



# GlobalLogic®

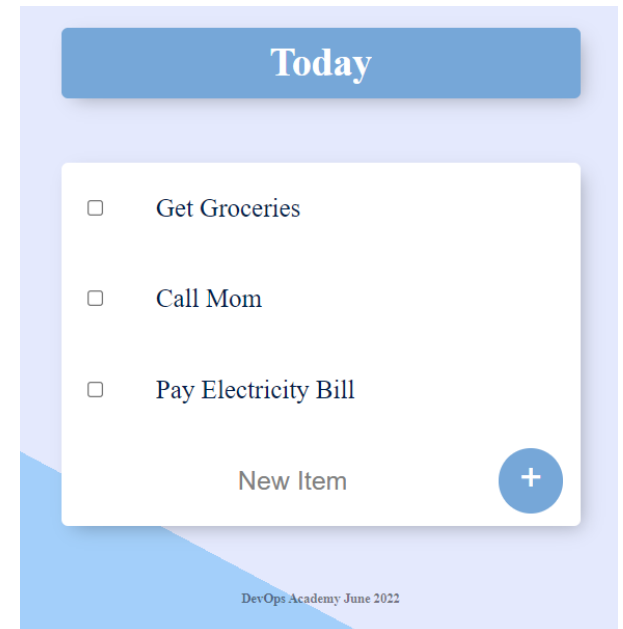
A Hitachi Group Company

## The final project – DevOps Academy 2022 (June)

Nina Rojanek

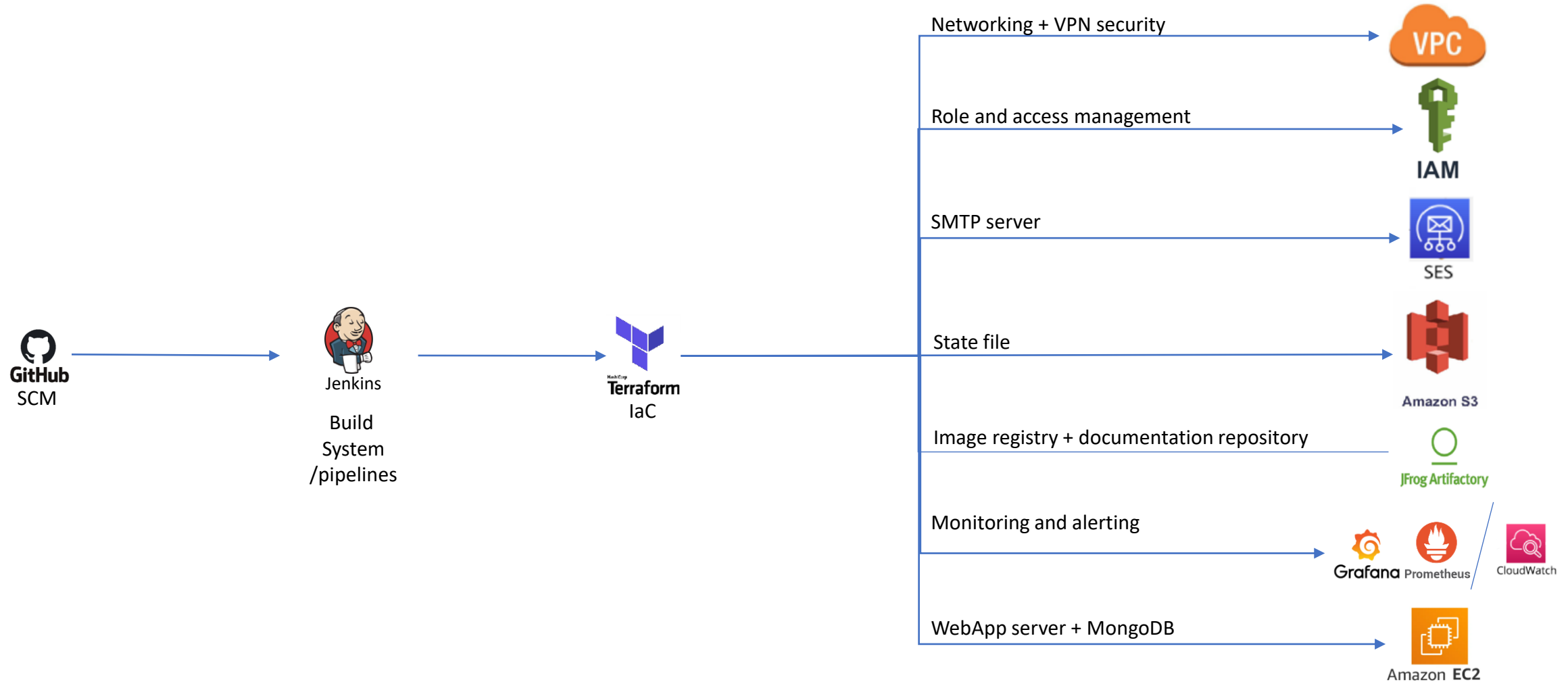
# DevOps Academy thesis project overview:

