

AWS SERVICES OVERVIEW

AWS Compute Services



Compute

EC2

EC2 Container Service

Lightsail

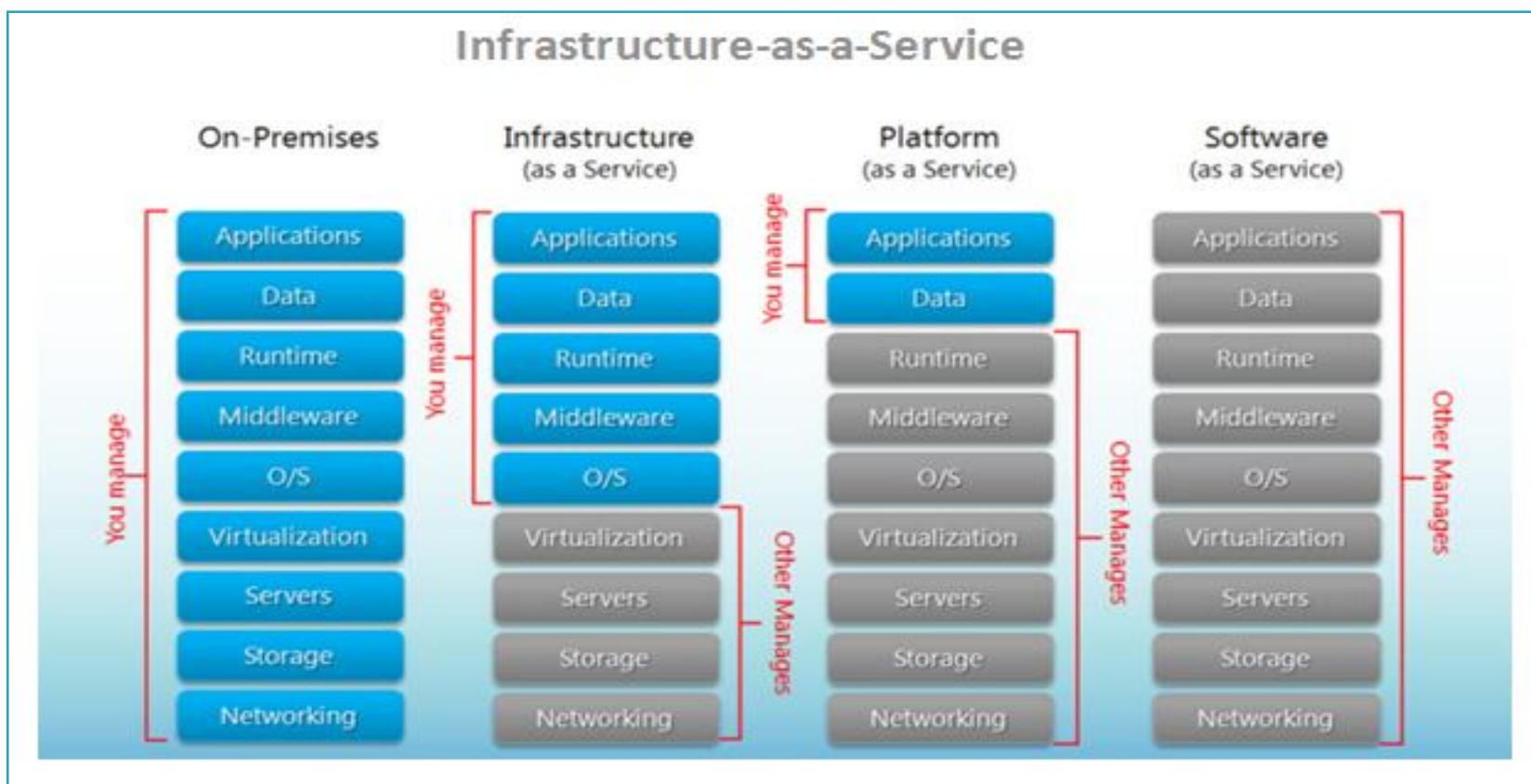
Elastic Beanstalk

Lambda

Batch

EC2 (Elastic Compute Cloud)

