# AWS Migration Strategy

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# AWS Migration Strategies

After completing this module, you should be able to:

- Create a business case for AWS Cloud Migration
- Understand AWS Cloud Adoption framework (CAF)
- Understand Cloud Adoption Journey
- 6R  Migration patterns
- Apply Well -Architected framework on AWS Target Architecture

# Defining Migration To AWS



- Migration to AWS environment is a combination of strategy, best practices, processes and AWS migration services
- Moving resources from an organization's On-Premises (Source Environment) to AWS environment (Target Environment) usually involves migration of the below type of resources to AWS
  - Server
  - Application
  - Database
  - Data
- A Well-defined strategy and Well-Architected framework is necessary to carry out a successful Migration.

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# Business Cases for Migrating to AWS

- Migrating  On-Premise resources to Cloud provides lots of benefits as given below.

- **Trade capital expense for variable expense**
- **Benefit from massive economies of scale**
- **Stop guessing about capacity**
- **Increase speed and agility**
- **Stop spending money to maintain data centers**
- **Go global in  minutes**

# AWS Advantage – Continuous Cost Reduction

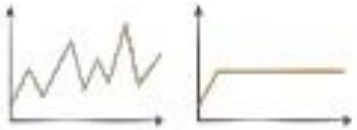


## Cost Savings and Flexibility

Replace up-front capital expense with low variable cost

Economies of scale allow AWS to continually lower costs

Continual Price Reductions



Pricing model choice to support variable & stable workloads

Save more money as you grow bigger

Tiered Pricing

Volume Discounts

Custom Pricing

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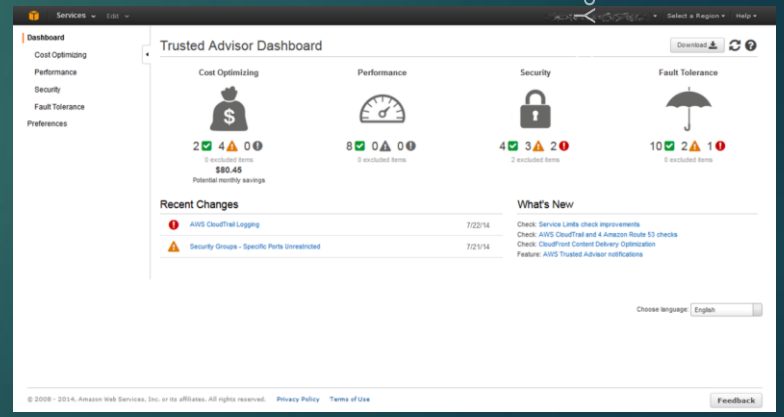
# AWS Economics Center



The AWS Economics Center provides access to tools , information and resources to compare the costs of AWS Services could be used by business leaders and  Architects quantify The economic benefits of Cloud Computing

- AWS TCO Calculator
- AWS Simple Calculator
- AWS Cost Explorer
- AWS Trusted Advisor

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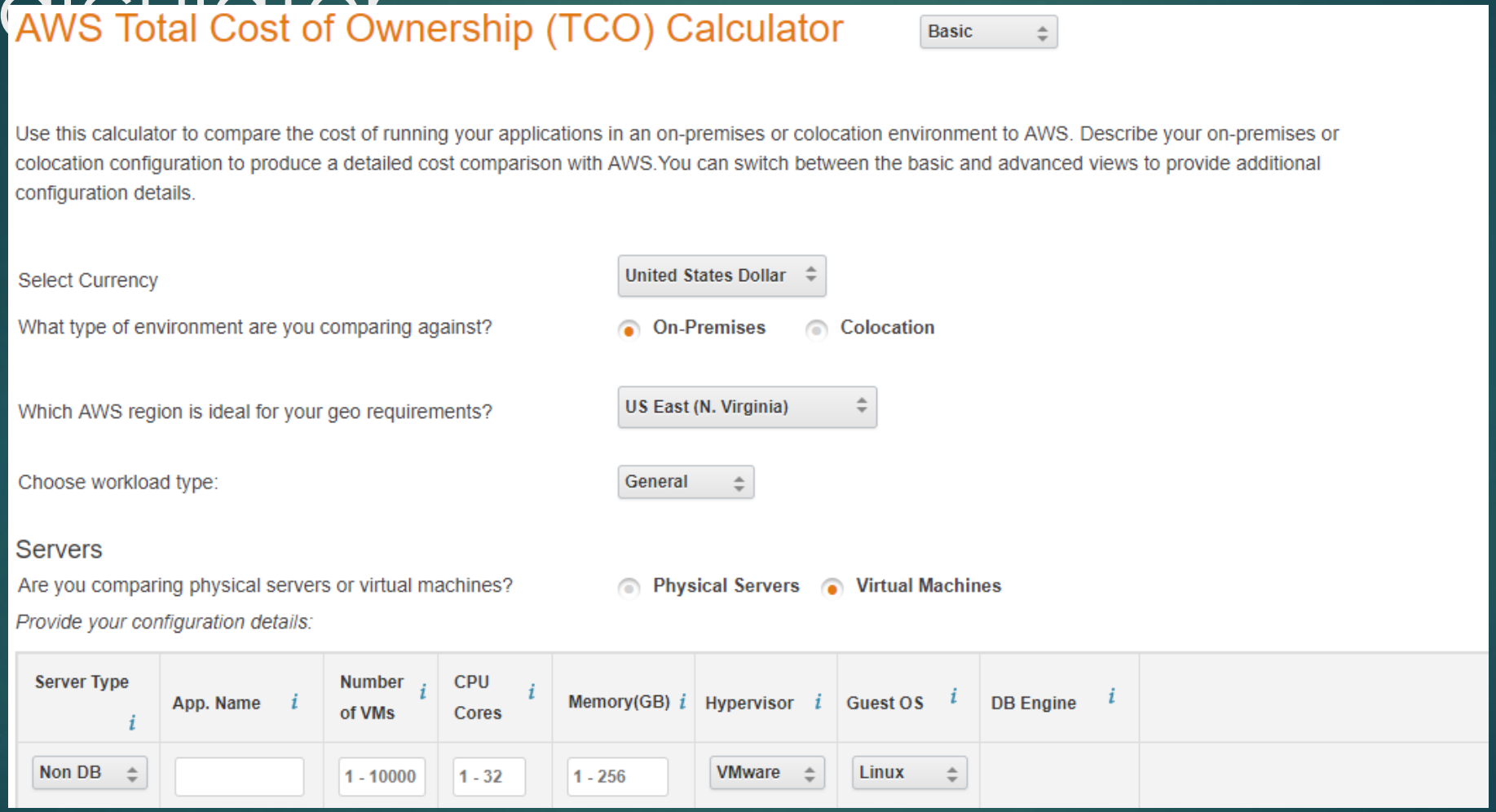
# AWS Total Cost Of Ownership(TCO) Calculator



