Disaster Recovery Strategies on AWS

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Overview

Disaster recovery strategies

Recovery Point Objective (RPO) and Recovery Time Objective (RTO)

Maintaining business continuity

Route 53 routing policies

AWS migration services

CloudEndure

Inherent Protections in AWS

Highly available and resilient services

Redundant power, cooling, network connections

Elastic load balancing with health checks

RDS Multi-AZ deployments

Use a second AWS region for disaster recovery

Balance cost with time to recover

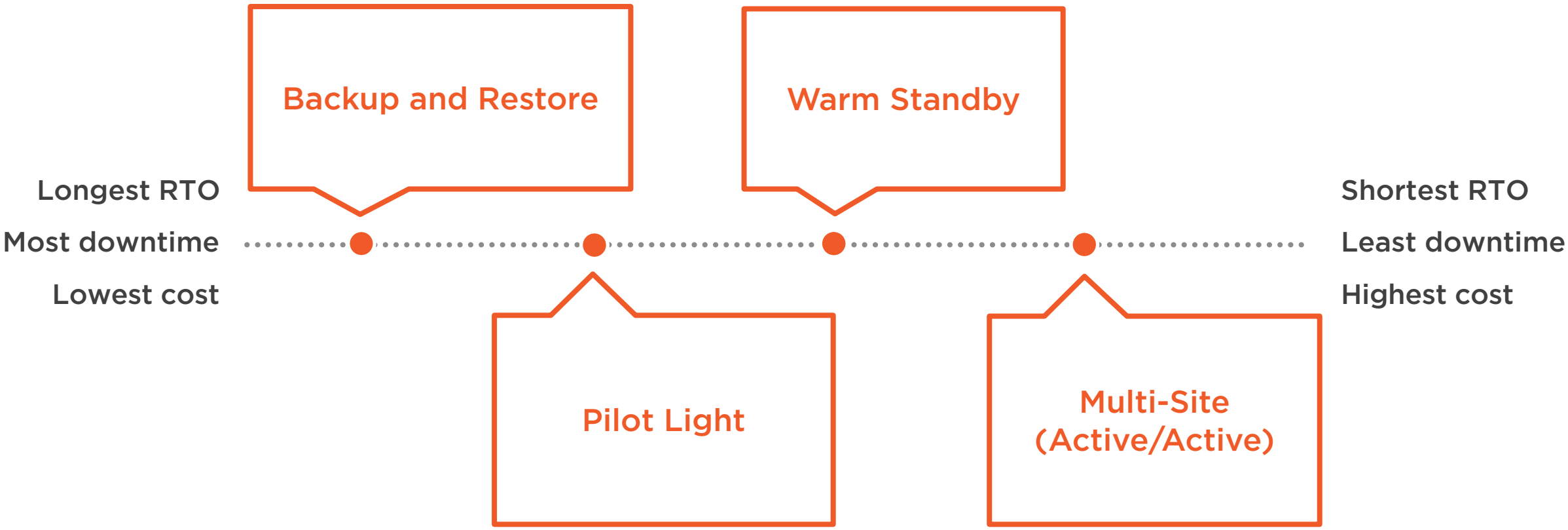
RPO and RTO

Recovery Point Objective (RPO) is the amount of time representing the risk of data loss

RPO dictates schedule of backups or snapshots

Recovery Time Objective (RTO) is the amount of downtime before recovery after disaster

