

JENKINS 2 PIPELINE AS A CODE

DENVER JENKINS AREA MEETUP



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APPLICATION ARCHITECT @ **OILDEX**

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OILDEX

**SOFTWARE AS A SERVICE PROVIDER FOR OIL AND
GAS COMPANIES**

- 7.5 Years

FOCUSED ON

- Streaming, Reactive, Non-blocking Architecture
- API Design
- DevOps
- Cloud Native Architecture
- Empowering software development teams
- Digital Transformation and Digital Optimization

AGENDA

- Overview of Jenkins 2
- Jenkins Pipeline Features
- Jenkins Environment
- Ideal Pipeline Flow
- Important pipeline plugins
- Demo
 - Setup and configure a pipeline
 - Using Docker with pipelines

OVERVIEW OF JENKINS 2

- Built-in support for delivery pipelines.
- Improved usability.
- Fully backwards compatible.

JENKINS PIPELINE FEATURES

Can support complex, real-world, CD Pipeline requirements: pipelines can fork/join, loop, parallel, to name a few programmatically

Is Resilient: pipeline executions can survive master restarts

Is Pausable: pipelines can pause and wait for human input/approval

Is Efficient: pipelines can restart from saved checkpoints

Is Visualized: Pipeline StageView provides status at-a-glance dashboards including trending

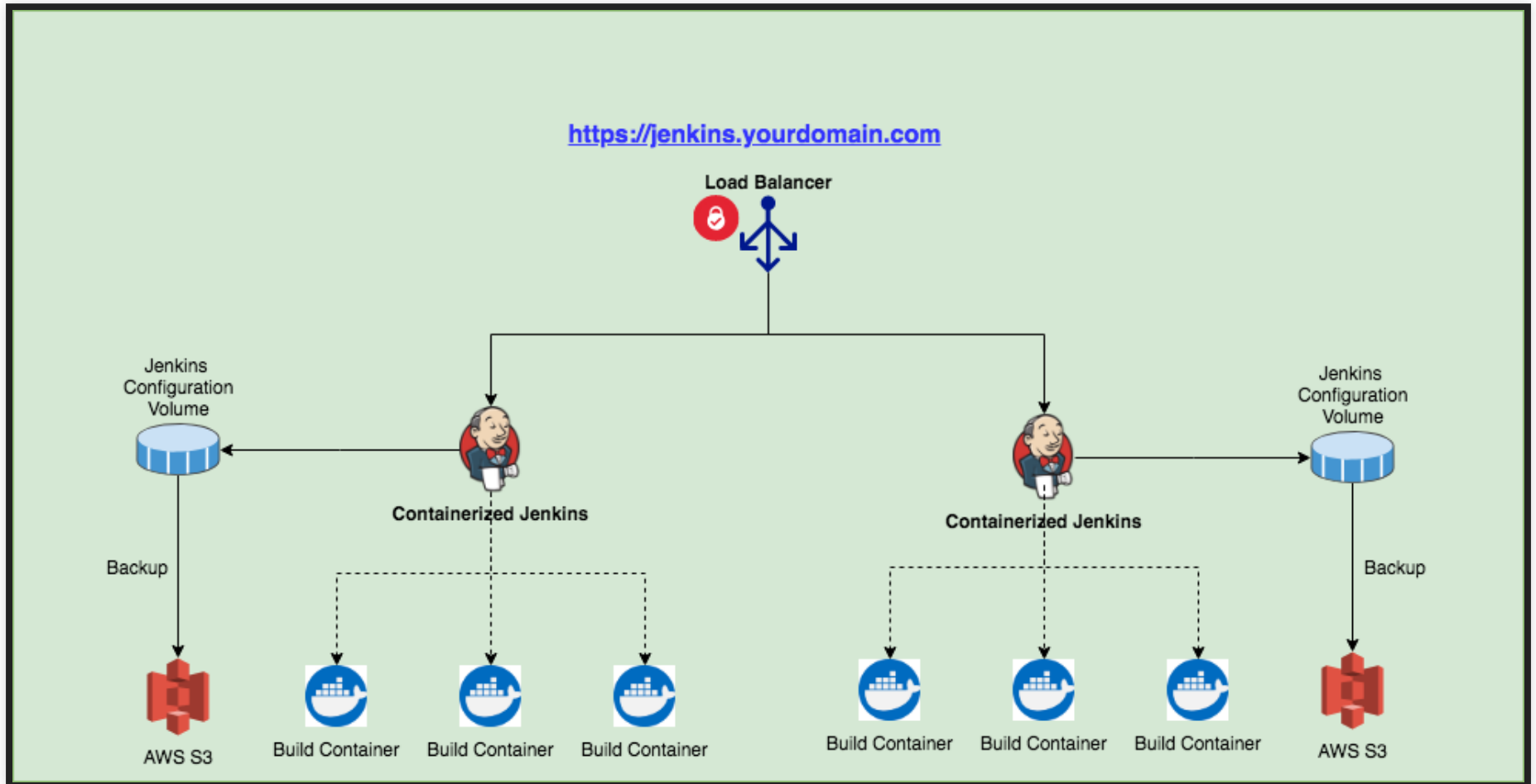
Pipeline configuration as a code in source control

