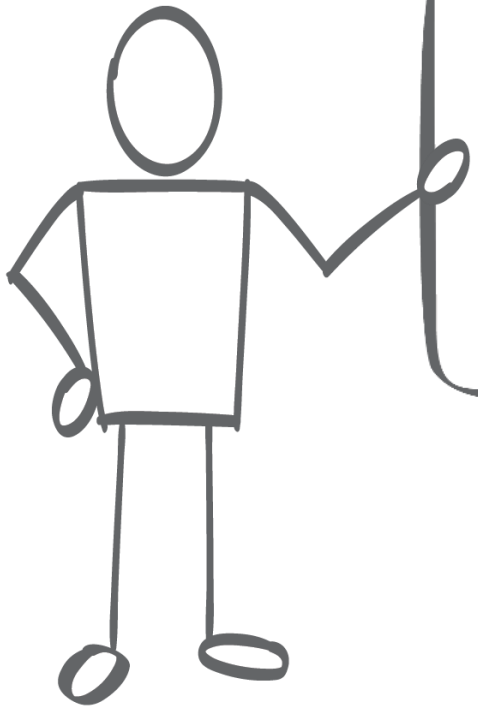
amazon web services | intel

AWSome Day

ONLINE CONFERENCE



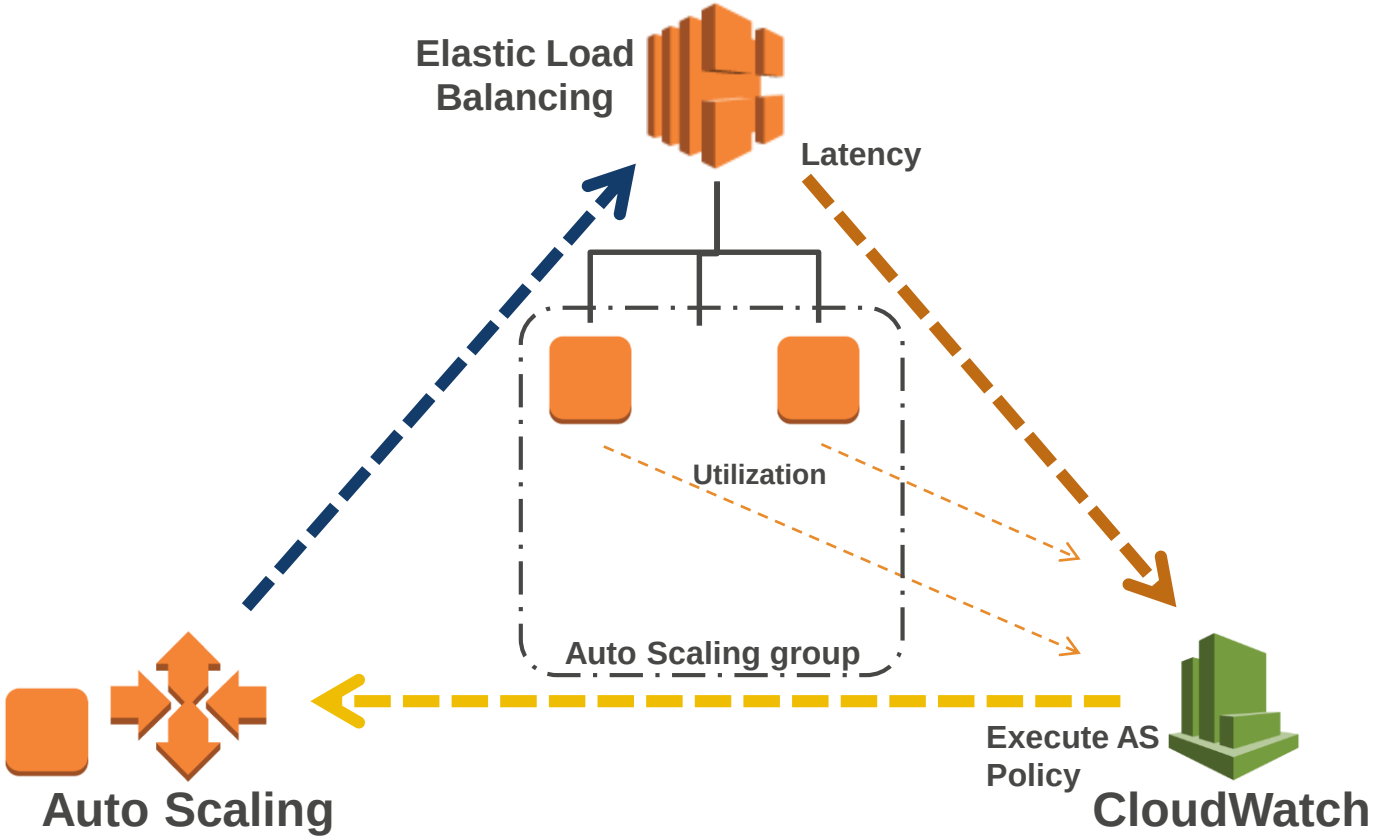
Module 5
AWS Elasticity and Management Tools

