Shared Responsibility Model

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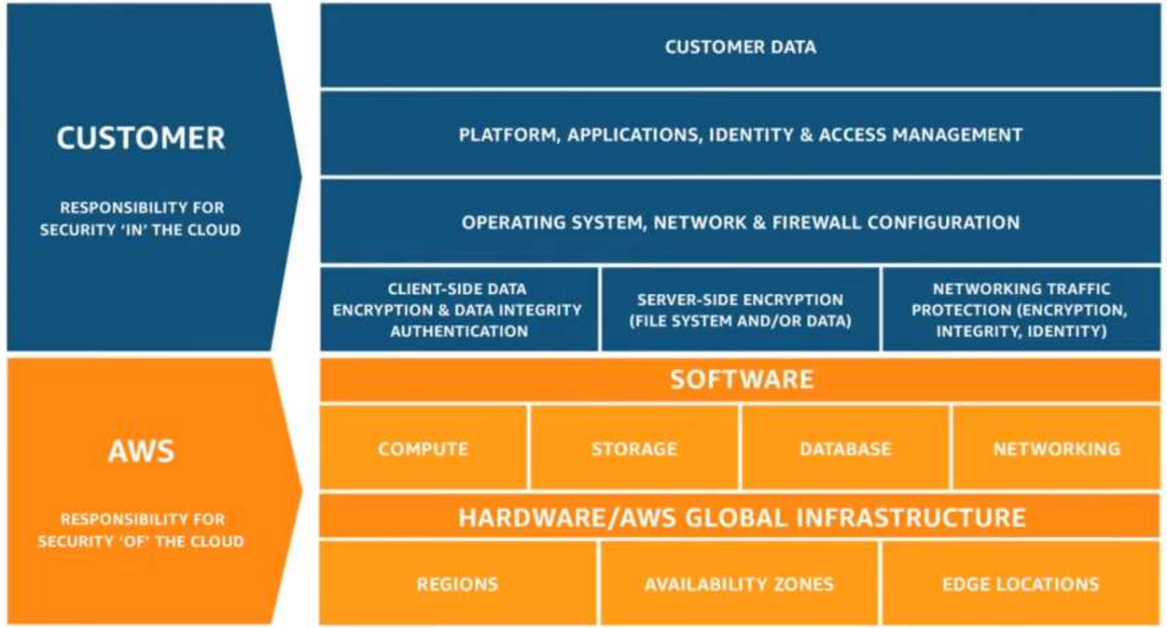
The **Shared Responsibility Model** is a **cloud security framework** that defines the security obligations of the customer versa the Cloud Service Provider (CSP) e.g. AWS.

Each CSP has their own variant of the Shared Responsibility Model but they are all generally the same.

AWS Shared Responsibility Model



The **type of cloud deployment model** and/or **the scope of cloud service category** can result in specialized Shared Responsibility Models.

AWS Shared Responsibility Model

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Customer

Configuration of Managed Services or Third-Party Software

- Platforms
- Applications
- Identity and Access Management (IAM)

Configuration of Virtual Infrastructure and Systems

- Operating System
- Network
- Firewall

Security Configuration of Data

- Client-Side Data Encryption
- Server-Side Encryption
- Networking Traffic Protection
- Customer Data

AWS

Software

- Compute
- Storage
- Database
- Networking

Hardware / Global Infrastructure

- Regions
- Availability Zones
- Edge Locations
- Physical Security

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AWS Shared Responsibility Model

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Customers are responsible for Security **in** the Cloud

IN

- Data
- Configuration

OF

- Hardware
- Operation of Managed Services
- Global Infrastructure

AWS is responsible for Security **of** the Cloud

Types of Cloud Computing Responsibility

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On-Premise	Infrastructure as a Service	Platform as a Service	Software as a Service
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
OS	OS	OS	OS
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

Legend: Customer is Responsible | CSP is Responsible

Shared Responsibility Model - Compute

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Let us take a look at **compute** as a comparison example of the Shared Responsibility Model

Infrastructure as a Service (IaaS)