Ability to embed Security part of DevOps pipeline

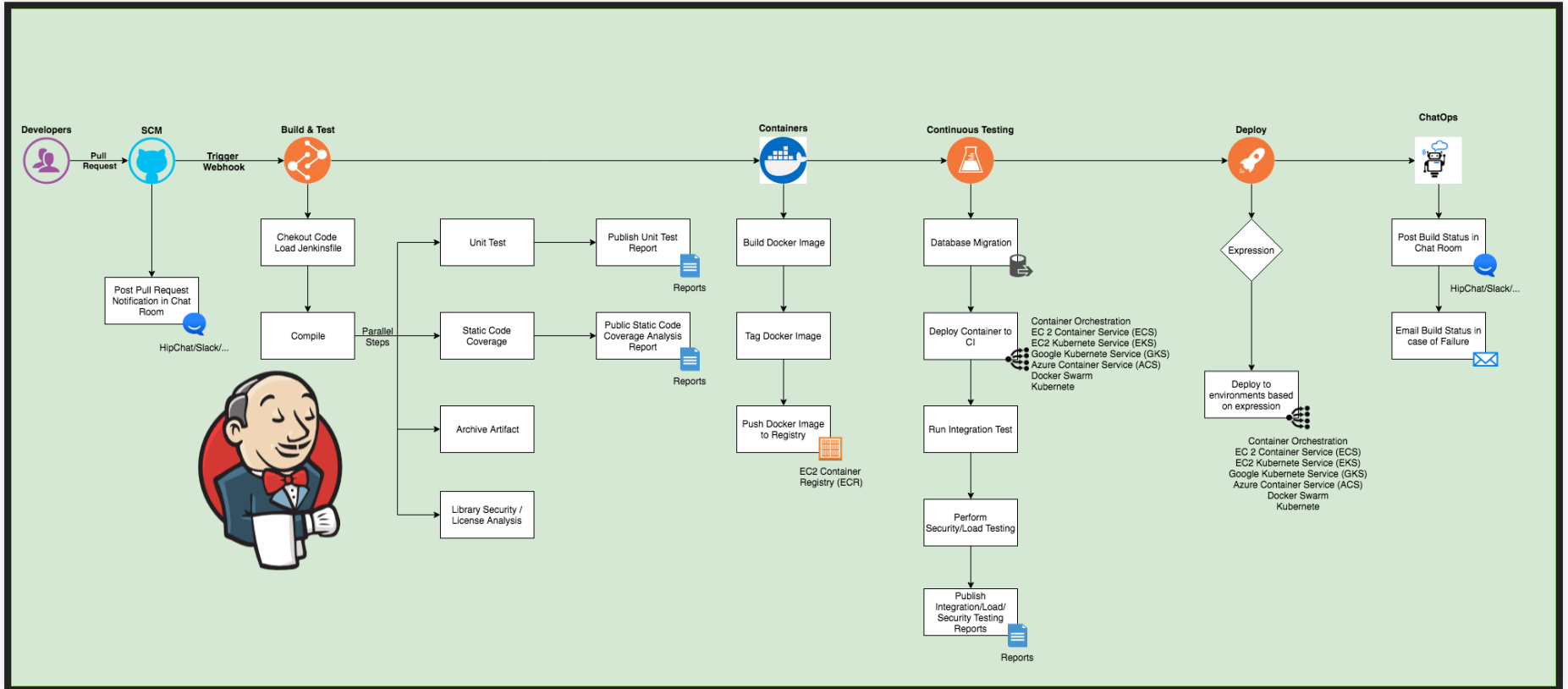
Reusability

Easy Recoverability

JENKINS ENVIRONMENT



PIPELINE FLOW



IMPORTANT PIPELINE PLUGINS

- Pipeline Plugin
- Docker Pipeline
- Docker
- Pipeline Stage View
- GitHub
- Blue Ocean
- Many More...

