High Availability and Disaster Recovery on AWS for DevOps Engineers

DESIGNING FOR HIGH AVAILABILITY ON AWS

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Course Overview

Best practices when designing for high availability and scalability

AWS-managed database offerings

Disaster recovery and business continuity

Course Scenario

Planning for massive worldwide growth

Currently in a small on-premises datacenter

Applications not designed for the cloud

3-tier Architecture

Front-end
web server

Application
server

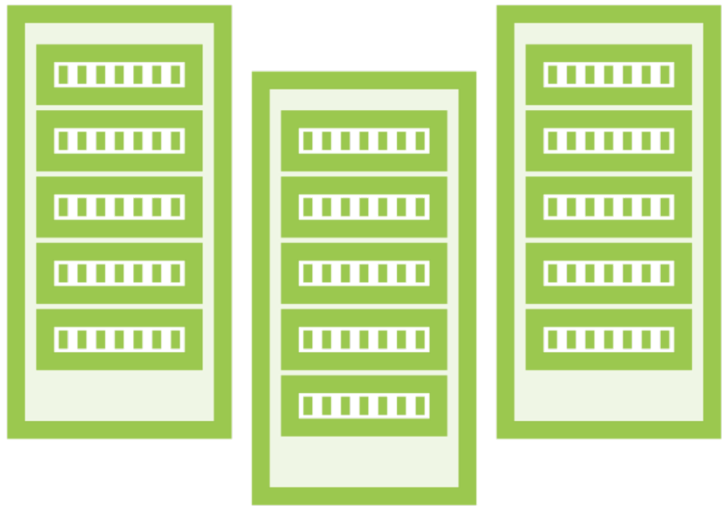
Database
server

AWS Global Infrastructure

Regions

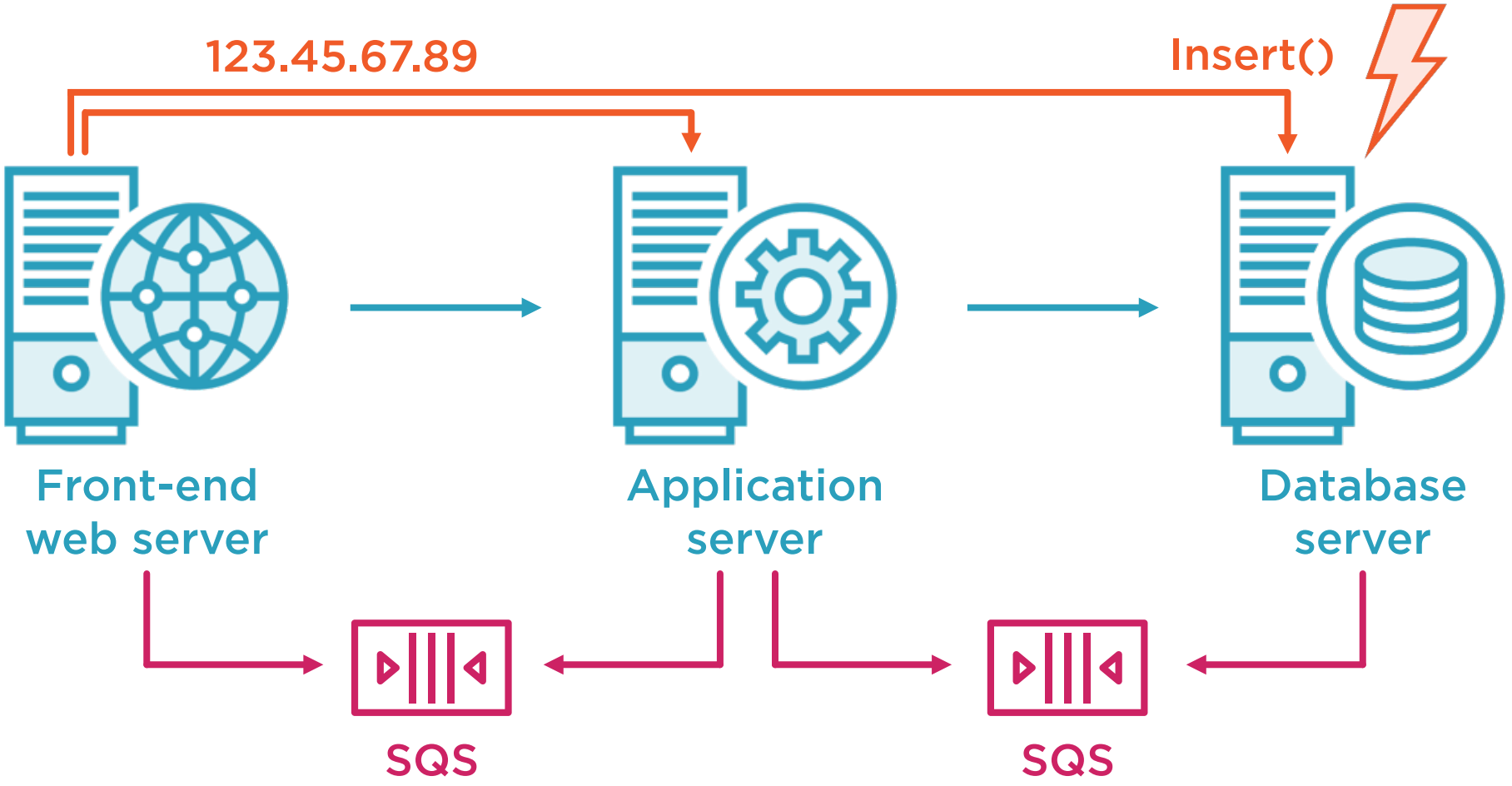
- Located all around the world
- Servers and services are based in regions
- Choose based on user locations
- All regions have at least 2 AZs

