AWS Deployment & Management Services

Lesson 07: AWS Deployment & Management service

Lesson Objectives

In this lesson, you will learn:

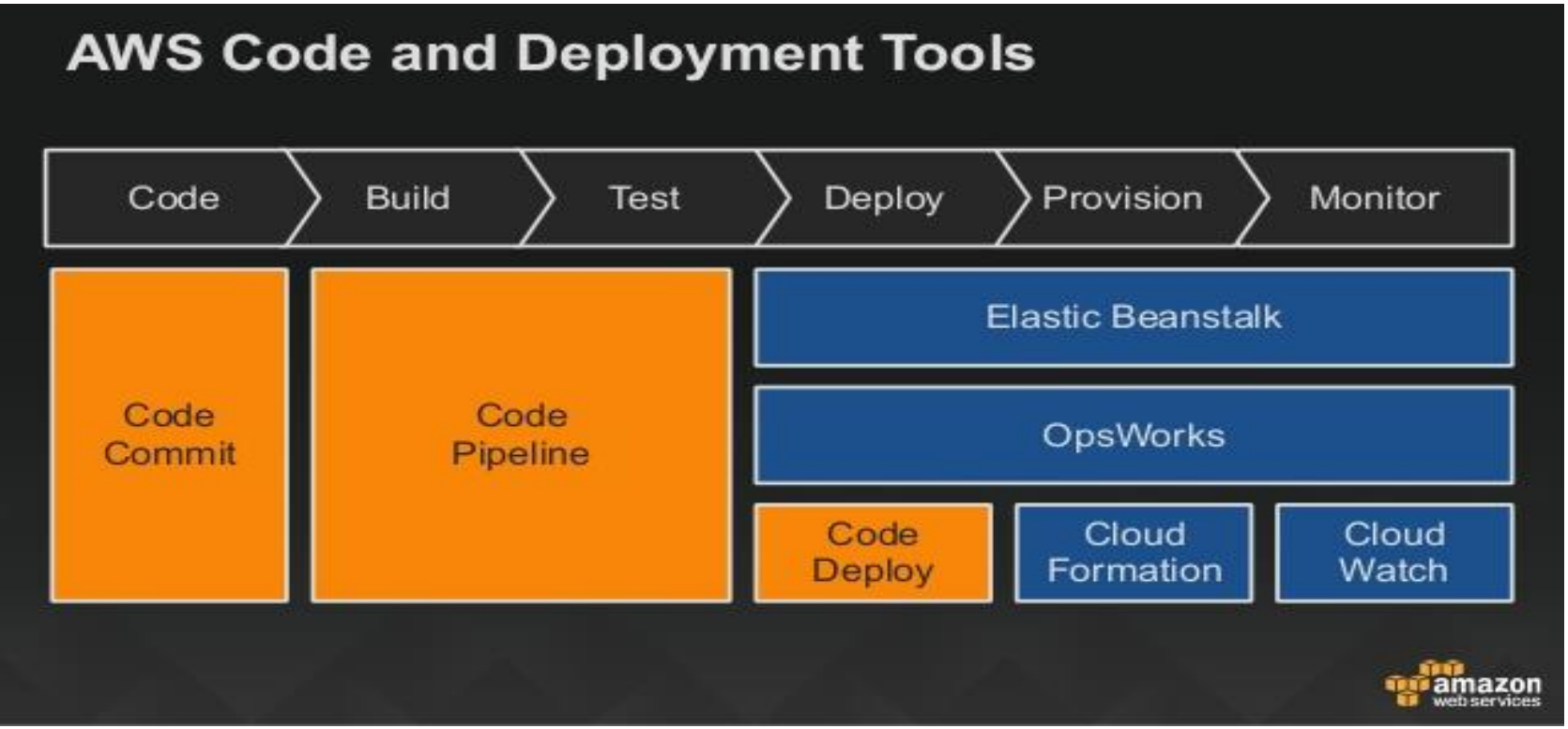
- Amazon Elastic Beanstalk
- AWS CloudFormation
- Amazon Cloudwatch
- Codebuild
- CodeDeploy

7.1: Amazon Elastic Beanstalk
Amazon Development tool Service

The AWS Developer Tools is a set of services which is designed to enable developers and IT operations professionals to implement DevOps to rapidly and safely deliver software .

These services help to securely store and version control the application's source code and automatically build, test, and deploy the application to AWS or your on-premises environment.