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud

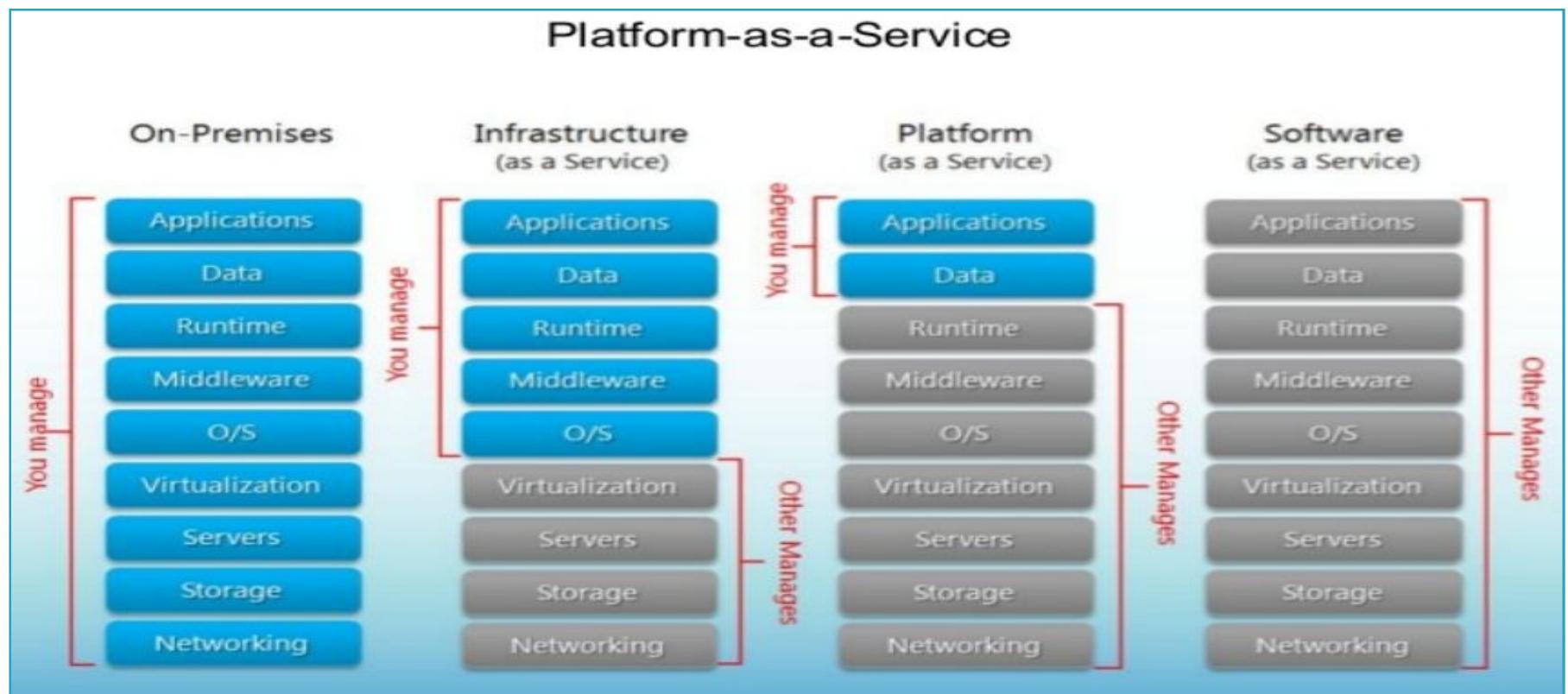


EC2 Concepts

- **Instance** - Virtual Computing environments
- **AMI** - Preconfigured template of instance
- **Instance Types** - Various configs of CPU, memory, storage and network
- **Key Pair** – Secure login to instance
- **Instance Store Volumes** – Temporary Data Storage
- **EBS (Elastic Block Store)** – Persistent Storage Volume
- **Availability Zones** – Physical locations of resources
- **Security Groups** – Firewall to protect resource access based on rules
- **Tags** – Metadata about the instance

Elastic Beanstalk

ElasticBeanstalk enables to quickly deploy and manage applications in the AWS Cloud without worrying about the infrastructure that runs those applications. Reduces management complexity without restricting choice or control.



Elastic Beanstalk concepts

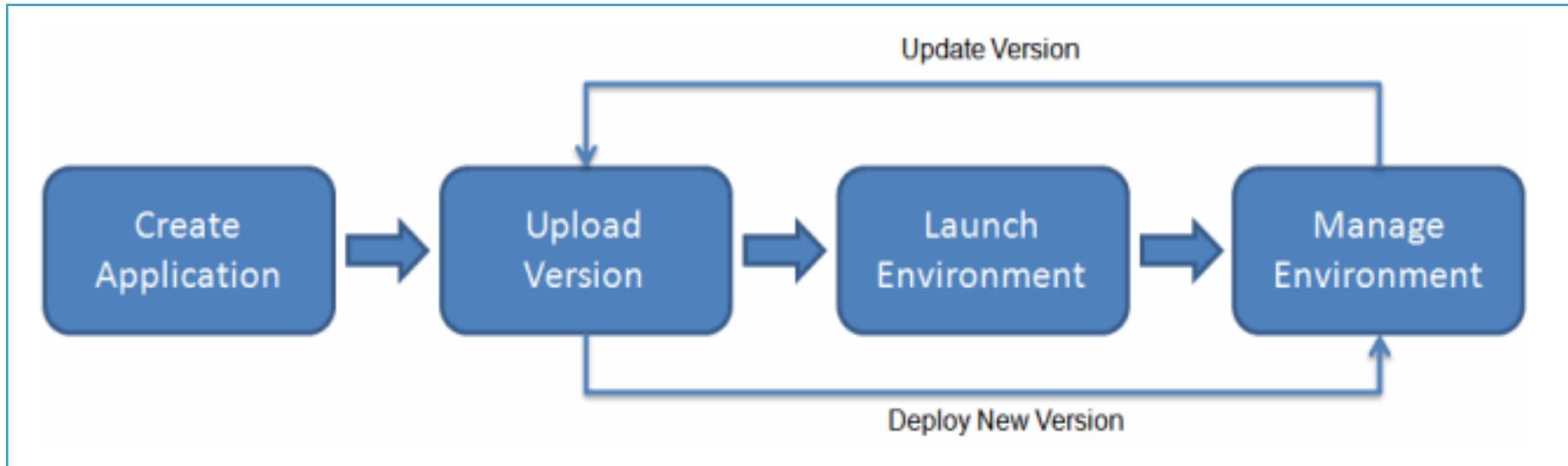
- **Application** - Logical collection of Beanstalk components (env, version, config)
- **Application Version** - Specific, labeled iteration of deployable code
- **Environment** - Provisions the resources needed to run the application version
- **Environment Tier** – Web server or Worker environment
- **Environment Config** – Collection of parameters or settings to define behaviour
- **Configuration Template** – Blueprint of environment configuration