- Main tasks and assumptions:
  - a) The CI/CD pipeline for a web application fully hosted on AWS cloud
  - b) All underlying infrastructure should be provisioned as IaC and its code is kept in the Git repository
- Cloud Provider: AWS
- The application: Simple CRUD WebApp build from scratch in Node.js with MongoDB-based database

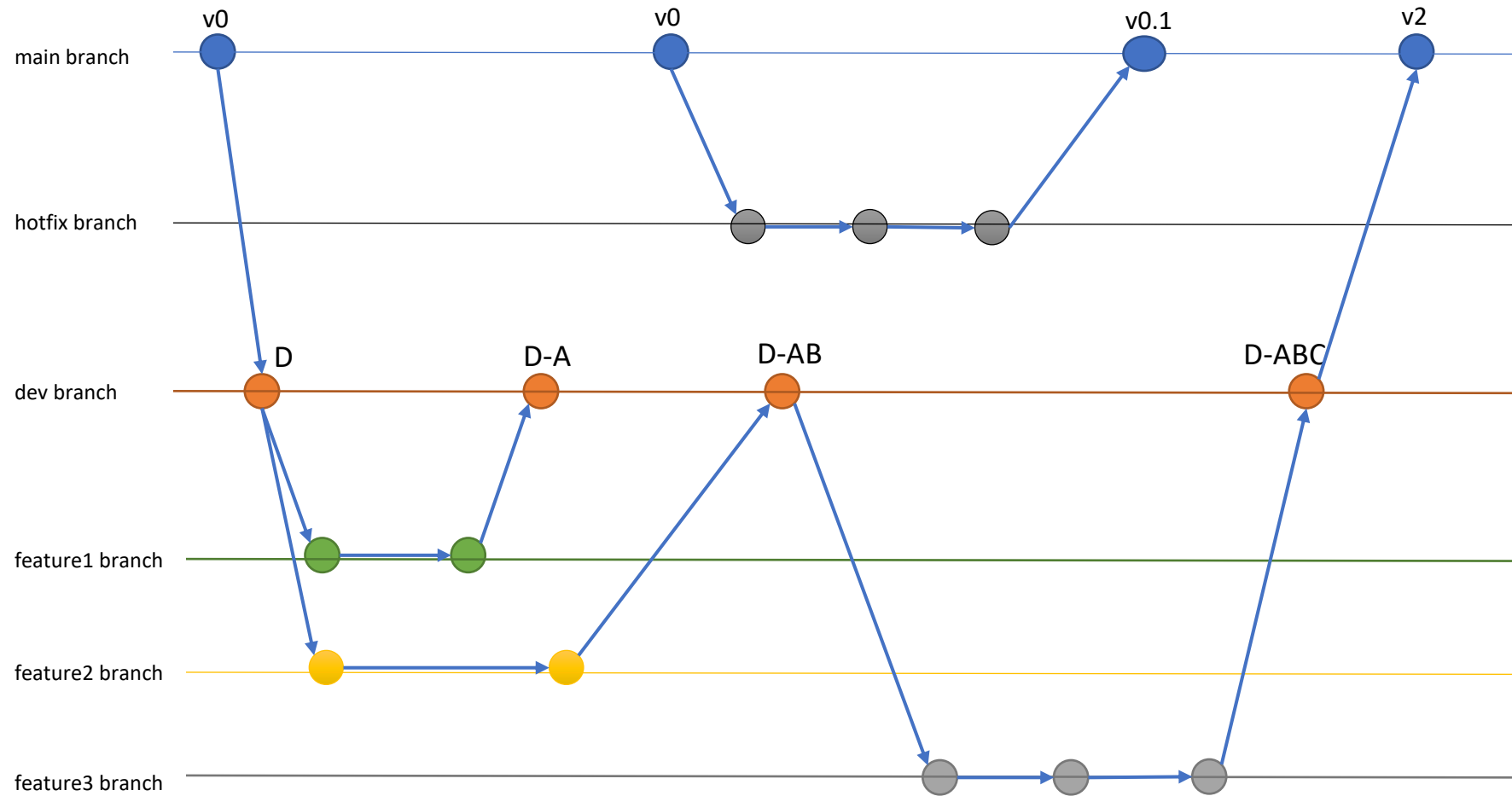


