DevOps Tools

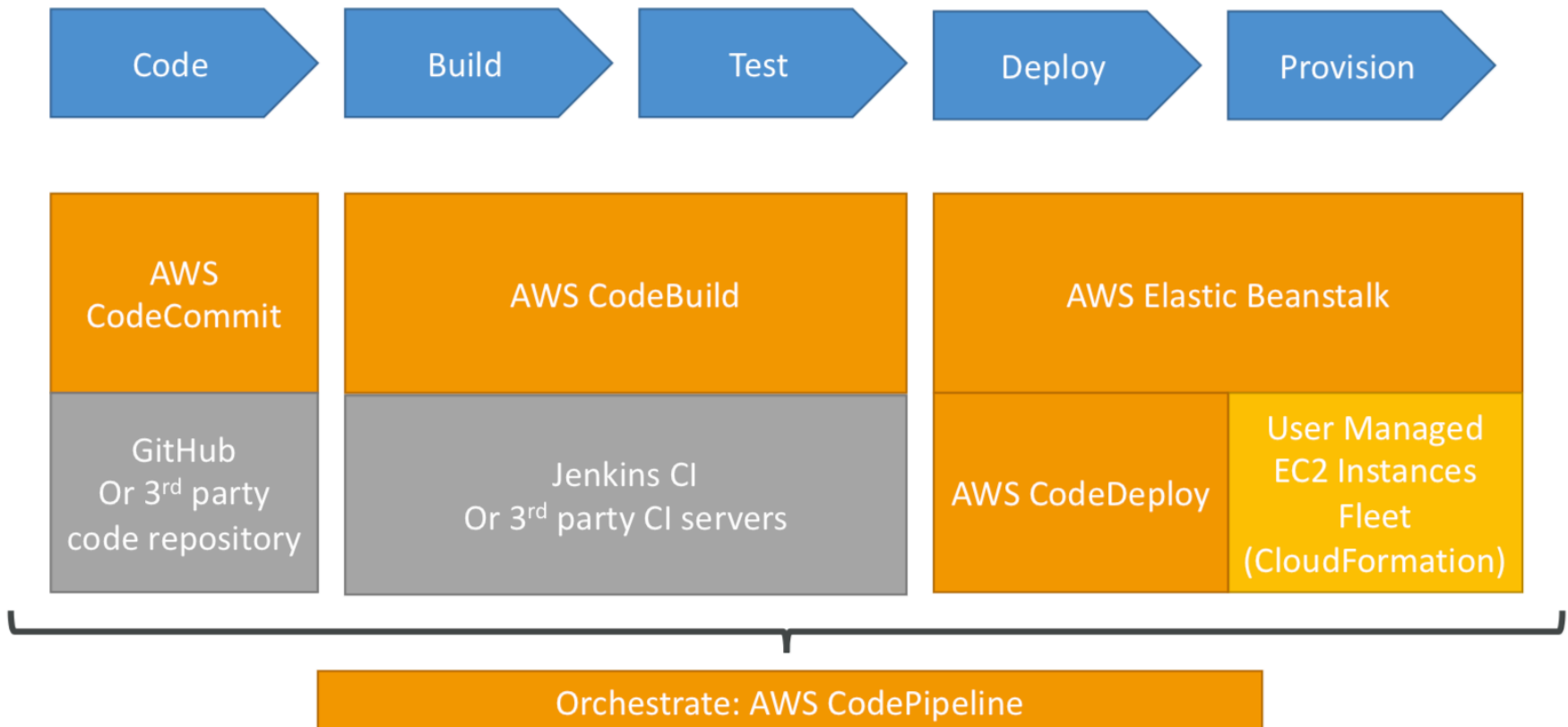## CodePipeline

AWS CodePipeline
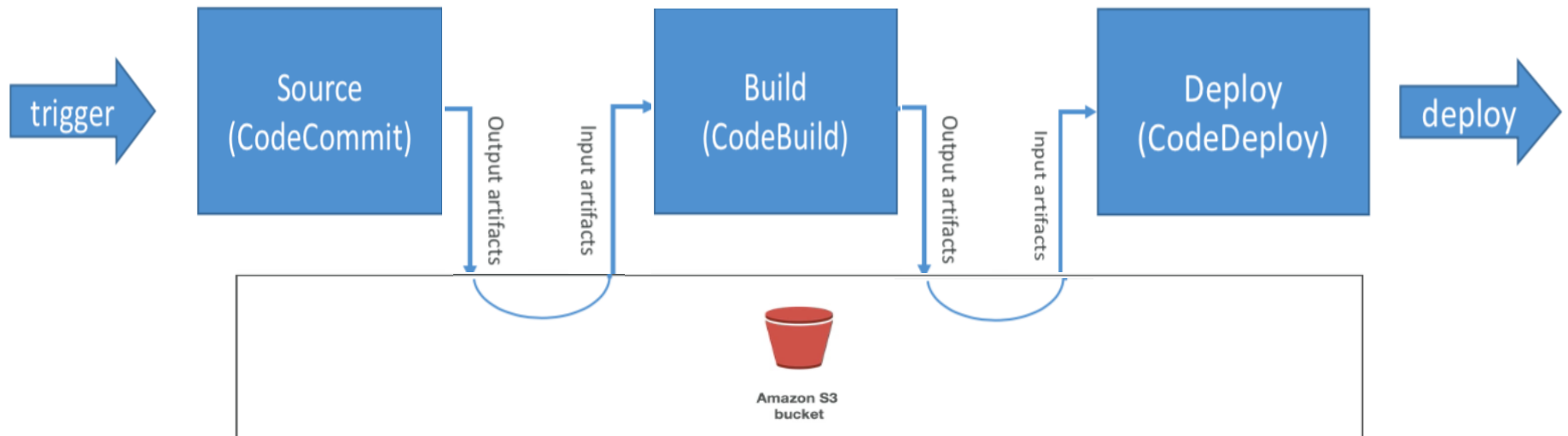
- Continuous delivery

- Visual workflow

- Source: GitHub / CodeCommit / Amazon S3

- Build: CodeBuild / Jenkins / etc…

- Load Testing: 3rd party tools

- Deploy: AWS CodeDeploy / Beanstalk / CloudFormation / ECS…

- Made of stages:
  - Each stage can have sequential actions and / or parallel actions
  - Stages examples: Build / Test / Deploy / Load Test / etc…
  - Manual approval can be defined at any stage

Technology Stack for CI/CD

Code	Build	Test	Deploy	Provision

AWS CodeCommit	AWS CodeBuild		AWS Elastic Beanstalk	
GitHub Or 3rd party code repository	Jenkins CI Or 3rd party CI servers		AWS CodeDeploy	User Managed EC2 Instances Fleet (CloudFormation)

Orchestrate: AWS CodePipeline

AWS CodePipeline artifacts

- Each pipeline stage can create "artifacts"

- Artifacts passed are stored in Amazon S3 and passed on to the next stage

trigger → **Source (CodeCommit)** — Output artifacts / Input artifacts → **Build (CodeBuild)** — Output artifacts / Input artifacts → **Deploy (CodeDeploy)** → deploy

Amazon S3 bucket

Exercise 06.1 - CodePipeline

- Building a sample codepipeline using codecommit, codebuild, codedeploy

- Adding a Manual approval stage to deploy to production instances

- CodePipeline integration with Cloudwatch

- Sequential and parallel actions
  - https://docs.aws.amazon.com/codepipeline/latest/userguide/reference-pipeline-structure.html#action-requirements

- Use cases for CodePipeline
  - https://docs.aws.amazon.com/codepipeline/latest/userguide/best-practices.html#use-cases
  - https://aws.amazon.com/blogs/devops/implementing-gitflow-using-aws-codepipeline-aws-codecommit-aws-codebuild-and-aws-codedeploy/

CodeStar Demo