7.1: Amazon Elastic Beanstalk
Amazon Development an management tool Service



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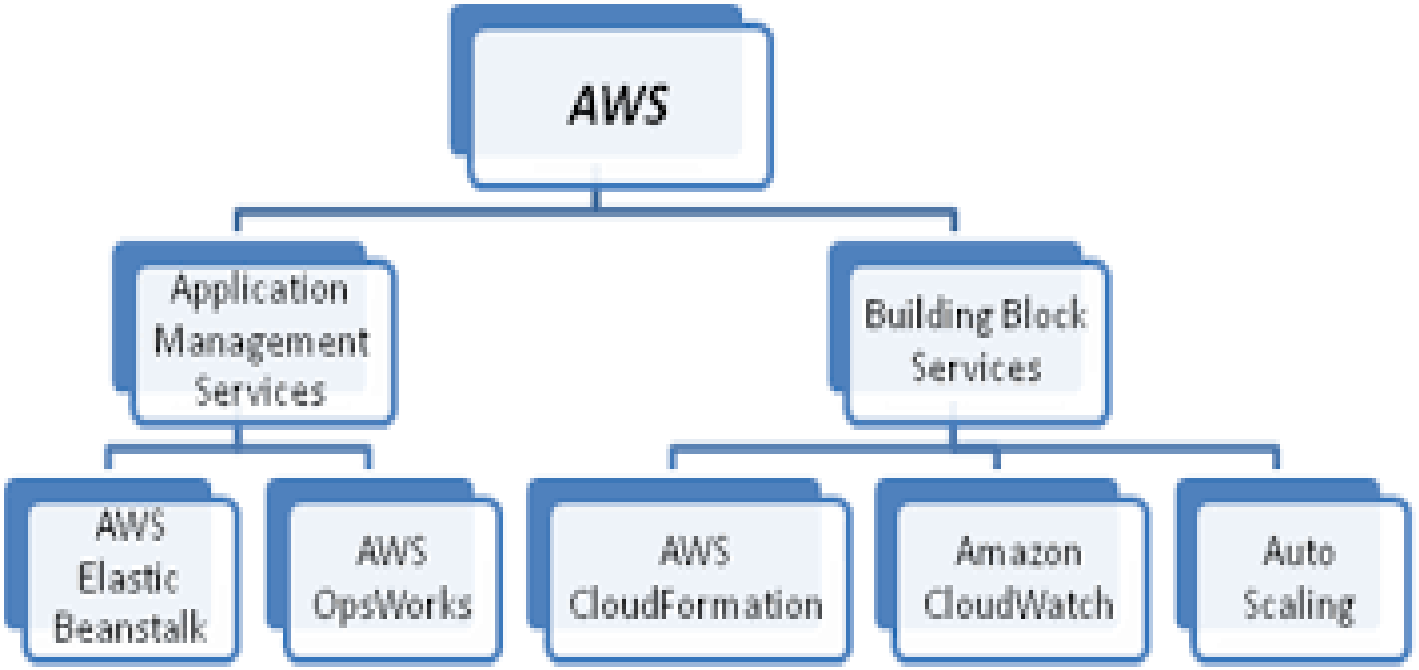
7.1: Amazon Elastic Beanstalk
Amazon Development tool Service



7.1: Amazon Elastic Beanstalk
Amazon Elastic Beanstalk

AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services .

With Elastic Beanstalk , one can easily deploy ,monitor and scale an application quickly and easily.

Supports popular programming languages such as Java, .NET, PHP, Node.js, Python and Ruby

With AWS Elastic Beanstalk, you can focus on the code and let the service manage the rest.

7.1: Amazon Elastic Beanstalk
Amazon Elastic Beanstalk

With Elastic Beanstalk, any one retain full control over the AWS resources powering your application.

To ensure easy portability of your application, Elastic Beanstalk is built using familiar application/web servers such as Apache HTTP Server, Apache Tomcat .

Elastic Beanstalk does not restrict your choice of persistent storage and database service options.

No additional cost for Elastic Beanstalk , pay only for the underlying AWS resources that your application consumes.

