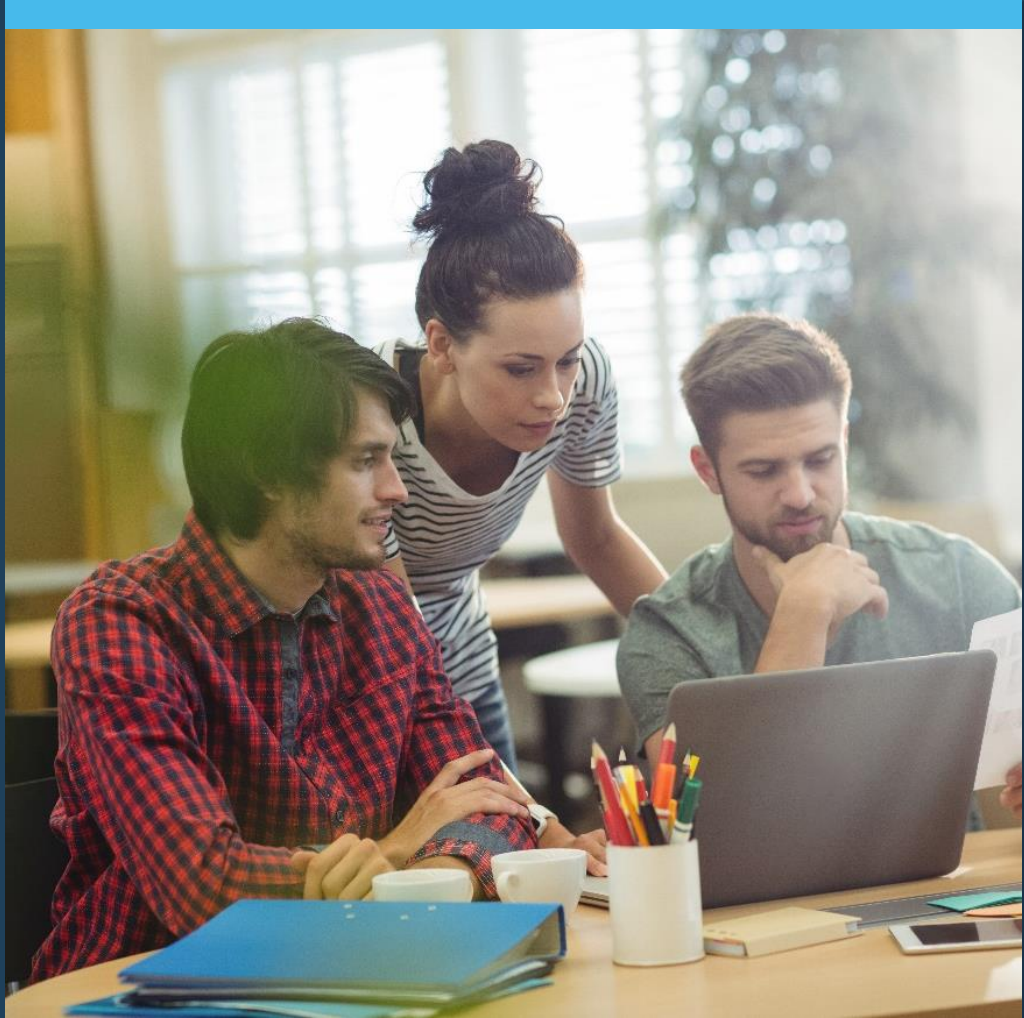


Certification Enablement Workshop - AWS Cloud Practitioner



Pre-read and Objectives for the Workshop

Pre-read

- An understanding of [AWS Cloud Concepts](#)
- Basic understanding of [security and compliance](#) within AWS Cloud
- Ability to distinguish AWS Core Services.
- Knowledge of [economics of AWS Cloud](#)

Objectives for the Workshop

- Ability to understand value of AWS Cloud
- Knowledge of [AWS Shared Responsibility Model](#)
- An understanding of best practices related to security
- Ability to identify AWS services for common use cases
- An understanding of AWS core services including compute, database, network and storage
- Knowledge on AWS economics, cloud costs and billing practices.

Certification Objectives Domain

01

Cloud Concepts-26%

Defining the AWS Cloud and its value proposition, identifying aspects of AWS Cloud Economics, understanding different cloud architecture design principle

02

Security and Compliance-25%

Defining AWS Shared Responsibility model, defining AWS cloud security and compliance concepts, identifying AWS access management capabilities, identifying different resources for security support

03

Technology-33%

Defining methods of deploying and operating in AWS Cloud, defining the AWS global infrastructure, identifying core AWS services, identifying resources for technology support

04

Billing and pricing-16%

Comparing various pricing model for AWS, recognizing various account structures in relation to AWS billing and pricing, identifying resources available for billing support





1. Cloud Concepts

- 1.1 Define the AWS Cloud and its value proposition
- 1.2 Identify aspects of AWS Cloud economics
- 1.3 Explain the different cloud architecture design principles