Auto Scaling

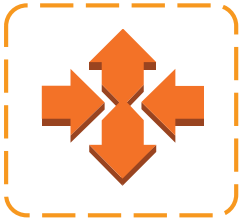
Auto Scaling

- **Scale** your Amazon EC2 capacity **automatically**
- Well-suited for applications that experience **variability in usage**
- Available at no additional charge

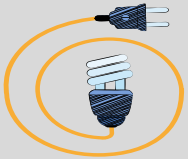
Trio of Services



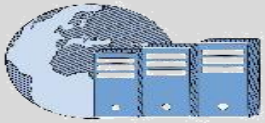
Auto Scaling Benefits



Better Fault Tolerance

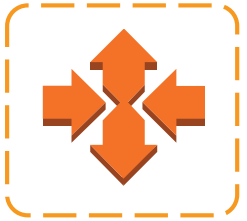


Better Availability



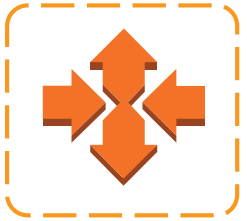
Better Cost Management

Launch Configurations

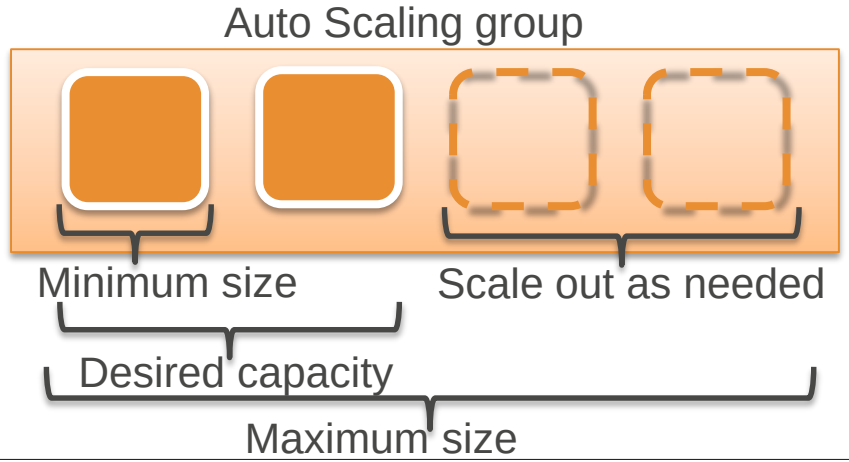


- A launch configuration is a template that an Auto Scaling group uses to launch EC2 instances.
- When you create a launch configuration, you can specify:
  - AMI ID
  - Instance type
  - Key pair
  - Security groups
  - Block device mapping
  - User data

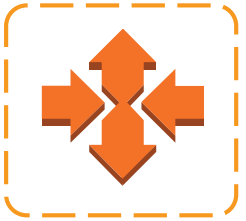
Auto Scaling Groups



- Contain a collection of EC2 instances that share similar characteristics.
- Instances in an Auto Scaling group are treated as a logical grouping for the purpose of instance scaling and management.

