions](#)⁴

Document Revisions

| Date | Description |
|-----------|-------------------|
| Dec. 2019 | First publication |

Notes

¹ <https://aws.amazon.com/windows/?analyst-reports-windows>

² <https://www.veritas.com/protection/netbackup>

³ <https://www.veritas.com/protection/backup-exec>

⁴ <https://www.veritas.com/protection/cloudpoint>

⁵ <https://www.commvault.com/>

⁶ <https://documentation.commvault.com/commvault/v11/article?p=30962.htm>

⁷ <https://www.veeam.com/data-center-availability-suite.html>

⁸ <https://www.druva.com/products/data-center/>

⁹ <https://www.druva.com/products/endpoints/>

¹⁰ <https://www.druva.com/products/aws-backup/>

¹¹ <https://www.veeam.com/microsoft-exchange-recovery.html>

¹² <https://www.veeam.com/microsoft-sharepoint-recovery-explorer.html>

¹³ <https://www.veeam.com/microsoft-sql-server-explorer.html>

¹⁴ <https://pages.awscloud.com/IDC-Windows-Server-Market-Update.html>