SOLUTION BRIEF

Optimize AWS storage with NetApp Cloud Volumes ONTAP

NetApp's application-driven infrastructure optimizes block storage on Amazon EBS.

NetApp

NetApp® Cloud Volumes ONTAP® for AWS delivers enterprise-grade data management capabilities that are designed to align storage infrastructure resources to the needs of applications. Based on the industry-leading ONTAP data management software, Cloud Volumes ONTAP unifies data services and automation processes to optimize cloud storage and dramatically reduce storage costs.

Deployed and managed through NetApp Cloud Manager, a centralized API-driven SaaS control platform that unifies data services and automation processes, unprecedented agility and consistent autonomous storage operations are delivered to match the storage infrastructure to the applications needs across the hybrid cloud.

The challenge

In today's world, enterprises must leverage public cloud infrastructure and services in models that best fit their applications needs, where data storage is at the center, to deliver business value. Providing applications with a block storage infrastructure driven by their needs in a unified way, wherever they are, is complex and cumbersome leading to operational overburden, cloud infrastructure overspending due to overprovisioning and inefficient use of infrastructure that slows cloud adoption and innovation.

Optimizing block storage infrastructure for applications also requires an emphasis on delivering adequate performance and sharing capabilities while maintaining proper levels of data protection, security, and privacy, and easily spin up efficient up-to-date copies to accelerate CI/CD pipeline.

Although block storage can be easily consumed in the public cloud, having complete interoperability between cloud providers and on-premises infrastructure is nearly impossible due to different service models, and discrepancy and incompatibility of features.

The solution

NetApp Cloud Volumes ONTAP for AWS is cloud-native storage and data management software that provides the most efficient, robust block storage infrastructure that matches applications needs. By leveraging the Amazon Elastic Compute Cloud (Amazon EC2), which provides necessary compute resources, Cloud Volumes ONTAP for AWS optimizes the consumption and performance

KEY BENEFITS

Ultimate savings

- Minimal cloud footprint through storage efficiency features
- Intelligent cold-data tiering to Amazon S3
- Consumption of cloud resources as needed

Data resilience

- Multi AZ high availability
- Instant space-saving snapshots
- Cross-site data replication
- Cloud backup to Amazon S3

Operational efficiency

- Deployed and managed through NetApp Cloud Manager
- Seamless data services integration
- Automated & orchestrated processes

Optimized DevOps

- Instant, non-disruptive thin clones for testing environments
- Integration with CI/CD pipelines through RESTful API
- Containers and Kubernetes support

Any cloud consistency

- Rapid "lift and shift" applications to the cloud without rearchitecting
- Same capabilities across on-premises and different cloud environments

Enterprise-grade performance

- Intelligent caching for increased IOPS and reduced latency
- Leverage the highest performing cloud resources at lower costs

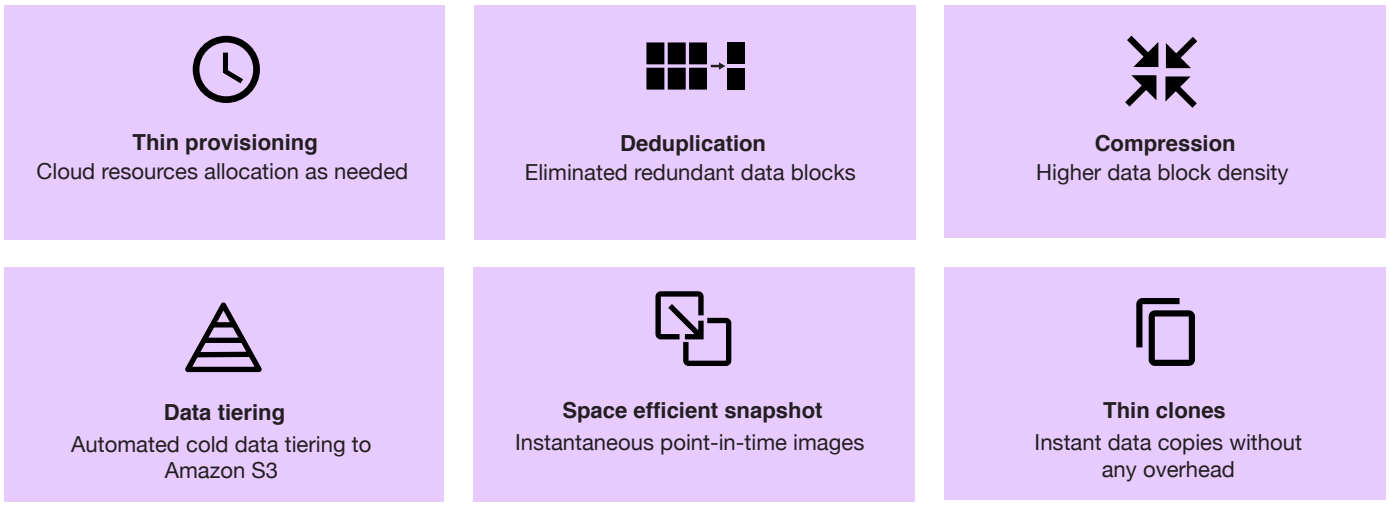

Figure 1: Enhance cloud usage through cost optimization and save up to 90%. Calculate AWS costs with Cloud Volumes ONTAP and estimate your cost optimization.

of Amazon Elastic Block Store (EBS) volumes and, together with intelligent cold data tiering to Amazon S3, present applications with the most economical, high-performance block storage delivered natively on AWS.