Business Continuity



Backup and Restore

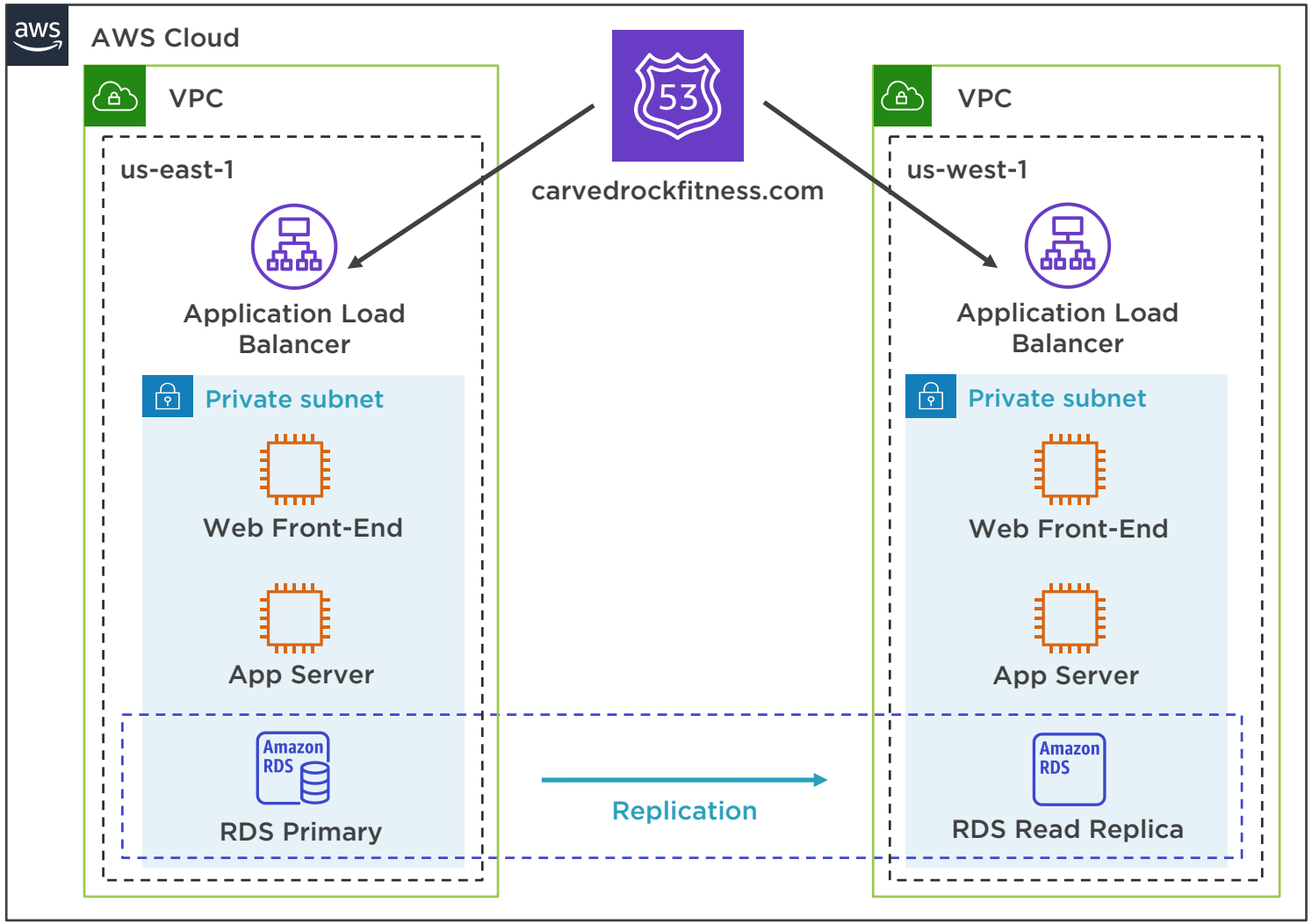
Regularly scheduled backups