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# AWS TCO Reports



## AWS Total Cost of Ownership (TCO) Calculator

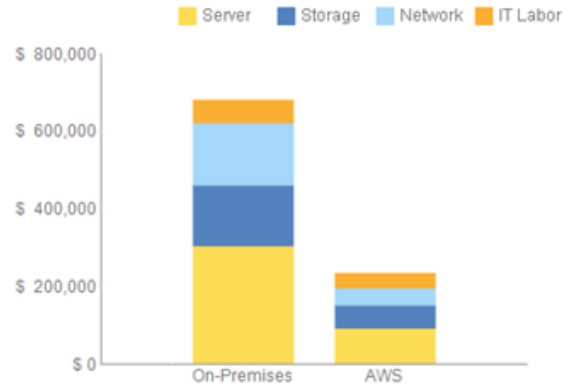
« Change Input

### On-Premises vs. AWS Summary

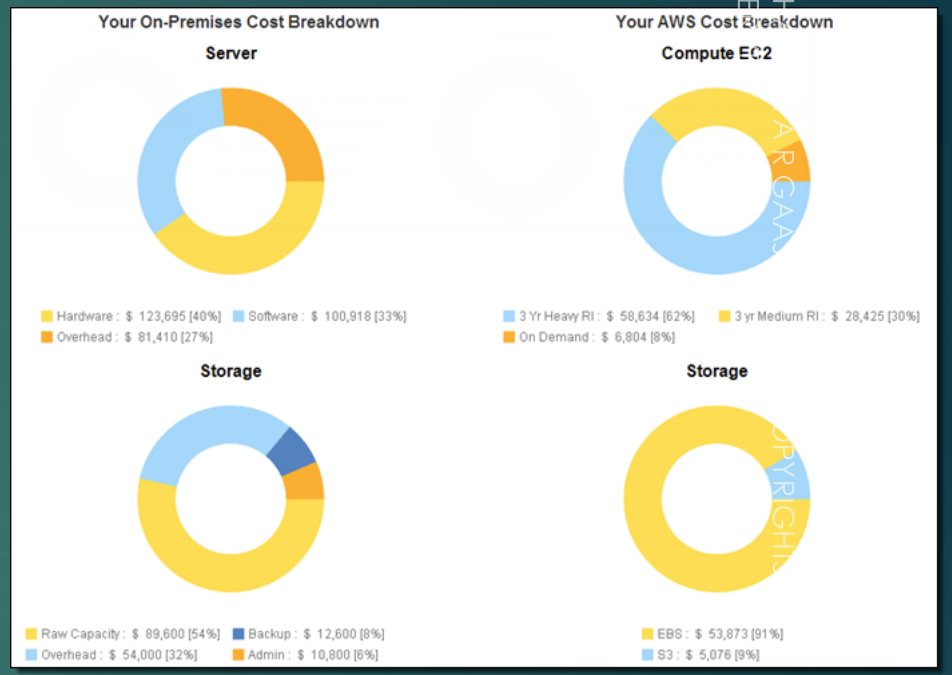
You could save **66%** a year by moving your infrastructure to AWS.

Your three year total savings would be **$ 446,263**.

3 Years Cost Breakdown

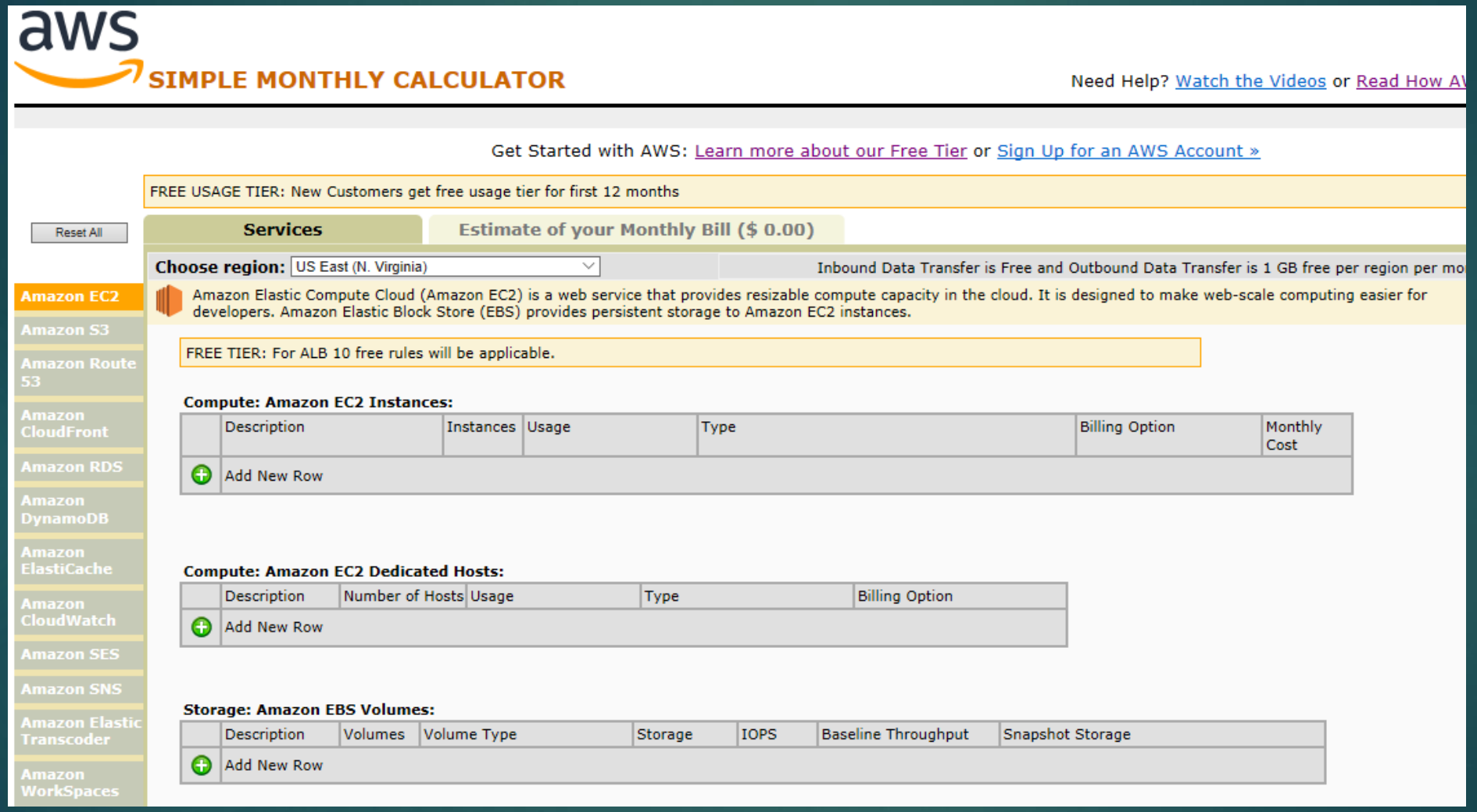



| 3 Yr. Total Cost of Ownership | | |
|---|---|---|
| | **On-Premises** | **AWS** |
| Server | $ 306,023 | $ 93,863 |
| Storage | $ 156,200 | $ 58,949 |
| Network | $ 160,480 | $ 45,228 |
| IT-Labor | $ 57,600 | $ 36,000 |
| **Total** | **$ 680,303** | **$ 234,039** |



