GLOBAL INFRASTRUCTURE

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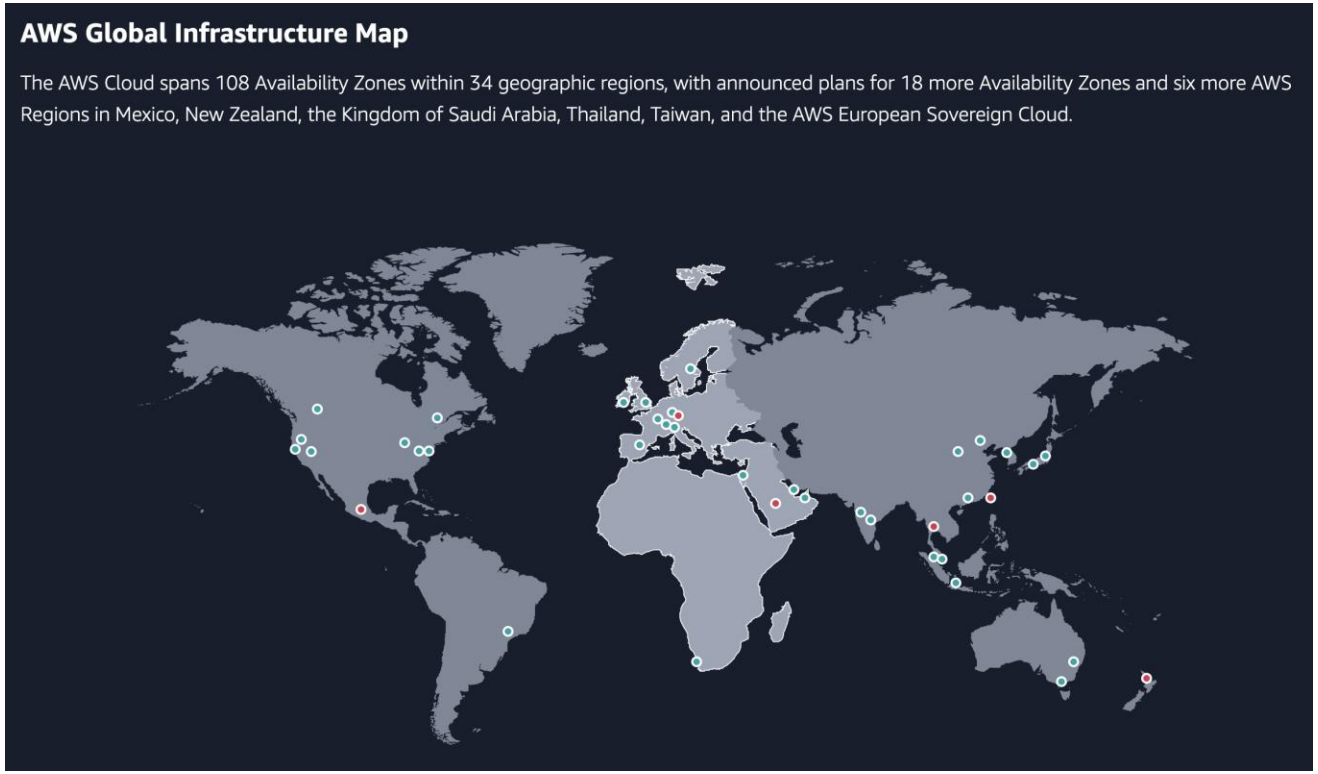
AWS GLOBAL INFRASTRUCTURE

This is built to deliver a secure, flexible, reliable, and scalable cloud computing environment.

Global Infrastructure continuously updates its footprint.