Manually spin up new infrastructure

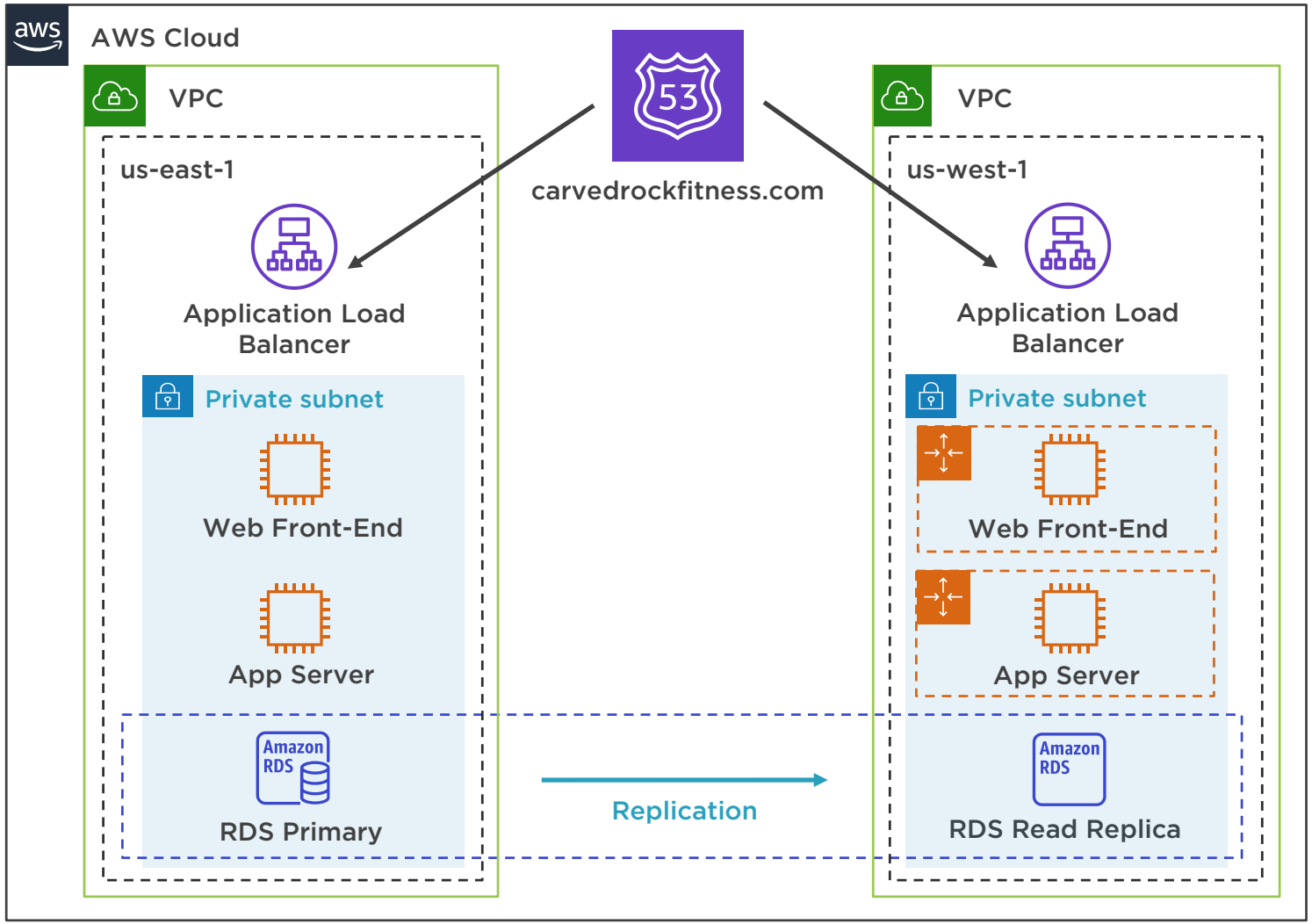
No standby infrastructure already in place

