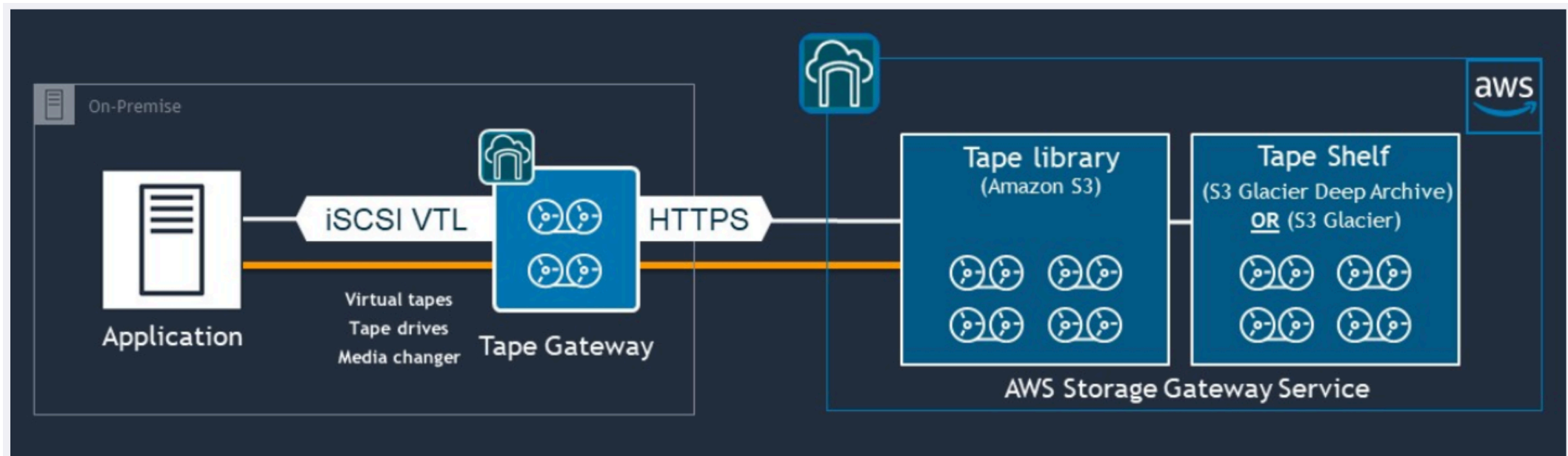


AWS Storage Gateway

Storage Gateway

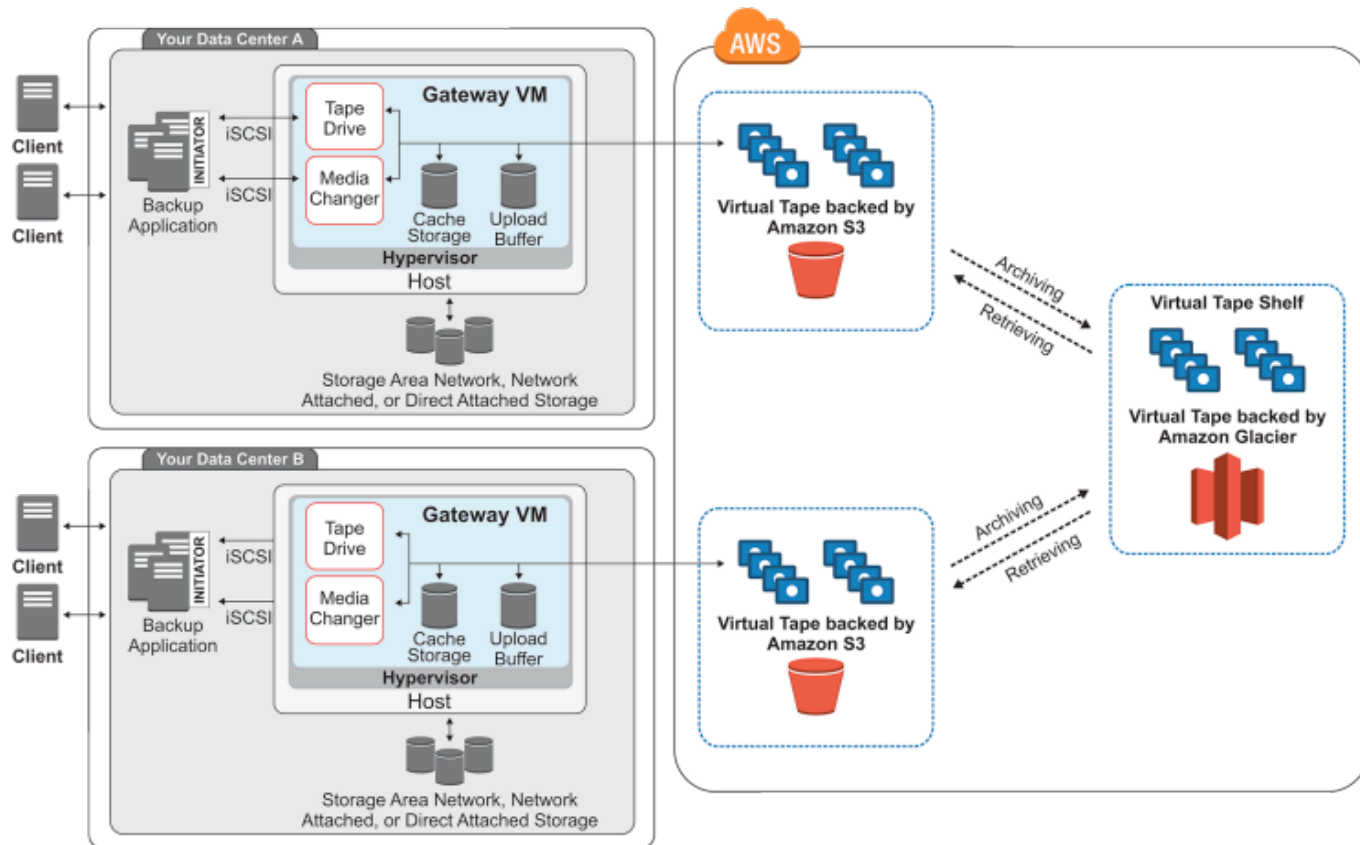
- AWS Storage Gateway is a hybrid cloud storage service that gives you on-premises access to virtually unlimited cloud storage.
- These include moving tape backups to the cloud, reducing on-premises storage with cloud-backed file shares, providing low latency access to data in AWS for on-premises applications, as well as various migration, archiving, processing, and disaster recovery use cases.
- To support these use cases, the service provides three different types of gateways – Tape Gateway, File Gateway, and Volume Gateway – that seamlessly connect on-premises applications to cloud storage, caching data locally for low-latency access.