# Initial setup of production and staging infrastructures

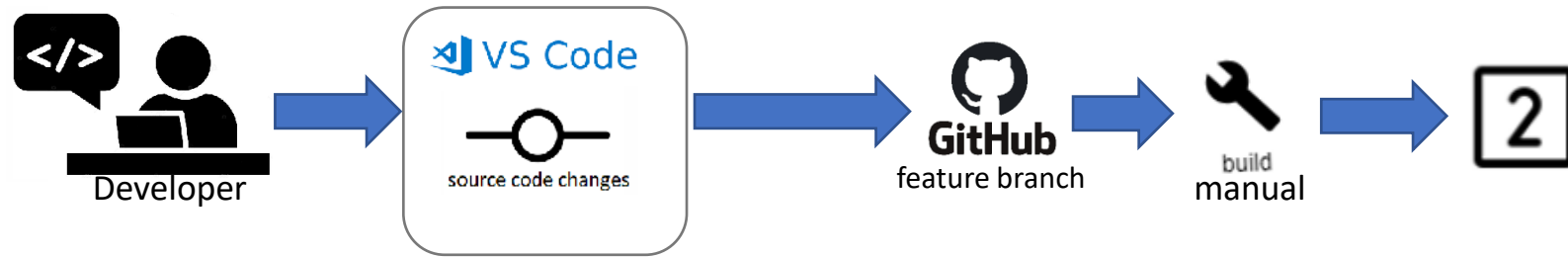
- pipelines in the selected Build System provision two completely separate infrastructure instances (for dev and for prod environments)
- Terraform backend (the state file) is located in AWS S3 storage, so it can be shared among later CI/CD stages tasks