Combined with a high availability architecture and data resilience features designed to maintain strict SLAs and SLOs, Cloud Volumes ONTAP shared block storage infrastructure supports use cases like enterprise applications, relational and NoSQL databases, big data analytics, and more. Through NetApp Cloud Manager APIs, thin block storage clones of live datasets can be instantly created and be integrated automatically with CI/CD pipelines, optimizing DevOps environments.

Business continuity and application-aware data protection

Cloud Volumes ONTAP can address different aspects and needs when it comes to disaster recovery. With high-availability configuration the strictest SLA & SLO can be met by maintaining zero data loss (RPO=0) and quick automated failover (RTO<60s). Backup and restore can be fulfilled through application-consistent snapshots and, through Cloud Manager integrated Cloud Backup service, ensures data is constantly backed-up in a separate object storage bucket for quick restoration in the event of data corruption or deletion. Likewise, leveraging NetApp SnapMirror® replication engine, secondary copies can be easily created in separate cloud region, maintaining application-consistency for protecting data against natural disasters and major outages.

Unified data control no matter where it is

NetApp Cloud Manager provides IT experts and cloud architects with a centralized control plane to manage, monitor, and automate data storage processes across hybrid-cloud environments as well as enabling seamless integration of NetApp's cloud data services. By unifying on-premises and cloud ONTAP deployments with seamless management and orchestration, Cloud Manager delivers an enhanced and single experience anywhere.

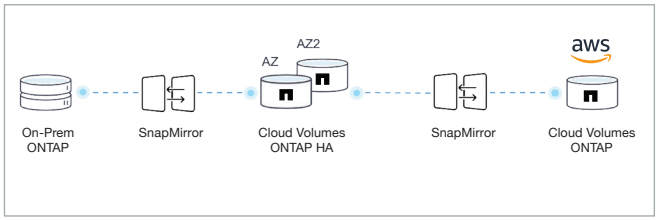

Figure 2

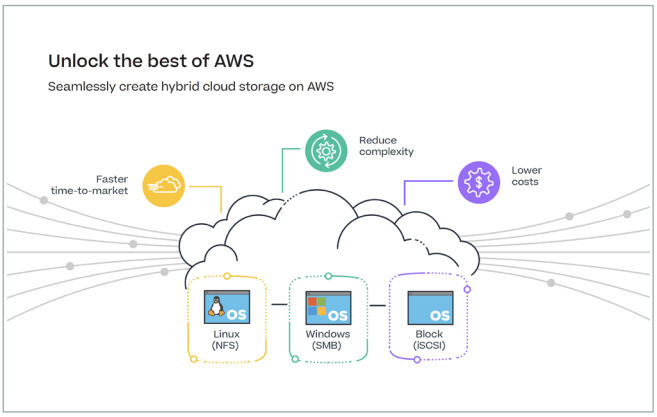

Figure 3

Simplify and expedite DevOps
With a single experience across hybrid cloud environments, Cloud Manager provides consistent common RESTful API calls to allow for the automation and orchestration of cloud storage operations. Combined with NetApp Trident™, Cloud Volumes ONTAP shared block storage can be integrated with container orchestrators (e.g., Kubernetes, OpenShift, Docker Swarm) and with the ability to instantly create dozens or even hundreds of thin clones for test and development environments, up-to-date copies of live datasets can be immediately used to optimize CI/CD pipelines.

Shared block storage in the public cloud is nothing new
Cloud Volumes ONTAP block storage volumes have been supported for years. A NetApp block storage volume can operate as shared disk and be attached to multiple compute instances. This ability is necessary in cases where clustered applications, using Windows Server Failover Clustering (WSCF) and Linux clusters, are deployed in or migrated to AWS. This capability also makes it possible to provision block storage for containers that span multiple availability zones.

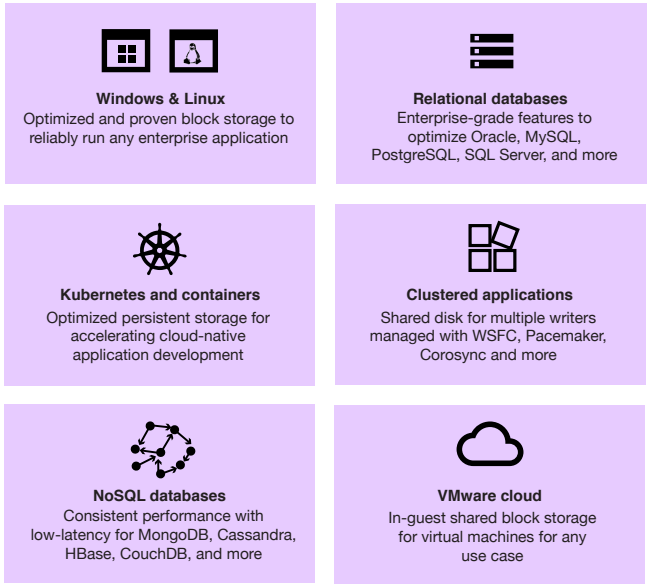

Figure 4: Wide range of workloads to optimize

For more information please visit:

NetApp and Amazon EBS

Get started with cloud block storage:
NetApp Cloud Manager

About NetApp
In a world full of generalists, NetApp is a specialist. We're focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services and applications to the right people—anytime, anywhere. www.netapp.com

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