# AWS Simple Monthly Calculator



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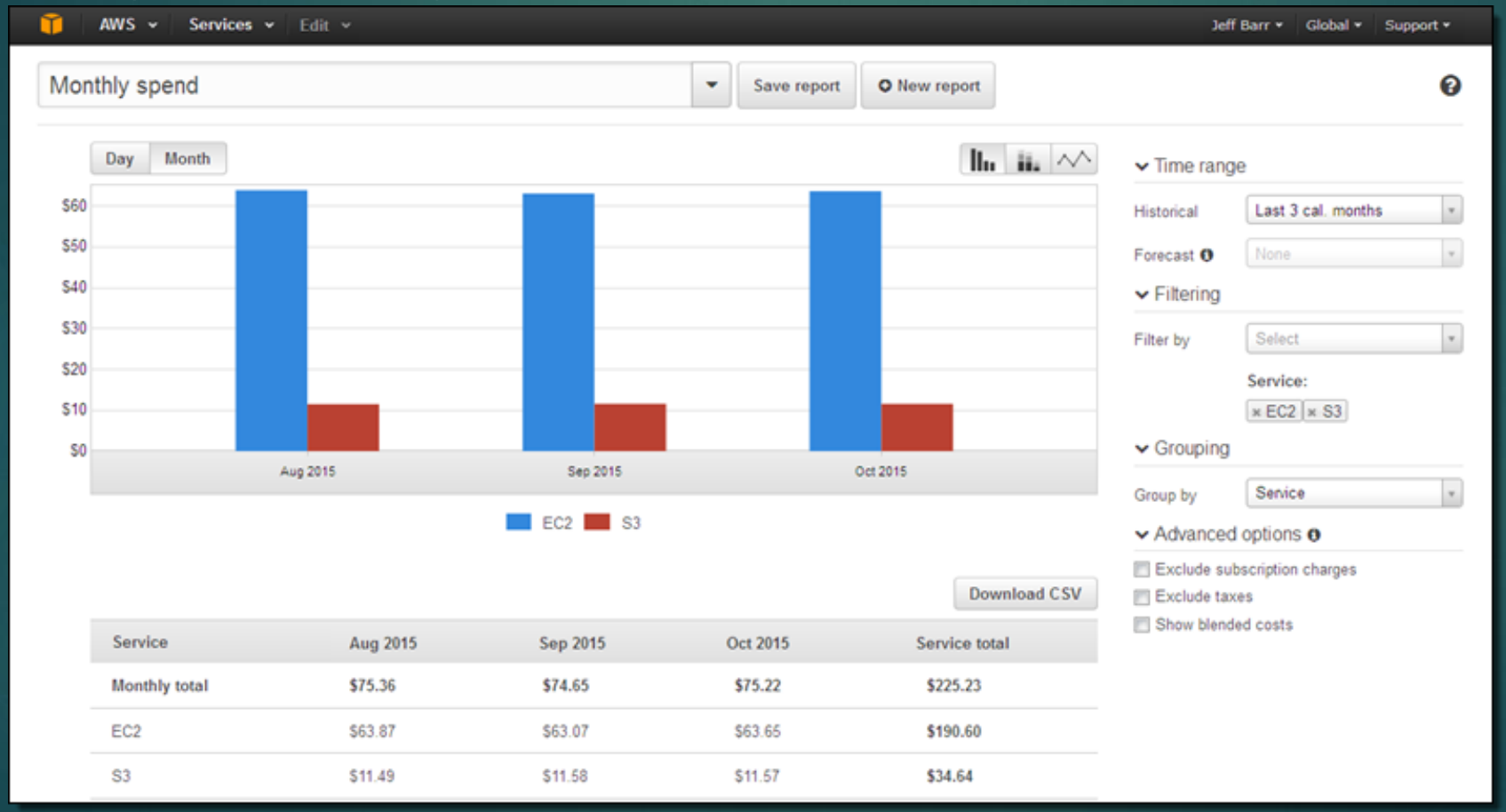
# AWS Cost Explorer



AWS Cost Explorer allows you to explore and forecast your AWS costs. You can use Cost Explorer's built-in filtering and grouping facilities to analyze your expenditures by Account, Service, Tag, Availability Zone, Purchase Option, and API Operation.

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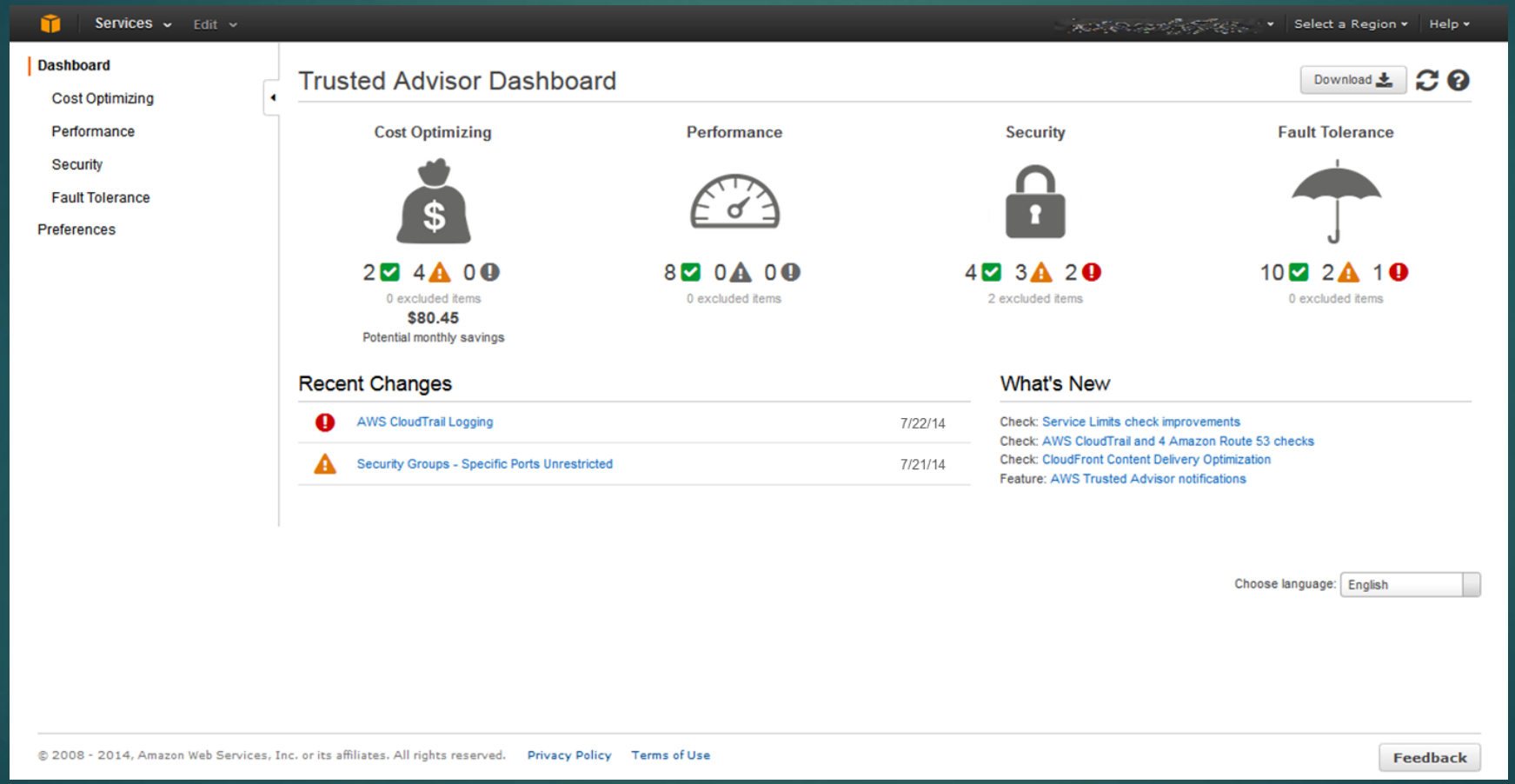
# AWS Trusted Advisor



AWS Trusted Advisor inspects your AWS environment and makes recommendations for saving money, improving syste performance and reliability, or closing security gaps.