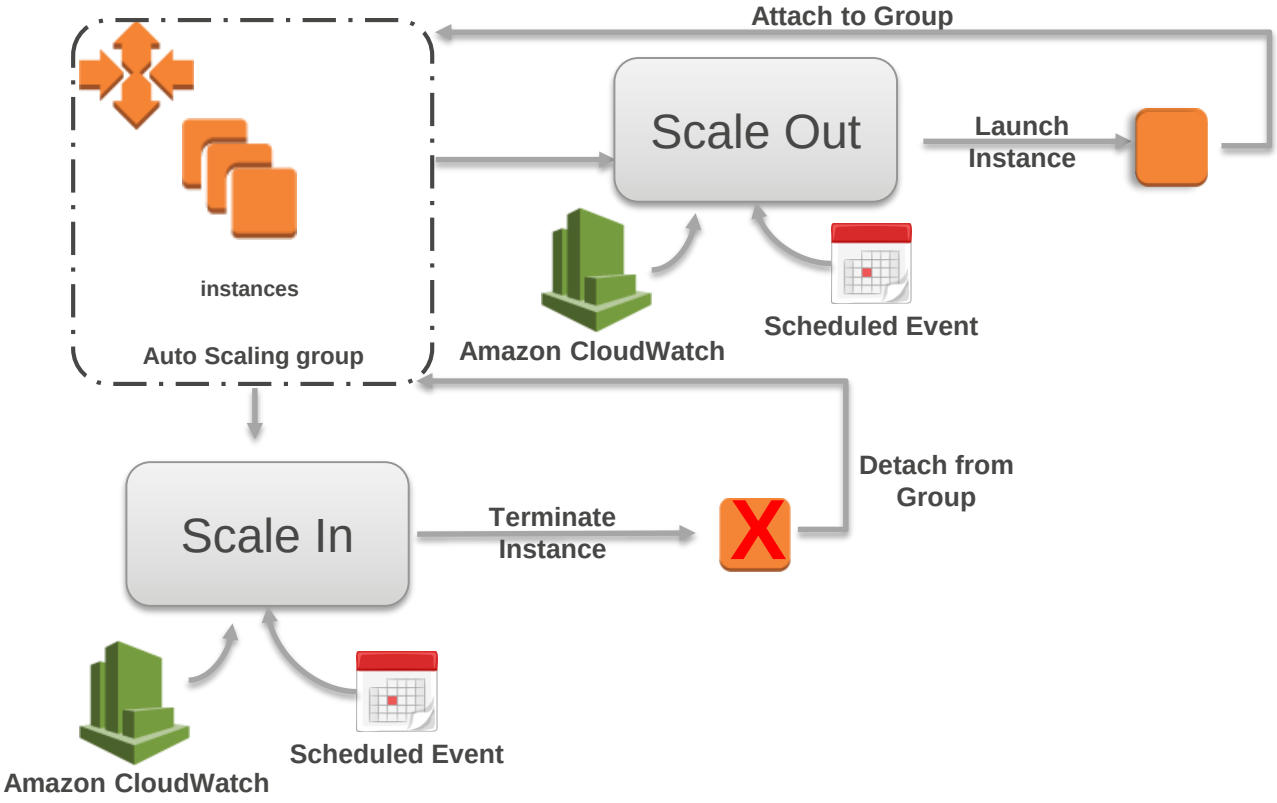


Dynamic Scaling



- You can create a scaling policy that uses CloudWatch alarms to determine:
  - When your Auto Scaling group should scale out.
  - When your Auto Scaling group should scale in.
- You can use alarms to monitor:
  - Any of the metrics that AWS services send to Amazon CloudWatch.
  - Your own custom metrics.