1.1 Define the benefits of the AWS cloud including



Define the AWS Cloud and its value proposition



Identify aspects of AWS Cloud economics



Explain the different cloud architecture design principles



AWS Cloud and its Value Proposition



AWS Cloud

Amazon Web Services



AWS EC2



AWS S3



DynamoDB



Cloud front



Other Services

AWS Facts and Figures

Launched in 2006

Pay-as-you-go

Scalable, Virtual

Unlimited Compute,
Storage, Bandwidth

IaaS, PaaS, SaaS,
FaaS, CaaS

VPN,
AWS Direct Connect,
Public Internet

AWS Value Proposition



Agility

Flexibility

Elasticity

Scalability



AWS Value Proposition



Reliability

High Availability

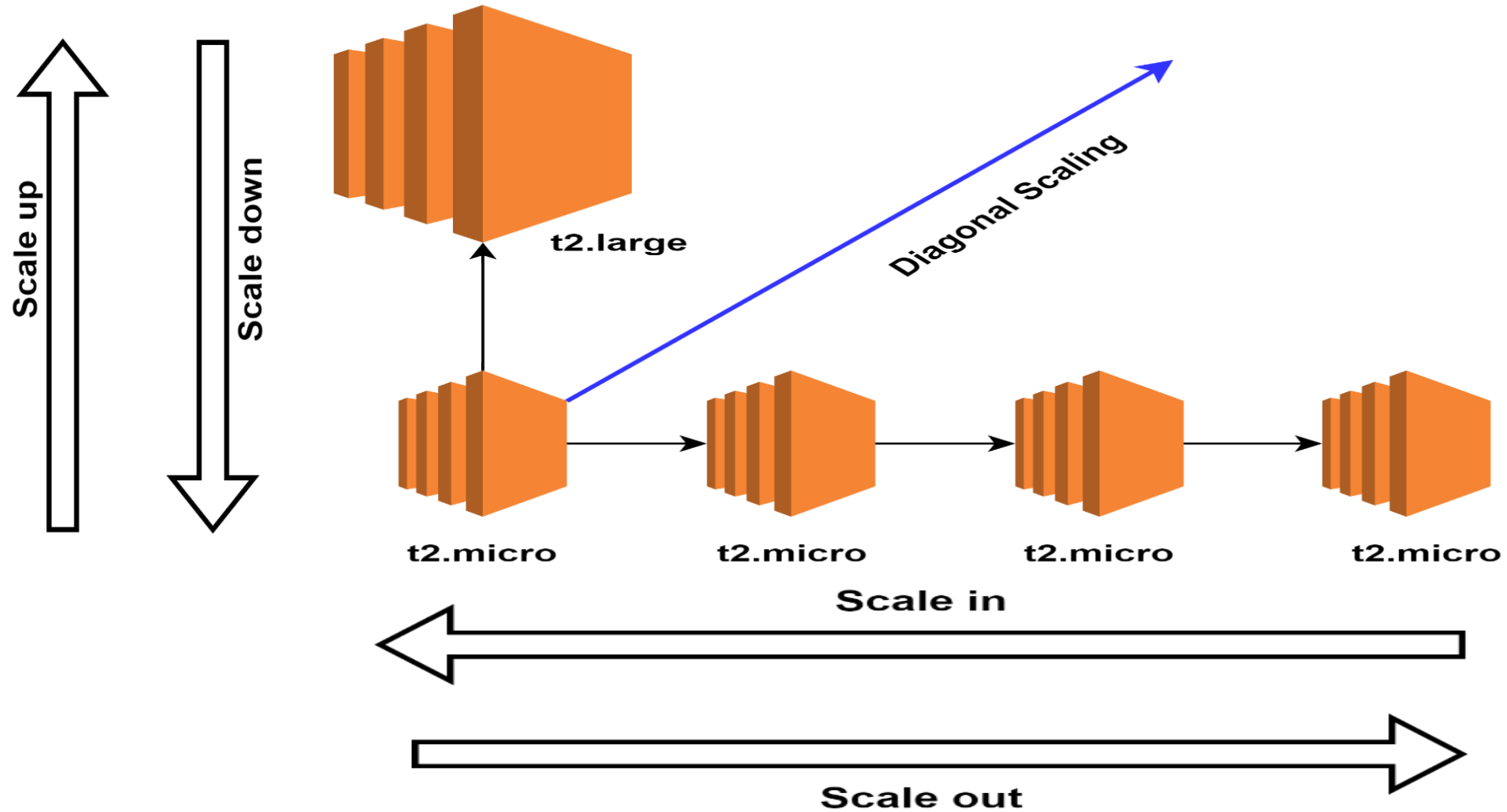
Economy of Scale

Pay as you go

Security



Use Cases for Scalability



Use Cases for Elasticity

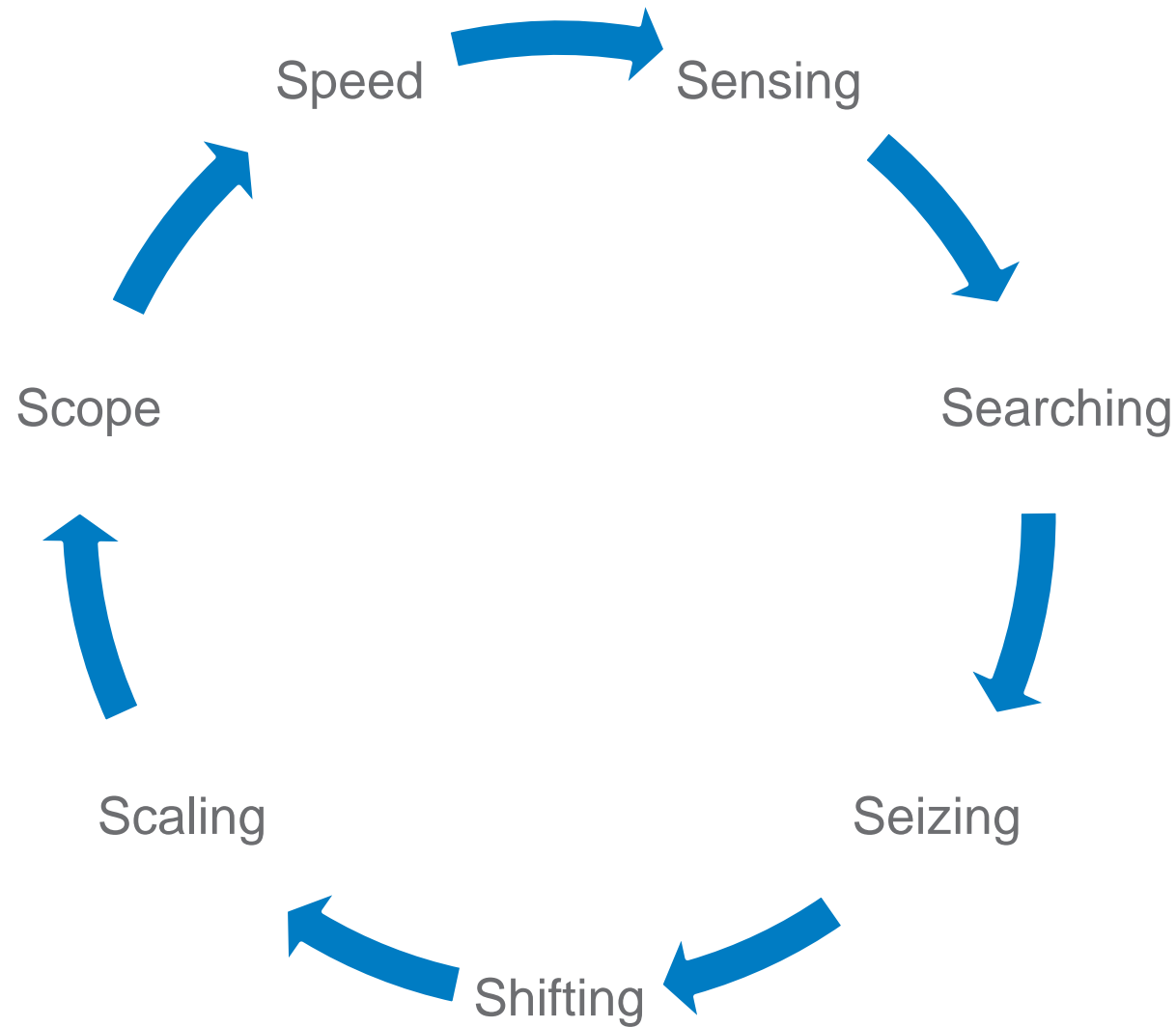


E-Commerce



Streaming Services

Seven S of Organizational Agility



Use Cases for Pay as You Go

Use cases for Pay as you go model



Benefits of Cloud Computing

- ☐ Fixed Expenses instead of variable expenses
- ☐ Massive Economy of Scale
- ☐ Stop guessing about capacities
- ☐ Better speed and improved agility
- ☐ Stop spending money on data centers
- ☐ Go global in minutes