Elastic Beanstalk Launguage Support

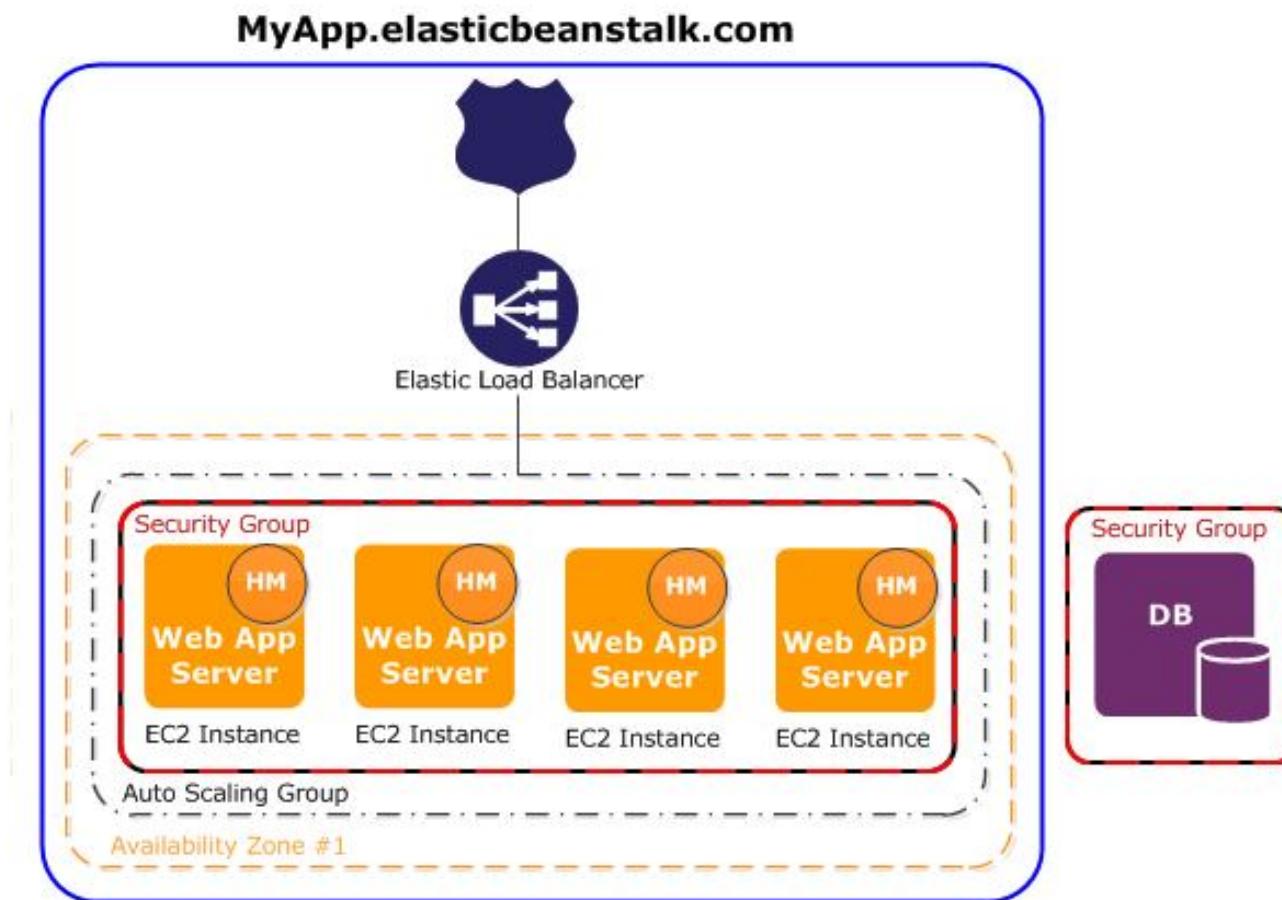


Deployment Artifacts: zip, war, docker

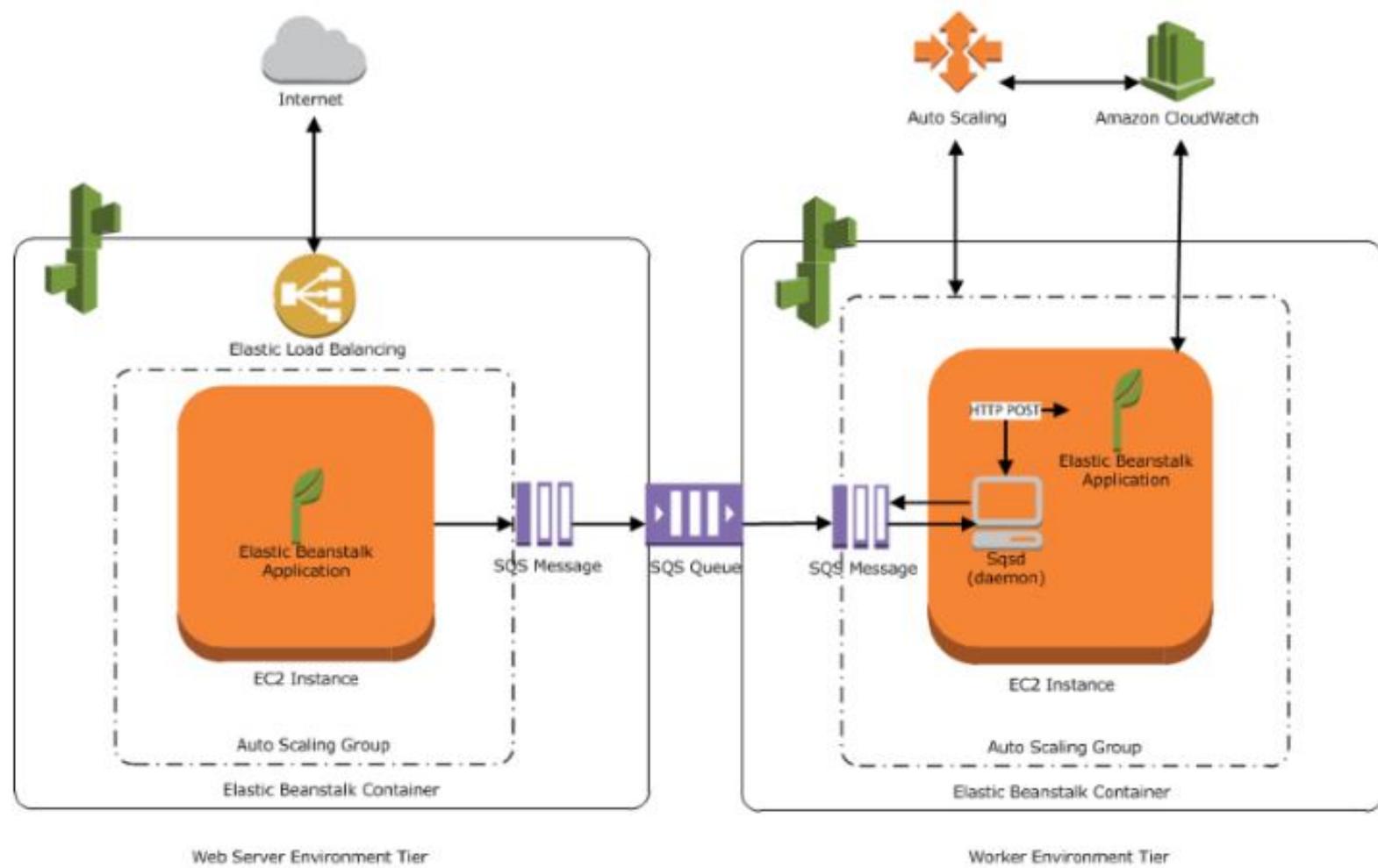
Elastic Beanstalk Workflow



Elastic Beanstalk Architecture (Web)



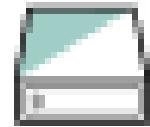
Elastic Beanstalk Architecture (Worker)



Elastic Beanstalk Competitors

- Cloud Foundry
- Google App Engine
- Azure Web Sites
- Heroku
- Bluemix

AWS Storage Services



Storage

Amazon Simple Storage Service (S3)

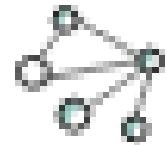
Amazon Elastic Block Storage (EBS)

Amazon Elastic File System (EFS)

