



Module 5: Pricing models, cloud application support & Architecting

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Module goals

- Fundamentals of pricing
- Getting help with AWS
 - Plans
 - Technology
 - Programs
- The AWS Well-Architected Framework
- Reference architectures

Fundamentals of pricing

How do you pay for AWS?

Pay as you go



Save when you reserve



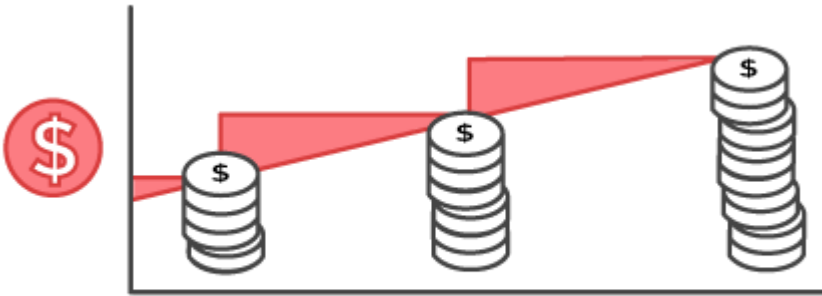
Use more, save more



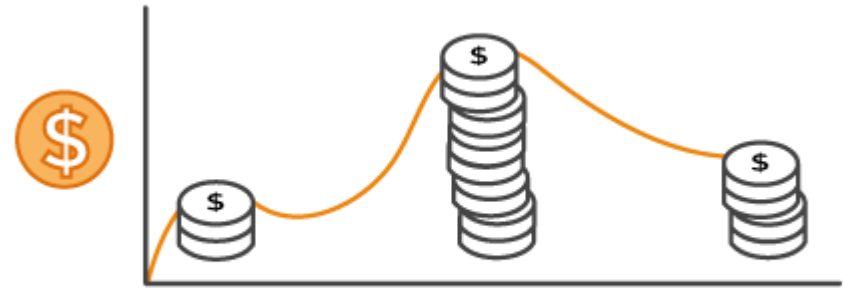
Pay as you go

Only pay for what you use

On premises/colocation



AWS



Save when you reserve: Savings Plans



Compute Savings Plans

Offer the greatest flexibility, up to 66% off (same prices as Convertible RIs)

FLEXIBLE ACROSS

- Instance family: E.g. move from C5 to M5
- Region: E.g. change from EU (Ireland) to EU (London)
- Operating System (OS): E.g. Windows to Linux
- Tenancy: E.g. switch Dedicated tenancy to Default tenancy
- Compute options: E.g. move from EC2 to Fargate



EC2 Instance Savings Plans

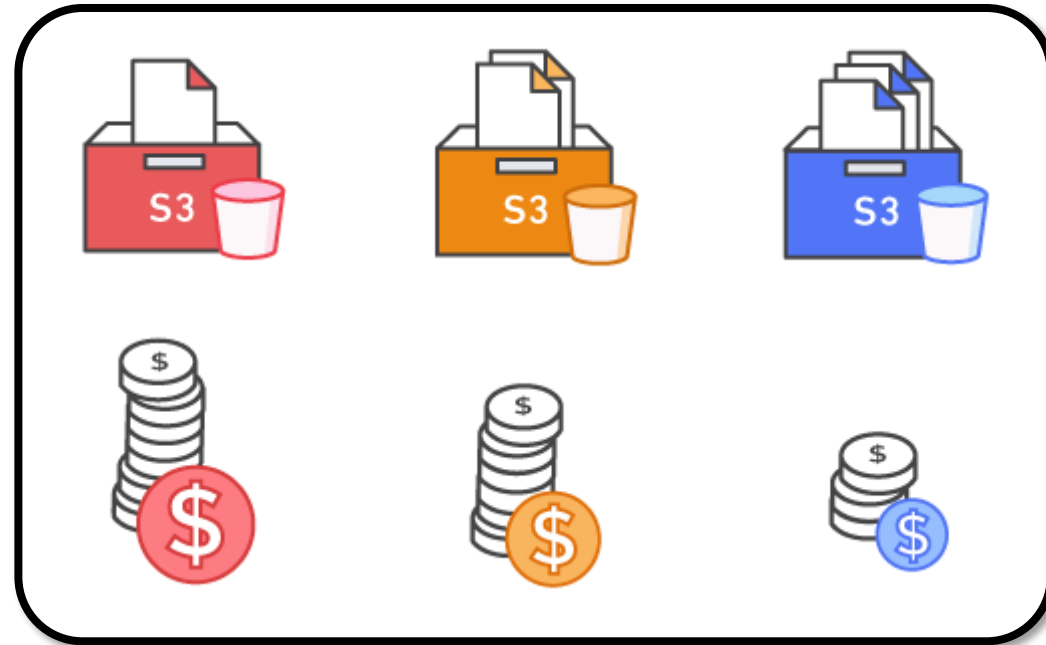
Provide the lowest prices, up to 72% off (same as Standard RIs) on the selected instance family (e.g. C5 or M5), in a specific AWS region

