Storage Solutions on AWS

Leveraging AWS Marketplace ISV Solutions

November 2016
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Introduction

As organizations’ data volumes continue to grow at an unprecedented rate, the need for secure, highly-available, and cost-effective storage is becoming increasingly essential. Amazon Web Services (AWS) offers customers storage solutions that allow them to take advantage of cloud scale, efficiency, and agility to support a variety of needs without the upfront investment and hassle of setting up and maintaining an on-premises system. Because AWS storage solutions can scale automatically to meet an organization’s needs, there’s no need to estimate storage requirements. To help improve security, 256-bit encryption at rest helps ensure that no one can view customer data. AWS supports several methods for loading and retrieving data, including: the AWS Import/Export service where AWS will import data into Amazon S3; AWS Import/Export Snowball, Amazon S3 Transfer Acceleration, and for backups of application data, AWS Storage Gateway, which helps organizations backup data to AWS.

To augment these services, many organizations leverage third-party storage software from independent software vendors in their AWS environments. Using AWS Marketplace, organizations can access storage solutions from popular software vendors with pay-as-you-go pricing in minutes. Whether an organization needs tools for migration, replication, backup, recovery, or archiving, sellers in AWS Marketplace can help. In addition to helping ensure data is protected and available, AWS Marketplace allows a seamless purchase process for AWS customers by providing buying options such as free-trial, hourly, monthly, and annual subscriptions for many products.

Primary Storage

The most obvious application of cloud storage models is doing away with on-premises storage arrays and replacing them with storage targets in the cloud. For many organizations, this is the end-goal, but most will spend several years using a hybrid storage model to get the most out of their existing storage investments, with data residing both on-premises and in the cloud. To help customers in this transition, software vendors offer solutions from AWS Marketplace that leverage file, block, object, and streamed data formats as an extension to on-premises storage. At the center of this hybrid model is the storage operating system, which allows organizations to provide storage resource targets while maintaining legacy NAS connection mechanisms.

Built on NetApp clustered Data ONTAP®, the software-only Cloud ONTAP delivers enterprise-class data storage management to AWS environments. With Cloud ONTAP, organizations can tie cloud storage to their on-premises datacenter using NetApp’s replication protocol, SnapMirror technology. It uses built-in compression to reduce bandwidth by as much as 70%. In addition, a single repository for both the active mirror and prior backup copies enables selective failover points. To enhance data security, Cloud ONTAP offers NetApp-managed encryption of at-rest storage, while the customer retains control of their encryption keys. OnCommand Cloud Manager handles deployment and management of Cloud ONTAP, giving organizations a simple point-and-click environment to manage their storage and ease control of their data.
Avere CloudFusion is a NAS solution that many customers leverage to protect their AWS workloads. With a purpose-built file system that scales beyond an exabyte, CloudFusion combines RAM, SSD, and cost effective disk storage into a simple-to-use, integrated NAS solution that is designed to optimally use all available storage tiers. It also looks at data access patterns and internal caching algorithms to prioritize storage targets to help maximize performance and minimize storage costs. Warm data is placed on Amazon EBS General Purpose volume for low-latency access to the proper Amazon EC2 Instances. Cold data is moved to Amazon S3, which leads to as much as 90% lower costs when compared to other cloud NAS solutions. It also offers support for protocols, including NFS and SMB, plus features for encryption, compression, and snapshotting, all available through a simple web GUI.

SoftNAS Cloud for AWS is an AMI launched via AWS Marketplace or AWS console that delivers on-demand, enterprise-grade NAS capabilities. SoftNAS Cloud provides file services (NFS, CIFS, AFP, iSCSI) and uses Amazon EBS or Amazon S3 for backend storage, enabling customers to move their on-premises applications to AWS without modification. High Availability is included at no additional cost when deployed with the two requisite instances. Storage capacities range from terabytes to petabytes. Other key features include cross-zone High Availability for private VPCs (SNAP HA), cross-region block replication (SnapReplicate), consistent storage pool backup/restore through EBS snapshots, Active Directory integration, compression, deduplication, thin-provisioning, easy set-up and configuration wizards, intuitive admin interface (StorageCenter) and a 99.999% no storage downtime guarantee.
Backup and Recovery

AWS can be utilized as an effective resource for backing up cloud-based workloads. Data can be securely imported into Amazon S3 or Amazon Glacier, which are generally much more cost-effective storage targets than on-premises storage arrays. AWS customers can also choose which AWS Region their data resides in to minimize latency/costs and address regulatory requirements. Even if a customer chooses to have their data reside in one AWS Region, that data on AWS is automatically replicated across multiple Availability Zones (datacenters) to help protect it from natural disasters and other rare events that might cause systems failures. To move this data from its production environment to a secure, cost-effective storage target that enables rapid failover, many customers leverage third party solutions from AWS Marketplace.

