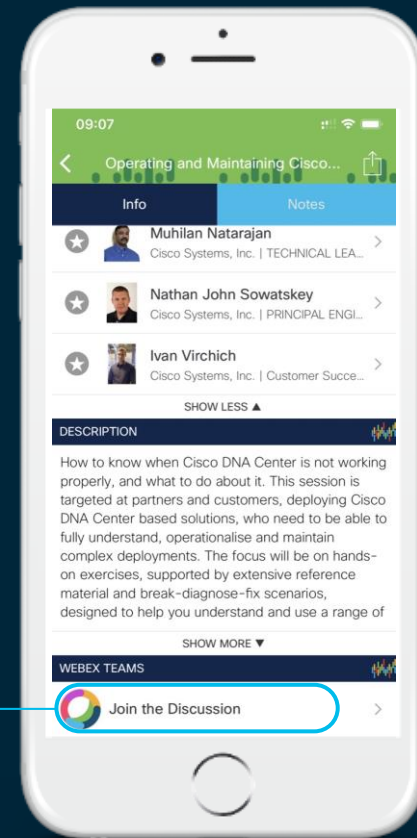# Cisco Webex Teams

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How

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Agenda

- Introduction to CI/CD.

- What is Jenkins-X ?

- How Jenkins-X helps.

- Features of Jenkins-X

- Jenkins-X deployment

- CI/CD for a sample application with Jenkins-X

- Conclusion.

Your presenter today

Rishikesh Radhakrishnan

Software Architect

- 15+ years in Software Architecture, Design & Development.
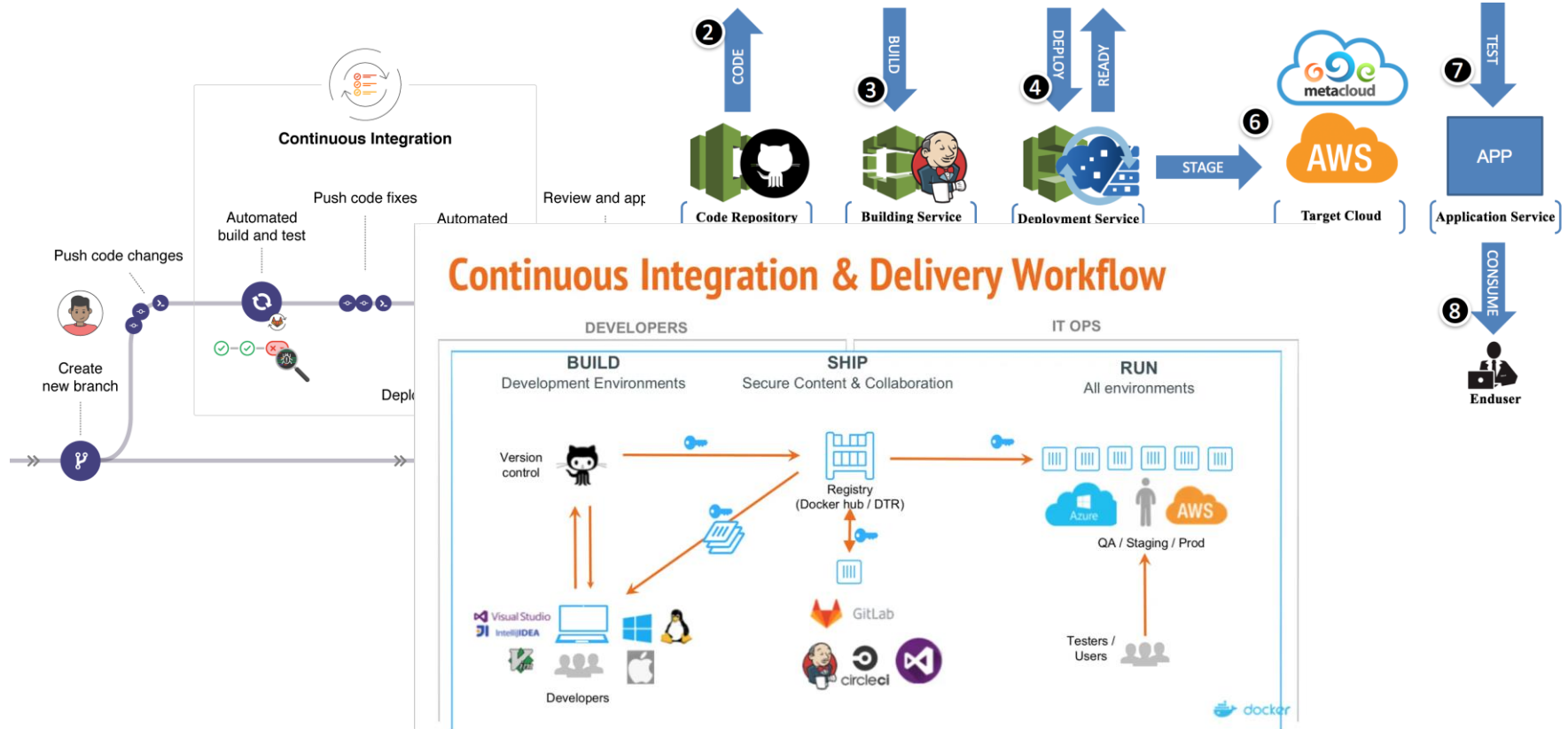- Focused on IoT, Infra Automation, Multi-Cloud Orchestration.

