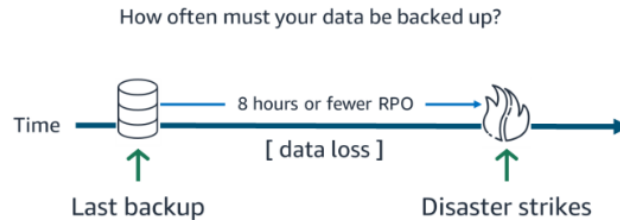


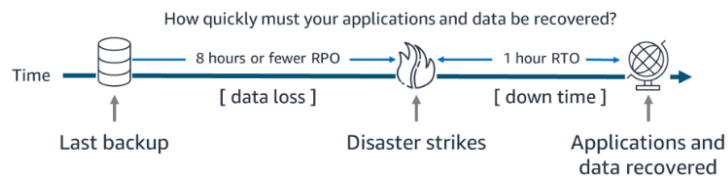
## DISASTER PLANNING

### Disaster planning strategies

**RPO** is the maximum acceptable amount of data loss, measured in time.



**RTO** is the maximum acceptable amount of time after a disaster strikes that a business process can remain out of commission.



A **Business Continuity Plan (BCP)** consists of the following:

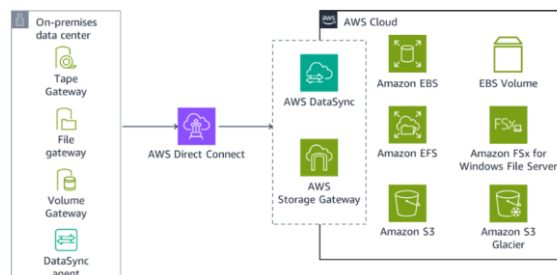
- Business impact analysis
- Risk assessment
- Disaster recovery plan
- Evaluated and determined RPO and RTO

## AWS disaster recovery planning

To properly scope your disaster recovery planning, services can be categorized in five categories:

- Storage (S3)
- Compute (EC2)
- Database (RDS)
- Networking & Content Delivery (Amazon VPC)
- Deployment orchestration services within Management & Governance (CloudFormation)

### A. Storage



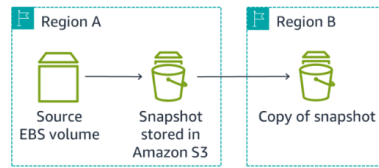
**DataSync** sync data between on premises storage and Amazon S3, Amazon EFS, or Amazon FSx. It supports scripted copy jobs and scheduled data transfers from on premises Network File System (NFS) and Server Message Block (SMB) storage. It can also optionally use AWS Direct Connect links.

#### 1. Cross region replication (S3)

S3 Standard, S3 Standard IA, and Amazon S3 Glacier automatically store objects **across a minimum of three Availability Zones**, each separated miles apart across a single Region.

For critical applications and data scenarios, it is a best practice to configure S3 **Cross Region Replication** (CRR)

## 2. EBS volume snapshots



Snapshots are incremental backups (save only the blocks on the device that have changed since your most recent snapshot) -> minimizes the time to create the snapshot, and saves on storage costs by not duplicating data.

**Amazon Data Lifecycle Manager** to automate the creation, retention, and deletion of snapshots that back up your EBS volumes.



**You cannot create snapshots of EC2 instance store volumes.**

*Create a new EBS volume and format it.*

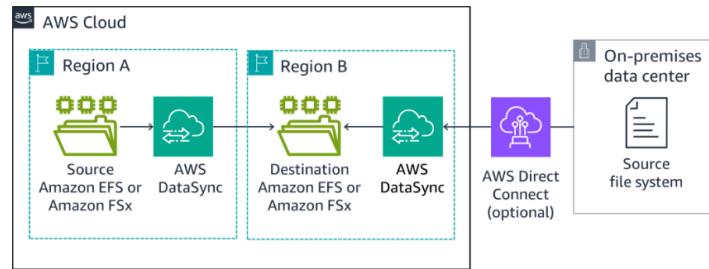
*Mount the new volume to the EC2 instance*

*Copy the data on your instance store volume to the EBS volume.*



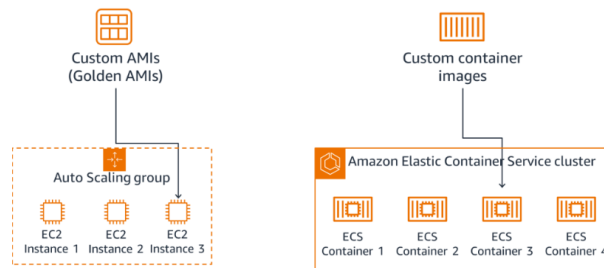
*Instance store volumes provide temporary block level storage that works well for information that changes frequently (buffers, caches, and scratch data).*

### 3. File system replication



**DataSync** makes data move faster between two EFS or FSx for Windows File Server file systems or between on premises storage and AWS file storage.

## B. Compute infrastructure



Configure instance for automatic reboot: it keeps the instance ID, IP addresses, EBS volume attachments, and other configuration details.



Make sure that the instance is configured to automatically start up any services or applications as part of its initialization process

A **golden AMI** refers to an AMI that is preconfigured with all necessary applications and services to perform its designated function.

As system configurations don't change as often as the codebase, it is easier to create the AMI and use a user data script to pull the latest code and configuration from the AWS CodeCommit repository when you deploy.