GSoC Project Intro: Pipeline as YAML

DEMO

JENKINS PIPELINE SAMPLE

```
#!/groovy

pipeline {

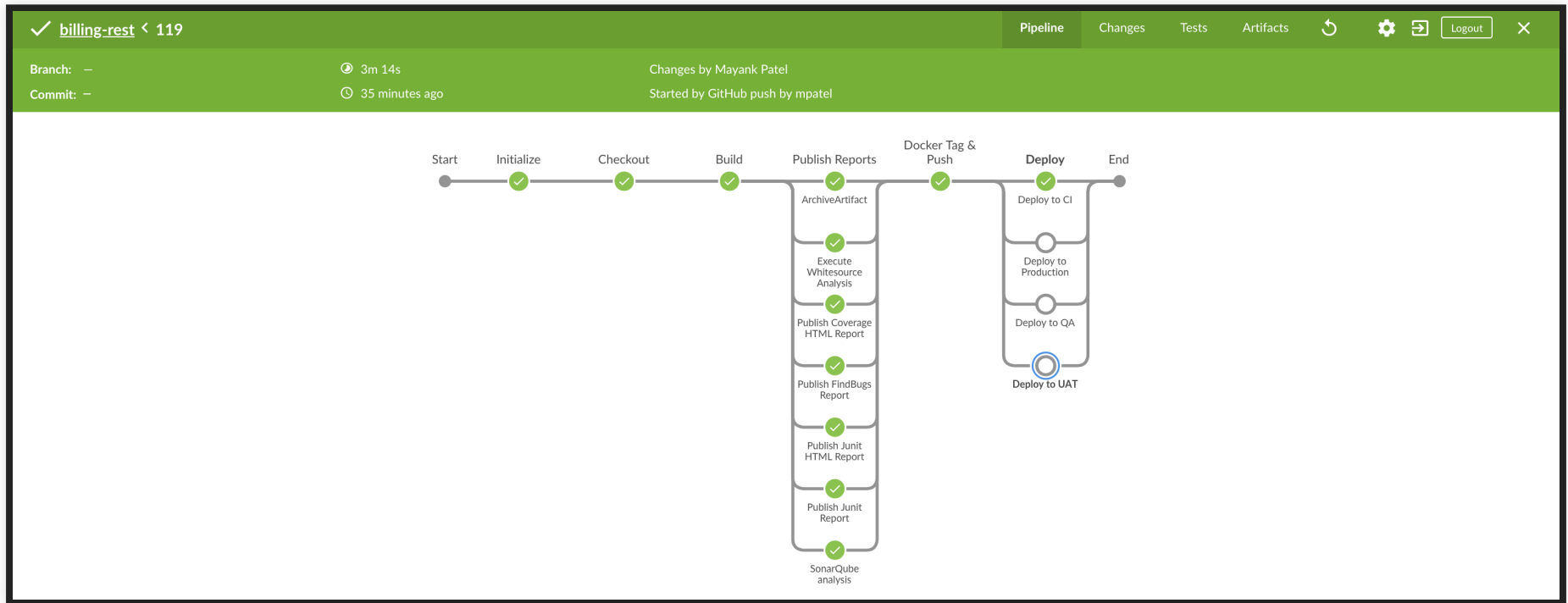
    agent {
        docker {
            image 'jenkinsslave:latest'
            registryUrl 'http://8598567586.dkr.ecr.us-west
            registryCredentialsId 'ecr:us-east-1:534875345
            args '-v /home/centos/.ivy2:/home/jenkins/.ivy
        }
    }
    environment {
        APP_NAME = 'billing-rest'
        BUILD_NUMBER = "${env.BUILD_NUMBER}"
    }
}
```

CLASSIC PIPELINE STAGE VIEW

billing-rest - Stage View													
<div>Average stage times: (Average full run time: ~2min 59s)</div> <div>#118 Jul 17 20:58 1 commit ⓘ</div> <div>#117 Jul 16 15:28 1 commit ⓘ</div> <div>#116 Jul 15 21:13 No Changes ⓘ</div>	Declarative: Checkout SCM	Initialize	Checkout	Build	Publish Reports	SonarQube analysis	ArchiveArtifact	Docker Tag & Push	Deploy - CI	Deploy - QA	Deploy - UAT	Deploy - Production	Declarative: Post Actions
	768ms	1s	799ms	57s	5s	14s	125ms	23s	37ms	32ms	32ms	32ms	792ms
	817ms	1s	690ms	1min 36s	10s	24s	198ms	38s	38ms				1s
	792ms	1s	708ms	1min 36s	8s	23s	179ms	38s	42ms				2s
	672ms	869ms	694ms	1min 33s	10s	24s	183ms	37s	40ms				75ms

BLUE OCEAN PIPELINE STAGE

VIEW



RESOURCES

- [Best Practices for Scalable Pipeline Code](#)
- [Google Trends](#)
- [Plugin Compatibility with Pipeline](#)
- [Pipeline Example Repository](#)
- [jenkins-pipeline-talk](#)
- [jenkins-pipeline-demo](#)
- [Jenkins Plugins](#)
- [Top 10 Best Practices for Jenkins Pipeline Plugin](#)

THANK YOU!

QUESTIONS?