AWS Certified Cloud Practitioner

Module 01 - AWS Cloud Introduction

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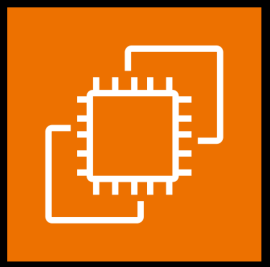
What is Cloud Computing?

Cloud computing is the on-demand delivery of IT resources over the Internet with pay-as-you-go pricing.

Instead of buying, owning, and maintaining physical data centers and servers, you can access technology services, such as computing power, storage, and databases, on an as-needed basis from a cloud provider like Amazon Web Services (AWS).



Amazon Elastic Compute Cloud (Amazon EC2)

Amazon Simple Storage Service (Amazon S3)

Amazon Relational Database Service (Amazon RDS)

Why would we want to use the cloud?

Web Services

Web Services (that's what the WS in AWS stands for!) let us accomplish tasks by using Services available over the Internet

Simple Storage Service (S3)

Store LOTS of files

Amazon Polly

Convert Text to Speech

Amazon Transcribe

Convert Speech to Text

Web Services

Amazon Textract

Extract text and numbers from documents

Amazon Translate

Translate between languages

Amazon Comprehend

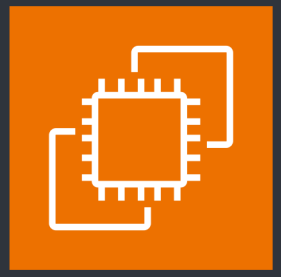
Analyzing and understanding meaning in text

Elastic Compute Cloud (EC2)

Compute

Servers running in the cloud

(Virtual Machines running on Physical Servers)



Key Points

- Have a Windows or Linux virtual server up and running in minutes
- You choose: Memory, CPU, Storage (Disk) and more
- You can install applications and use the server as a:
  - Web Server
  - Database
  - File server
  - … and more!

Let's launch an EC2 instance!

Why?

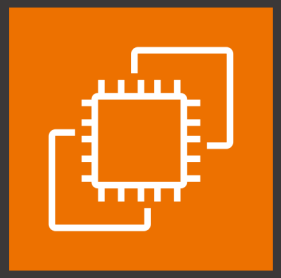
A server provides an essential building block component for websites and applications.

It is "Compute" that will process requests (such as customer orders, or web page requests)

We just used …

EC2 – Elastic Compute Cloud

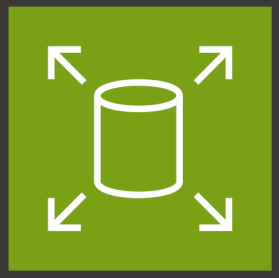
Virtual Servers



EBS – Elastic Block Store

Virtual Storage

(Hard Disk Drives and Solid State Drives)



VPC – Virtual Private Cloud

Virtual Networking with Virtual Network Cards (ENI - Elastic Network Interface)

AWS Cloud Value Framework (1 of 2)

Cost Savings (TCO)

Infrastructure cost savings/ avoidance from moving to the cloud.

Example:

50%+ reduction in TCO.

Staff Productivity

Efficiency improvement by function on a task-by-task basis.

Example:

Over 500 hours per year of server configuration time saved.

Operational Resilience

Benefit of improved availability, security, and compliance.

Example:

Critical workloads run in multiple AZs and Regions for robust DR.

AWS Cloud Value Framework (2 of 2)

Business Agility

Deploying new features/ applications faster and reducing errors

Example:
Launch of new products 75% faster.