FLEXIBLE ACROSS

- Size: E.g. move from m5.xl to m5.4xl
- OS: E.g. change from m5.xl Windows to m5.xl Linux
- Tenancy: E.g. modify m5.xl dedicated to m5.xl default tenancy

Use more, save more

Automatic volume-based discounts



Pricing concepts

Compute

- Charged per hour/second*
- Varies by instance type

*Linux only

Storage

- Charged typically per GB

Data transfer

- Outbound is aggregated and charged
- Inbound has no charge (with some exceptions)
- Charged typically per GB



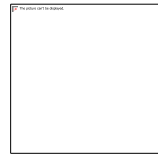
Different services are priced differently



Amazon EC2



Amazon EBS



Amazon S3



AWS CloudFormation

Amazon EC2: Five purchase types

On-Demand Instances

- Charged per hour/second*
- Short-term
- Unpredictable workloads

Dedicated Hosts

- Physical server dedicated to you
- Applications with specific compliance requirements

Reserved Instances

- Discount for 1 to 3 year commitments
- Applications with steady state usage

Savings Plans

- Discount on EC2 and Fargate for 1 to 3 year commitments
- Applications with steady state usage
- Savings similar to RIs but with added flexibility

Spot Instances

- Spare AWS capacity for up to 90% discount
- Applications with flexible start and end times
- Urgent computing needs for large amounts of capacity

Amazon EBS pricing model

Volumes

- Charged by GB provisioned/month
- Varies by volume type

Snapshots

- Charged by space consumed in Amazon S3
- Charged for volume copied across regions

Data transfer

- Inbound data transfer is free
- Outbound data transfer charges are tiered

Amazon S3 pricing model

- Amount of storage used
- Region
- Storage class
- Number and type of requests (GET, PUT, COPY)
- Amount of data transferred out of the region

AWS services with no additional charge



Amazon VPC



Elastic Beanstalk



Auto Scaling



AWS CloudFormation

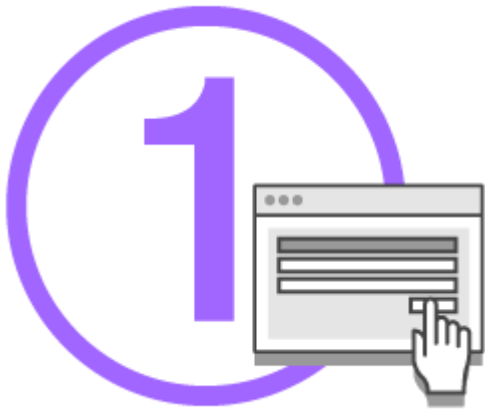


AWS Identity and Access
Management (IAM)

Cost estimating tools

AWS Free Tier

Enables you to gain free hands-on experience with the AWS platform, products, and services.



**Sign up for an
AWS account**



**Learn with 10-
minute tutorials**



**Start building
with AWS**

AWS Simple Monthly Calculator

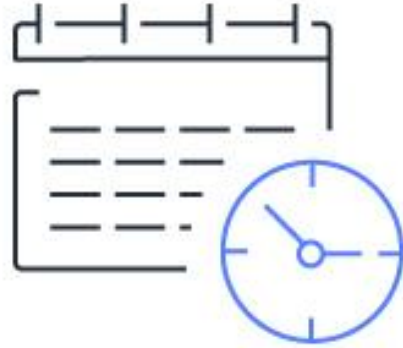


- Estimate your monthly bill
- Per-service cost breakdown
- Aggregate monthly estimate
- Provides common customer examples

Analyzing with AWS Cost Explorer



Get started quickly



Set custom intervals



Filter/group data



Forecast cost and usage



Save progress



Access data
programmatically

What Is Trusted Advisor?