Availability Zones



- Clusters of data centers
- Independent power and cooling
- Multiple redundant network connections
- “Single datacenter” experience

Loosely Coupled Architectures



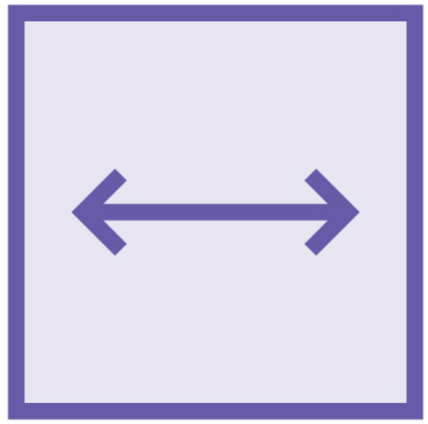
Implementing Disposable Resources

Immutable Infrastructure

Always treat underlying infrastructure as disposable

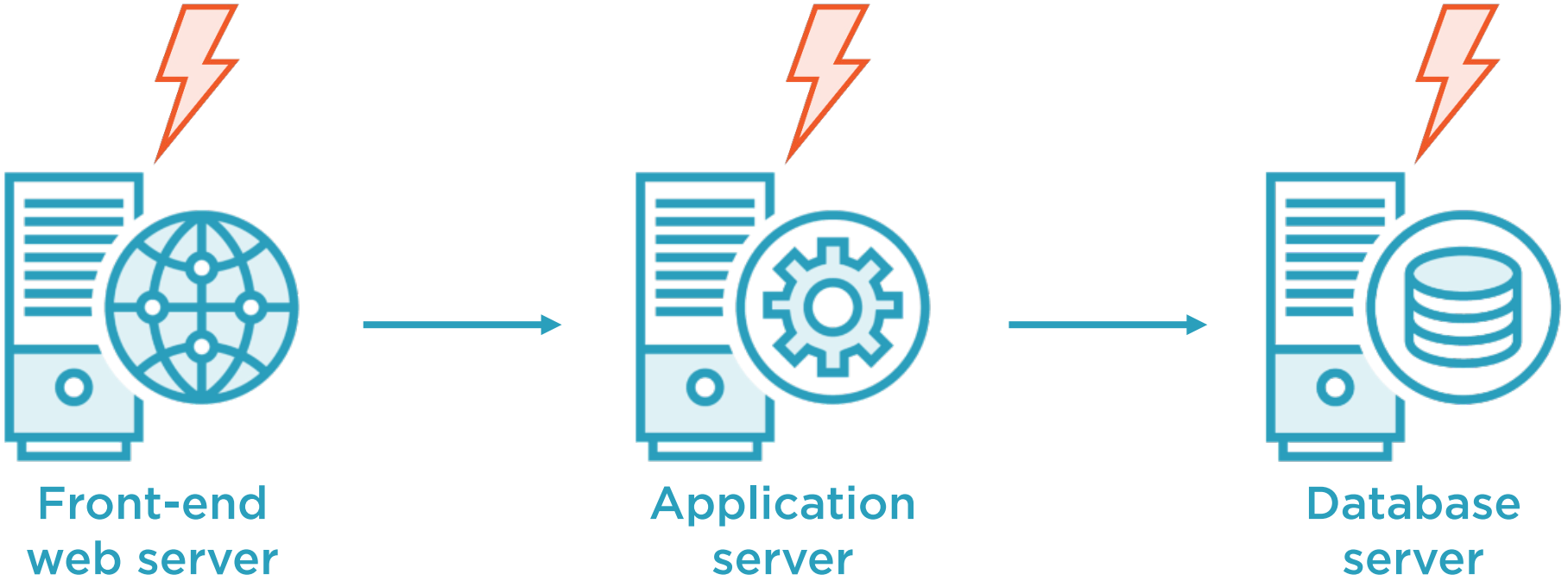
Spin up new servers rather than update existing ones