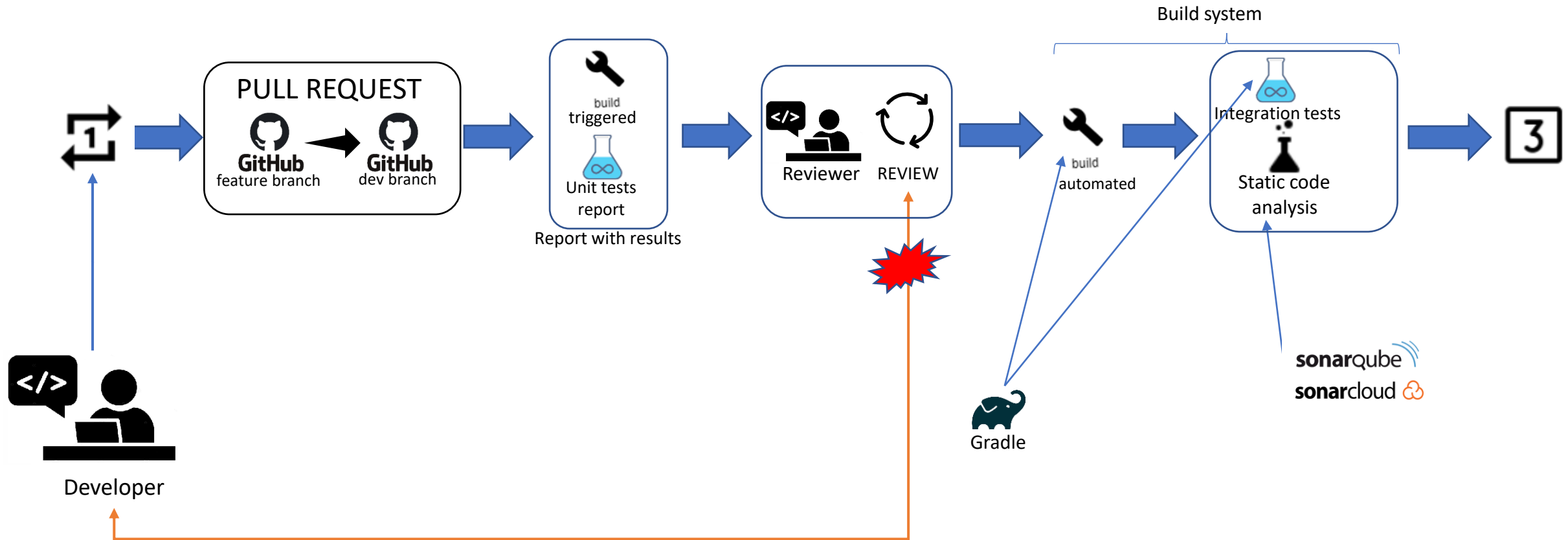
# Branching strategy



# Development - 1

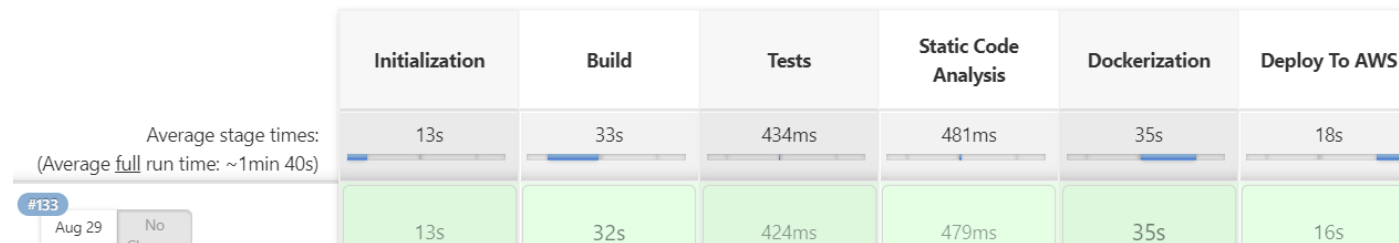
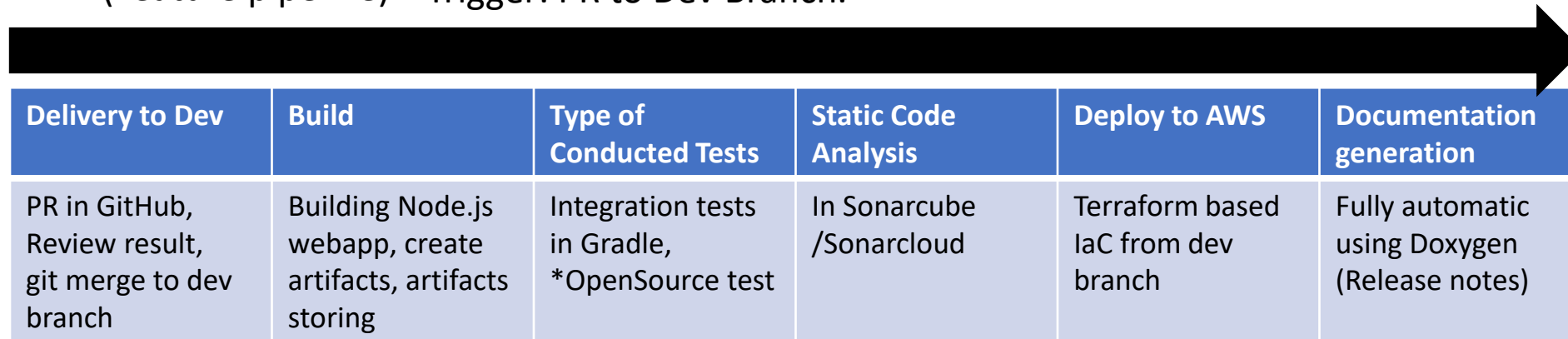