Introduction to CI/CD

What is CI/CD?

CI/CD BluePrint Steps

AWS Code Pipeline #CICD Service

Continuous Integration

Push code changes

Create new branch

Automated build and test

Push code fixes

Automated

Review and app

Deplo

Continuous Integration & Delivery Workflow

DEVELOPERS   IT OPS

BUILD
Development Environments

SHIP
Secure Content & Collaboration

RUN
All environments

Version control

Registry
(Docker hub / DTR)

Azure   AWS

QA / Staging / Prod

Visual Studio
IntelliJIDEA

GitLab

Developers

circleci

Testers / Users

docker

What is Jenkins-X ?

Jenkins – X Components

Jenkins X provides automated CI/CD for applications on Kubernetes with GitOps promotion through environments and preview environments on Pull Requests
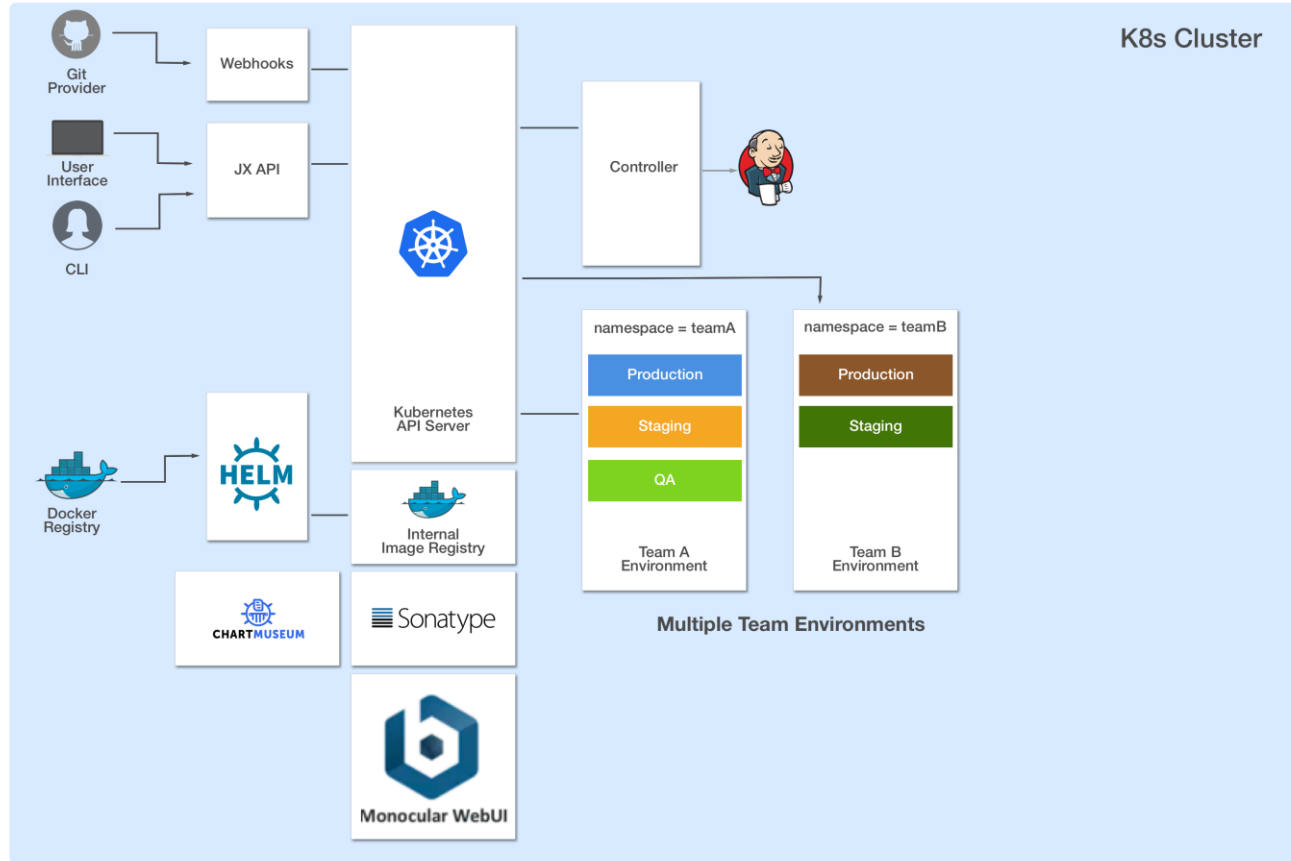
Architecture