Auto Scaling Basic Lifecycle

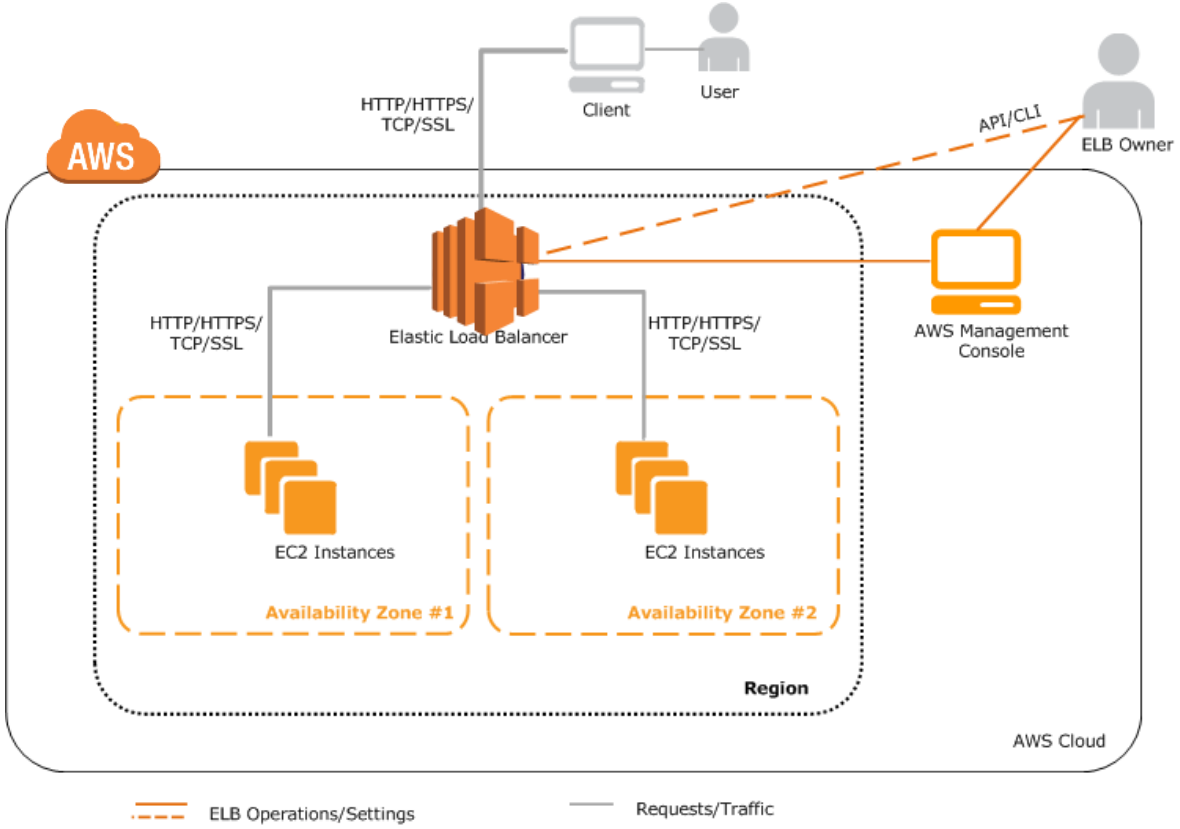


Elastic Load Balancing

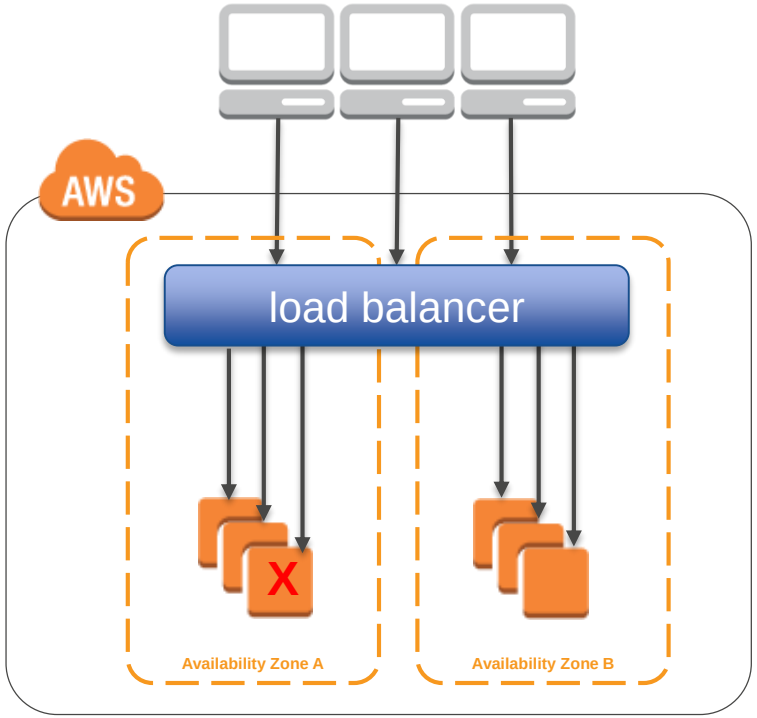
Elastic Load Balancing

- **Distributes** traffic across multiple instances
- Supports **health checks** to detect unhealthy Amazon EC2 instances
- Supports the **routing and load balancing** of HTTP, HTTPS, and TCP traffic to Amazon EC2 instances