Amazon Glacier

AWS Storage Gateway

AWS Network Services



Networking & Content Delivery

VPC

CloudFront

Direct Connect

Route 53

AWS Database Services



Database

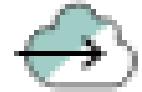
RDS

DynamoDB

ElastiCache

Amazon Redshift

AWS Migration Services



Migration

AWS Migration Hub

Application Discovery Service

Database Migration Service

Server Migration Service

Snowball

AWS Developer Services



Developer Tools

CodeStar

CodeCommit

CodeBuild

CodeDeploy

CodePipeline

X-Ray

AWS Messaging Services



Messaging

Simple Queue Service

Simple Notification Service

Simple Email Service

AWS Security Services



Security, Identity & Compliance

IAM

Inspector

Certificate Manager

Directory Service

WAF & Shield

Artifact

Amazon Macie

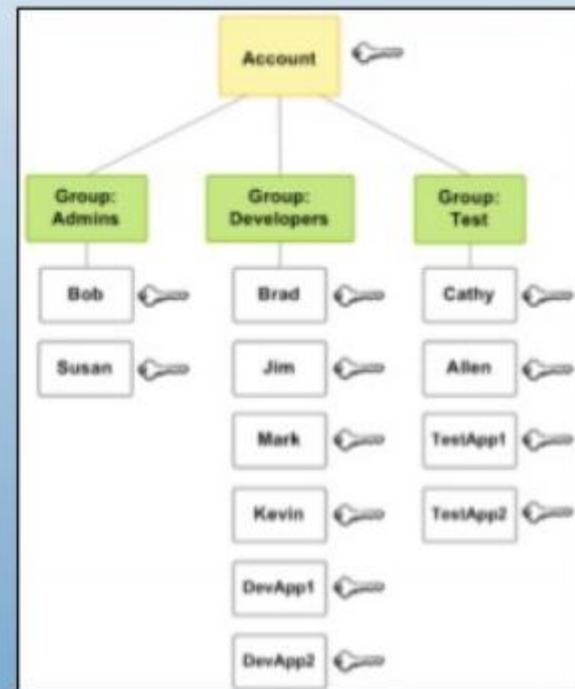
CloudHSM

AWS Identity and Access Management (IAM)

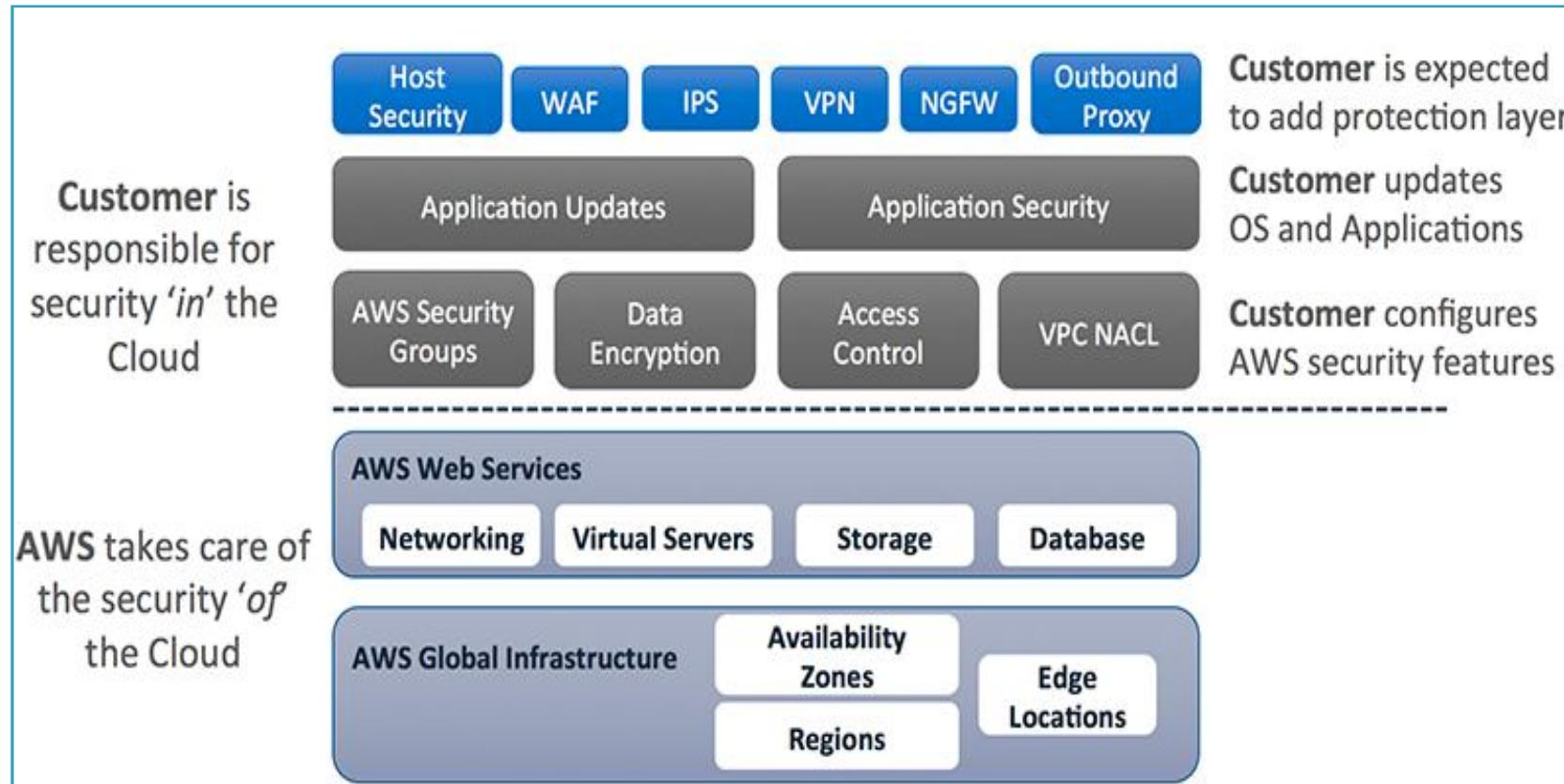
IAM is a web service for securely controlling access to AWS services. Centrally manage users, security credentials such as access keys, and permissions that control which AWS resources users and applications can access.