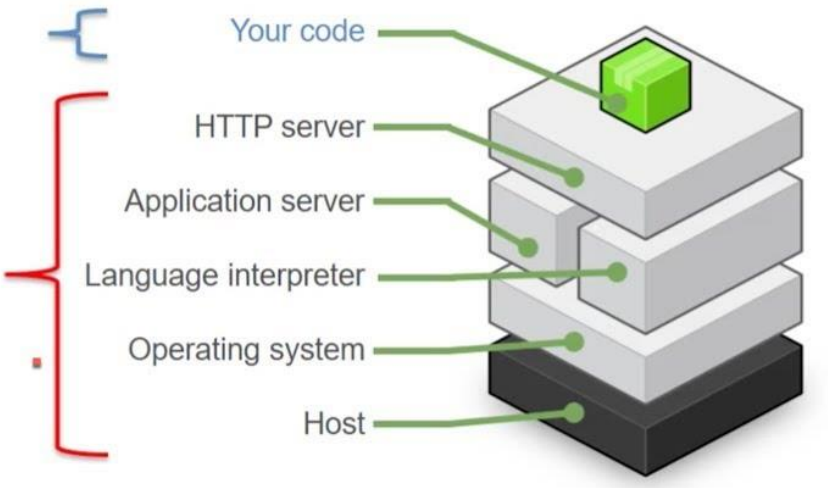
7.1: Amazon Elastic Beanstalk
Amazon Elastic Beanstalk

Elastic Beanstalk

On-instance configuration

Focus on building your application

Elastic Beanstalk configures each Amazon EC2 instance in your environment with the components necessary to run applications for the selected platform. No more worrying about logging into instances to install and configure your application stack.



Provided by you

Provided and managed by Elastic Beanstalk

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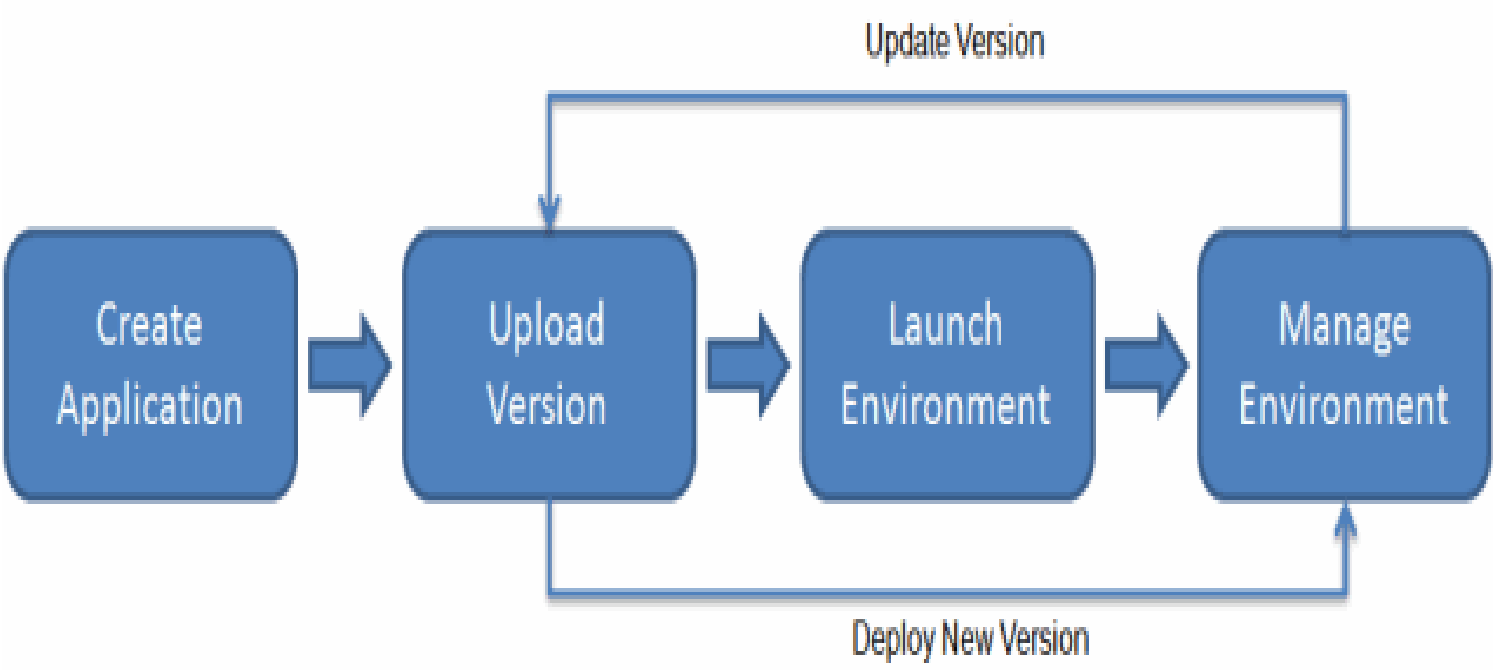
7.1: Amazon Elastic Beanstalk
Elastic Beanstalk - Workflow