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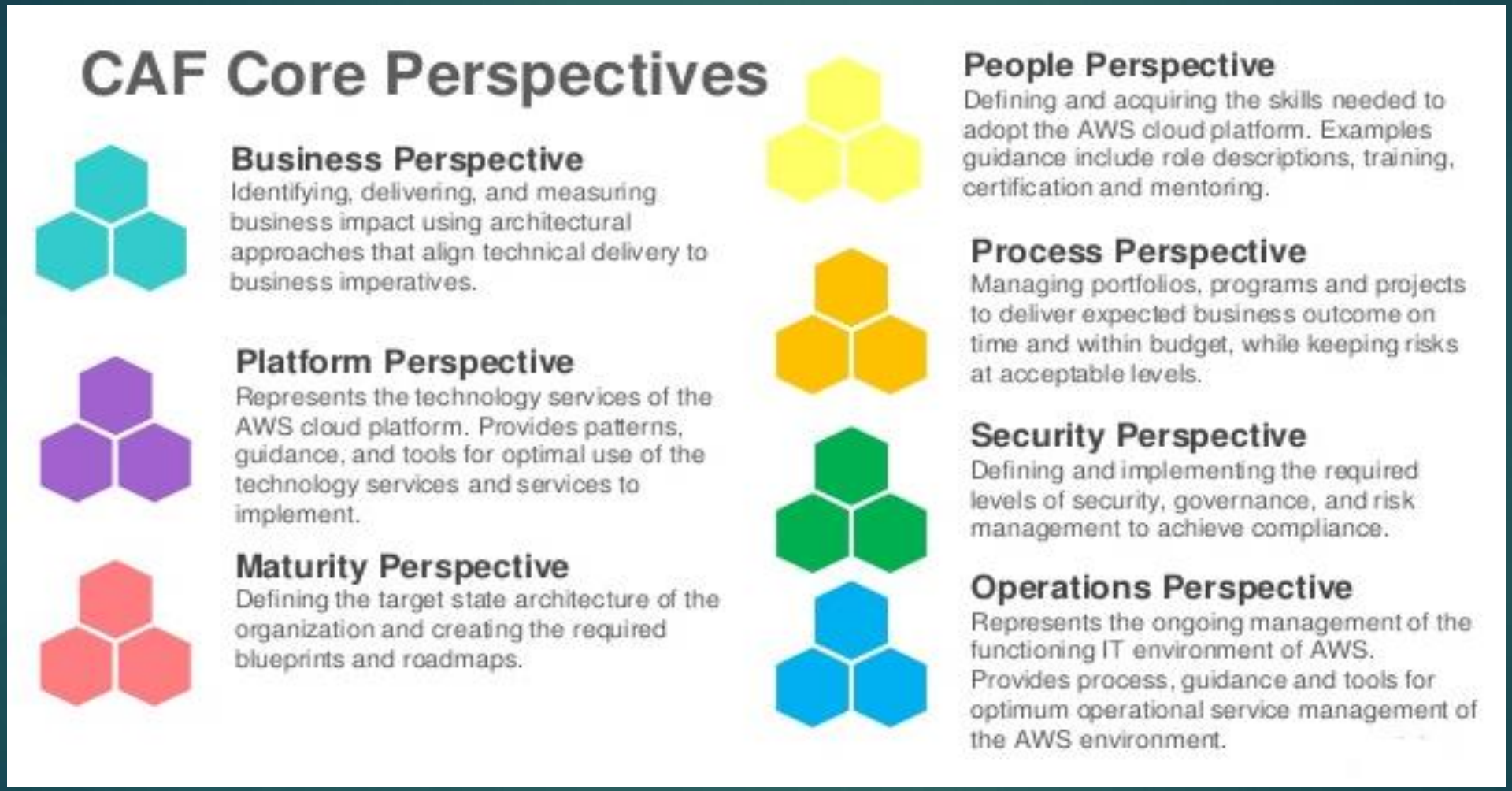
# What is Cloud Adoption Framework (CAF)

- Helps Organizations understand how cloud adoption transforms the way they work and it provides structure to identify and address gaps in skills and processes .

Ref : https://aws.amazon.com/whitepapers/#framework-and-methodologies

# CAF Core Perspectives



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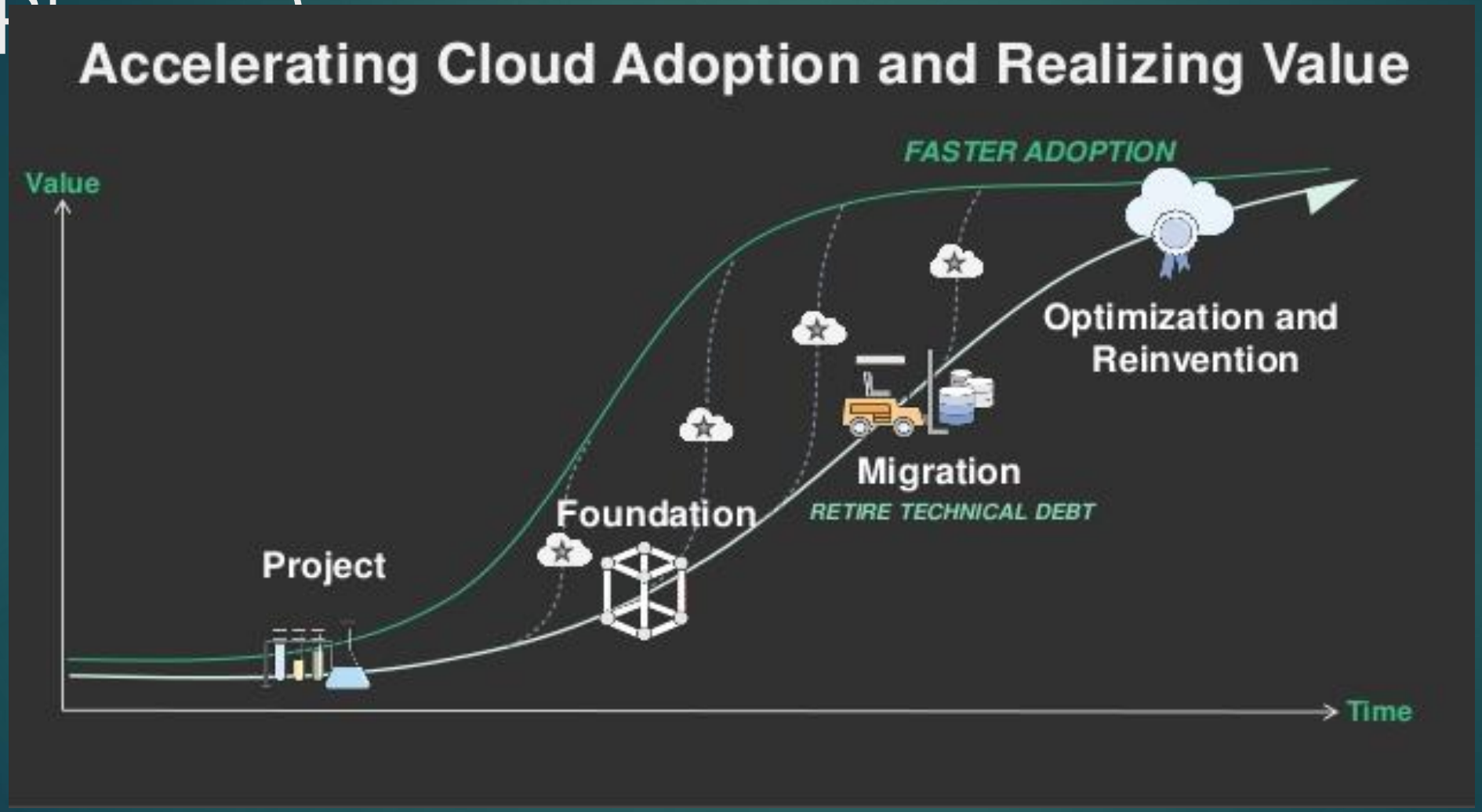
# AWS Cloud Adoption Journey (4 P