Storage Gateway – Tape Gateway



The AWS Storage Gateway service can be configured to act as a Virtual Tape Library (VTL) that spans from your on-premises environment, where your production applications are, to the AWS cloud's highly scalable, redundant and durable storage services, Amazon S3, Amazon S3 Glacier, and Amazon S3 Glacier Deep Archive.

Storage Gateway – Tape Gateway



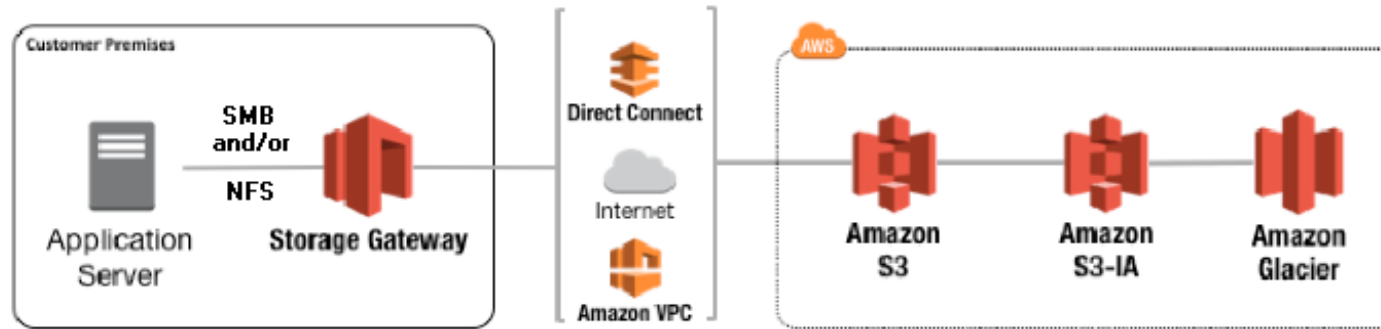
Virtual tape – A virtual tape is like a physical tape cartridge. However, virtual tape data is stored in the AWS Cloud. Each gateway can contain up to 1,500 tapes or up to 1 PiB of total tape data at a time. The size of each virtual tape, which you can configure when you create the tape, is between 100 GiB and 5 TiB.