1.2 Identify aspects of AWS Cloud economics



Define items that would be part of a Total Cost of Ownership proposal



Identify which operations will reduce costs by moving to the cloud



AWS Cloud Economics

AWS Cloud Economics

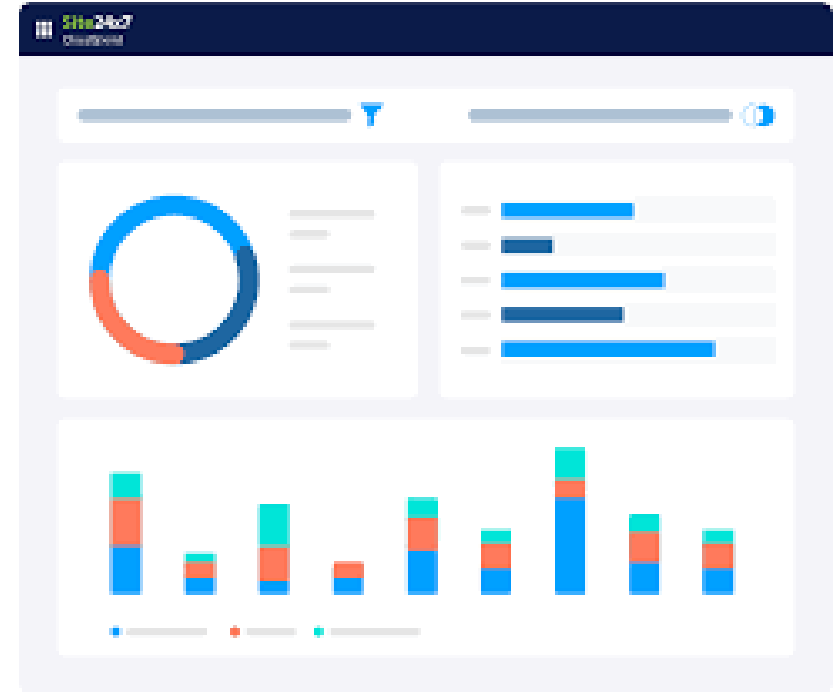
How much it cost?

Initial Cost

Migration cost

Duration to move

Monthly bill



Benefits of AWS Cloud Economics



**Cost Savings
(TCO)**



**Staff
Productivity**



**Operational
Resilience**



**Business
Agility**

Financial Benefits on Using AWS

Optimized Cost of Providing AWS
Business Operations Impact
Value

94%

Less time lost
to unplanned
downtime

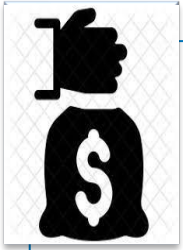
\$36.5_M

Additional revenue
per year per
organization

14%

Average higher
productivity, for 2,808
users per organization

Total Cost of Ownership (TCO) - Elements



CapEx



OpEx



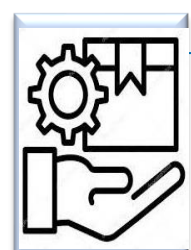
Staffing



Opportunity Costs



Licensing



Facilities Overhead

AWS Cloud pricing calculators

AWS TCO Calculator

aws pricing calculator

FeedbackEnglishContact Sales

AWS Pricing Calculator > My Estimate

My EstimateEdit

Add serviceAdd supportAdd groupClear estimateExport estimateShare

Estimate summaryInfo

Upfront cost0.00 USD

Monthly cost

Total 12 months cost

*Includes upfront cost

Getting Started with AWS

Contact UsSign in to the Console

AWS Simple Monthly Calculator

aws

SIMPLE MONTHLY CALCULATOR

Sign up for an AWS accountHours Per Month: 732Language: English

Need Help? Watch the Videos or Read How AWS Pricing Works or Contact Sales

Simple Monthly Calculator deprecation update: We appreciate your continuous feedback regarding the AWS Pricing Calculator. The Simple Monthly Calculator's deprecation date is delayed to ensure the features requested from our customers are available in the AWS Pricing Calculator. We will continue to add services to the AWS Pricing Calculator to guarantee parity with the Simple Monthly Calculator. If you have any feedback, contact us by using the Feedback link in the AWS Pricing Calculator.

FREE TIER: New Customers get free usage tier for first 12 months

Reset All

ServicesEstimate of your Monthly Bill (\$ 0.00)

Choose region: US East (N. Virginia)

Inbound Data Transfer is Free and Outbound Data Transfer is 1 GB free per region per month

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers. Amazon Elastic Block Store (EBS) provides persistent storage to Amazon EC2 instances.

Newer versions of the EC2 calculators are available: Amazon EC2 , EC2 Dedicated Host, Elastic Graphics, Elastic IP

Compute: Amazon EC2 Instances:

Description	Instances	Usage	Type	Billing Option	Monthly Cost
Add New Row					

Compute: Amazon EC2 Dedicated Hosts:

Description	Number of Hosts	Usage	Type	Billing Option
-------------	-----------------	-------	------	----------------

Common Customer Samples

Free Website on AWS

AWS Elastic Beanstalk Default

Marketing Web Site

Large Web Application (All On-Demand)