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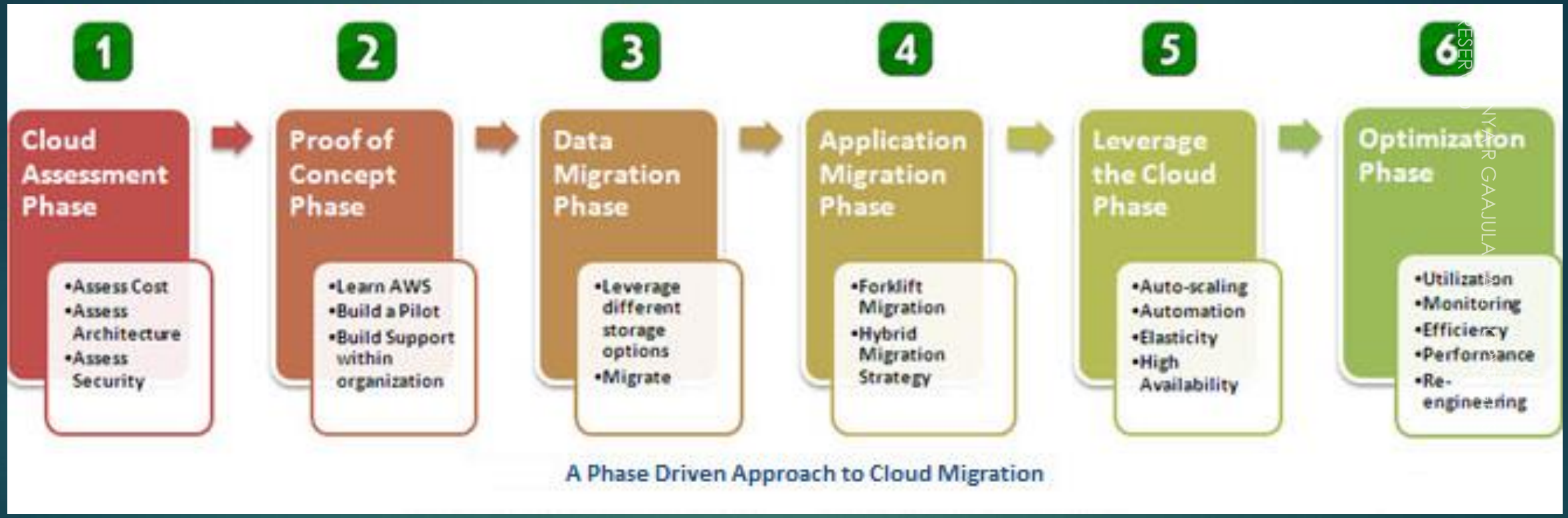
# AWS Cloud Adoption Process






A Phase Driven Approach to Cloud Migration

# 6 Strategies for Migrating



A

## The 6R's in Cloud Migrations

- Customers will keep host / application in their source environment
- Minimal analysis/validation of scope and application affinity
- Dependency on integrating service management

**Retain**

- Application and host decommission on source
- No migration to target
- Application owner approvals needed

**Retire**

- Like for Like application migration to target cloud
- Minimal effort to make the application work on the target cloud infrastructure (Minimal application layout change)
- Storage migration will be needed (without conversion)

**Rehost**

- Up-Version of the OS and/or Database onto the target cloud
- Some level of application changes
- Application reinstallation on the target
- Database to AWS RDS

**Replatform**

- OS and/or Database porting
- Middleware and application change to cloud service offering
- Data conversion; Database transition to MySQL, Aurora, etc.

**Refactor**

- Use SaaS-based offerings, application architecture changes may require Porting
- Middleware, data modernisation; application consolidation / stacking

**Repurchase**

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# AWS Well-Architected Framework



- AWS Well-Architected framework helps cloud architects to build the most secure , high-performing, resilient, and efficient infrastructure possible for their applications
- Framework helps Customers and partners a consistent approach to evaluate architectures.
- Provides guidance to customer to help implement designs which allows scalability.
- Well-Architected Framework provides the below benefits
  - Build and deploy faster
  - Lower / Mitigate Risks
  - Make Informed Decisions
  - Learn AWS Best Practices

You can access AWS Well Architecture framework via this link https://aws.amazon.com/whitepapers/#framework-and-methodologies