Archive : If you archive a tape in GLACIER, you can retrieve the tape typically within 3-5 hours. If you archive the tape in DEEP_ARCHIVE, you can retrieve it typically within 12 hours.

Storage Gateway – File Gateway

- AWS Storage Gateway's file interface, or file gateway, offers you a seamless way to connect to the cloud in order to store application data files and backup images as durable objects on Amazon S3 cloud storage. File gateway offers SMB or NFS-based access to data in Amazon S3 with local caching. It can be used for on-premises applications, and for Amazon EC2-resident applications that need file storage in S3 for object-based workloads.

Storage Gateway – File Gateway



You can create a file gateway using an Amazon EC2 image. After the file gateway is activated, you create and configure your file share and associate that share with your Amazon S3 bucket. Doing this makes the share accessible by clients using either the NFS or SMB protocol. Files written to a file share become objects in Amazon S3, with the path as the key. There is a one-to-one mapping between files and objects, and the gateway asynchronously updates the objects in Amazon S3 as you change the files. Objects are encrypted with Amazon S3–server-side encryption keys (SSE-S3). All data transfer is done through HTTPS.

Storage Gateway – Volume Gateway

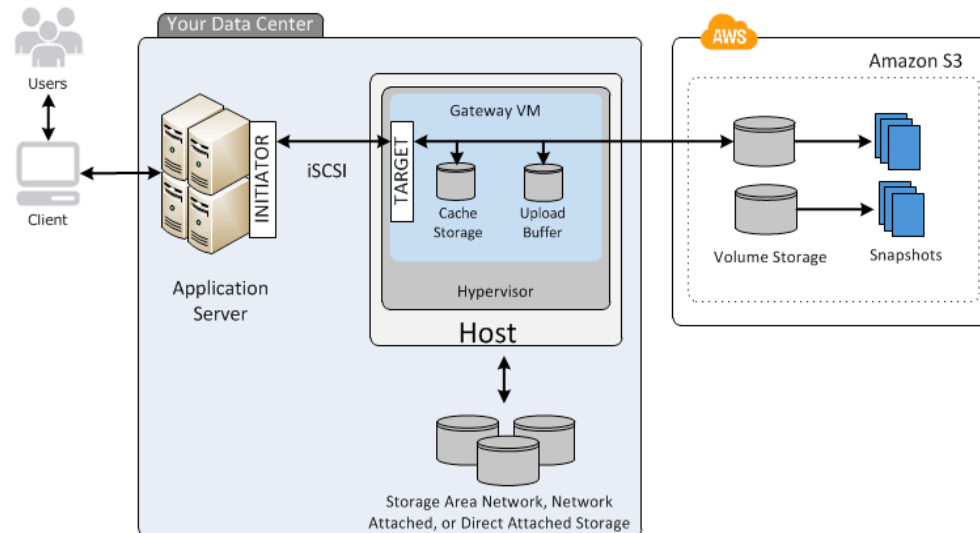
- The Volume Gateway provides either a local cache or full volumes on-premises while also storing full copies of your volumes in the AWS cloud. Volume Gateway also provides Amazon EBS Snapshots of your data for backup, disaster recovery, and migration
- You can run Volume Gateway in two modes: Cached and stored. With cached volumes, the Storage Gateway service stores the full volume in its Amazon S3 service bucket, and a portion of the volume—your recently accessed data—is retained in the gateway's local cache for low-latency access.