NetApp AltaVault is a cloud-integrated storage appliance that offers an efficient and secure approach to backing up cloud-based workloads using your existing backup software. AltaVault deduplicates, encrypts, and rapidly migrates data to Amazon S3 or Amazon Glacier, enabling rapid recovery in that data in production is corrupted or lost. The AVA-c4 offers Ingest rates of up to 300GB/hr in backup mode and 175GB/hr in cold storage mode. It can support up to 20TB of cloud capacity, which can represent up to 600TB of data after deduplication.

N2W Cloud Protection Manager (CPM) allows organizations to automate, control, and maintain the backup of their entire AWS environment. CPM allows for the reliable backup and instant recovery of all types of Amazon EC2 instances (with snapshots or AMIs), Amazon EBS volumes, Amazon RDS databases, Amazon Redshift Clusters with associated configurations and individual files. CPM also gives administrators the flexibility to choose the frequency of backups and retention periods for each Amazon EC2 Instance. It also enables AWS customers to build DR plans between AWS regions, create retention management policies to optimize snapshot costs and apply application consistent backup for mission-critical applications using Windows VSS or scripts.
Actifio Sky for AWS is another popular solution available in AWS Marketplace that can help make it easier to protect production workload data, such as multi-terabyte Oracle or Microsoft SQL Server databases. It lets customers backup AWS-hosted applications, vault and recover them in other AWS regions. To support DevOps principles, fresh, self-serve copies of production data can be easily accessed for dev/test in local and remote AWS regions. By virtualizing production workloads hosted on AWS, Actifio Sky captures production data at the block level and in the native format of a customer’s applications, then manages that data as a single golden master hosted on AWS and updated incrementally forever. By understanding which blocks of which applications changed when, Actifio lets organizations create an unlimited number of virtual copies - of any application, at any historical point in time - without consuming additional storage.

File Transfer and Data Replication

One of the many benefits of cloud-based models is its ability to support users across a large geographic span with minimal upfront investments. With on-premises models, an organization must build a datacenter or find a co-location provider every time they want to expand into a new region. With AWS, organizations can support users virtually anywhere in the world quickly and cost-effectively. While this makes it much more feasible for any organization to support a global workforce, it also means that the network is everything. In some cases, transferring large files and other data sets to or from AWS across public WANs can introduce latency, packet-loss, and unnecessary costs. Solutions from AWS Marketplace Sellers can accelerate and secure file and data transfer to and from the AWS cloud.

Aspera creates next-generation transport technologies and solutions that move big data and digital content at maximum speed, regardless of file size, transfer distance and network conditions. Built on the patented FASP® transport technology, Aspera’s transfer platform and software solutions enable customers to move large files and data sets globally to, from and between cloud and on-premises infrastructure up to hundreds of times faster than FTP and other TCP-based transfer products. Aspera can be deployed on AWS via the Marketplace as a VM-based offering or as a SaaS offering. Silver Peak Cloud Acceleration is another popular solution for maximizing transfer speed and lower WAN costs. It employs real-time network optimization techniques to maximize application performance across the cloud while minimizing IT operational cost. Silver Peak provides real-time and historical analysis of WAN performance, including detailed reports on bandwidth, latency, and packet loss, providing a unified user experience across heterogenous deployment environments through its management and visibility tool.

Customers who are looking for a file transfer and data replication solution that can also support Big Data workloads should also take a look at Attunity CloudBeam. It simplifies, automates, and accelerates the loading and replication of data from a variety of structured and unstructured sources including Amazon EMR and other Hadoop environments to create a data lake for Hadoop consumption on Amazon S3, including replication across AWS Regions. CloudBeam makes it easier to ingest enterprise data for use in Big Data Analytics by Amazon EMR or other Hadoop distributions from Cloudera, Hortonworks or MapR as well as for pre-processing before moving data into Amazon Redshift, Amazon S3, or Amazon RDS. Attunity CloudBeam is designed to handle files of any size, transferring content over any given network connection, thereby achieving best-in-class acceleration and guaranteed delivery.
Conclusion

AWS provides secure, cost-effective storage without many of the challenges that come with on-premises storage. Whether an organization is looking to replace their primary storage arrays with AWS storage targets, leverage AWS for backup/DR, or improve the replication and transfer of large files, AWS can help. AWS Marketplace has a wide variety of storage software solutions from popular software vendors that can help accelerate these initiatives by complementing the existing AWS storage services to help enable organizations to achieve a seamless experience across their AWS and on-premises storage environments.

Learn more about Storage solutions in AWS Marketplace at https://aws.amazon.com/mp/storage/