Sustainability

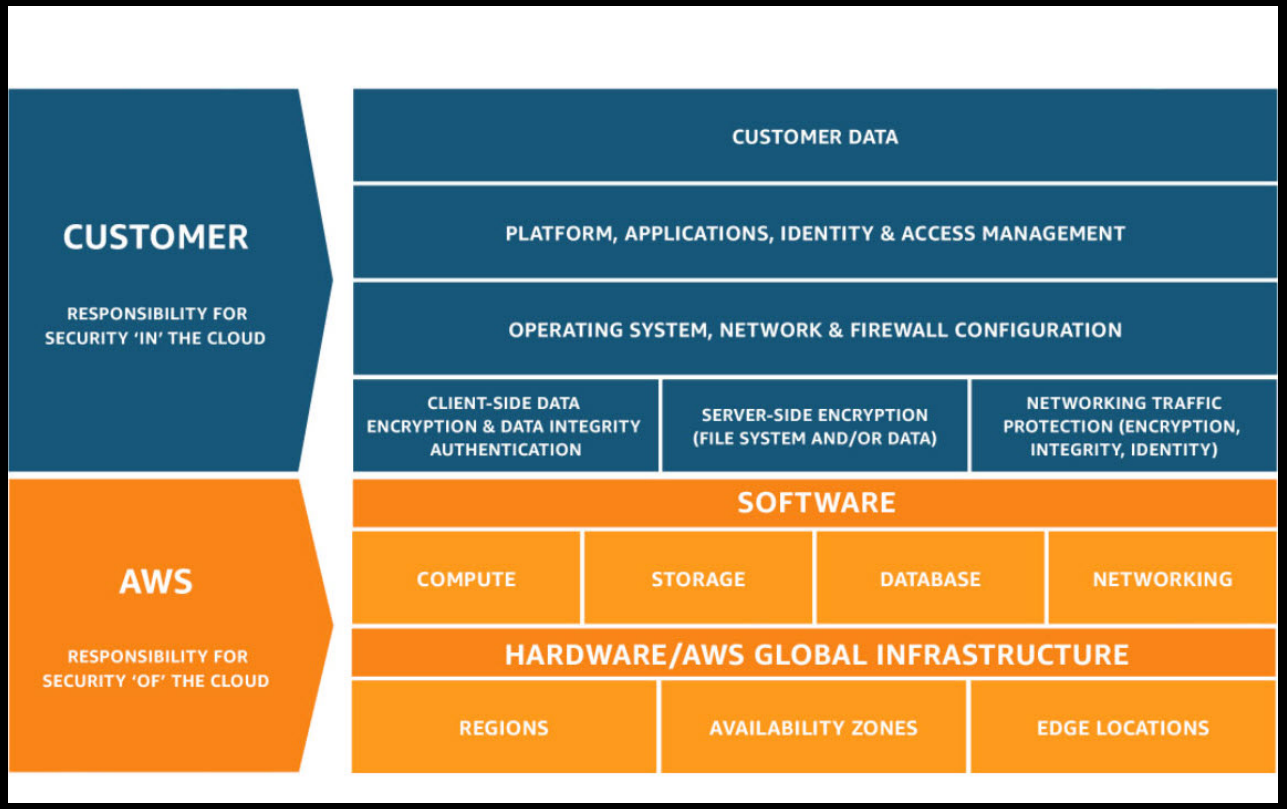
Minimizing environmental impact of business operations

Example:

Power consumption reduced by 10 megawatts per year

What is the division of responsibility between AWS and us as the customer?

AWS Shared Responsibility Model



YOU as the customer have responsibility for making many decisions about how to implement and SECURE your AWS Resources.

It is your responsibility to correctly apply features and settings in your cloud environment

How will we know the recommend best practices for working in the cloud?

AWS Well-Architected Framework (1 of 2)

The AWS Well-Architected Framework describes key concepts, design principles, and architectural best practices for designing and running **workloads** in the cloud.

Operational Excellence

Focuses on running and monitoring systems, and continually improving processes

Security

Protecting information and systems, including confidentiality and integrity of data, managing permissions, and establishing security controls.

Reliability

Focuses on workloads performing their intended functions and how to recover quickly from failure to meet demands.

AWS Well-Architected Framework (2 of 2)

Performance Efficiency

Focuses on structured and streamlined allocation of IT and computing resources (optimal sizes to meet requirements)