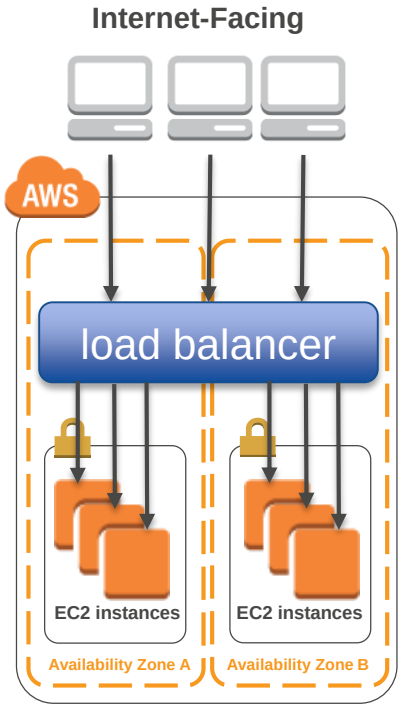
Elastic Load Balancing Example

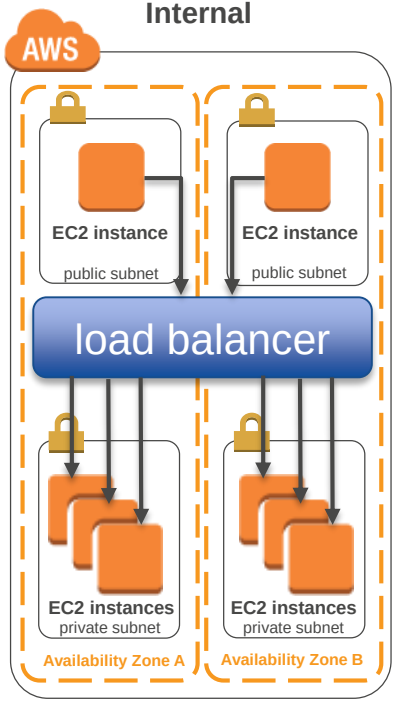


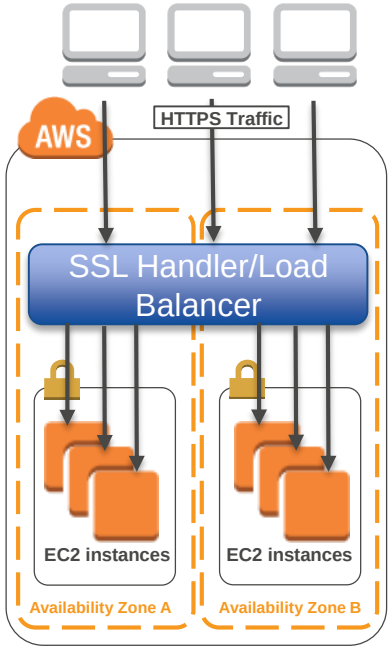
How It Works



Load Balancer Types







Back-end Instances for Your Load Balancer

- Health Checks
- Security Groups
- Subnets
- Register
- De-Register Instances

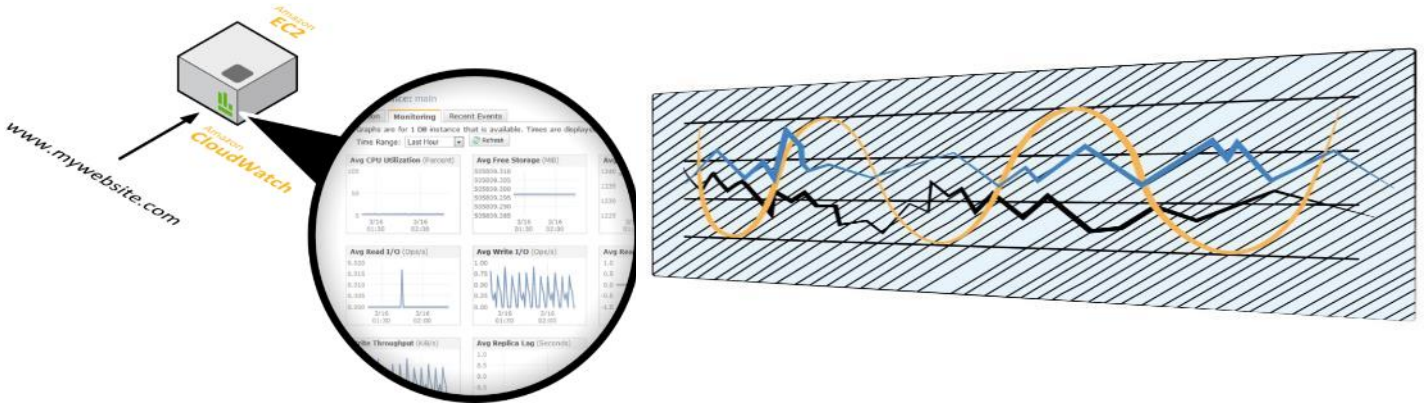