Bare Metal
EC2 Bare Metal Instance

Customer:
- The Host OS Configuration
- Hypervisor

AWS
- Physical machine

Virtual Machine
Elastic Cloud Compute (EC2)

Customer:
- The Guest OS Configuration
- Container Runtime

AWS
- Hypervisor, Physical machine

Containers
AWS Elastic Container Service(ECS)

Customer:
- Configuration of containers
- Deployment of Containers
- Storage of containers

AWS
- The OS, The Hypervisor, Container Runtime

Platform as a Service (PaaS)

Managed Platform
AWS Elastic Beanstalk

Customer:
- Uploading your code
- Some configuration of environment
- Deployment strategies
- Configuration of associated services

AWS
- Servers, OS, Networking, Storage, Security

Software as a Service (SaaS)

Content Collaboration
Amazon WorkDocs

Customer:
- Contents of documents
- Management of files
- Configuration of sharing access controls

AWS
- Servers, OS, Networking, Storage, Security

Function as a Service (FaaS)

Functions
AWS Lambda

Customer:
- Upload your code

AWS
- Deployment, Container Runtime, Networking, Storage, Security, Physical Machine, (basically everything)

Shared Responsibility Model - Compute

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Bare Metal

EC2 Bare Metal Instance

Dedicated

EC2 Dedicated Instance/Host

Virtual Machines (VM)

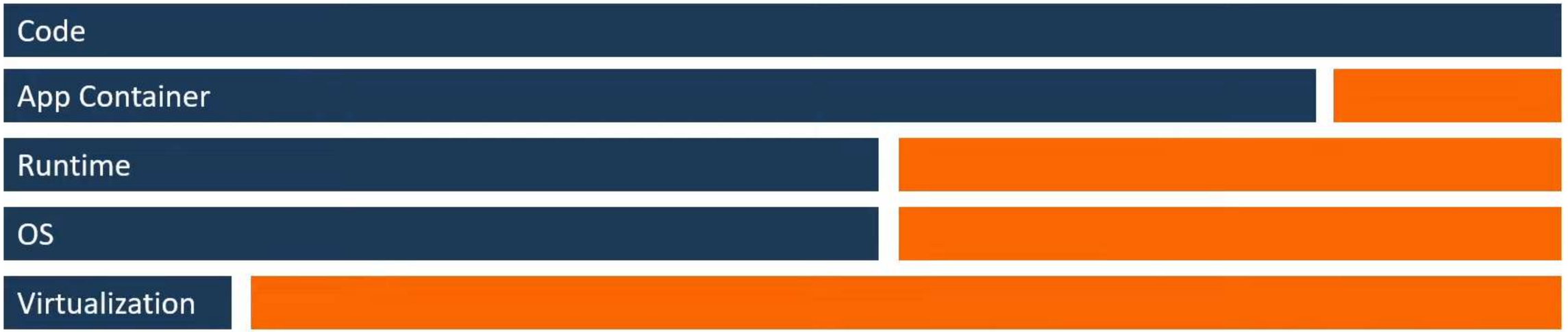
Elastic Compute Cloud (EC2)

Containers

Elastic Container Service(ECS)
Elastic Kubernetes Service (EKS)
AWS Fargate*

Functions

AWS Lambda



Shared Responsibility Model

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The **Shared Responsibility Model** is a simple visualization that helps determine what the customer is responsible for and what the CSP is responsible for related to AWS.