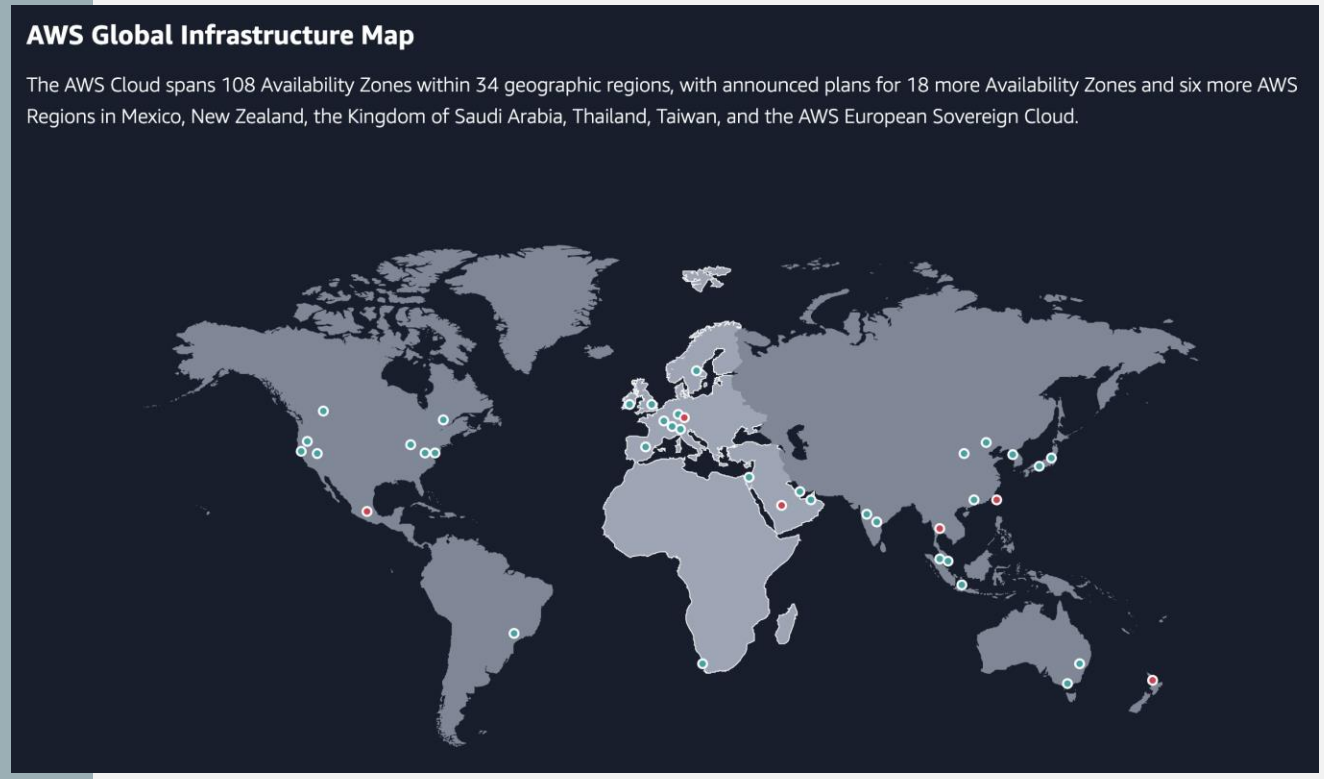


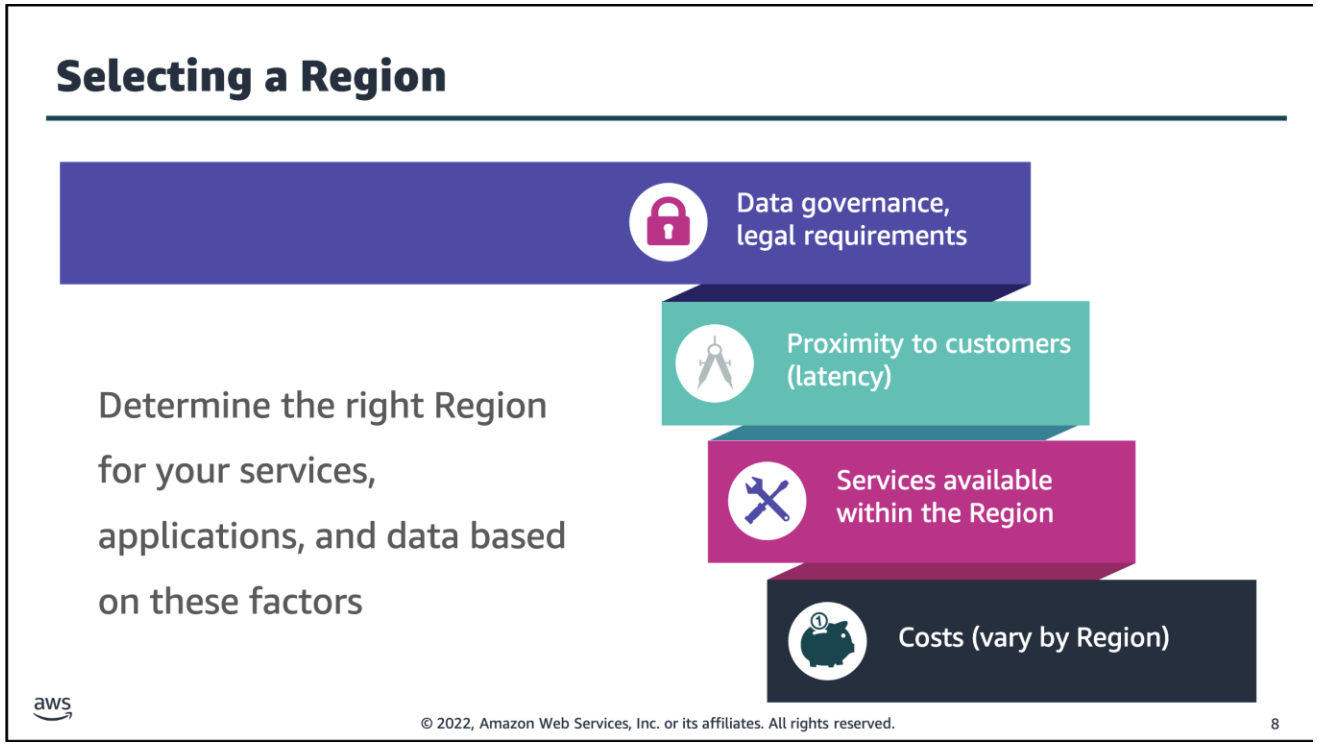
AWS REGION

Allows the user to replicate data across the region.

Communications between the region uses the backbone of AWS Network Infrastructures.

The regions are based on different availability zones.