A service providing guidance to help you reduce cost, increase performance, and improve security

Cost Optimization



0  9  0 

\$7,516.87

Potential monthly savings

Performance



3  7  0 

Security



2  4  11 

Fault Tolerance



0  15  5 

Service Limits



37  0  1 

Cost estimating tools tour

AWS Support



Support plan overview

Support plan	Features
Basic	<ul style="list-style-type: none">• Customer service• Support forums• Service health checks• Documentation, whitepapers, and best-practice guides
Developer	<ul style="list-style-type: none">• Best-practice guidance• Client-side diagnostic tools• Building-block architecture support
Business	<ul style="list-style-type: none">• Use-case guidance• IAM for controlling individuals' access to AWS Support• Full AWS Trusted Advisor• An API for interacting with Support Center and Trusted Advisor• Third-party software support
Enterprise	<ul style="list-style-type: none">• Application architecture guidance• Infrastructure event management• Technical Account Manager (TAM)• White-glove case routing• Management business reviews



Tech Support Access and Response

Support plan	Tech support access	Response times
Basic	<ul style="list-style-type: none">• N/A	<ul style="list-style-type: none">• N/A

Support documentation

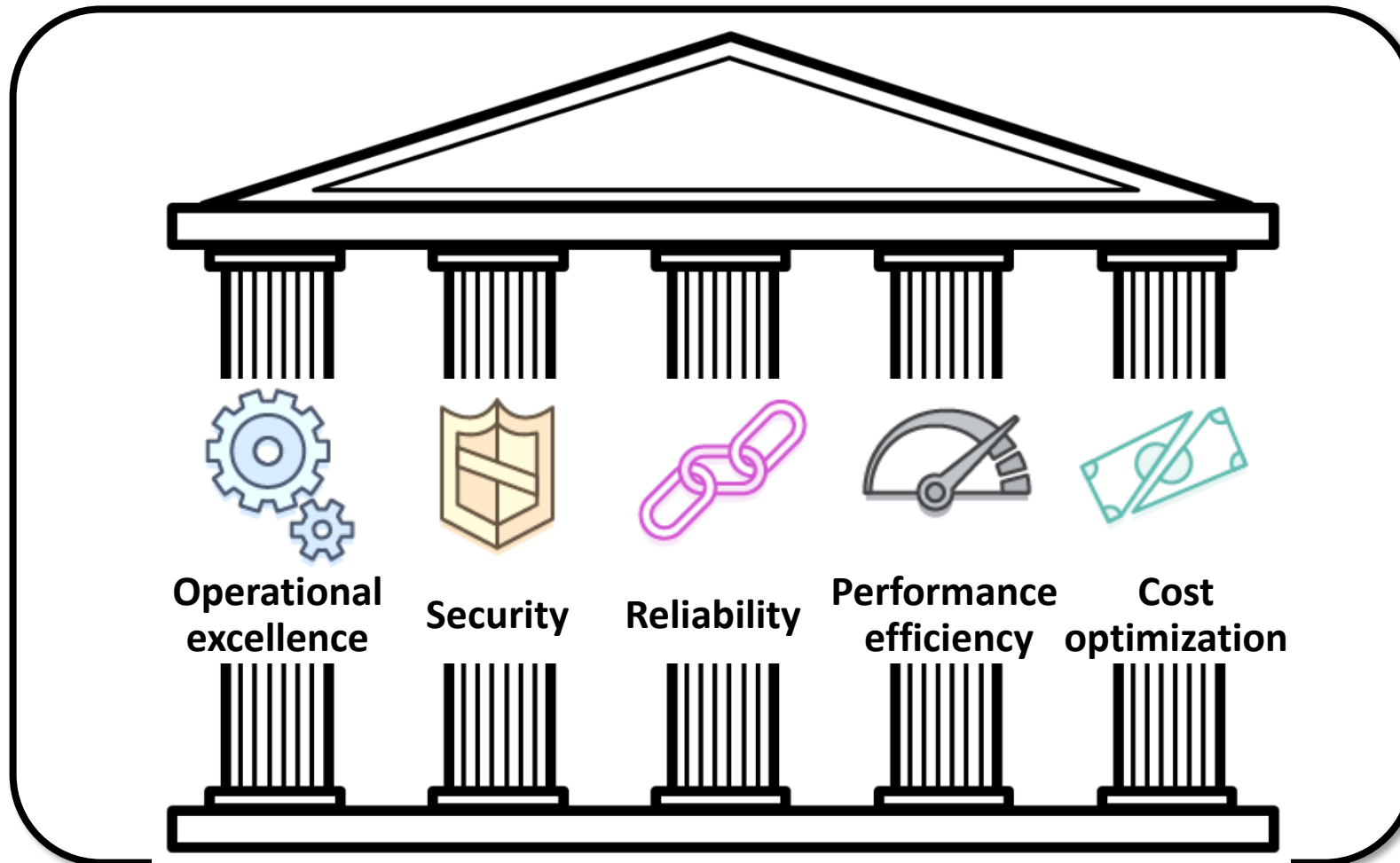
- Knowledge Center (FAQs and common requests)
- AWS Documentation
- AWS Discussion Forums
- AWS Support Center