7.2: AWS CloudFormation
AWS CloudFormation

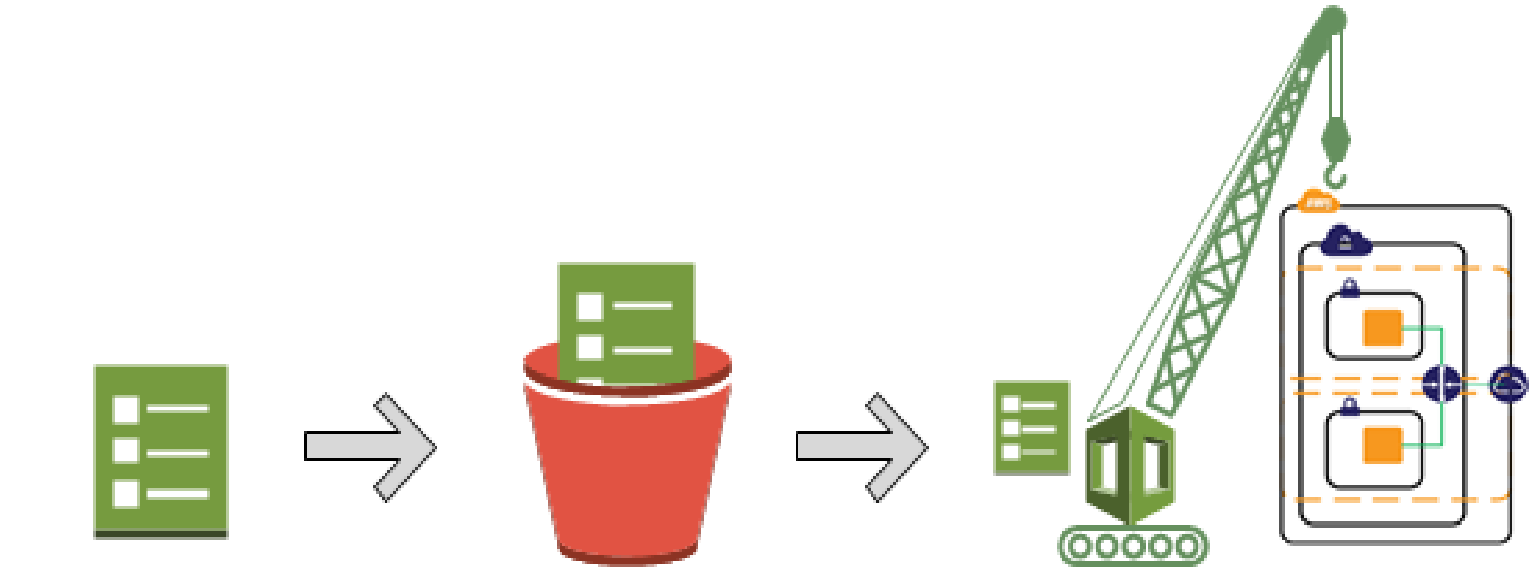
AWS CloudFormation provides a common language for you to describe and provision all the infrastructure resources in your cloud environment.

It allows us to use a simple text file to model and provisioning an automated and secure manner, all the resources needed for your applications across all regions and accounts.

This file serves as the single source of truth for your cloud environment.

AWS CloudFormation is available at no additional charge, and you pay only for the AWS resources needed to run your applications

7.2: AWS CloudFormation
AWS CloudFormation Workflow



7.2: AWS CloudFormation
AWS CloudFormation workflow

You can design an AWS CloudFormation template (a JSON or YAML-formatted document) in AWS CloudFormation Designer or write one in a text editor.

Save the template with proper file extension (i.e. .json or . Yaml or .txt) locally or store in a S3 bucket.

Create an AWS CloudFormation stack by specifying the location of your template file i.e. either a path on your local computer or an Amazon S3 URL.

7.2: AWS CloudFormation
AWS CloudFormation workflow

AWS CloudFormation provisions and configures resources by making calls to the AWS services that are described in your template.

After all the resources have been created, AWS CloudFormation reports that your stack has been created.

If stack creation fails, AWS CloudFormation rolls back your changes by deleting the resources that it created.

When you delete a stack, you specify the stack to delete, and AWS CloudFormation deletes the stack and all the resources in that stack. You can delete stacks by using the AWS CloudFormation console, API, or AWS CLI.

7.3: AWS Cloudwatch
Amazon Cloudwatch

It is a monitoring service for AWS cloud resources and the applications you run on AWS.

Amazon CloudWatch can be used to

- collect and track metrics,
- collect and monitor log files,
- set alarms,
- and automatically react to changes in your AWS resources.