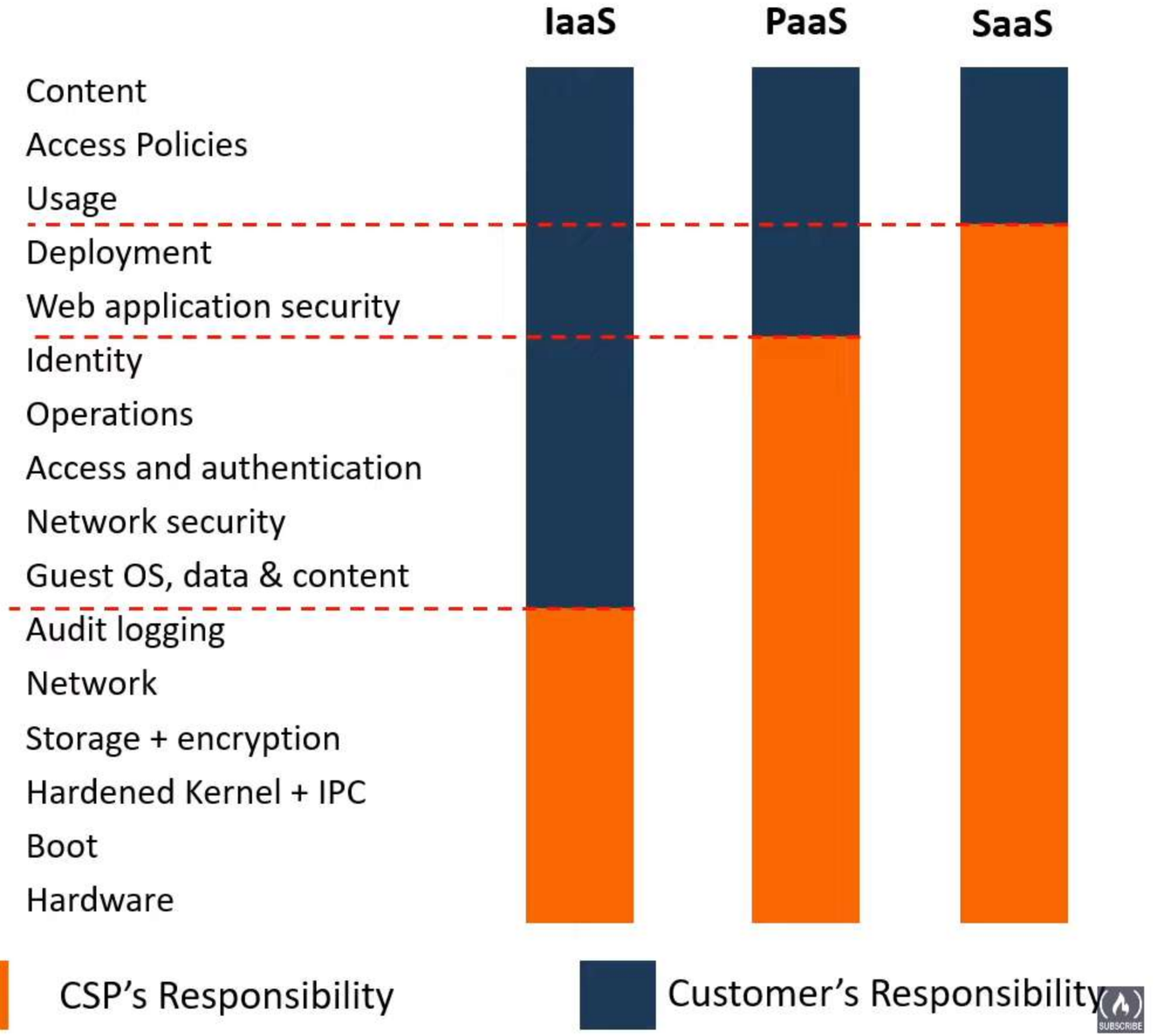
The customer is responsible for the data and the **configuration** of access controls that resides in AWS.

The customer is responsible for the **configuration** of cloud services and granting access to users via permissions.

CSP is generally responsible for the underlying Infrastructure.

Responsibility of in the cloud
If you can configure or store it then you (the customer) are responsible for it.

Responsibility of the cloud
If you can not configure it then CSP is responsible for it



Shared Responsibility Model – Architecture

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Less Responsibility

Amplify Serverless Framework

Lambda Serverless Architecture

Serverless / Functions
No more servers, just worry about data and code

Fargate Serverless Containers

ECS/EKS Containers

Microservices / Containers
Mix and match languages, better utilization of resources

Elastic Beanstalk Platform as a Service

EC2 Infrastructure as a Service

Traditional / VMs
Global workforce is most familiar with this kind of architecture and lots of documentation, frameworks and support.

More Responsibility