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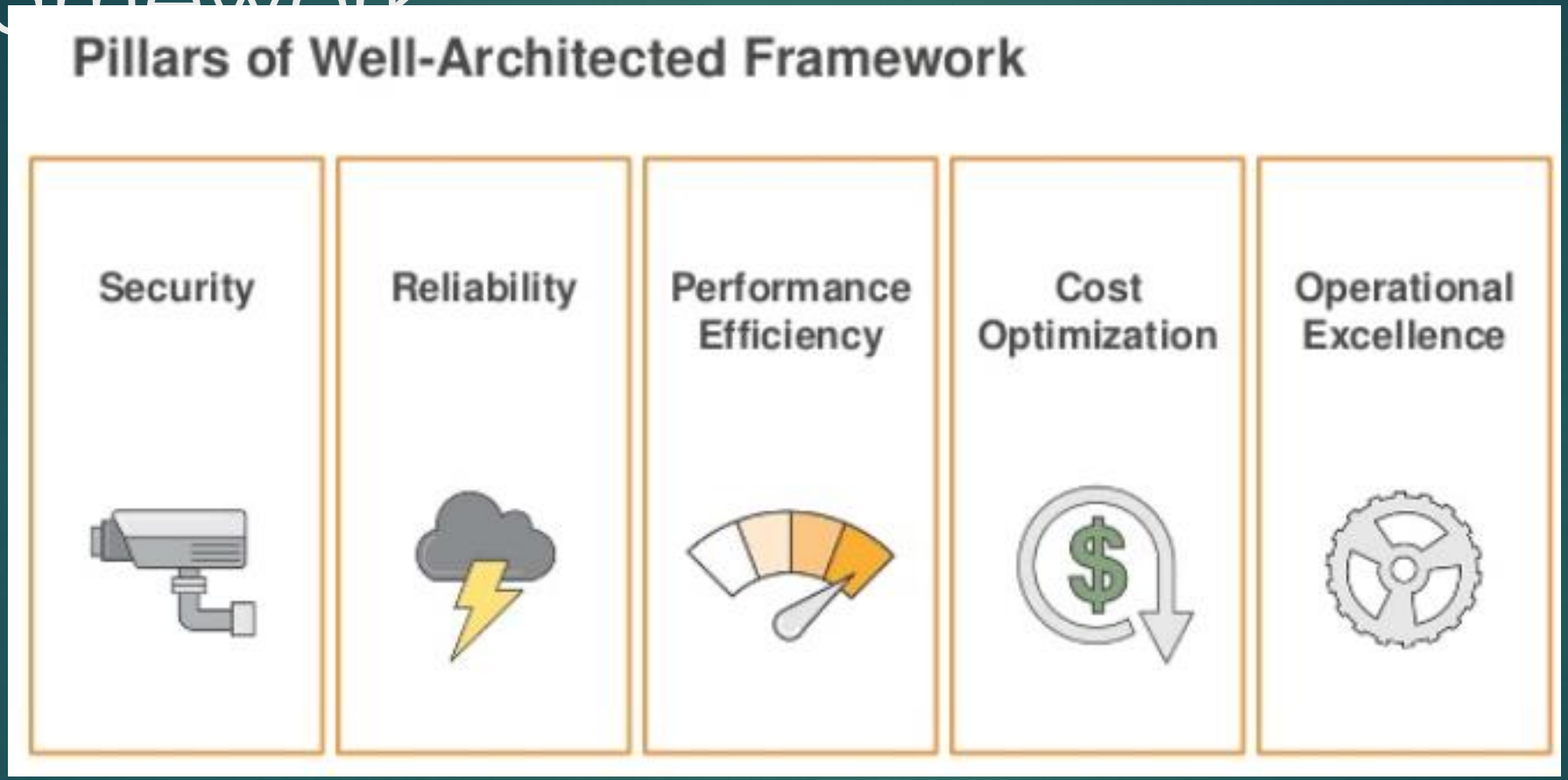
# 5 Pillars of Well-Architected Framework



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# 5 Pillars of Well-Architected Framework



| Pillar Name | Description |
|---|---|
| **Security** | The ability to protect information, systems, and assets while delivering business value through risk assessments and mitigation strategies. |
| **Reliability** | The ability of a system to recover from infrastructure or service failures, dynamically acquire computing resources to meet demand, and mitigate disruptions such as misconfigurations or transient network issues. |
| **Performance Efficiency** | The ability to use computing resources efficiently to meet system requirements, and to maintain that efficiency as demand changes and technologies evolve. |
| **Cost Optimization** | The ability to avoid or eliminate unneeded cost or suboptimal resources. |
| **Operational Excellence** | The ability to run and monitor systems to deliver business value and to continually improve supporting processes and procedures. |

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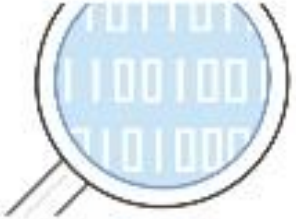
# Principles of Security Pillar



## Security pillar

*Protect information, systems, and assets while delivering business value through risk assessments and mitigation strategies*

Security at all layers



Enable traceability

Implement a principle of least privilege

Focus on securing system

Automate security best practices

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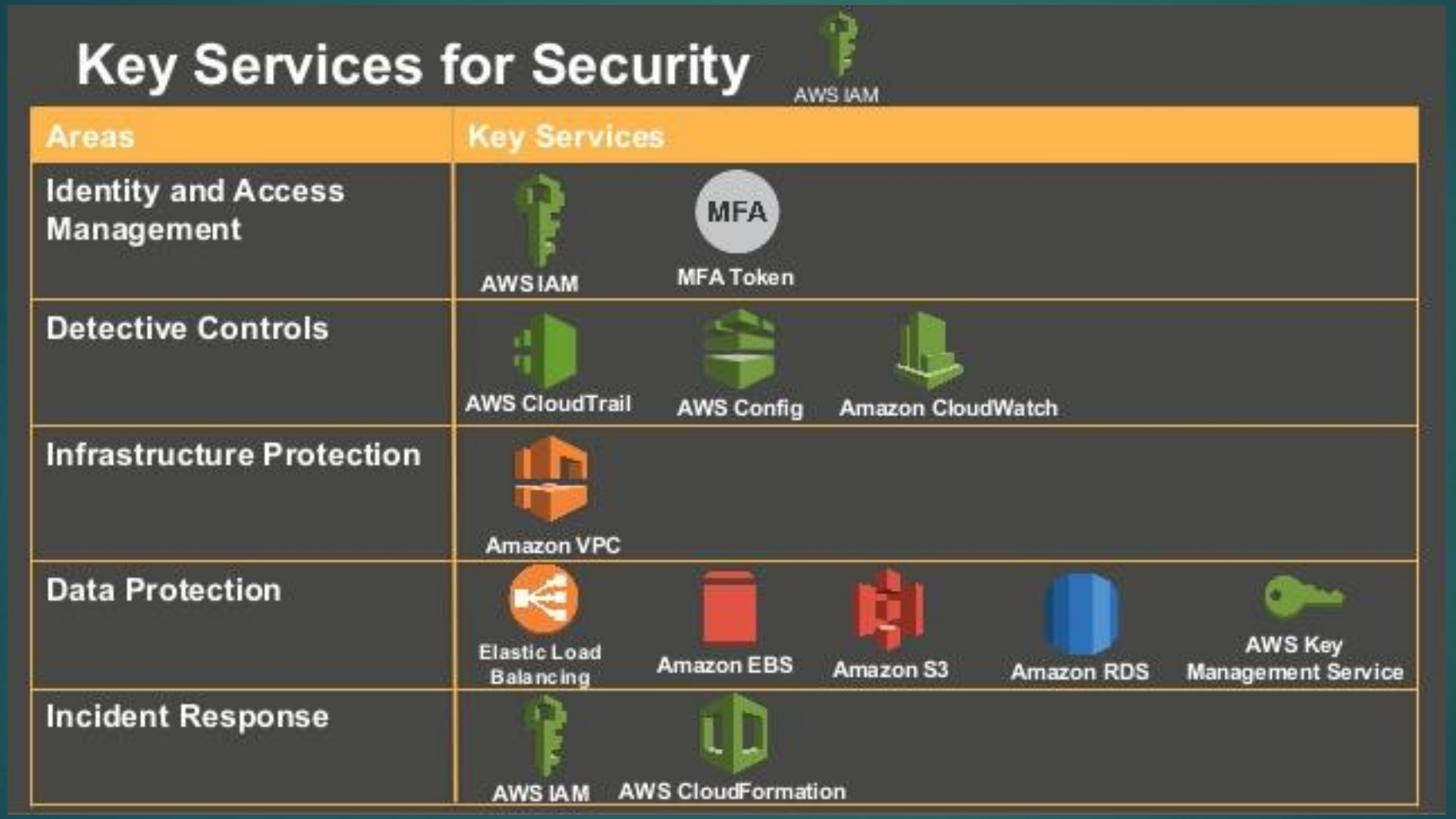
# Key Services for Security