7.3: AWS Cloudwatch
Amazon Cloudwatch

It can monitor AWS resources such as

- Amazon EC2 instances,
- Amazon DynamoDB tables,
- and Amazon RDS DB instances,
- custom metrics generated by your applications and services,
- and any log files your applications generate

It provides a reliable, scalable, and flexible monitoring solution that you can start using within minutes.

Amazon CloudWatch allows programmatically retrieve the monitoring data, view graphs, and set alarms to help you troubleshoot, spot trends, and take automated action based on the state of your cloud environment.

7.3: AWS Cloudwatch
Amazon Cloudwatch - Benefits

Monitor Amazon EC2

- One can view metrics for CPU utilization, data transfer, and disk usage activity from Amazon EC2 instances (Basic Monitoring) for no additional charge.

Monitor Other AWS Resources

- It Monitor metrics on Amazon DynamoDB tables, Amazon EBS volumes, Amazon RDS DB instances, Amazon Elastic MapReduce job flows, Elastic Load Balancers, Amazon SQS queues, Amazon SNS topics, and more for no additional charge.

Monitor Custom Metrics :

- Through a Simple API request ,one can submit the Custom Metrics generated by it's own applications and have them monitored by Amazon CloudWatch..

7.3: AWS Cloudwatch
Amazon Cloudwatch - Benefits

Monitor and store Logs :

- One can send it’s existing system, application, and custom log files to CloudWatch Logs and monitor these logs in near real-time.