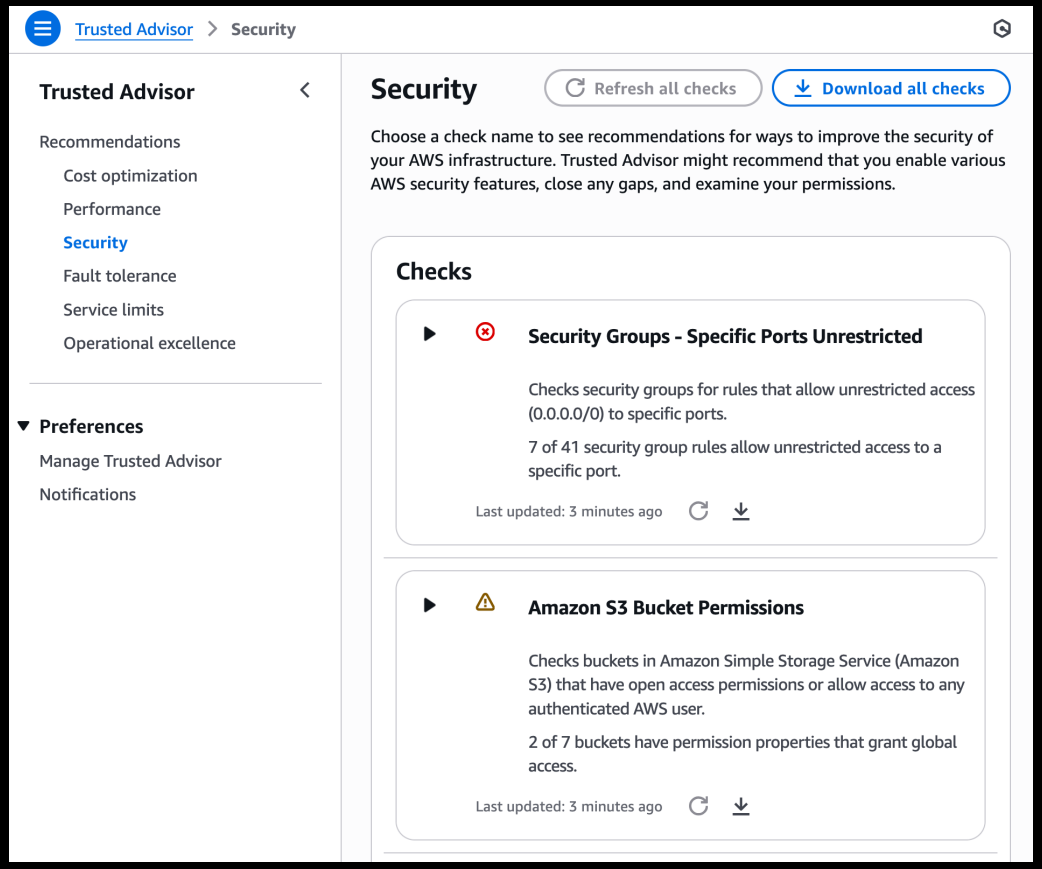
Cost Optimization

Focuses on avoiding unnecessary costs. Understanding spending over time and controlling fund allocation.

Sustainability

Focuses on minimizing environmental impacts of running cloud workloads.

AWS Trusted Advisor



Trusted Advisor inspects your AWS environment, and then makes recommendations when opportunities exist to save money, improve system availability and performance, or help close security gaps.

NOTE: The 0.0.0.0/0 shown in the left means the ENTIRE INTERNET

Support Plans

Developer Support

- No Phone Support (web only)
- Basic Trusted Advisor Checks

Business Support

- 24/7 Phone, Web, and chat
- All the Trusted Advisor checks

Enterprise On-Ramp / Enterprise Support

- 24/7 Phone, Web, and chat
- Technical Account Manager (TAM)
- All the Trusted advisor Checks

What is this going to cost?

Cloud Costs and Pricing

Your three key tools …

Pricing Pages

Every AWS service has a detailed Pricing page that describes the cost components

Example: https://aws.amazon.com/s3/pricing/

AWS Pricing Calculator

https://calculator.aws allows you to dynamically generate a cost estimate combining multiple services

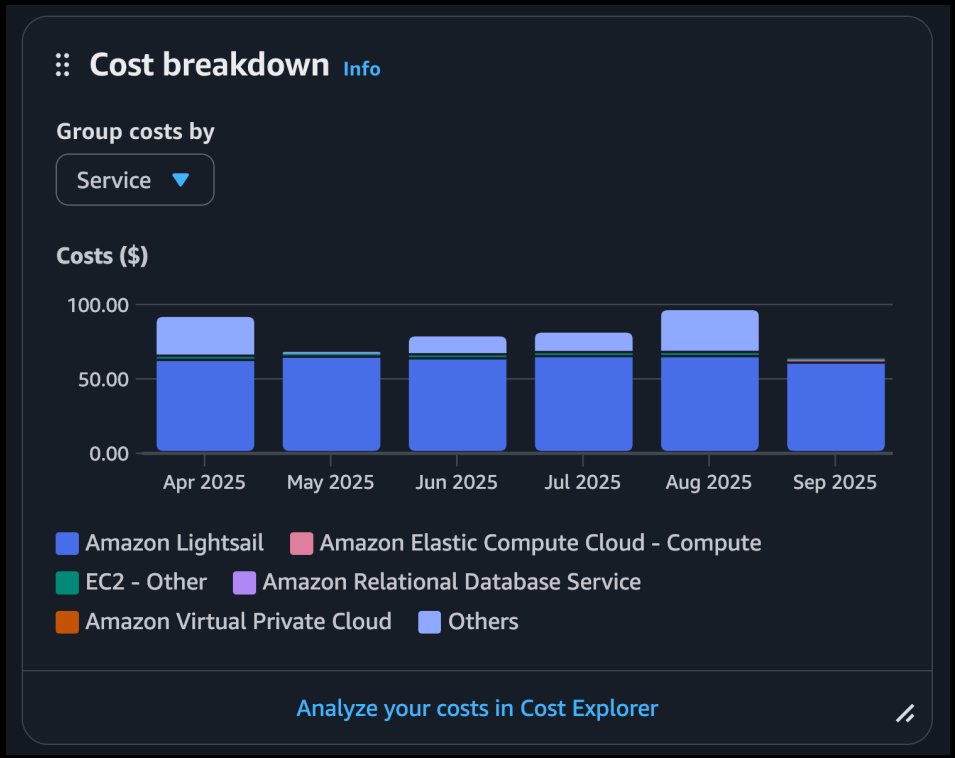
(It also explains all the cost calculations)

AWS Cost Explorer

Visualize, understand, and manager your costs and usage over-time.

The "**Cost and Usage Report**" provides highly detailed granular data too!

AWS Cost Explorer - Example



Links

- AWS Console: https://aws.amazon.com/console/
- AWS Shared Responsibility Model: https://aws.amazon.com/compliance/shared-responsibility-model/
- AWS Well-Architected Framework: https://aws.amazon.com/architecture/well-architected/?ref=wellarchitected-wp
- AWS Cloud Economics (Cloud Value Framework): https://d1.awsstatic.com/executive-insights/en_US/awscloudeconomicsebook.pdf
- S3 Pricing Page: https://aws.amazon.com/s3/pricing/
- AWS Pricing Calculator: https://calculator.aws
- AWS Support Plans: https://aws.amazon.com/premiumsupport/plans/