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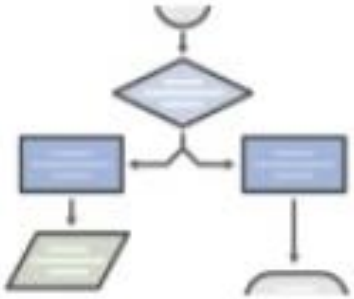
# Principles of Reliability Pillar



## Reliability pillar

*Ability of a system to recover from infrastructure or service disruptions, dynamically acquire computing resources to meet demand, and mitigate disruptions such as misconfigurations or transient network issues*



Test recovery procedures

Automatically recover from failure

Scale horizontally to increase availability

Stop guessing capacity

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# Key Services for Reliability

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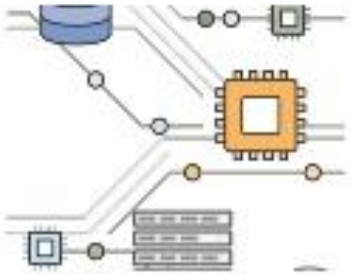
# Principles of Performance Effi



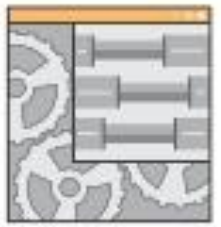
## Performance efficiency pillar

*Efficiently use of computing resources to meet requirements, and maintaining that efficiency as demand changes and technologies evolve*



Democratize advanced technologies

Go global in minutes



Use server-less architectures

Experiment more often

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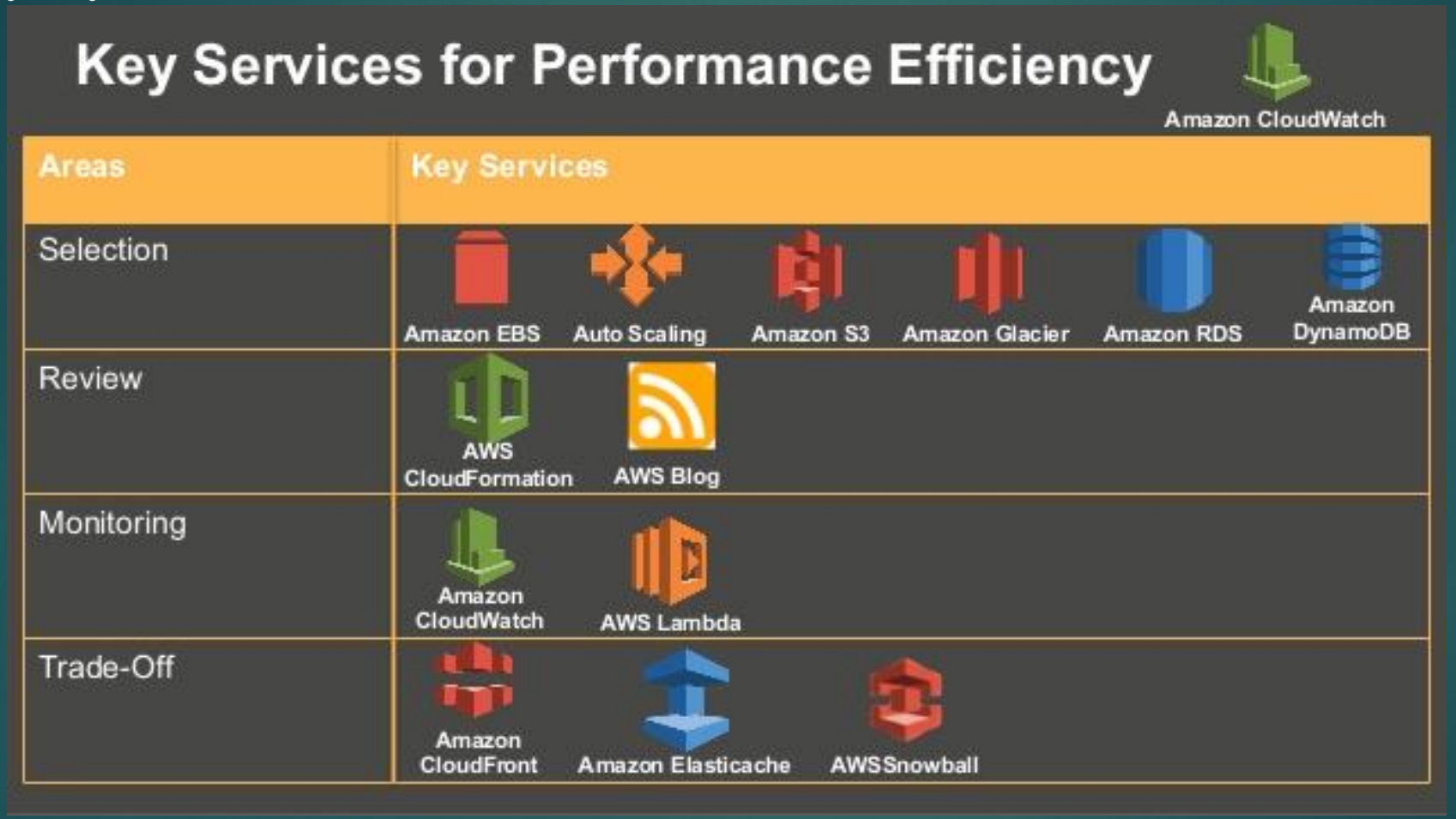
# Key Services for Performance Effi



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# Principles of Cost Optimization Pi

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# Key Services For Cost Optimization



## Key Services for Cost Optimization

| Areas | Key Services |
| --- | --- |
| Cost-effective resources | Reserved Instances; AWS Trusted Advisor |
| Matched supply and demand | Auto Scaling |
| Expenditure awareness | Amazon CloudWatch; Amazon SNS |
| Optimizing over time | AWS Blog & What's New |