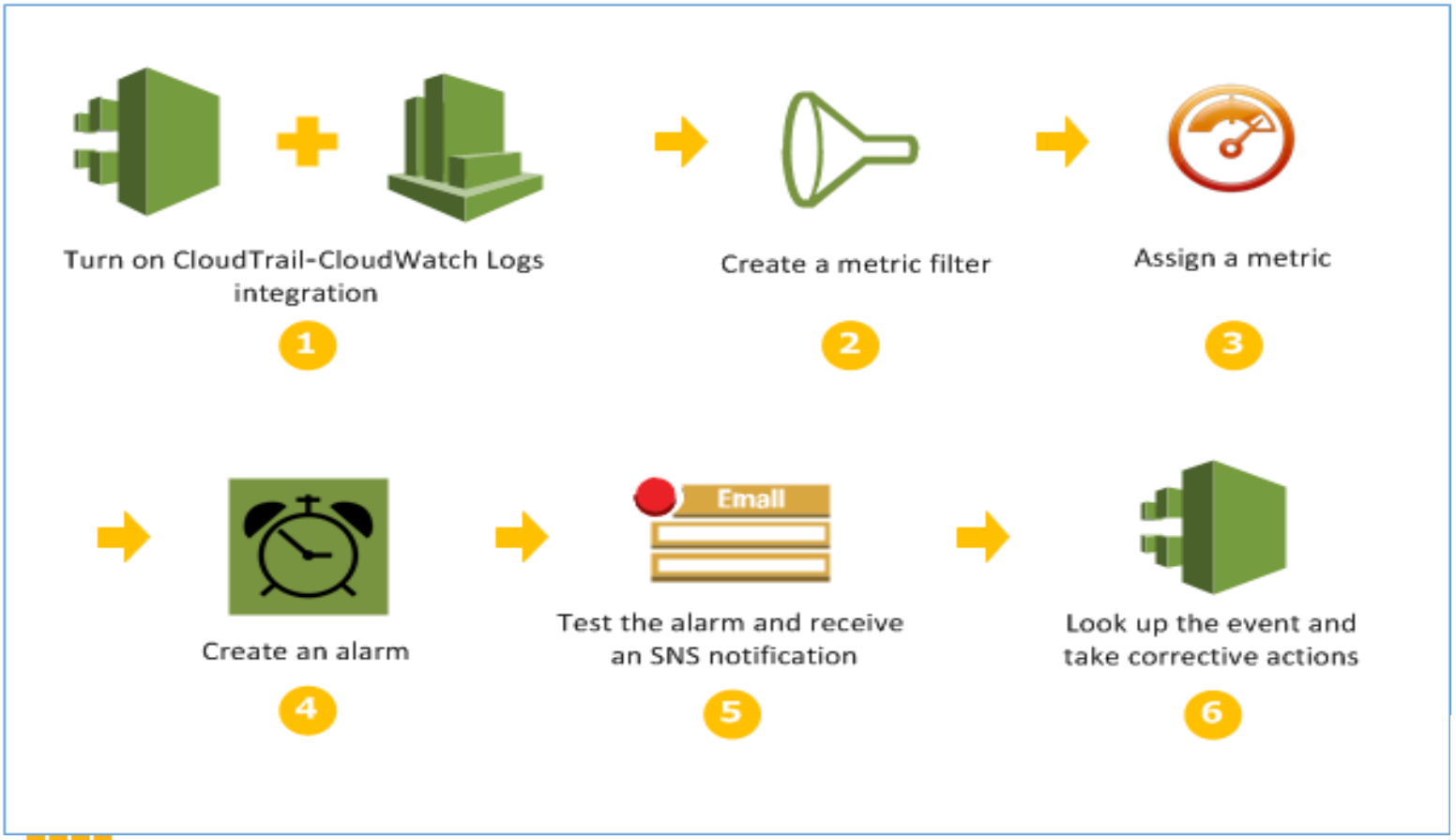
Set Alarms

- It helps to Set alarms on any of your metrics to send you notifications or take other automated actions.

View Graphs and Statistics

- Amazon Cloudwatch Dashboards enable us to create re-usable graphs of AWS resources and custom metrics so you can quickly monitor operational status and identify issues at a glance.

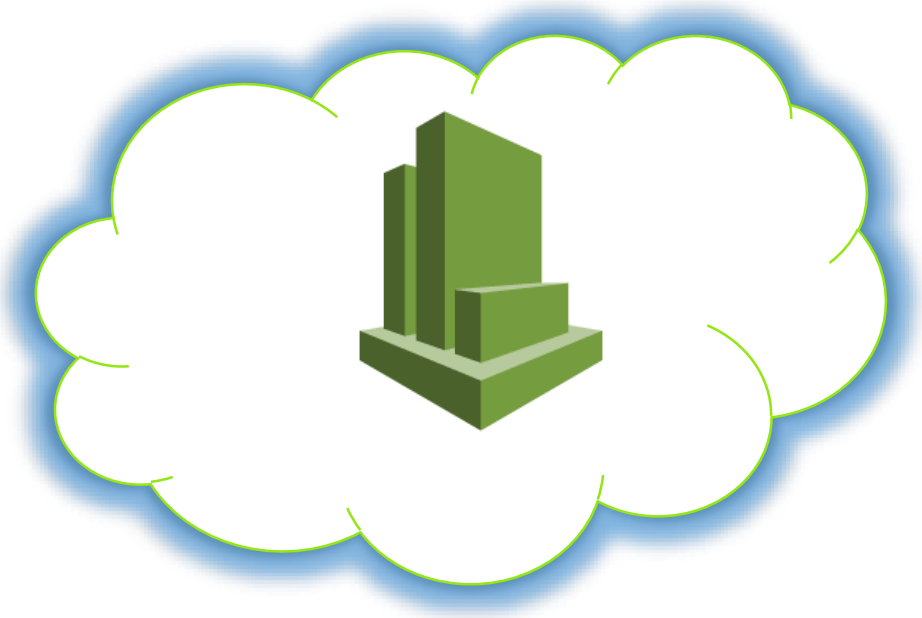
7.3: AWS Cloudwatch
Amazon Cloudwatch



7.3: AWS Cloudwatch Demo

Demo on:

- Amazon Cloudwatch (Steps given in Note section)



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Demo on:

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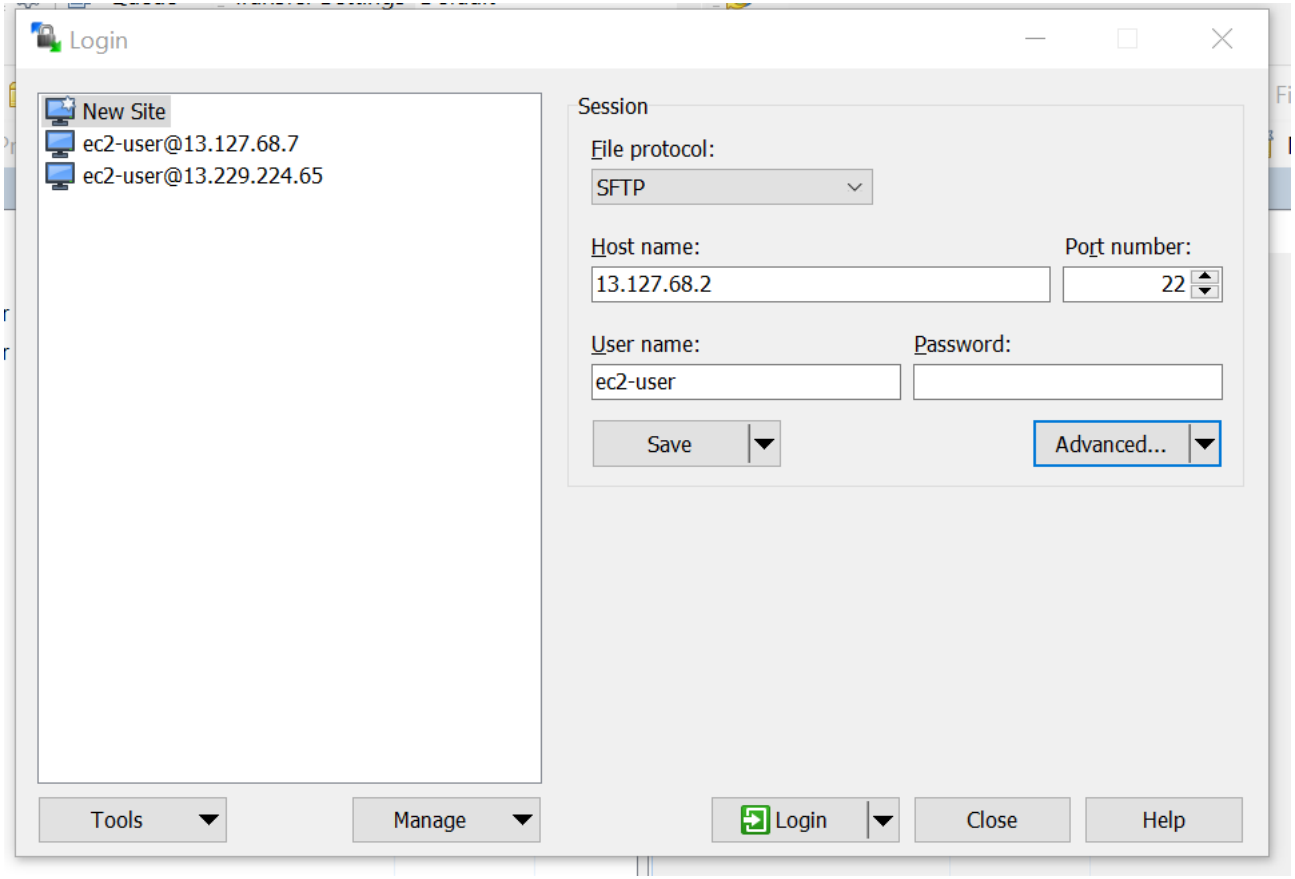
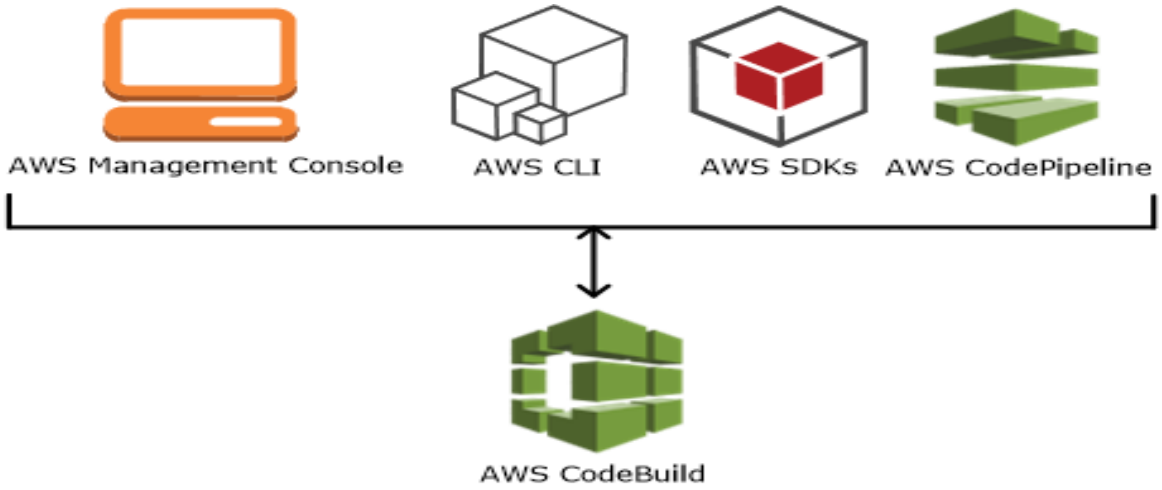


7.4: AWS CodeBuild
Amazon CodeBuild

- AWS CodeBuild is a fully managed build service which compiles source code, runs tests, and produces software packages that are ready to deploy.
- One don’t need to provision, manage, and scale it’s own build servers.
- CodeBuild scales continuously and processes multiple builds concurrently, so your builds are not left waiting in a queue



7.4: AWS CodeBuild
Amazon CodeBuild - Benefits

The benefits of Codebuild are

- Fully managed Build service.
- On demand
- Out of the Box
- Continuous Scaling
- Enables Continuous Integration and Delivery
- Secure

7.5: AWS CodeDeploy
Amazon CodeDeploy

AWS CodeDeploy is a service that automates software deployments to a variety of compute services including Amazon EC2, on-premises instances.