SELECTING REGIONS

- Based on proximity of the customer
- Services available in the region
- Cost may vary depending on region

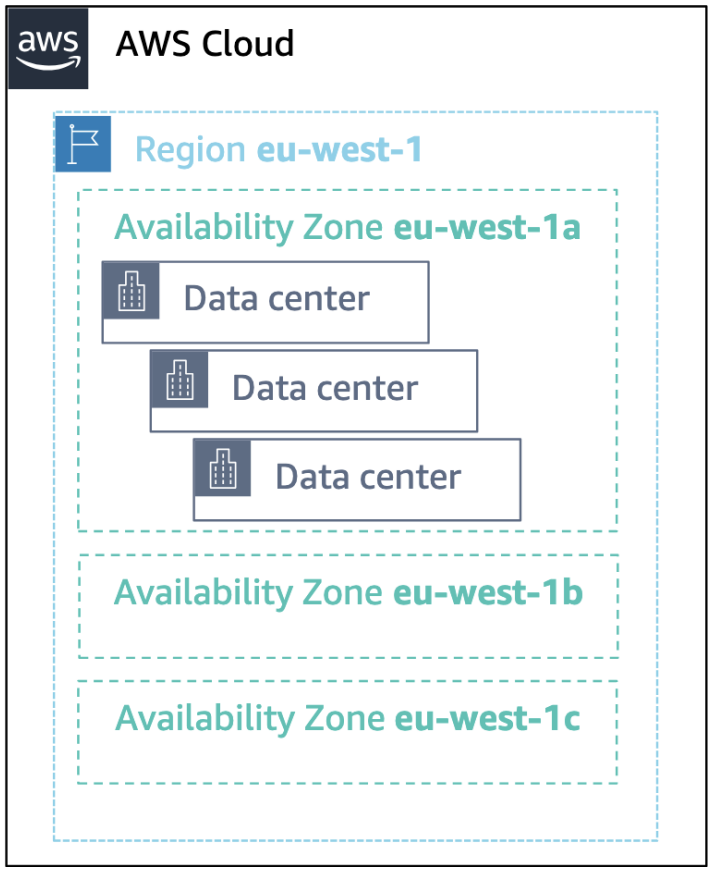
AVAILABILITY ZONES

Each region has multiple availability zones.

These zones have data centers

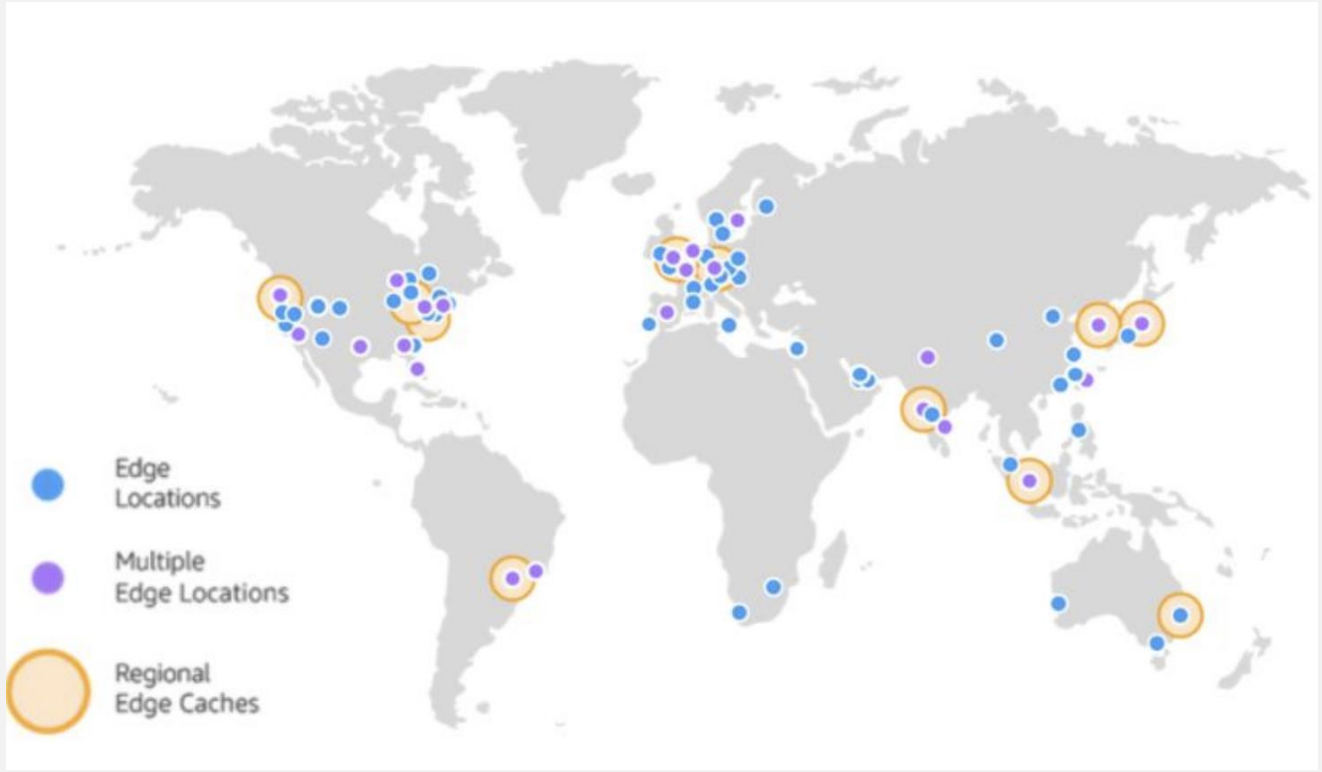
They are all interconnected with each other using high speed private networking

AWS recommends replicating data across availability zones for resiliency.