Cost Optimization Pillars



Right Sized Infrastructure

Increase Elasticity

Leverage the right pricing model

Optimize storage

Measure, monitor, and improve



1.3 Explain the different cloud architecture design principles



Design for failure



Decouple components versus monolithic architecture



Implement elasticity in the cloud versus on-premises

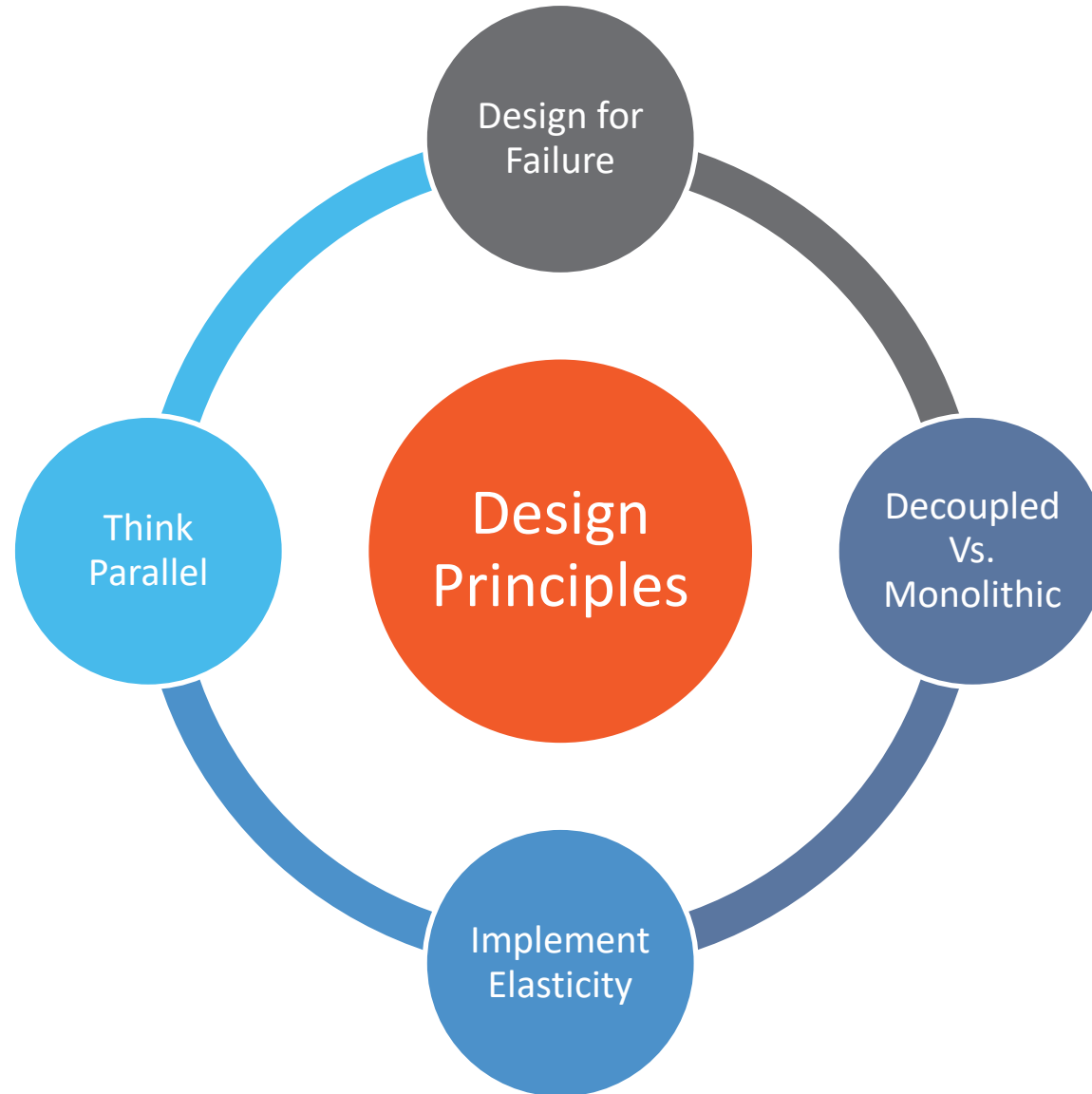


Think parallel



Cloud Architecture Design Principles

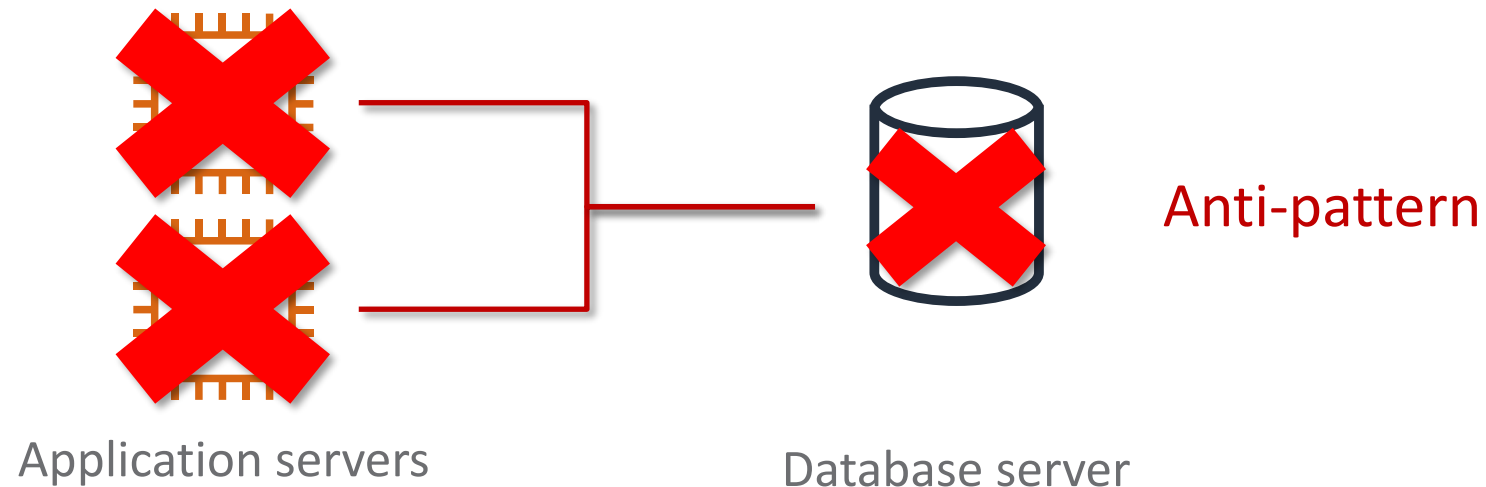
Design Principles



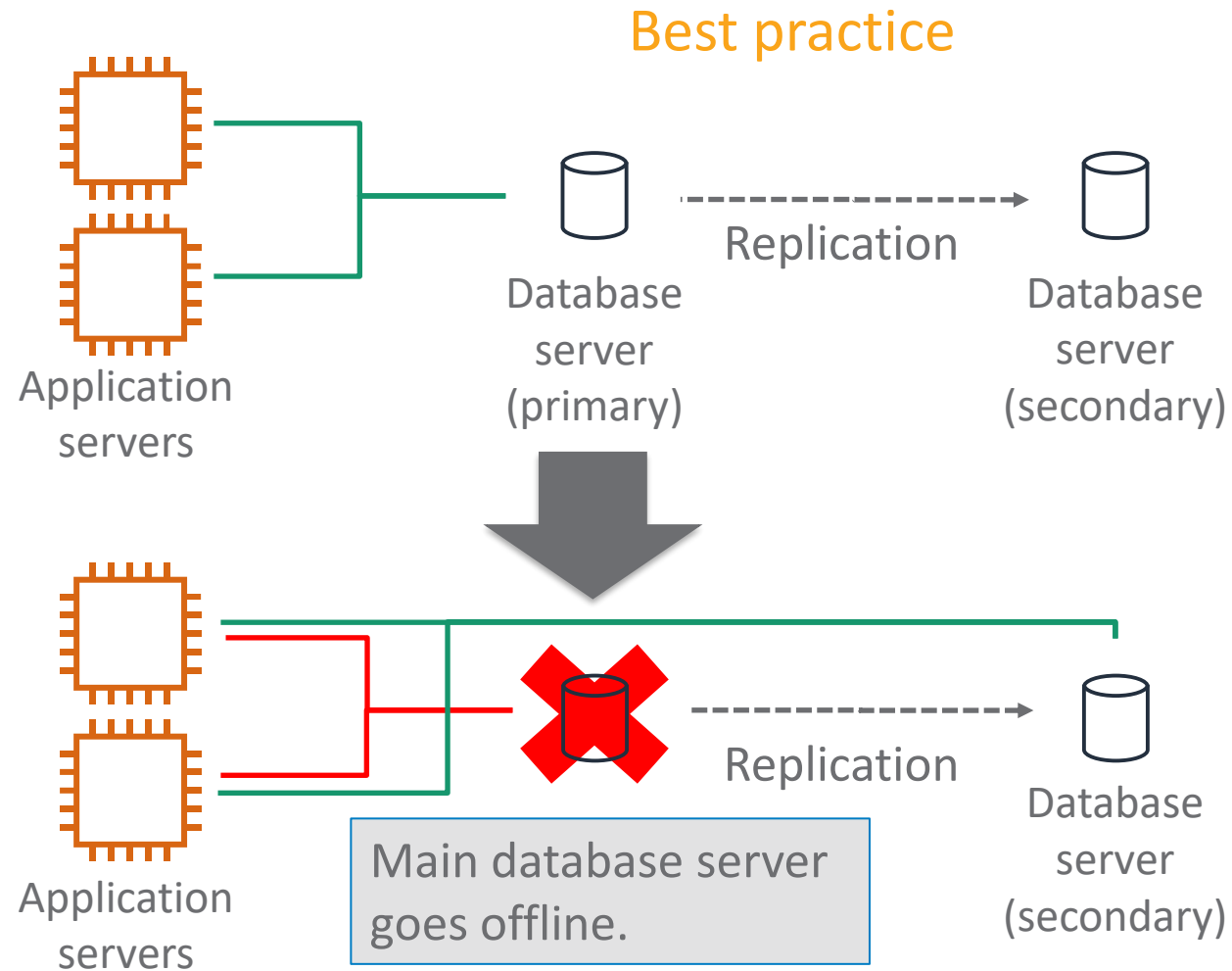
Design for Failure

*Assume everything fails.
Then, design backward.*

Where possible, use redundancy to prevent single points from bringing down an entire system.