AWS Identity and Access Management (IAM)

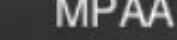
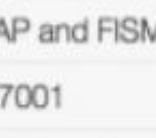
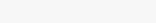
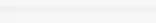
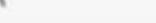
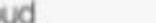
- Each account has root identity plus Users, Groups, Roles
 - Account-level: password complexity policies
- Unique security credentials for each user
 - Login/password (optional)
 - Access / secret keys (for APIs) (optional)
 - (V)MFA devices (optional)
- Policies control access to AWS APIs
- Deeper integration into some Services
 - S3: policies on objects and buckets
 - Simple DB: domains
- AWS Management Console supports IAM user log on
- Not for Operating Systems or Applications
 - use LDAP, Active Directory/ADFS, etc...



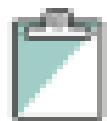
AWS Shared Security Model



AWS Security Compliance

Certificates:	Programmes:
	PCI DSS Level 1
	SOC 1 / ISAE 3402
	SOC 2
	SOC 3
	ISO 9001
	IRAP (Australia)
	FIPS 140-2
	CJIS
	CSA
	FERPA
	HIPAA
	FedRAMP (SM)
	DoD CSM Levels 1-2, 3-5
	DIACAP and FISMA
	ISO 27001
	MTCS Tier 3 Certification
	ITAR
	MPAA
	G-Cloud
	Section 508 / VPAT