Storage Gateway – Volume Gateway

- With stored volumes, your entire data volume is available locally in the gateway, for fast read access. At the same time, Volume Gateway maintains an asynchronous copy of your stored volume in the service's Amazon S3 bucket.
- Data written to gateway cached volumes can be asynchronously backed up as point-in-time snapshots of your volumes and stored in the cloud as Amazon EBS snapshots. With stored volumes, such snapshots are required.

Storage Gateway – Volume Gateway

- **Cached Volume Gateway** - Cached volumes can range from 1 GiB to 32 TiB in size and must be rounded to the nearest GiB. Each gateway configured for cached volumes can support up to 32 volumes for a total maximum storage volume of 1,024 TiB (1 PiB)



Storage Gateway – Volume Gateway

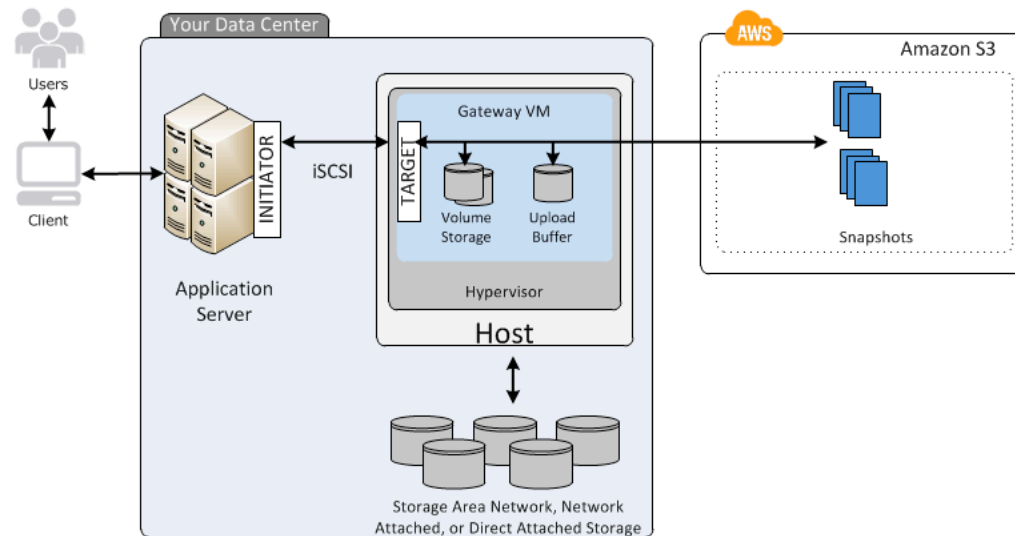
- **Disks for use by the gateway as cache storage** – As your applications write data to the storage volumes in AWS, the gateway first stores the data on the on-premises disks used for cache storage. Then the gateway uploads the data to Amazon S3. The cache storage acts as the on-premises durable store for data that is waiting to upload to Amazon S3 from the upload buffer.
- The cache storage also lets the gateway store your application's recently accessed data on-premises for low-latency access. If your application requests data, the gateway first checks the cache storage for the data before checking Amazon S3.

Storage Gateway – Volume Gateway

- **Disks for use by the gateway as the upload buffer** – To prepare for upload to Amazon S3, your gateway also stores incoming data in a staging area, referred to as an *upload buffer*. Your gateway uploads this buffer data over an encrypted Secure Sockets Layer (SSL) connection to AWS, where it is stored encrypted in Amazon S3.
- You can take incremental backups, called *snapshots*, of your storage volumes in Amazon S3. These point-in-time snapshots are also stored in Amazon S3 as Amazon EBS snapshots. When you take a new snapshot, only the data that has changed since your last snapshot is stored

Storage Gateway – Volume Gateway

- **Stored Volume Gateway** : You can store your primary data locally, while asynchronously backing up that data to AWS. Stored volumes provide your on-premises applications with low-latency access to their entire datasets. At the same time, they provide durable, offsite backups.



Storage Gateway – Volume Gateway

- Stored volumes can range from 1 GiB to 16 TiB in size and must be rounded to the nearest GiB. Each gateway configured for stored volumes can support up to 32 volumes and a total volume storage of 512 TiB (0.5 PiB).
- Data written to your stored volumes is stored on your on-premises storage hardware. This data is asynchronously backed up to Amazon S3 as Amazon Elastic Block Store (Amazon EBS) snapshots.