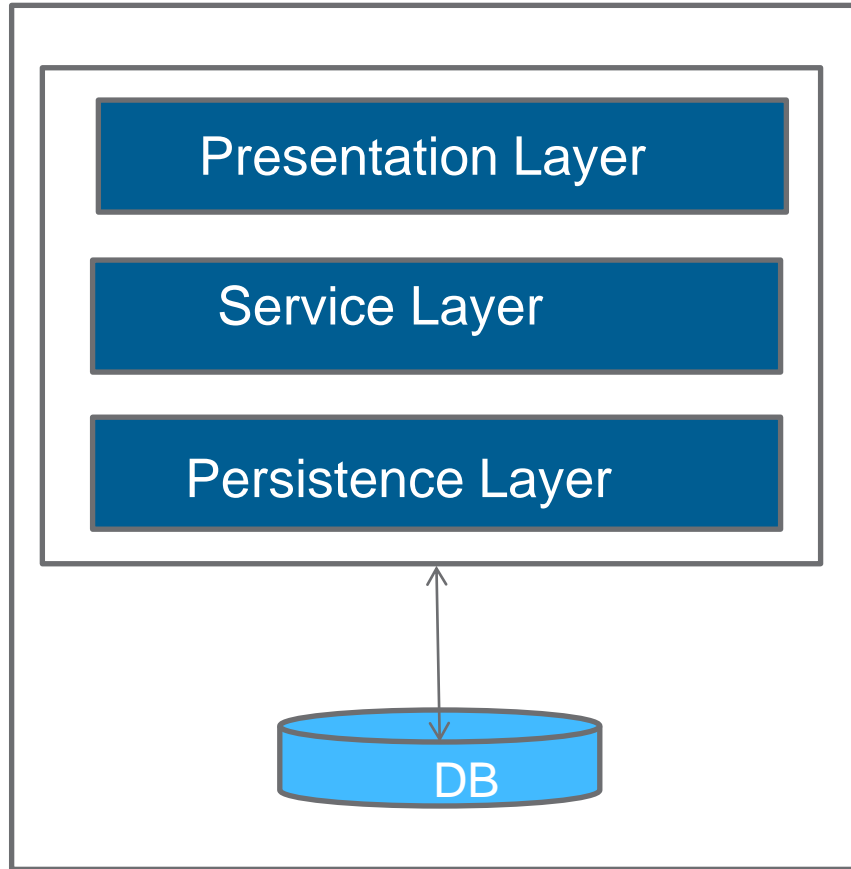
Design for Failure



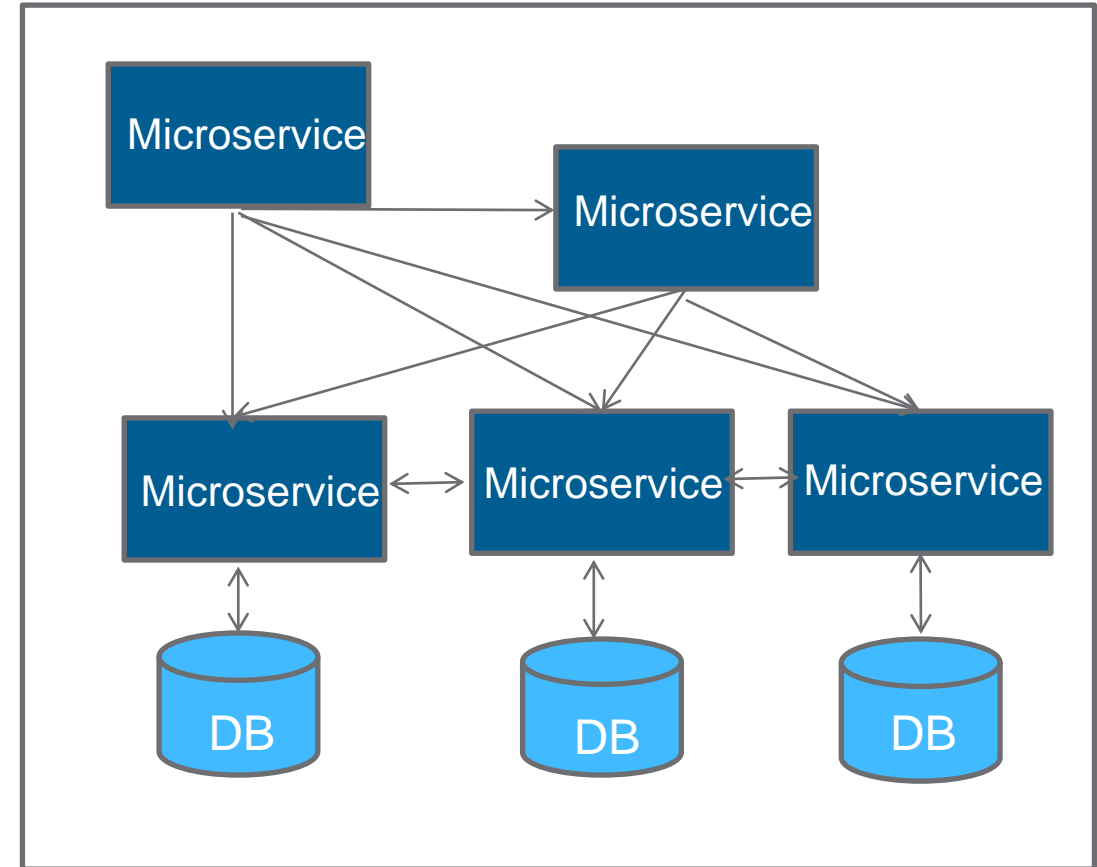
Create a secondary (standby) database server and replicate the data.

Secondary server picks up the load.