Amazon CloudWatch

Amazon CloudWatch

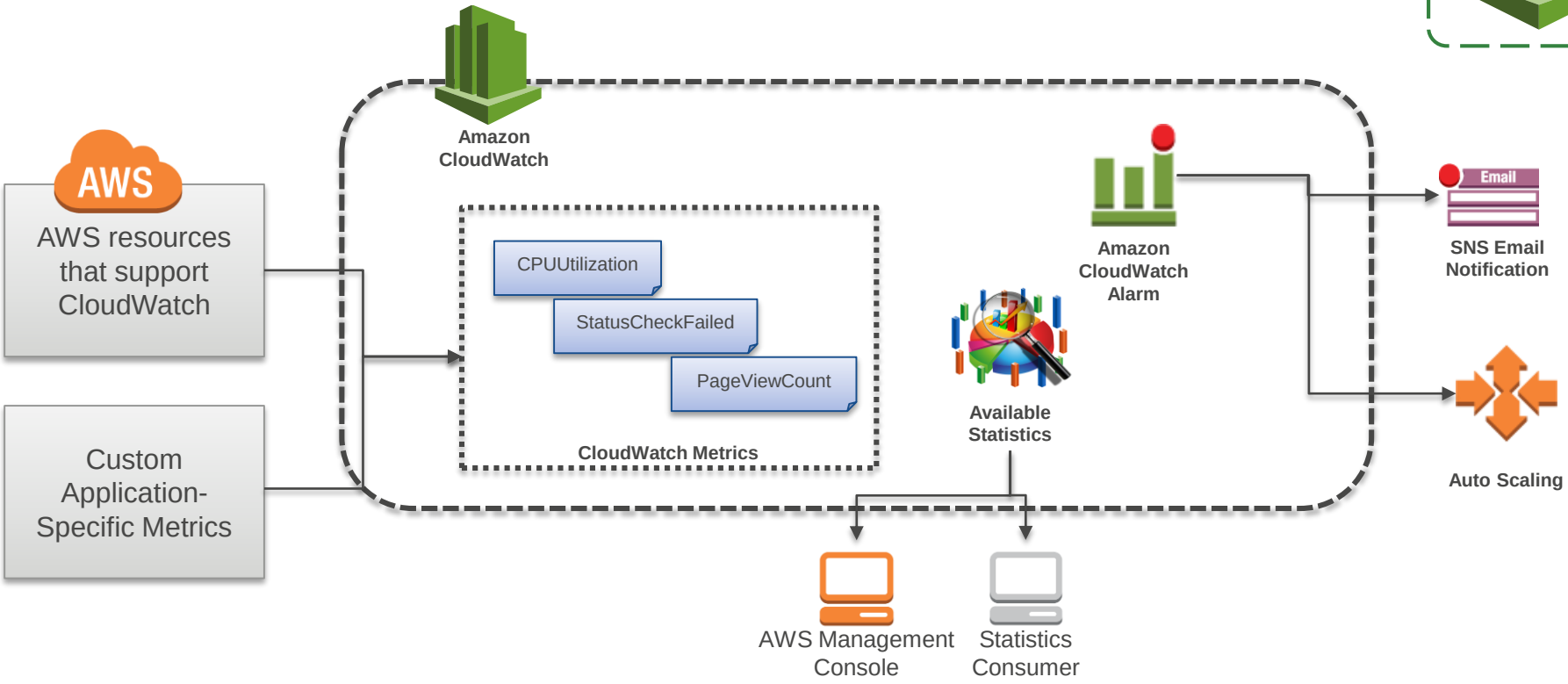
- A **monitoring service** for AWS cloud resources and the applications you run on AWS
- **Visibility into** resource utilization, operational performance, and overall demand patterns
- **Custom application-specific** metrics of your own
- **Accessible** via AWS Management Console, APIs, SDK, or CLI