Keep applications fully up and running

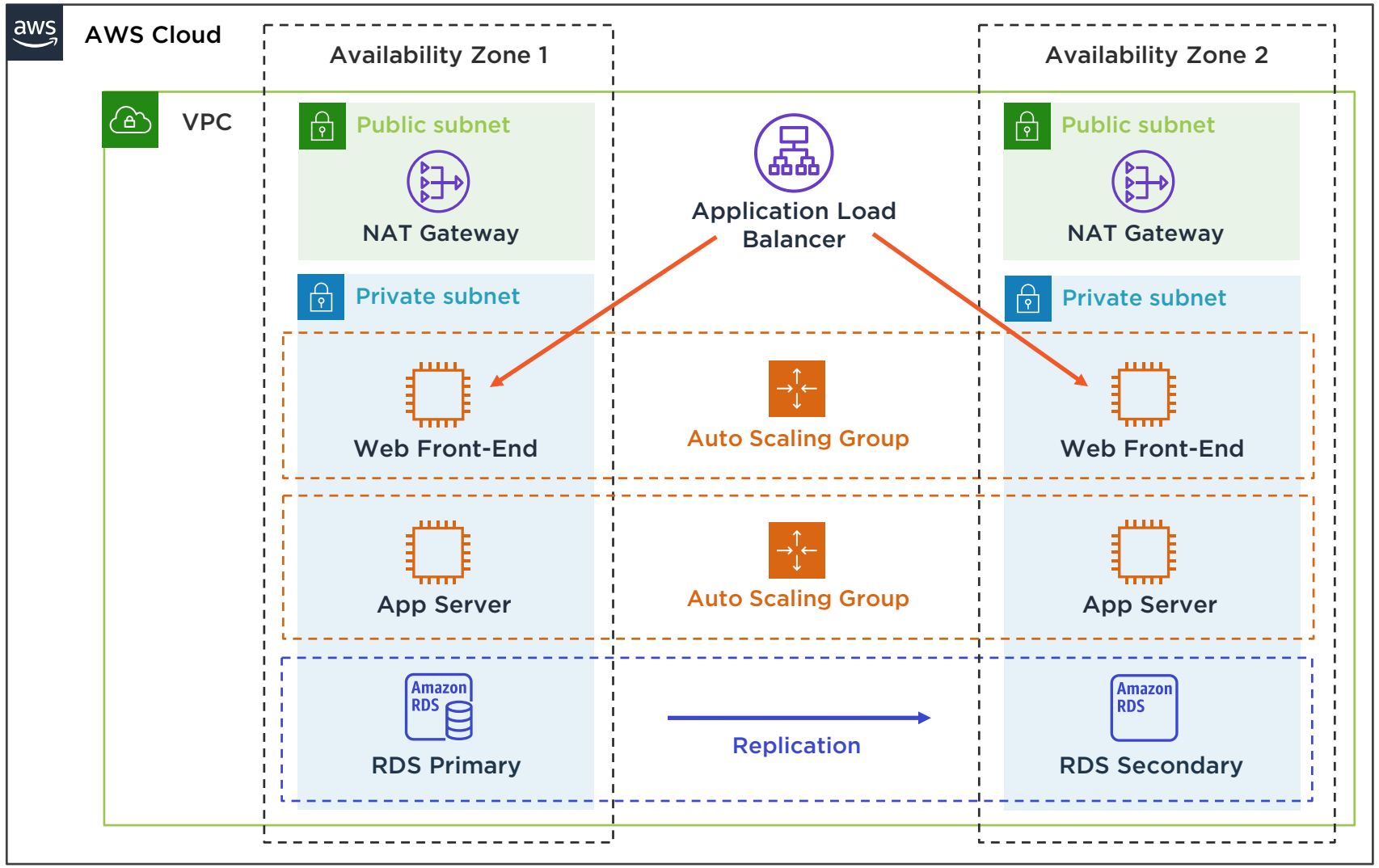


Reduce dependencies within applications

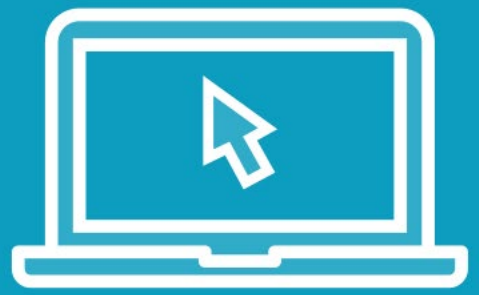
Eliminating Single Points of Failure



Highly Available Solution Architecture



Demo



Create EC2 instances in different Availability Zones

Create an Application Load Balancer

Health checks

Simulate a server outage

Review

- AWS global infrastructure
- Regions and availability zones
- Loosely coupled architectures
- Eliminating single points of failure
- Disposable resources
- Solution architecture for high availability
- Health checks

Up Next:
Designing for Scalability