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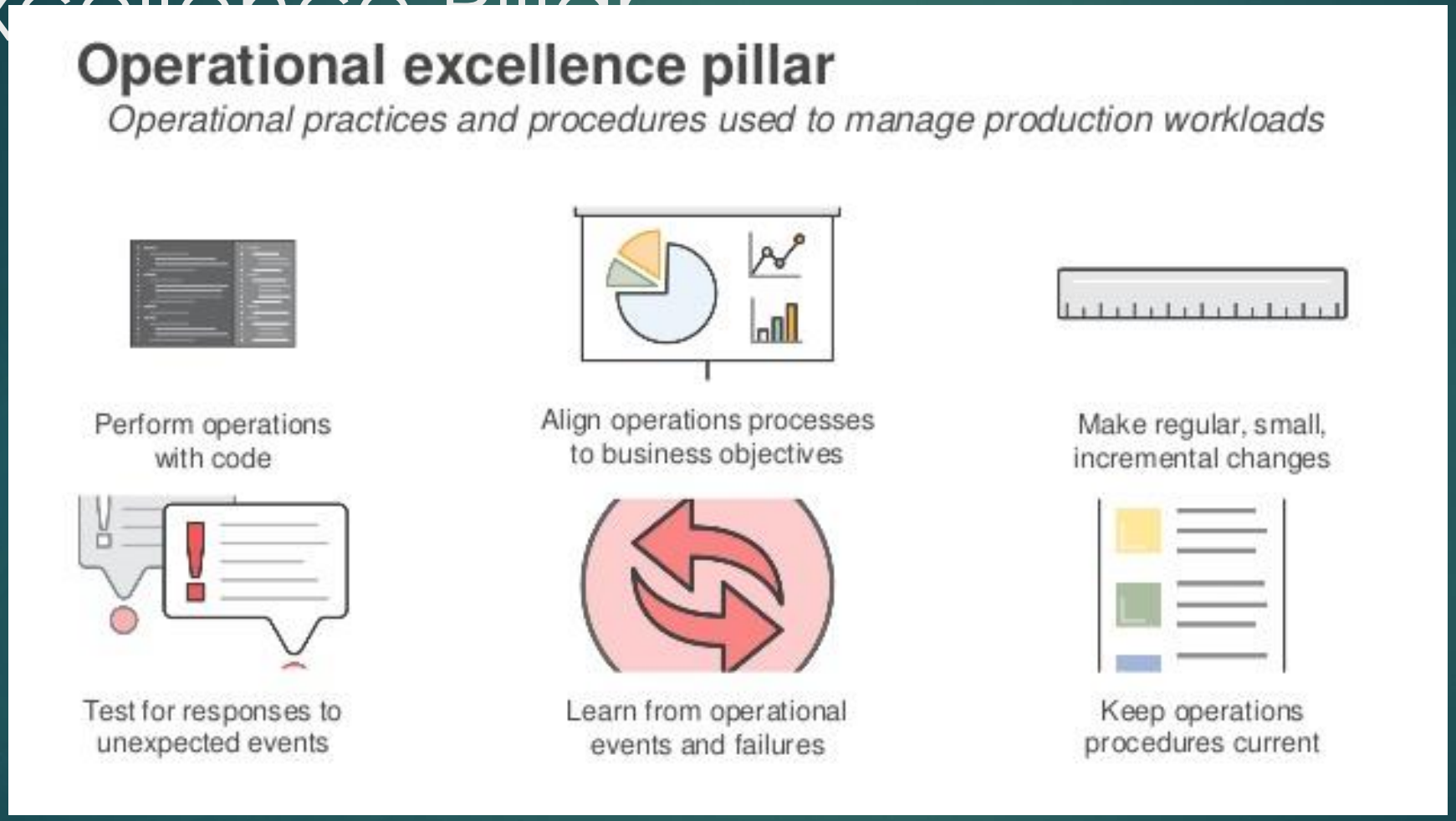
# Principles of Operational Excellence Pillar



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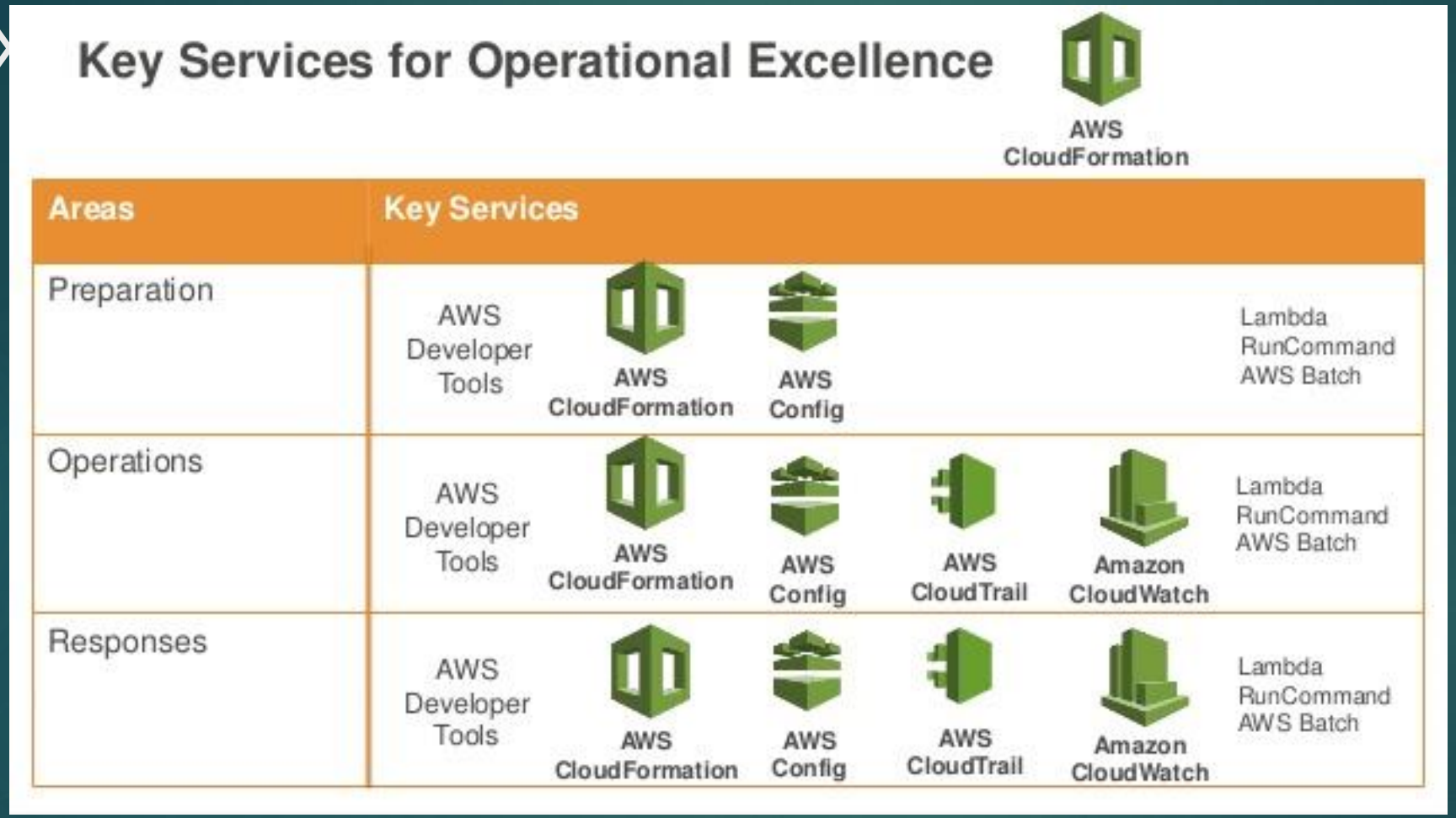
# Key Services for Operational Ex



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# AWS Migration Strategy – Summary



- We need to use Migration Strategies for Migrating from On-Premises to AWS
- Understood your journey and Migration Process to AWS Cloud
- Identified 6R Migration Patterns for each application which needs to be migrated
- Various Principles & Key Services of using AWS Well- Architected framework on your AWS target environment

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# THANK YOU

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