AWS Management Services



Management Tools

CloudWatch

CloudFormation

CloudTrail

Config

OpsWorks

Service Catalog

Trusted Advisor

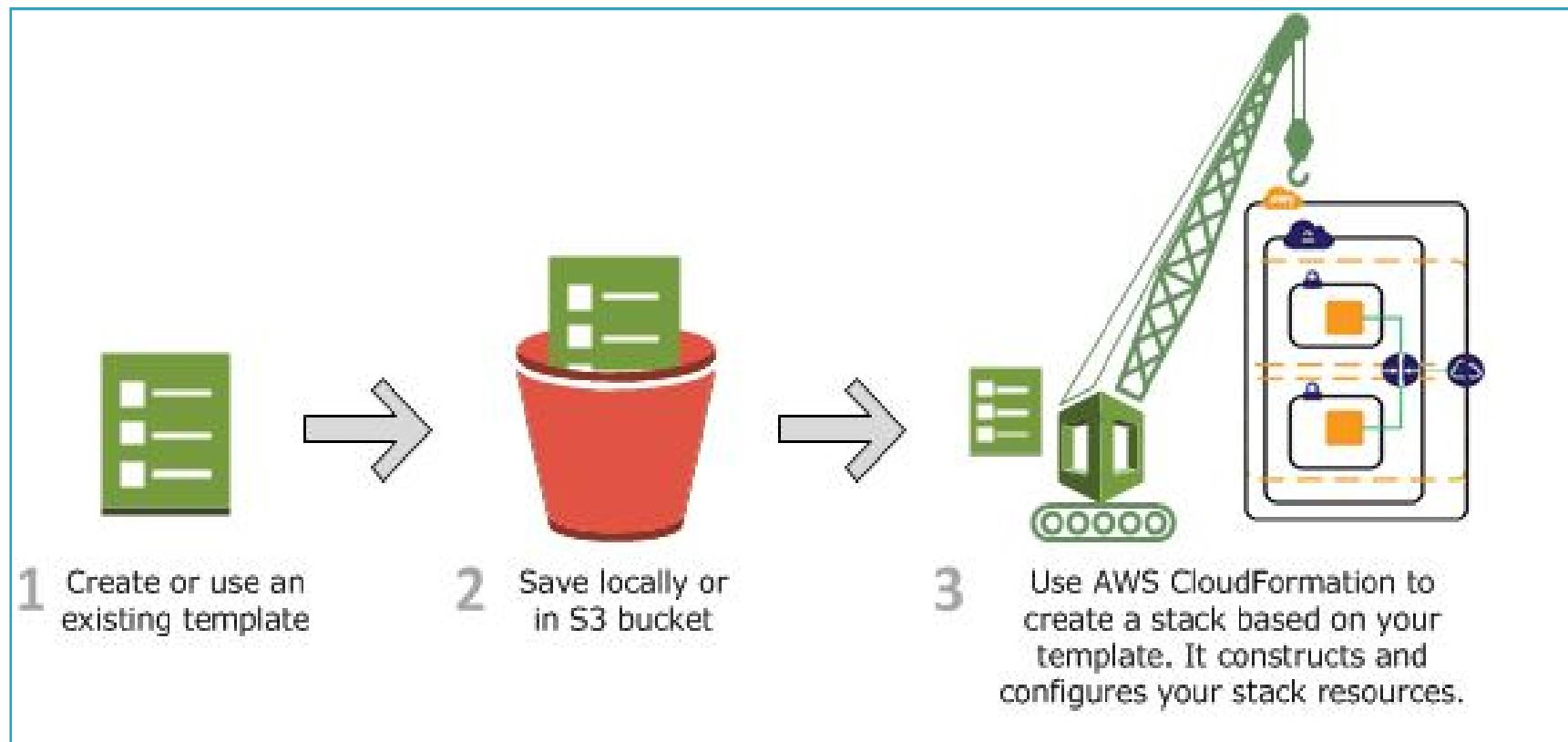
Managed Services

Cloud Formation

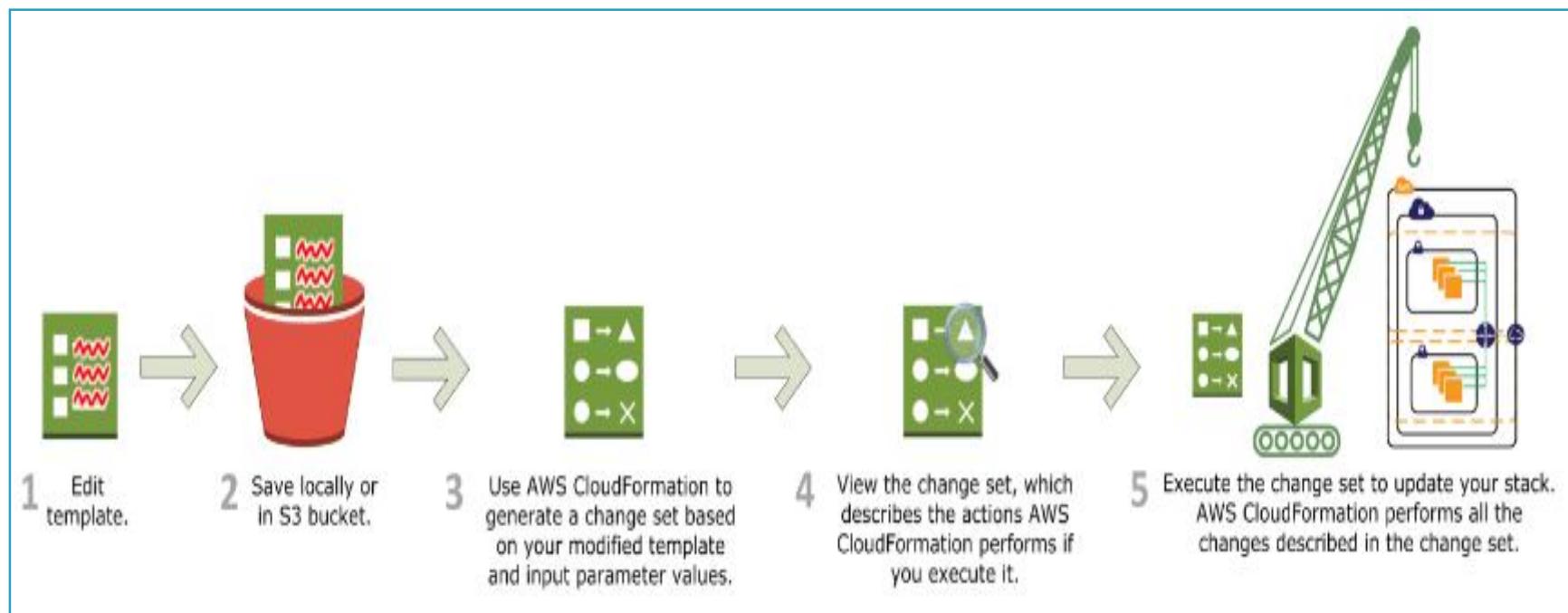
AWS CloudFormation enables you to create and provision AWS infrastructure deployments predictably and repeatedly

- **Templates** – Blueprints for building AWS resources (JSON or YAML)
- **Stack** – Logical group of related resources to be managed as single unit
- **Change Sets** – Shows how changes might impact the running resources

Cloud Formation – Create Process



Cloud Formation – Update Process



Cloud Formation – Best Practices

Planning and organizing

- Organize Your Stacks By Lifecycle and Ownership
- Use Cross-Stack References to Export Shared Resources
- Use IAM to Control Access
- Reuse Templates to Replicate Stacks in Multiple Environments
- Verify Quotas for All Resource Types
- Use Nested Stacks to Reuse Common Template Patterns