Monolithic architecture vs Decouple components



Monolithic Architecture

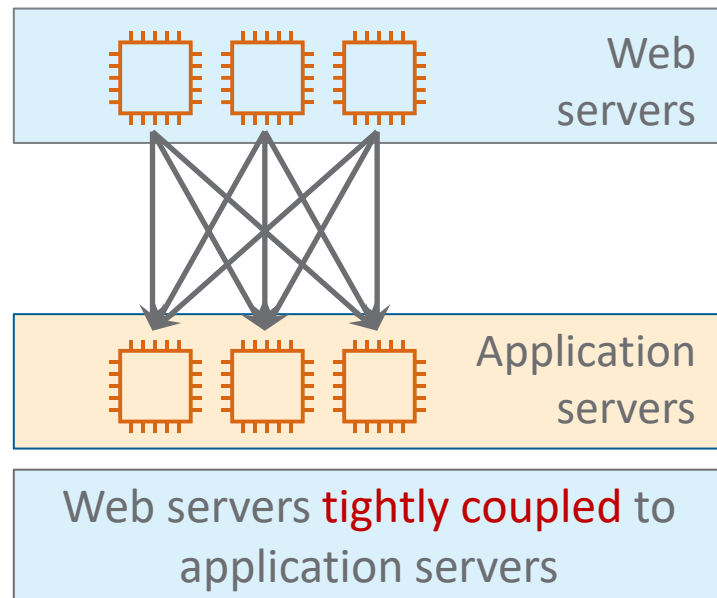


Decouple components

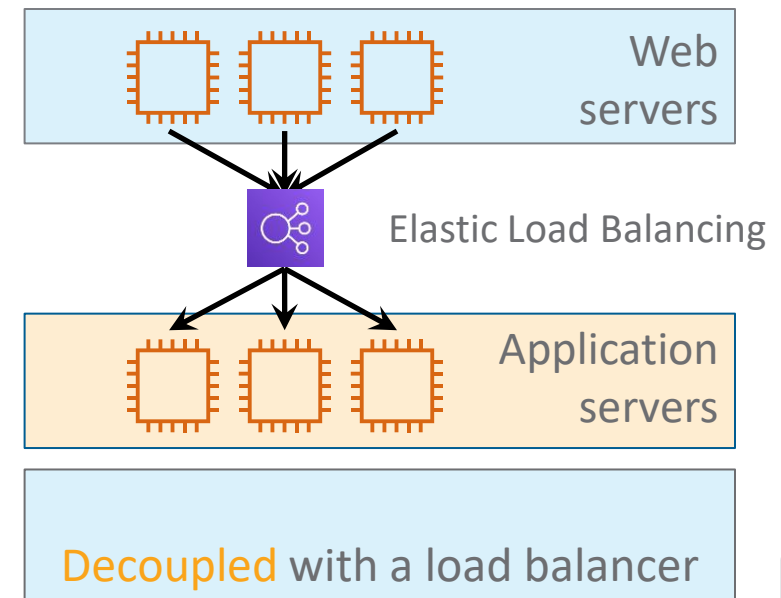
Decouple components

Design architectures with independent components.