AWS DATA CENTERS

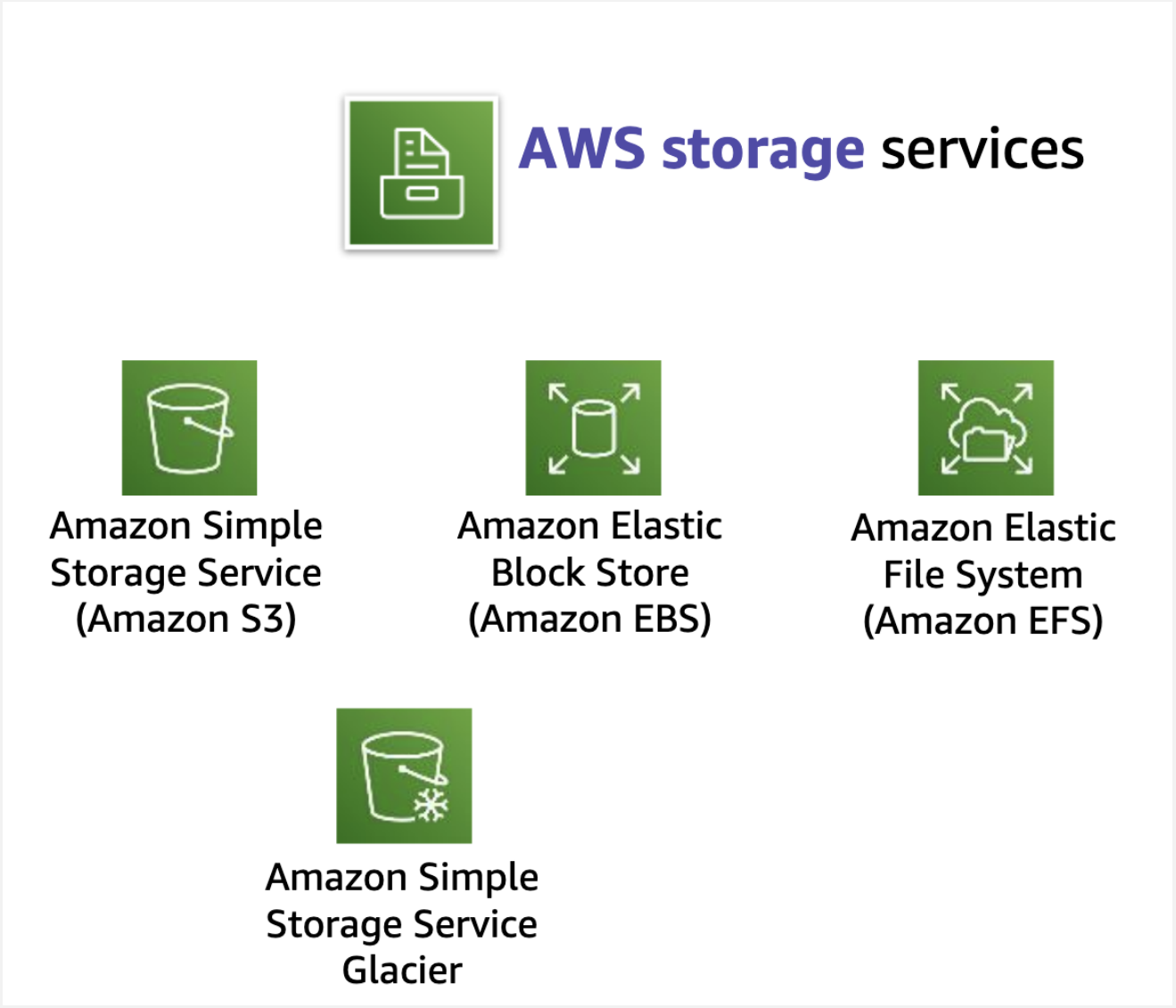
This is built for data security. Most data processing is done here; most data centers have between 50,000-80,000 servers.



POINTS OF PRESENCE

- AWS provides a global point of presence that consist of edge locations.
- This is used with Amazon CloudFront (delivers context to end users with reduced latency)