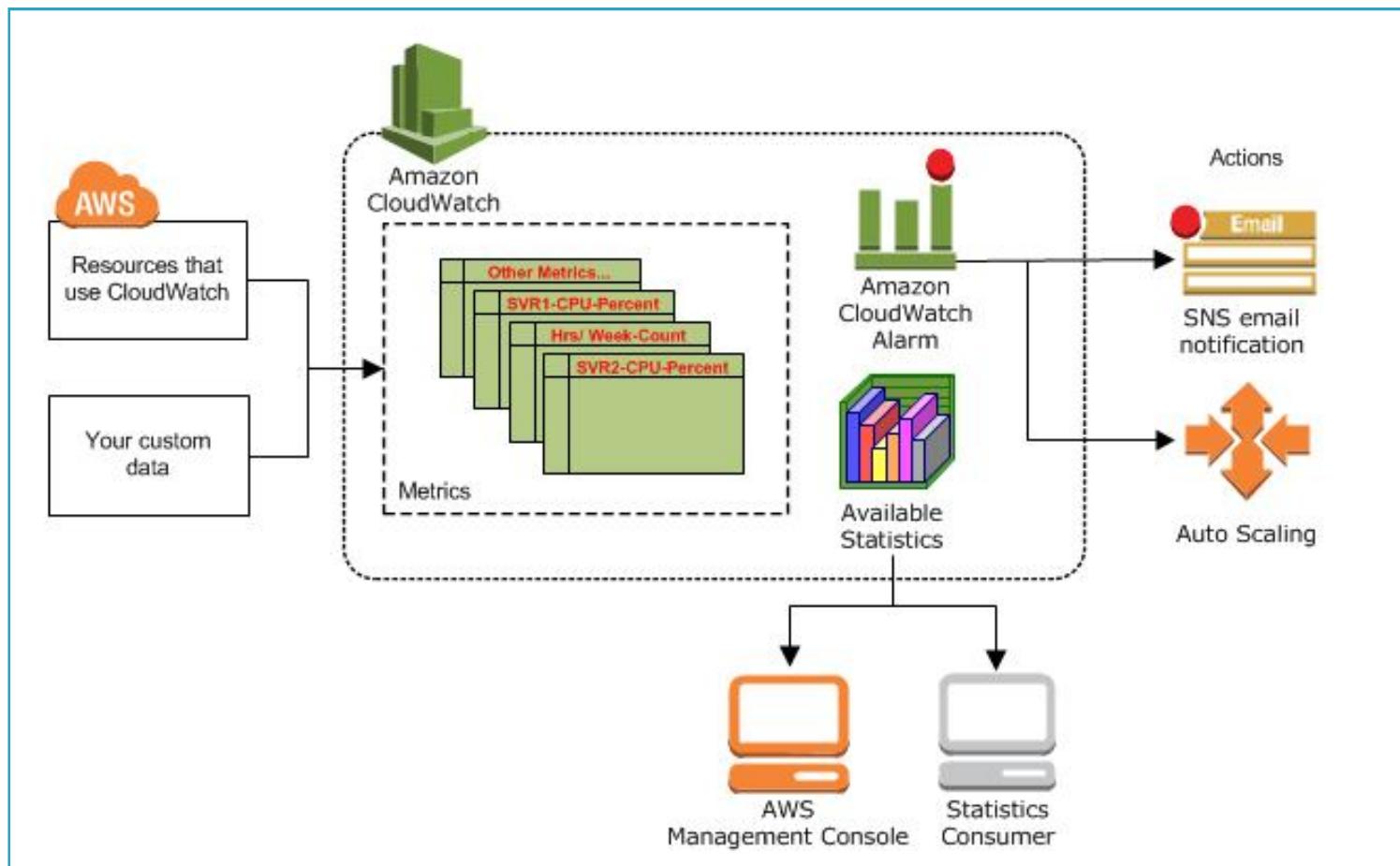
Creating templates

- Do Not Embed Credentials in Your Templates
- Use AWS-Specific Parameter Types
- Use Parameter Constraints
- Use AWS::CloudFormation::Init to Deploy Software Applications on Amazon EC2 Instances
- Use the Latest Helper Scripts
- Validate Templates Before Using Them

Managing stacks

- Manage All Stack Resources Through AWS CloudFormation
- Create Change Sets Before Updating Your Stacks
- Use Stack Policies
- Use AWS CloudTrail to Log AWS CloudFormation Calls
- Use Code Reviews and Revision Controls to Manage Your Templates
- Update Your Amazon EC2 Linux Instances Regularly

Cloud Watch



AWS Other Services



Analytics

Athena
EMR
CloudSearch
Elasticsearch Service
Kinesis
Data Pipeline
QuickSight
AWS Glue



Artificial Intelligence

Lex
Amazon Polly
Rekognition
Machine Learning



Application Services

Step Functions
SWF
API Gateway
Elastic Transcoder



Internet Of Things

AWS IoT
AWS Greengrass



Business Productivity

WorkDocs
WorkMail
Amazon Chime



Mobile Services

Mobile Hub
Cognito
Device Farm
Mobile Analytics
Pinpoint



Game Development

Amazon GameLift



Contact Center

Amazon Connect

Thank You!