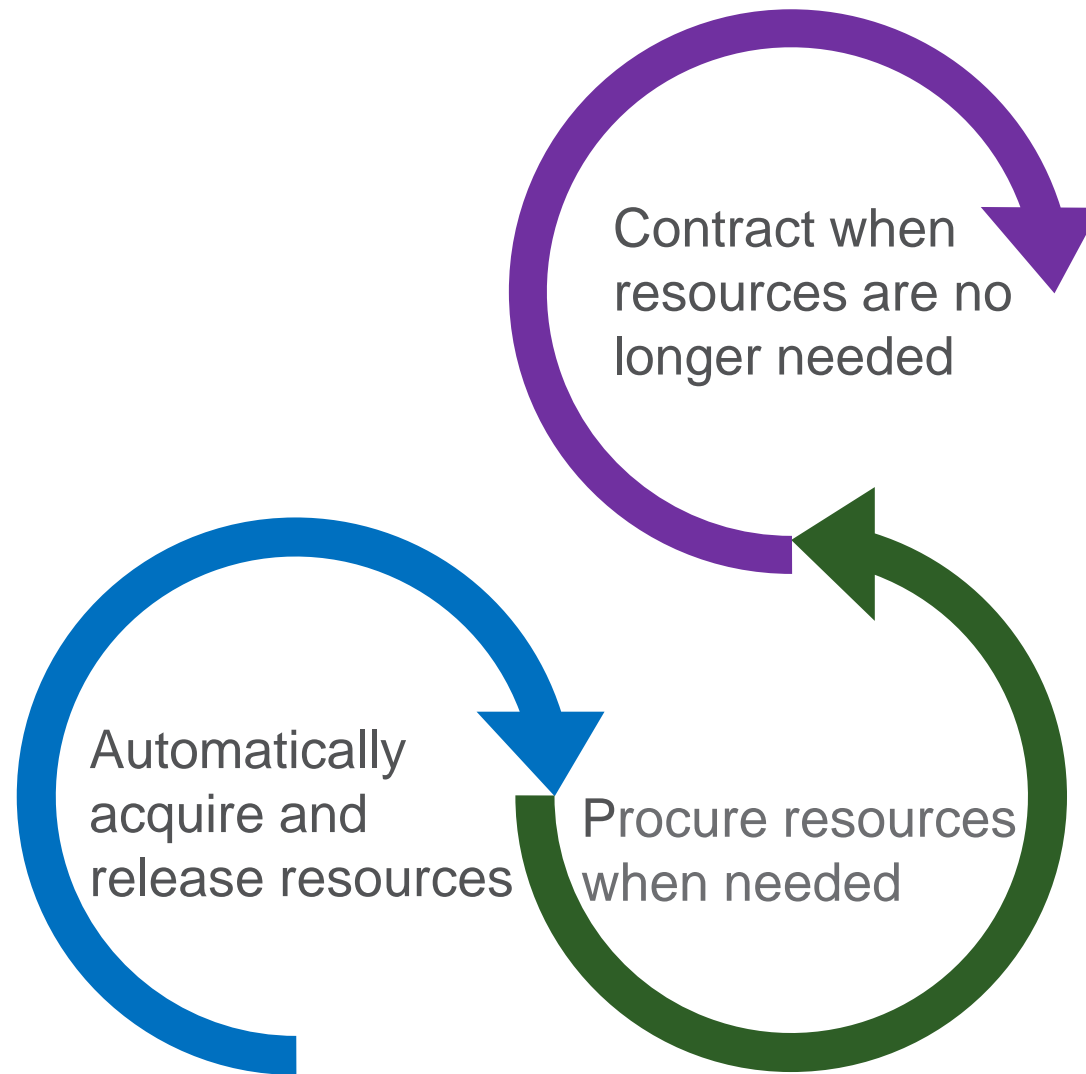
Anti-pattern



Best practice



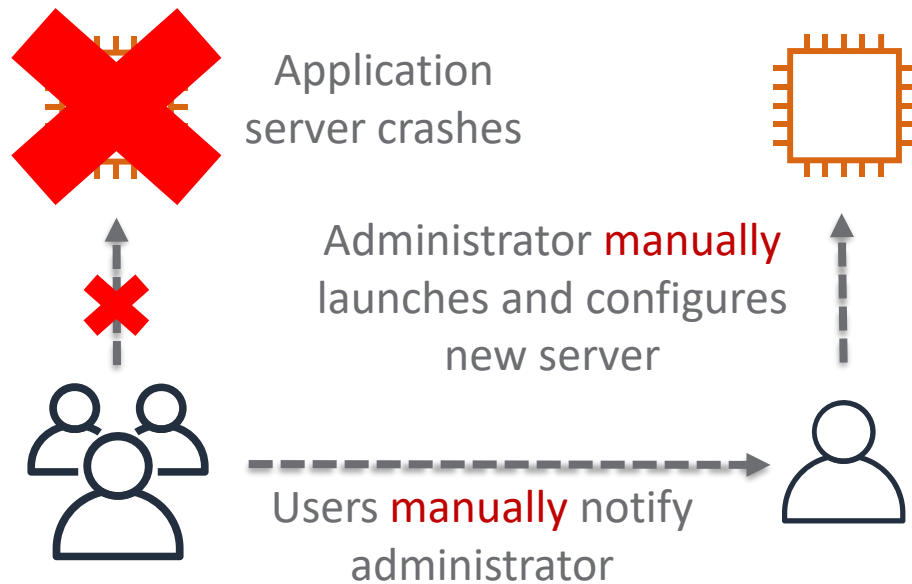
Elasticity



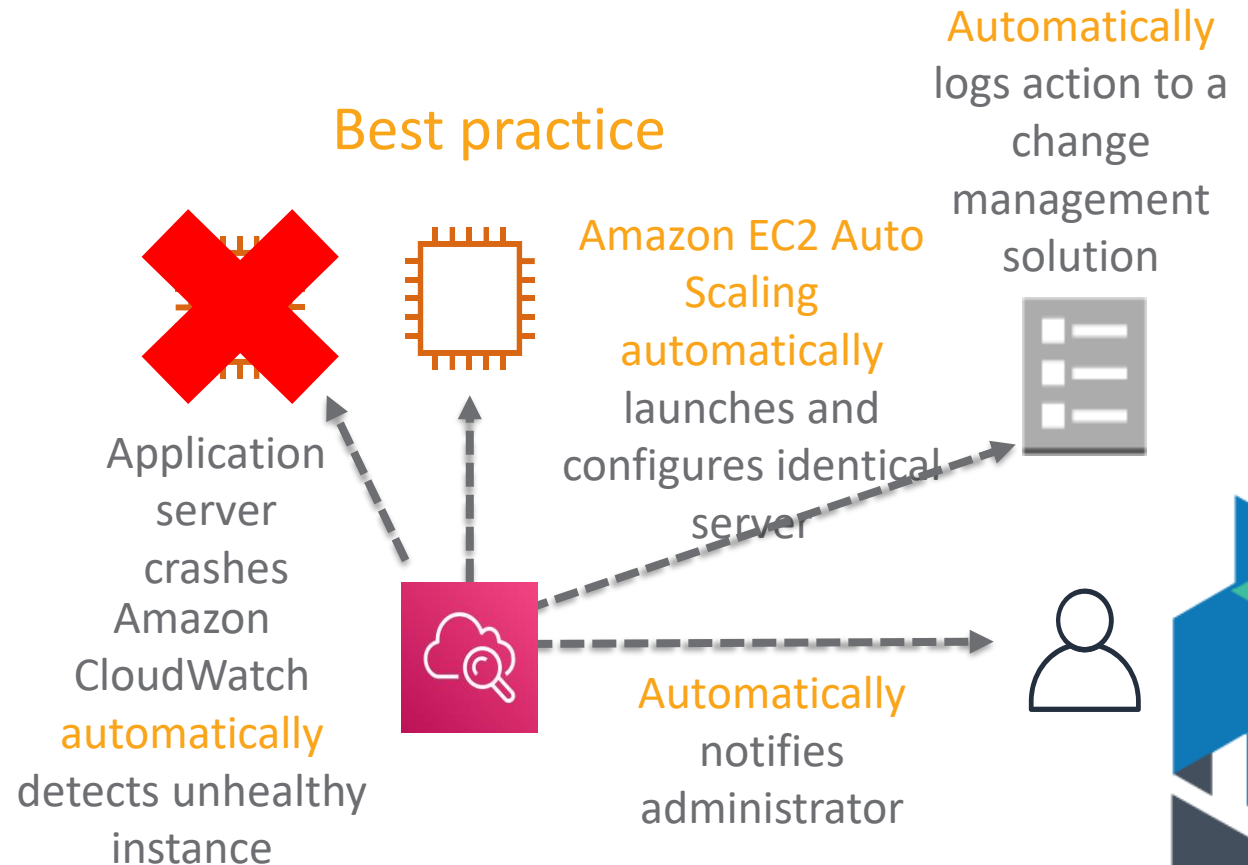
Implement elasticity in the cloud

Where possible, automate the provisioning, termination, and configuration of resources.