# Integration - 2

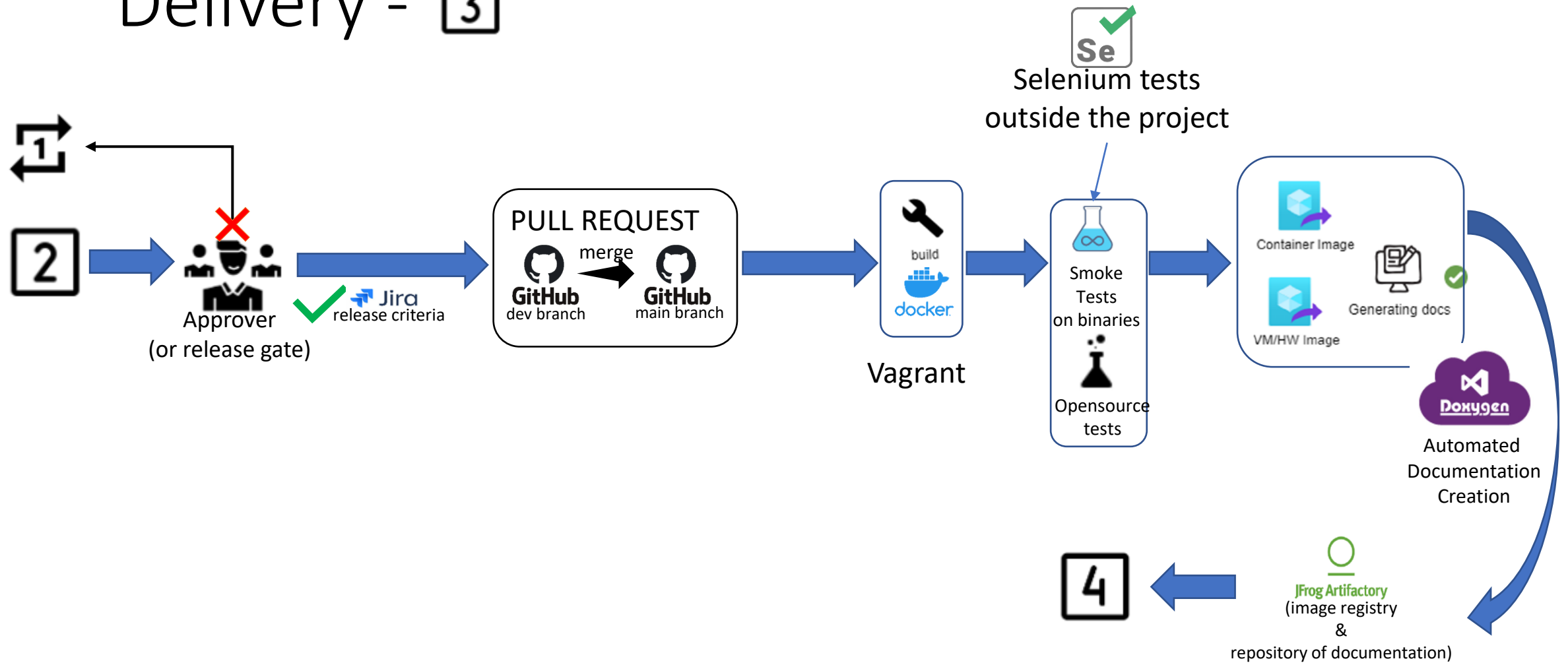


# CI/CD Pipelines proposition

DEV (Feature pipeline) Trigger: PR to Dev Branch.