The AWS Well-Architected Framework

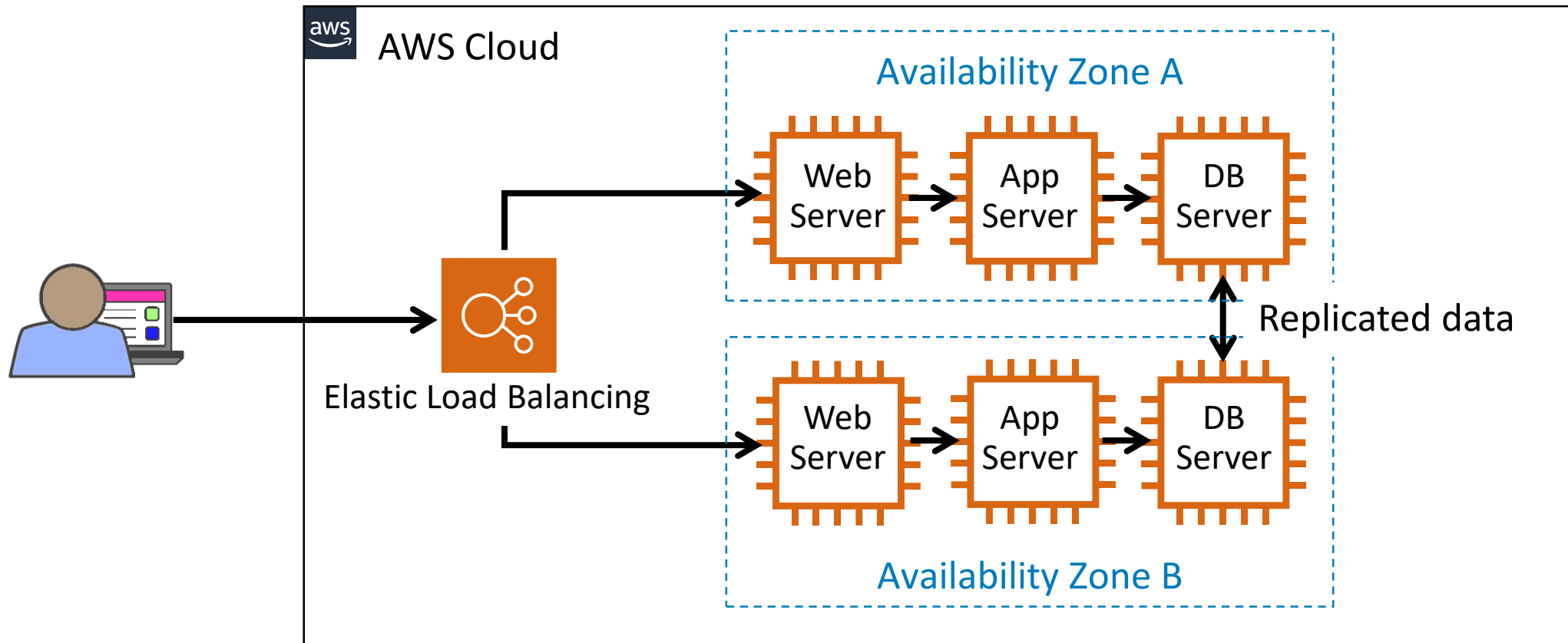
What is the Well-Architected Framework?

- A guide for designing infrastructures that are:
 - ✓ Secure
 - ✓ High-performing
 - ✓ Resilient
 - ✓ Efficient
- A systematic approach to evaluating and implementing architectures
- Established best practices developed through lessons learned by working with customers

Five pillars of the framework



Example: Improving availability with Elastic Load Balancing



Cost optimization design principles



Adopt a consumption
model



Stop spending money
on datacenter
operations



Measure overall
efficiency

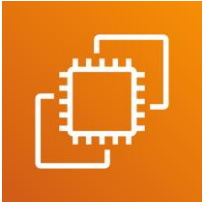


Analyze and attribute
expenditure



Use managed services to
reduce TCO

Managed services: Relational database options



Amazon EC2



Amazon
Relational
Database Service
(Amazon RDS)



Amazon
Redshift



Amazon
Aurora
Serverless



Amazon
Athena

Unmanaged

Highly managed

Pay for Infrastructure

Pay per Transaction

AWS Well-Architected Framework tour

Key takeaways

- AWS offers a pay-as-you-go approach for pricing
- Some services have specific pricing factors and some have no additional charge*
- AWS Simple Monthly Calculator helps you estimate your monthly bill
- Additional support such as Knowledge Center, AWS Documentation, and AWS Discussion Forums
- The Well-Architected Framework
 - Designed to help you build secure, high-performing, resilient, and efficient infrastructure in a cloud-native way
 - Provides a consistent approach for evaluating architectures and implementing designs
 - Established five pillars with design principles that scale with your needs over time

Thank you!

 #AWSomeDay