K8s Cluster

Git Provider

Webhooks

User Interface

JX API

CLI

Controller

Kubernetes API Server

Docker Registry

HELM

Internal Image Registry

CHARTMUSEUM

Sonatype

Monocular WebUI

namespace = teamA

Production

Staging

QA

Team A Environment

namespace = teamB

Production

Staging

Team B Environment

Multiple Team Environments

How Jenkins-X helps ?

Jenkins-X Approach

Capabilities of Jenkins X

7

Jenkins X uses capabilities identified by the Accelerate book by Nicole Forsgren, Jez Jumble & Gene Kim

1. Use version control for all artifacts.
2. Automate your deployment process.
3. Use trunk-based development.
4. Implement continuous integration.
5. Implement continuous delivery.
6. Use loosely coupled architecture.
7. Architect for empowered teams.

https://jenkins-x.io/about/accelerate

Features of Jenkins-X

Jenkins – Features

- Automated K8 Cluster Setup.
  - With Jenkins-X environment bootstrapped
  - Plain Vanilla.
  - Install on existing K8 Cluster.

- Creates pipelines to implement CI/CD for your K8 Applications.

- GitOps to manage code promotion.

- Preview for your applications.
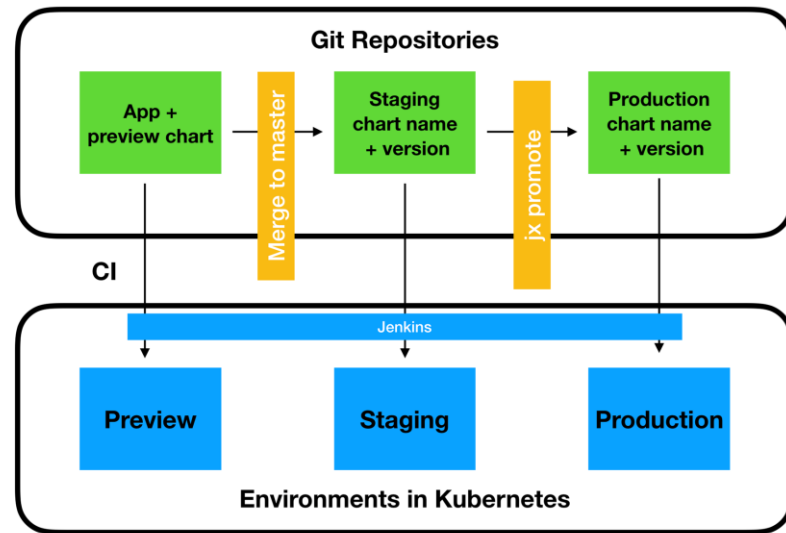
Jenkins-X deployment

Jenkins – X Deployment

- Use the *jx* binary to deploy Jenkins-X with a K8 Cluster.

- Download the binary relevant to your platform.

- Run the command *jx create cluster <provider_name>* to install a K8 cluster with Jenkins-X
  - You can skip the Jenkins-X installation by providing the –skip-installation flag.

- To install Jenkins in an existing cluster, setup kubeconfig and run *jx boot.*

- That's all that's needed to bootstrap Jenkins-X into your K8 Cluster.

Sample application
with Jenkins-X

Jenkins – X Create App

Jenkins-X provides quickstarts, which are templates to begin instead of starting from scratch.

jx create quickstart

The above command provides list of quickstarts to choose from.

Once complete it sets up the CI/CD pipeline, GitHub Repo and required components as part of its setup.

Conclusion

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