MORE AWS SERVICES

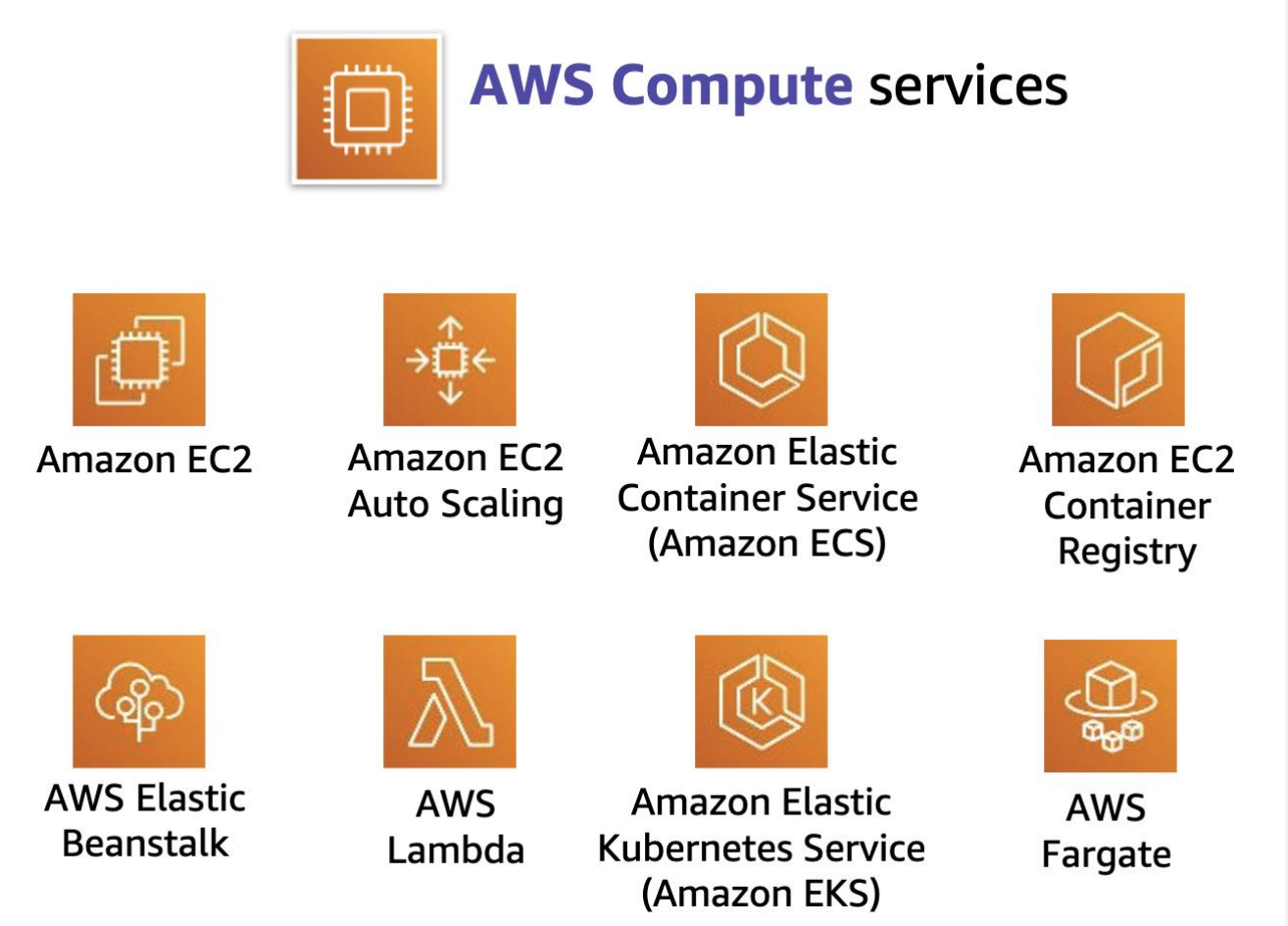


AWS STORAGE CATEGORIES

- Amazon Simple Storage Service (Amazon S3)
  - Object storage service
- Amazon Elastic Block Store (Amazon EBS)
  - High performance block storage
- Amazon Elastic File System (Amazon EFS)
  - Fully managed elastic network file
- Amazon Simple Storage Service Glacier
  - Longterm back-up S3 that's low cost

COMPUTING SERVICE CATEGORY

- Amazon Elastic Compute Cloud (Amazon EC2)
  - Resizable computing capacity
- Amazon EC2 Auto Scaling
  - Allows user to add or remove EC2 instances
- Amazon Elastic Container Service (Amazon ECS)
  - High performance container organizer
- Amazon Elastic Container Registry (Amazon ECR)
  - Fully managed docker containers
- AWS Elastic Beanstalk
  - Managed web applications
- AWS Lambda
  - Allows user to run code without servers
- AWS Fargate
  - Allows users to run containers without servers