Amazon CloudWatch Facts

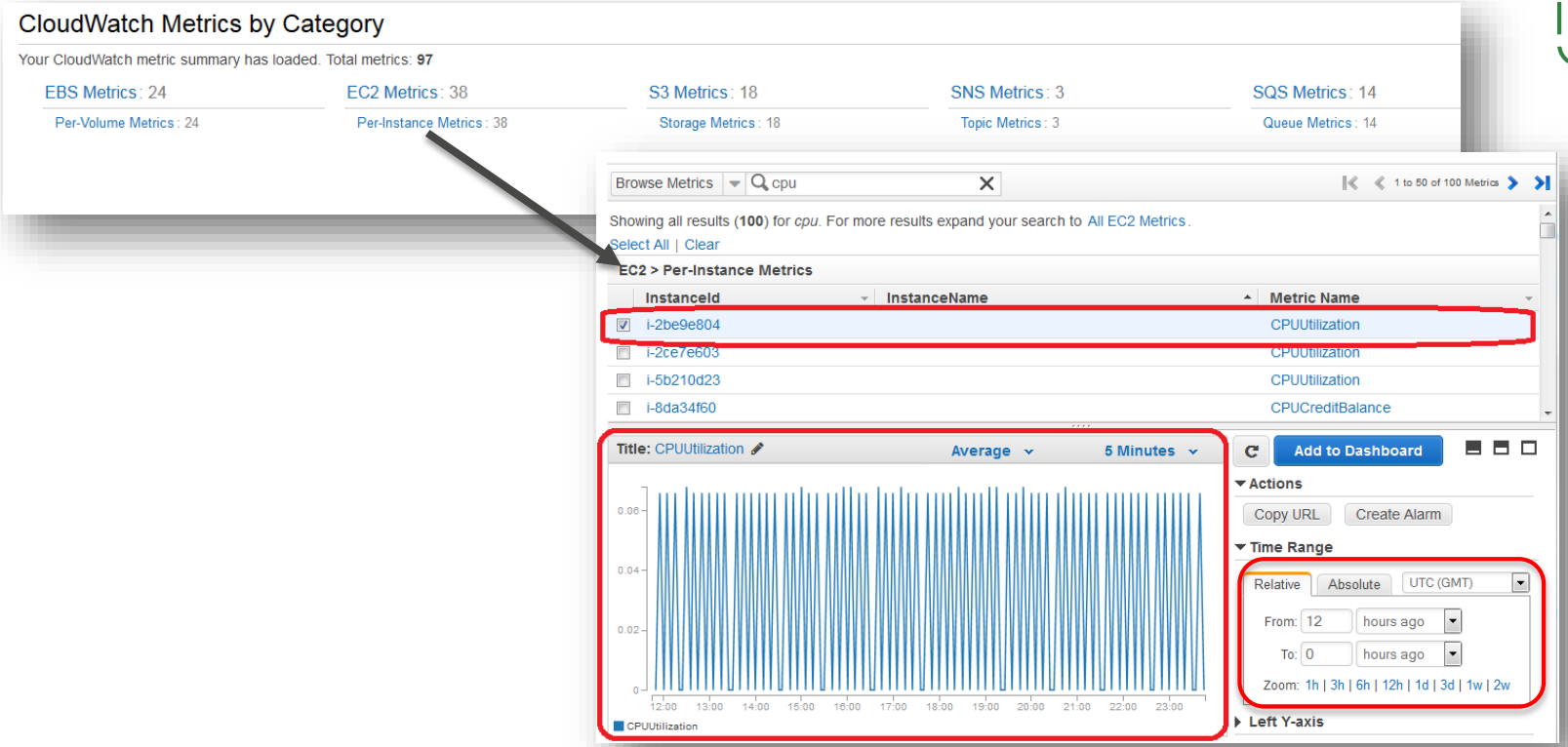
- Monitor other AWS resources
  - View graphics and statistics
- Set Alarms