Copy backups across regions on a schedule

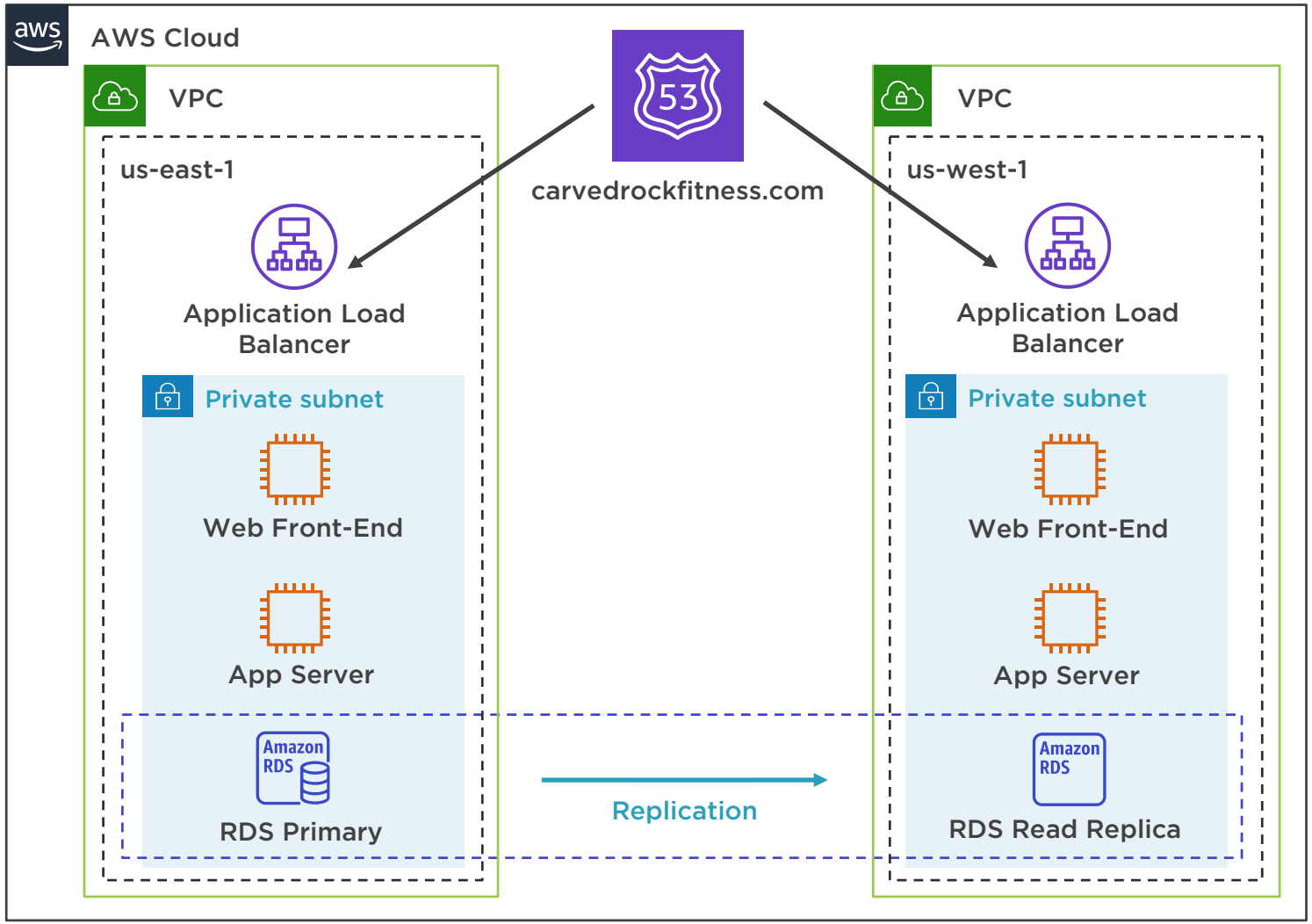
Pilot Light


AWS Cloud
VPC
us-east-1
53
carvedrockfitness.com
VPC
us-west-1
Application Load Balancer
Application Load Balancer
Private subnet
Private subnet
Web Front-End
Web Front-End
App Server
App Server
Amazon RDS
RDS Primary
Replication
Amazon RDS
RDS Read Replica

Warm Standby



Multi-site (Active/Active)



Route 53 Routing Configurations

Production-ready infrastructure running in multiple regions

Simple: Single resource, single region

Active-Active: Available infrastructure in secondary region

Active-Passive: Standby-only infrastructure in secondary region

Route 53 Health Checks

Endpoint must be healthy to receive traffic

Monitored by IP address or domain name

HTTP, HTTPS, or TCP

Requests sent from up to 8 different AWS regions

Record set TTL should be 60 seconds or less

Route 53 Geolocation Routing

Route user traffic to different regions to improve performance

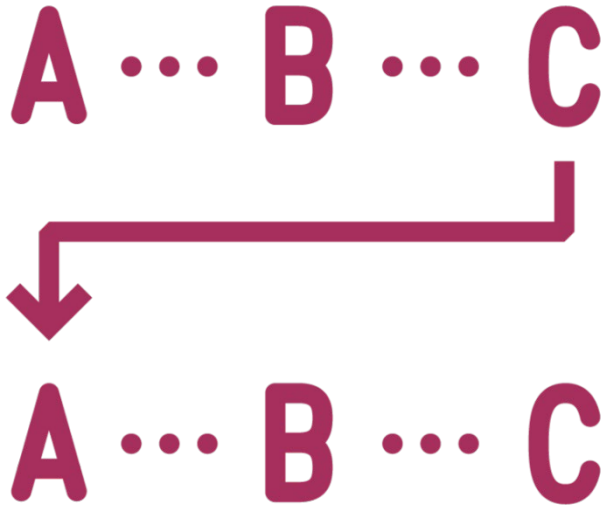
Provide different responses to DNS query based on location

User location determined by IP address

Configure a Default record to ensure all traffic is routed

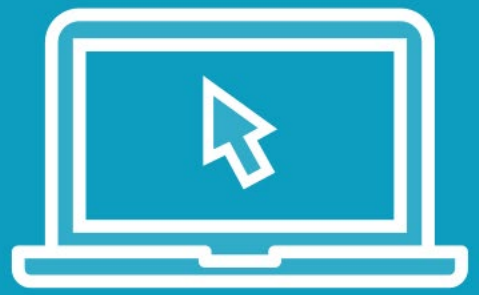
Route 53 Failover Routing

Active-Passive: Do not route traffic to secondary region until a failed health check



Specify Primary and Secondary record sets

Demo



Create Route 53 health checks

Configure a Geolocation routing policy

Configure a Failover routing policy

Migrating On-premises Workloads to AWS

Useful when assessing current on-premises workloads for cloud migration

Can be part of a disaster recovery or hybrid on-premises/cloud strategy

Application Discovery Service

Collects host names, IPs, hardware specifications, network activity, etc.

Server Migration Service (SMS)

Imports existing virtual machines into the AWS cloud as EC2 instances

Database Migration Service (DMS)

Migrates on-premises databases to AWS

Conversions using SCT

CloudEndure

Solutions for Migration and Disaster Recovery

Disaster Recovery: subscription-based

Requires installation of an agent

Allows for sub-second RPOs

Define blueprints for disaster recovery instances

Point-in-time recovery

Course Summary

High availability and the AWS global infrastructure

Scalability and auto scaling

Highly available and scalable databases

Disaster recovery strategies

Continuous testing and validation

Thank You!