AWS CodeDeploy can deploy application content that runs on a server and is stored in Amazon S3 buckets, GitHub repositories, n-premises.

It rapidly release new features and Avoid downtime during application deployment.

AWS CodeDeploy works with various systems for configuration management, source control, continuous integration, continuous delivery, and continuous deployment.

7.5: AWS CodeDeploy
Amazon CodeDeploy - Benefits

Server and serverless applications

Automated deployments.

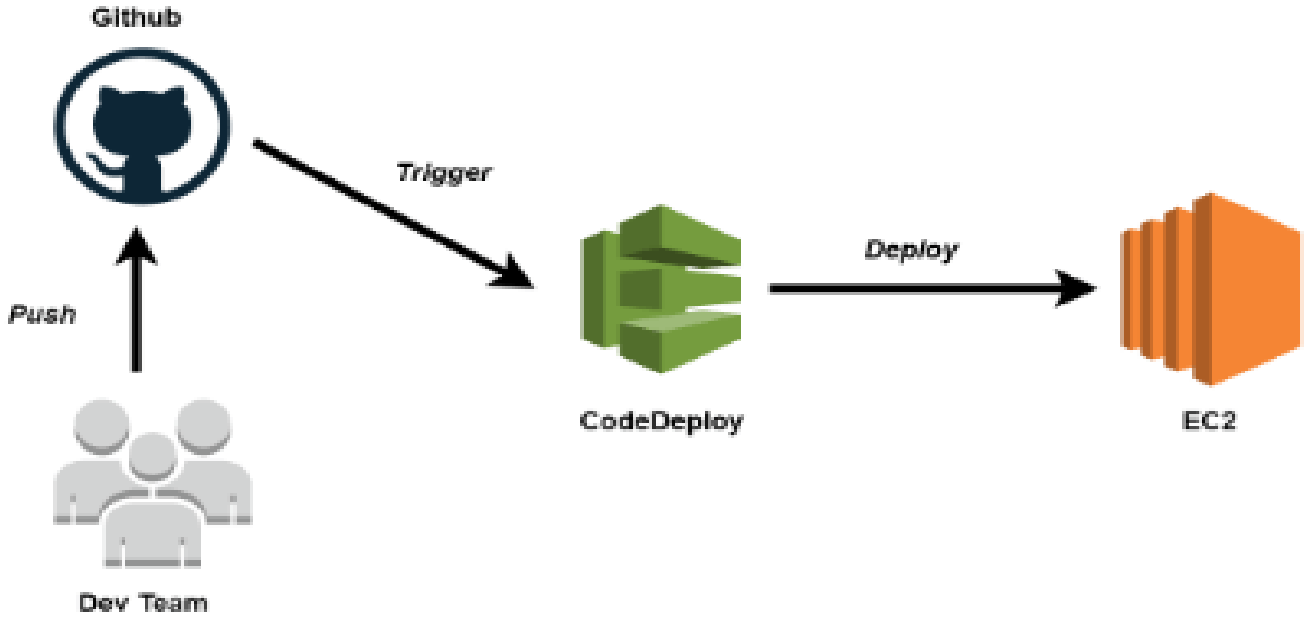
It Minimize downtime.

Stop and roll back

Centralized control

Easy to adopt

7.5: AWS CodeDeploy
AWS Codedeploy



Summary

In this lesson, you have learnt:

- Amazon Elastic Beanstalk
- AWS CloudFormation
- Amazon Cloudwatch
- Codebuild
- CodeDeploy

Review – Questions

Question 1: _____ is a monitoring service for AWS cloud resources and the applications you run on AWS.

Question 2 : _____ AWS service provides a common language for user to describe and provision all the infrastructure resources in your cloud environment.

Review – Questions

Question 3 : _____AWS service Supports popular programming languages such as Java, .NET, PHP, Node.js, Python and Ruby

- Question 4: Which of the followings are not the AWS deployment and management service ?

  Option 1 : Amazon EBS

  Option 2 : Amazon CodeBuild

  Option 3 : Amazon Codedeploy

  Option 4 : Amazon EC2