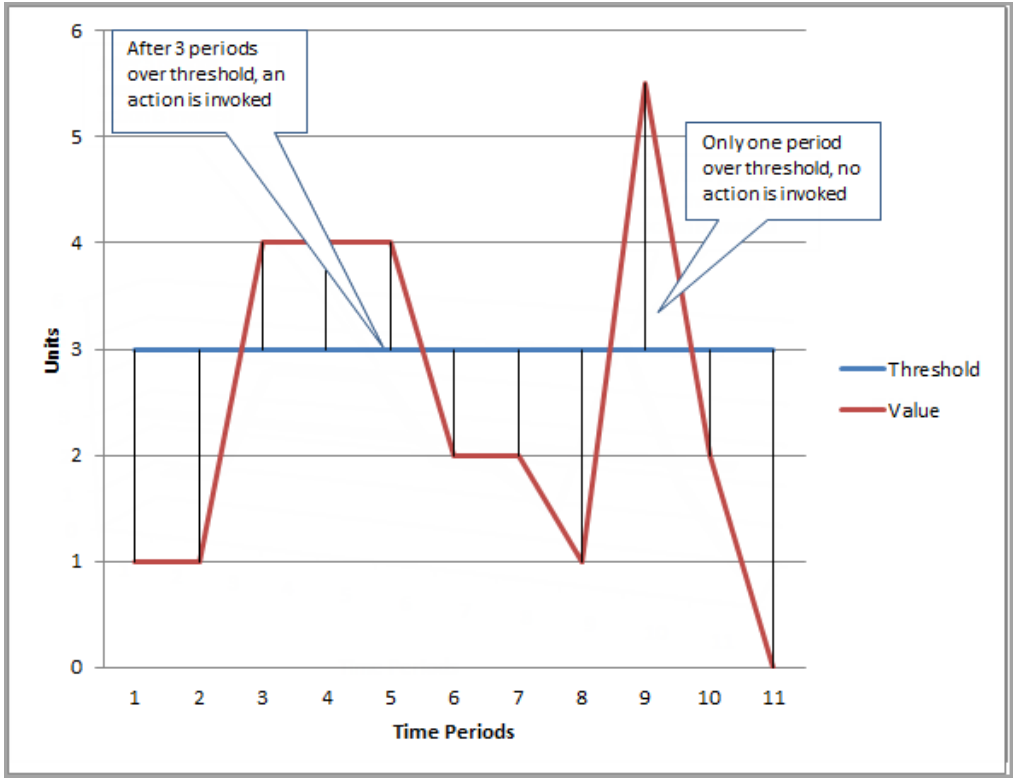
Amazon CloudWatch Architecture



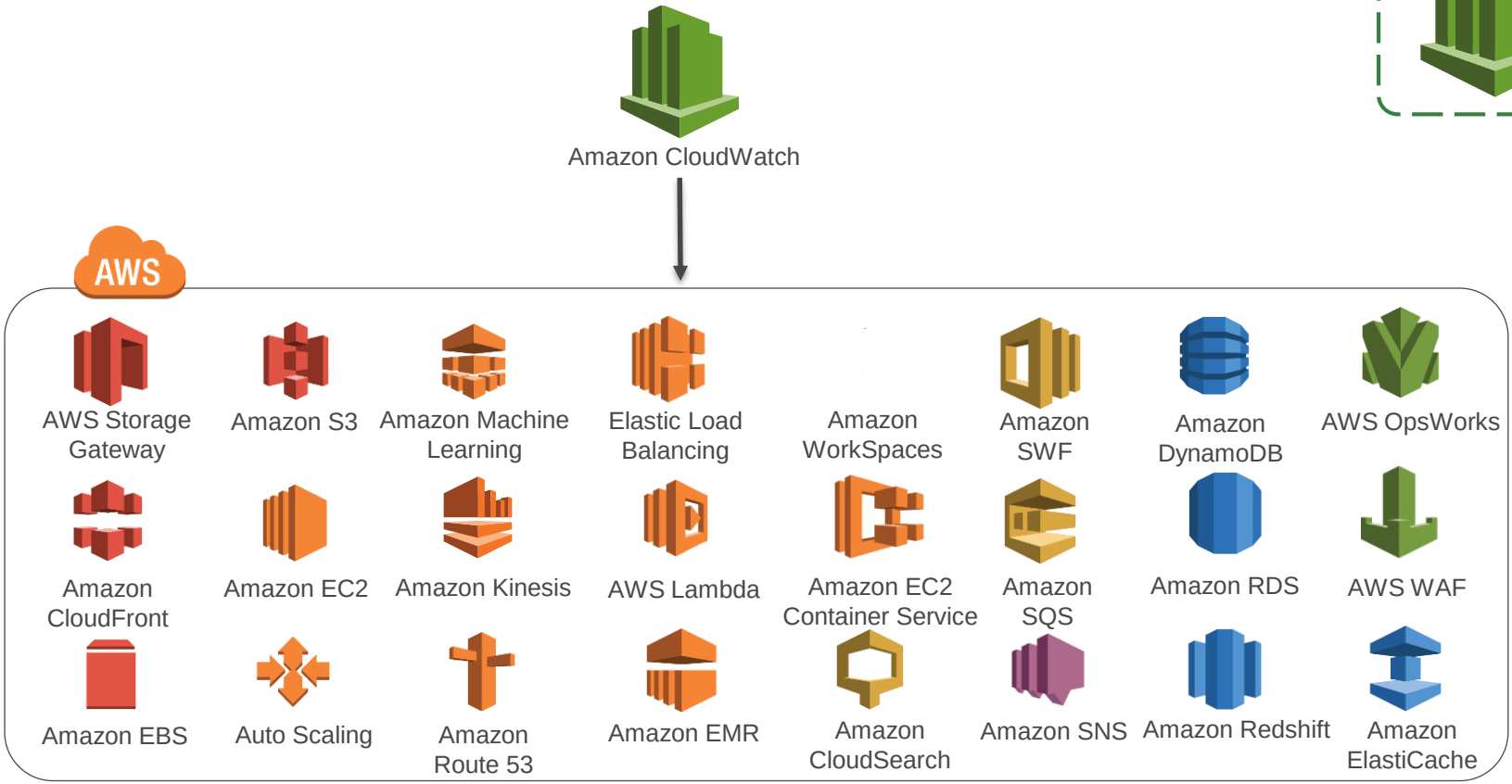
CloudWatch Metrics Examples



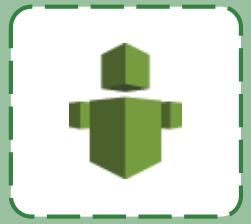
CloudWatch Alarms



Supported AWS Services



AWS Trusted Advisor

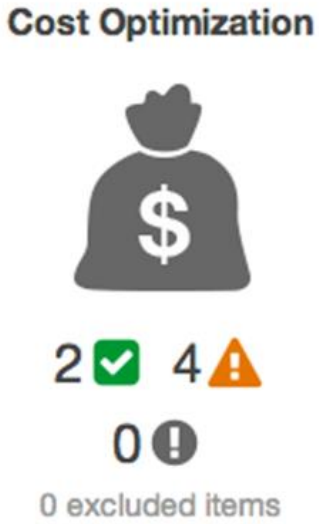


AWS Trusted Advisor

- **Best practice** and recommendation engine.
- Provides AWS customers with performance and security recommendations in four categories: **cost optimization**, **security**, **fault tolerance**, and **performance improvement**.

Cost Optimization

- Amazon EC2 Reserved Instance Optimization
- Low Utilization Amazon EC2 Instances
- Idle Load Balancers
- Underutilized Amazon EBS Volumes
- Unassociated Elastic IP Addresses
- Amazon RDS Idle DB Instances



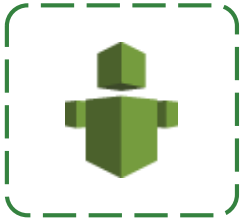
Security

- Security Groups
- AWS IAM Use
- Amazon S3 Bucket Permissions
- MFA on Root Account
- AWS IAM Password Policy
- Amazon RDS Security Group Access Risk

Fault Tolerance

- Amazon EBS Snapshots
- Load Balancer Optimization
- Auto Scaling Group Resources
- Amazon RDS Multi-AZ
- Amazon Route 53 Name Server Delegations
- ELB Connection Draining

Performance Improvement



- High Utilization Amazon EC2 Instances
- Service Limits
- Large Number of Rules in EC2 Security Group
- Over Utilized Amazon EBS Magnetic Volumes
- Amazon EC2 to EBS Throughput Optimization
- Amazon CloudFront Alternate Domain Names

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