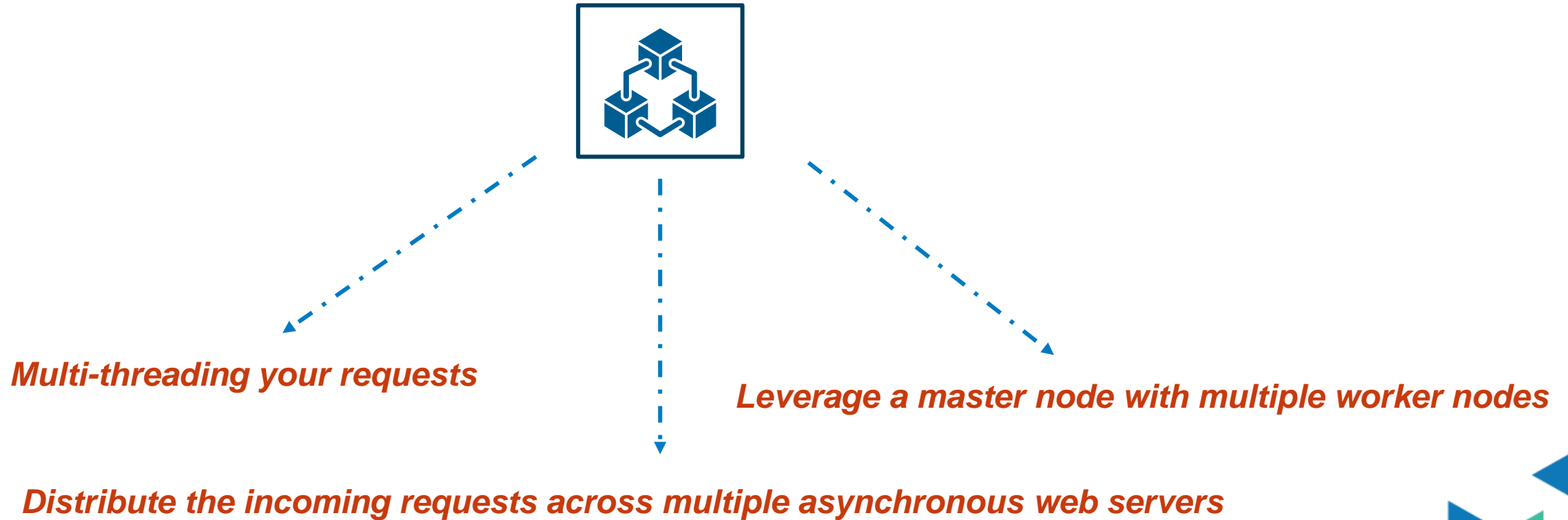
Anti-pattern



Best practice

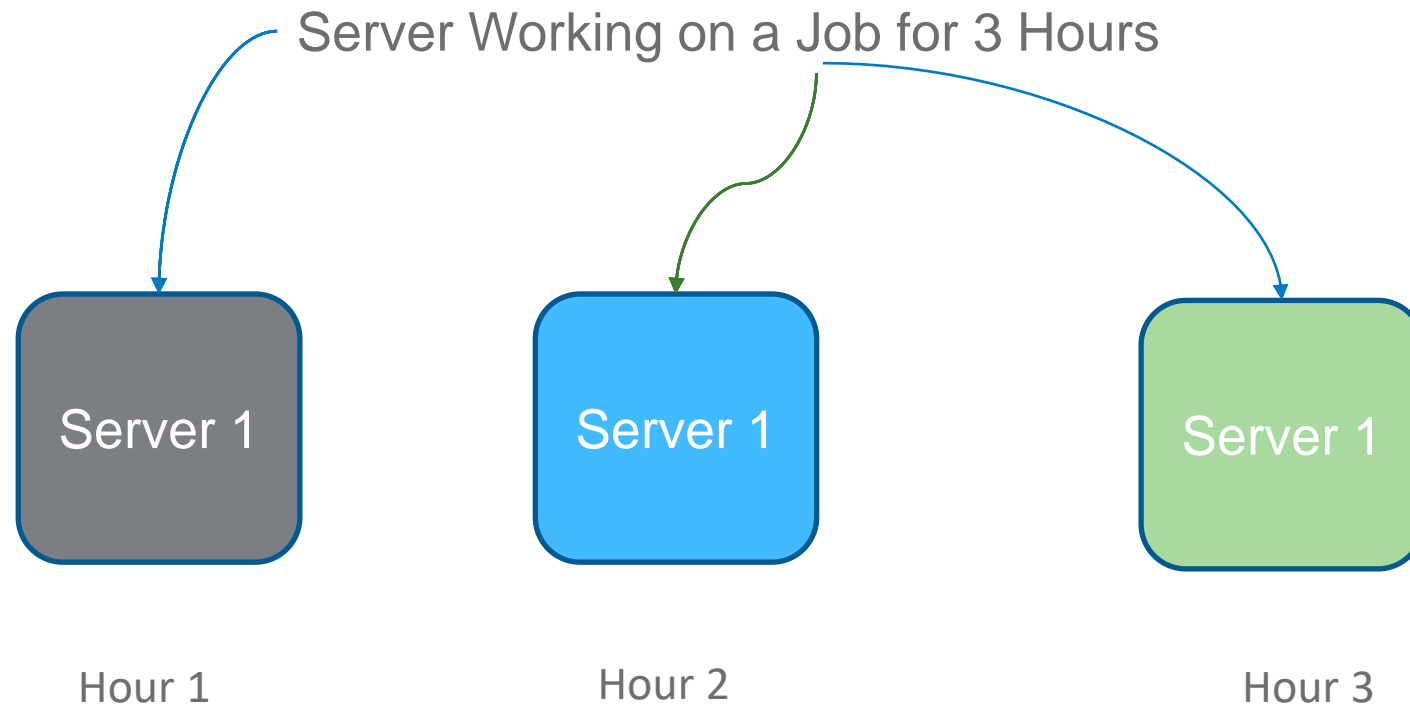


Think Parallel



Think parallel

Experiment with parallel architectures



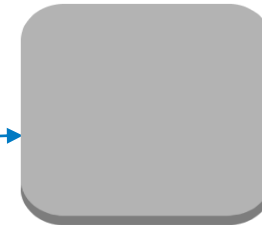
Think parallel

Experiment with parallel architectures

Three Servers Working on the same job
for 1 hour parallelly



Server 1

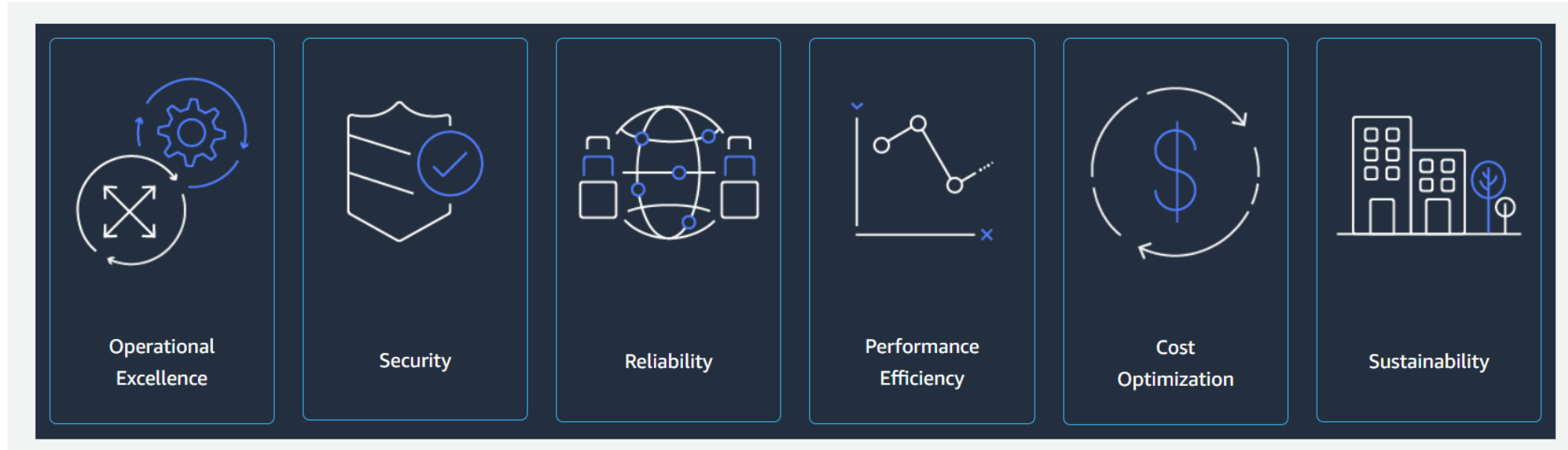


Server 2



Server 3

Well-Architected Framework



Summary

In This Module you have learnt the below Cloud Concepts

- AWS Cloud and its value proposition
- Aspects of AWS Cloud economics
- Different cloud architecture design principles

Sample Questions



Question 1

Which of the following benefit you get when you use AWS Cloud? (Select Two)

- A. Capital expenditure (Capex) is swapped with variable expenses
- B. Companies require more IT staffs
- C. Fixed monthly bills for customers irrespective of what resources they use.
- D. Companies gain better agility for their businesses
- E. All time free storage in Amazon S3

Answer: A,D

Question 2

Which design principle of AWS Cloud Architecture offers distribution of workloads among multiple Availability Zones?

- A. Design for failure
- B. Design for agility
- C. Automation implementation
- D. Implement elasticity

Answer: A

Question 3

Which of the following is a critical design concept for architecting cloud applications?

- A. Use the largest instance possible
- B. Implement elasticity
- C. Provision capacity for peak load
- D. Use the Scrum development process

Answer: B

Question 4

Which pillar of the AWS Well-Architected Framework is supported by the design philosophy of performing operations as code?

- A. Operational excellence
- B. Performance efficiency
- C. Reliability
- D. Security

Answer: A

Question 4

What is raised when a business deploys web servers across several AWS Regions?

- A. Coupling
- B. Availability
- C. Security
- D. Durability

Answer: B