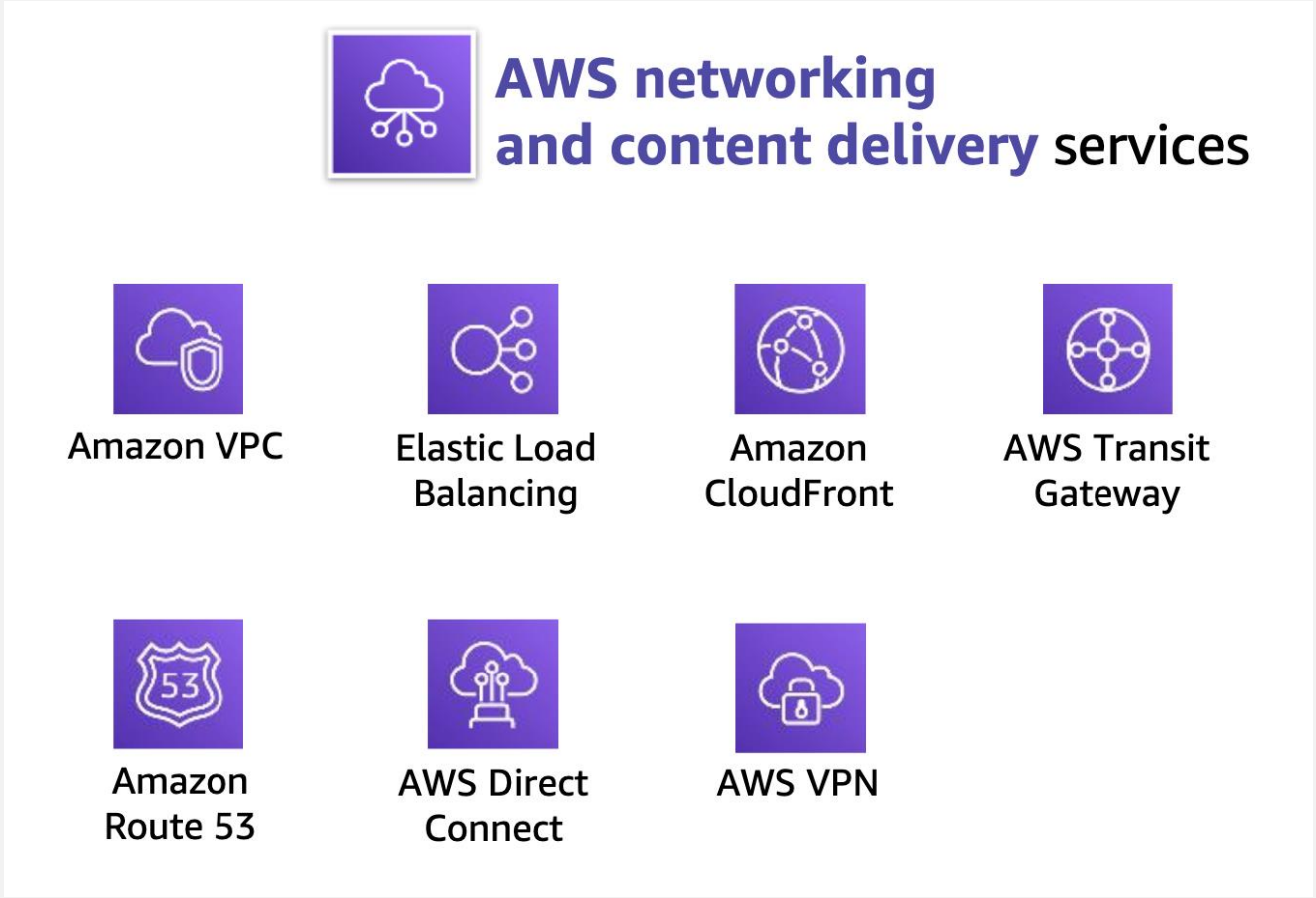


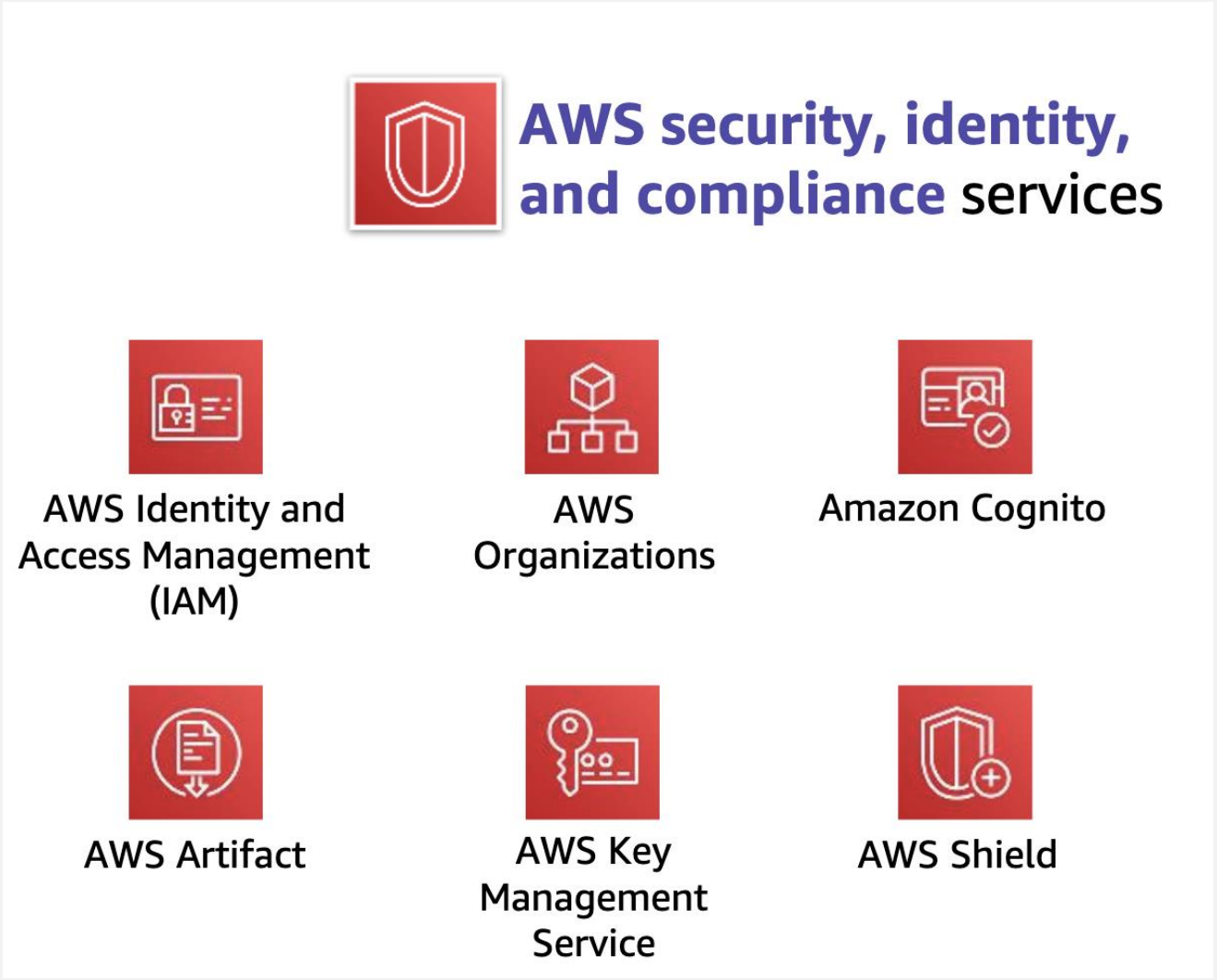
DATABASE SERVICE CATEGORY

- Amazon Relational Database Service (Amazon RDS)
  - Easy to manage databases
- Amazon Aurora
  - MySQL and PostgreSQL compatible relational database
- Amazon Redshift
  - Allows users to run analytic queries
- Amazon DynamoDB
  - Key value and document database

NETWORKING AND CONTENT DELIVERY SERVICE CATEGORY

- Amazon Virtual Private Cloud (Amazon VPC)
  - Allows users to provision isolated parts of the cloud
- Elastic Load Balancing
  - Distributes application traffic
- Amazon CloudFront
  - Fast content delivers
- AWS Transit Gateway
  - Allows customers to access VPCs
- Amazon Route 53
  - Route end users to internet applications
- AWS Direct Connect
  - Establishes private network connections
- AWS VPN
  - Provides secure tunnel to global network