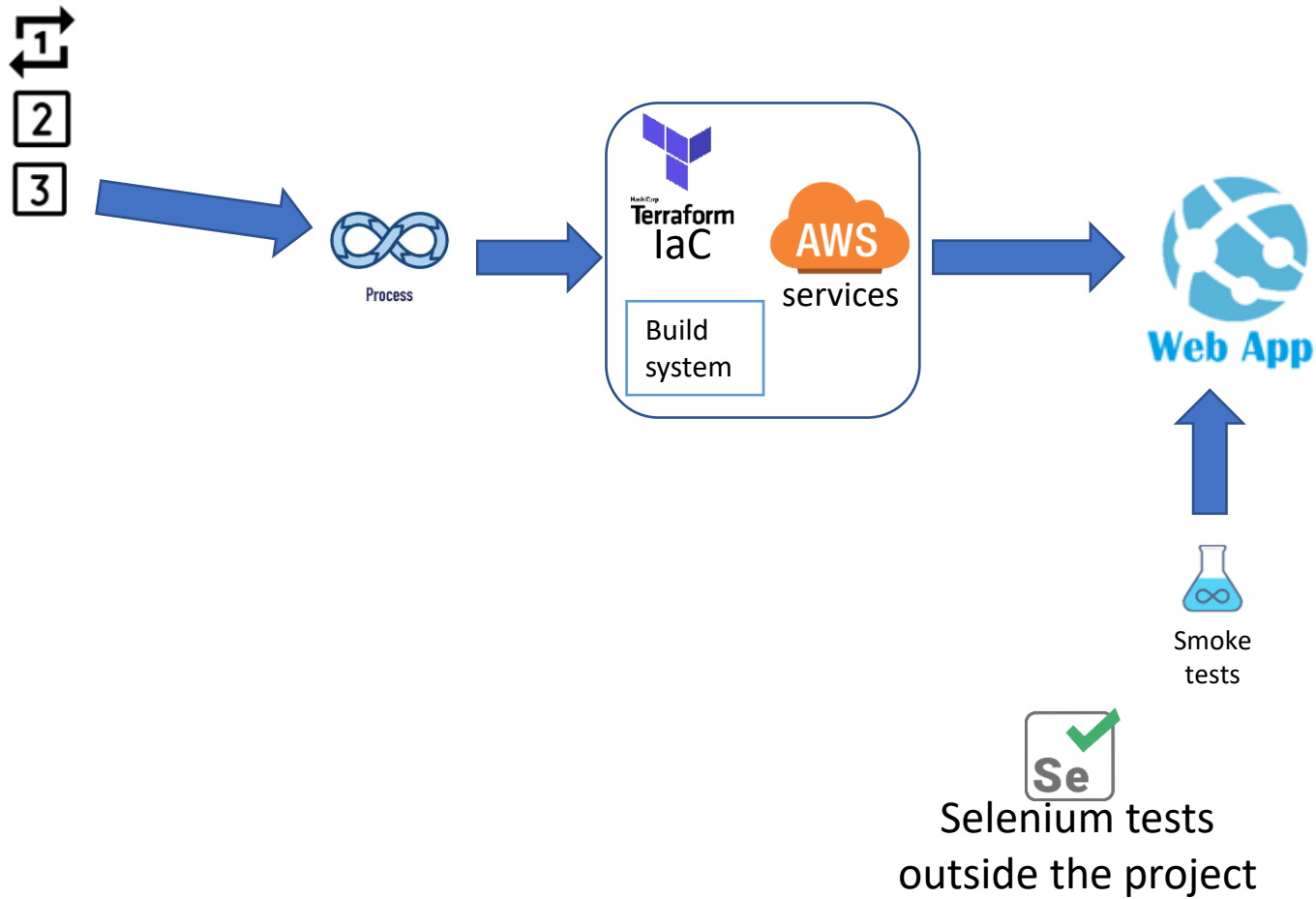


# Delivery - 3

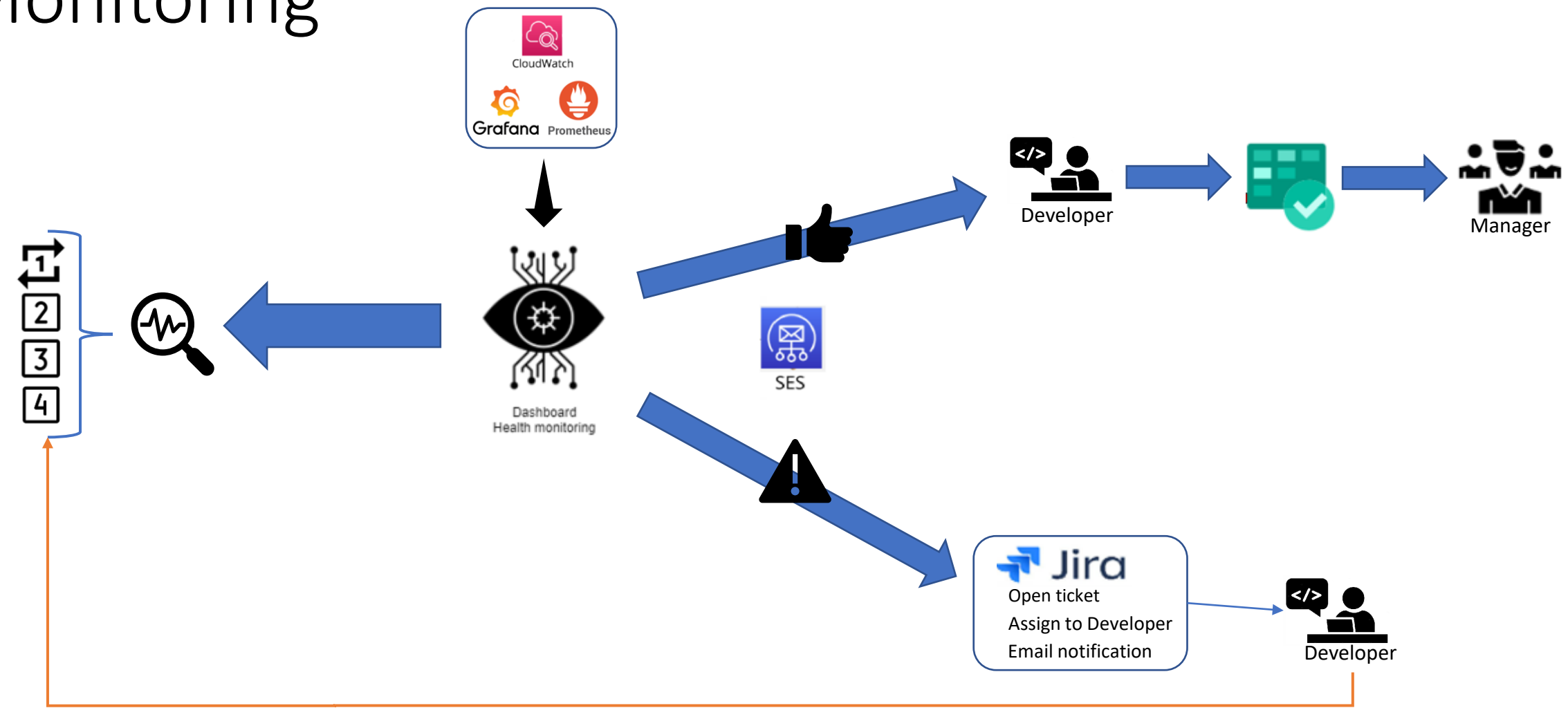




# Deployment - 4

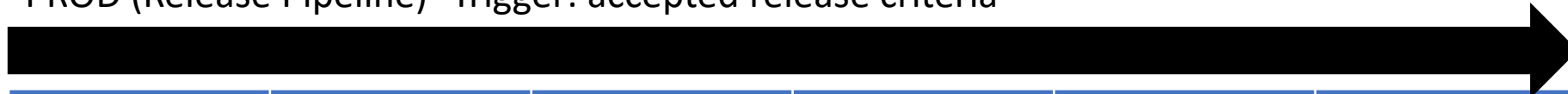


# Monitoring



# CI/CD Pipelines proposition

PROD (Release Pipeline) Trigger: accepted release criteria

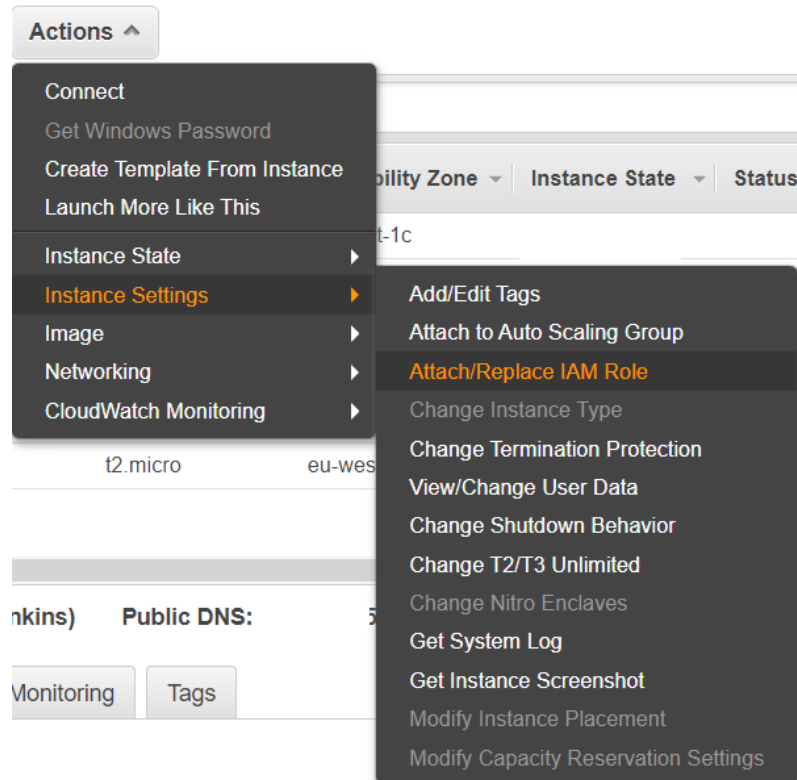


Delivery to Prod	Build	Type of Conducted Tests	Deploy to AWS	Documentation generation	Generate monitoring report
PR in GitHub,, git merge to prod branch	Building Node.js webapp, create and store artifacts in Artifactory	Smoke Tests on Prod	Terraform based IaC from prod branch	Fully automatic using Doxygen (Release notes)	Use SES and notify about monitoring results

	Initialization	Merge to Prod	Build	Dockerization	Deployment	Smoke Tests	Documentation generation
Average stage times: (Average <u>full</u> run time: ~1min 34s)	19s	329ms	18s	24s	7s	134ms	134ms
#26 Aug 29 No	11s	369ms	31s	35s	14s	429ms	420ms

# Jenkins Agents

- Created IAM role “Jenkins-ec2-role” with permission: AmazonEC2FullAccess
- Add role to EC2 instance with Jenkins installed
- Create AWS security group for Jenkins Agent with open ssh connection from security group used by Jenkins server
- Install Jenkins plugin: Amazon EC2
- Configuration of plugin in Jenkins System
- Configuration of Jenkins Agent creation



# DEMO



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