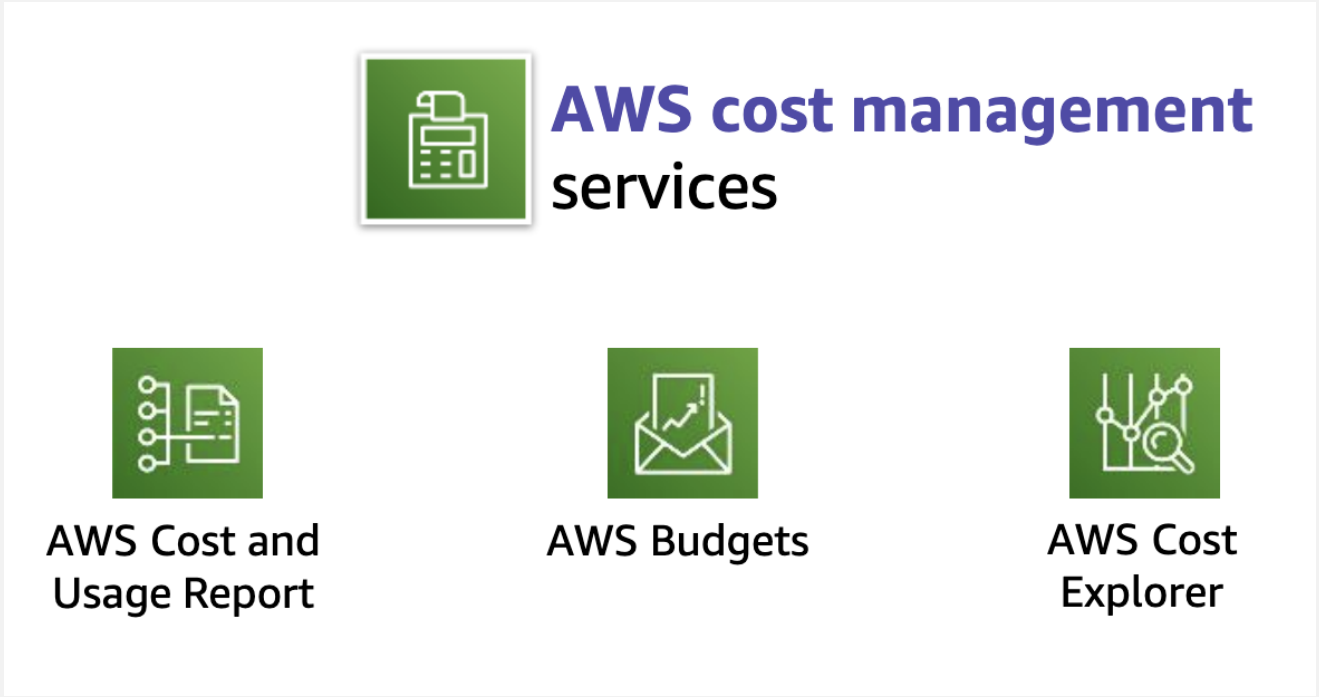


SECURITY, IDENTITY, AND COMPLIANCE SERVICE CATEGORY

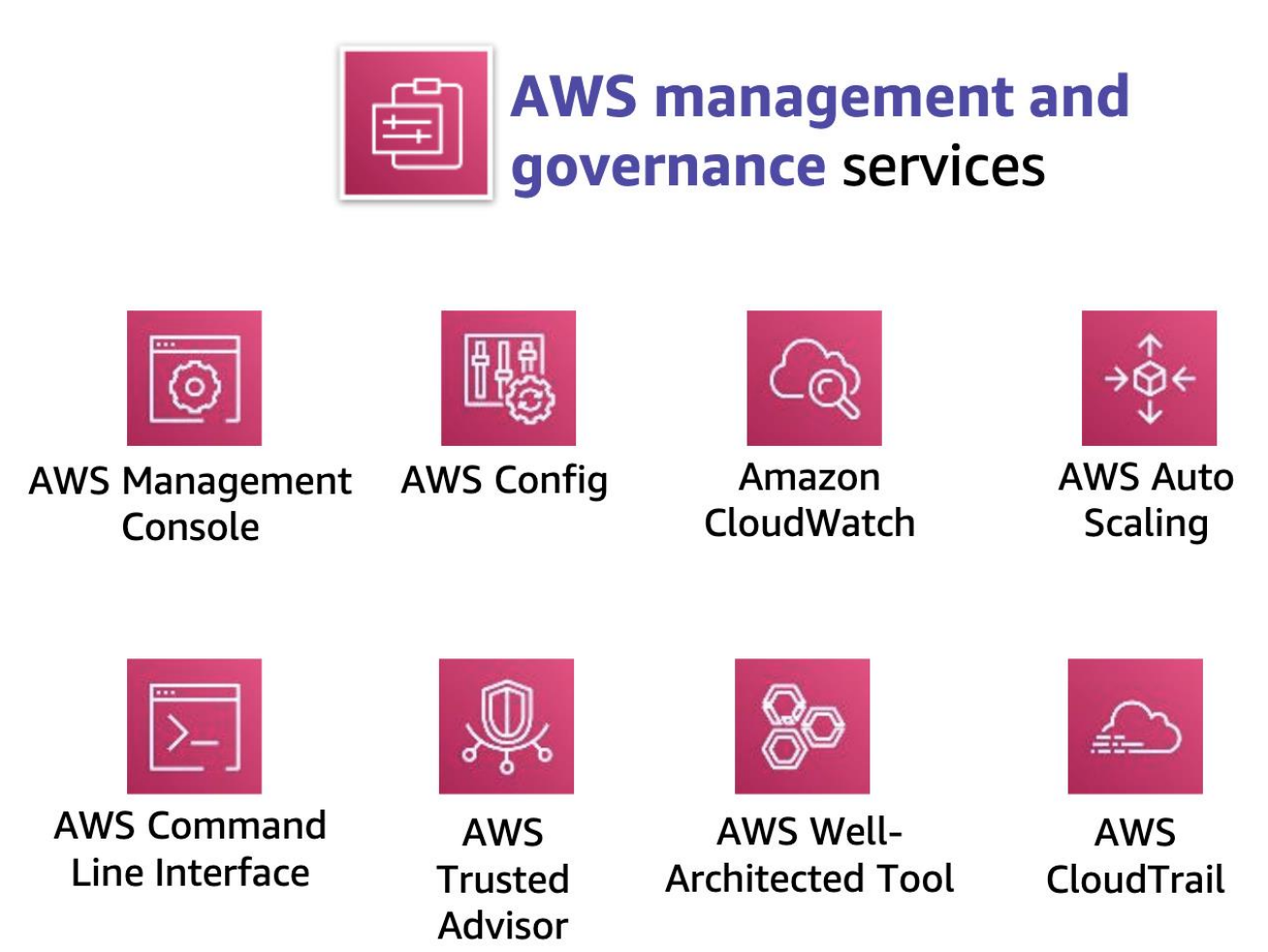
- AWS Identity and Access Management (IAM)
  - Manages user's services
- AWS Organizations
  - Allows users to restrict services
- Amazon Cognito
  - Allows users to add sign-in, sign-up, and manage web applications
- AWS Artifact
  - Access to AWS security reports
- AWS Key Management Service (AWS KMS)
  - Manages access in keys
- AWS Shield
  - Protection for your applications

AWS COST MANAGEMENT SERVICES CATEGORY

- AWS Cost and Usage Report
  - Includes pricing data
- AWS Budgets
  - Allows users to set up custom budgets
- AWS Cost Explorer
  - Easy to use interface that manages AWS Cost and Usage Report



MANAGEMENT AND GOVERNANCE SERVICE CATEGORY



- AWS Management Console
  - Web-based UI to manage services
- AWS Config
  - Tracks inventory changes
- Amazon CloudWatch
  - Monitors resources and applications
- AWS Auto Scaling
  - Scales multiple resources
- AWS Command Line Interface
  - Unified tool to manage services
- AWS Trusted Advisor
  - Optimizes performance and security
- AWS Well-Architected Tool
  - Helps review workloads
- AWS CloudTrail
  - Tracks user's activity and API usage