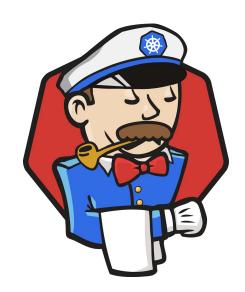
## Jenkins X

automated CI/CD for kubernetes



https://jenkins-x.io/

#### Everything has changed in software in 5 years...

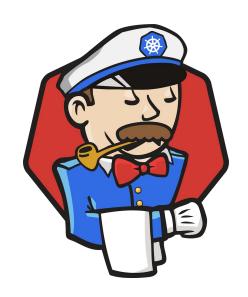
- Move from on premise -> public cloud
- Move from VMs to containers
  - Immutable infrastructure for DevOps speed and reduced cost
- Kubernetes has become the defacto standard in orchestrating containers
  - 2018 all public clouds will support GA kubernetes as a service
  - All other significant operating system, PaaS and platform vendors support kubernetes now too
- Move from monoliths -> microservices
  - Hypothesis driven development, small iterations, fast feedback
- Become high performing teams via CI/CD
  - Deliver business value faster!

#### Challenges for teams who want to be high performing:

- Setup the cloud/kubernetes & environments
- Move to containers
- Deploy containers into Kubernetes
  - Generate YAML or helm charts?
- Adopt Continuous Delivery and promotion
  - O What's this GitOps thing?
- Automate everything and improve feedback
- Keep delivering actual business value to customers



# Jenkins X



https://jenkins-x.io/

#### How does Jenkins X help?

- Automates the installation, configuration and upgrade of Jenkins + other apps (helm, skaffold, nexus, monocular etc) on Kubernetes
- Automates CI/CD for your applications on Kubernetes
  - Docker images
  - Helm charts
  - Pipelines
- Uses GitOps to manage promotion between environments
  - Test -> Staging -> Production
- Lots of feedback
  - E.g. commenting on issues as they hit Staging + Production

### How do we setup Kubernetes + Jenkins X?



### Install the command line tool: jx

https://jenkins-x.io/getting-started/install/

#### macOs:

brew tap jenkins-x/jx

brew install jx

#### linux:

curl -L https://github.com/jenkins-x/jx/releases/download/v1.2.16/jx-linux-amd64.tar.gz | tar xzv

sudo mv jx /usr/local/bin

### Jenkins X: setup kubernetes + Jenkins X

- If using the public cloud use:
  - o jx create cluster aws
  - o jx create cluster gke
  - o jx create cluster aks

- If you have a cluster already ensure RBAC enabled then:
  - ∘ jx install

More help here: <a href="https://jenkins-x.io/getting-started/">https://jenkins-x.io/getting-started/</a>

#### jx create cluster (aks|aws|gke|minikube)

```
2. gke (helm)
   #1s:crt: -muse64 encoded certs-
   tlin key: «base64 encoded keys-
 type: butternetes.to/tla
Mailing for external loadbalancer to be created and update the nginx-ingress-controller service in Nube-system namespace
External loadbalancer created
You can now configure a wildcard DMS contains to the one locateluncer address 35:189.117.38
? Docote 25 100 117 34 mig in
leging impress cockrulier installed and coefficiend
Context "gke_lenkinss-dev_europe-west2-b_roackspring" modified.
Lets set up a git username and API token to be oble to perform CL / CD
7 Do you wish to use raidovies as the Gittlub usernowe for CI/CD pipelines: Tun
Claring the Jenkins X cloud environments repo to /Users/rajdavies/.jx/cloud-environments
? A local Jenkins X cloud environments repository already exists, recreate with latest? Yes
Cloning the Jenkins X cloud environments repo to /Users/roidovles/.jx/cloud-environments
Counting objects: 308, done,
Compressing objects: 100% (4/4), done.
Total 368 Cdelts 05, reused 1 Edelts 05, pack-reused 364
High repointd lenking-s Hitp://chartmiseum.build.cd.lenkins-x.io
"jenkins-w" has been added to your repositories
re irf secrets.youLided
helm repo add jenkins-x http://chartmusem.build.cd.jenkins-x.io
"jenkins-s" has been added to your repositories
Nels repo update
Hong tight while we grab the latest from your chart repositories...
... Skip local chart repository
... Successfully got an update from the "womocular" chart repository
... Successfully got an update from the "is" chart repository
... Successfully got an updake from the "Incubator" chart repository
. Successfully got on update from the "jenkins a" chart repository
  Successfully got an update from the "stable" chart repository
```

#### What does that give me?

#### Each team gets their own:

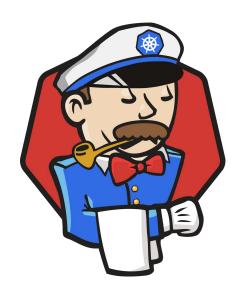
- Development Tools Environment
  - Jenkins master
  - Elastic pool of Kubernetes build pods
  - Nexus + Monocular (helm application store)
- Staging Environment
- Production Environment

## I'm so excited.



#### Jenkins X: Summary

- Please try it out!
  - https://jenkins-x.io/
- Feedback:
  - https://jenkins-x.io/community/
- CloudBees
  - https://pages.cloudbees.com/K8s



#### Jenkins X: create/import projects

- Available commands:
  - jx create spring
  - jx create quickstart
  - ∘ jx import
- Automatically set up CI/CD Pipelines for new + imported projects
  - Setups git repository
  - Adds webhooks on git provider to trigger Jenkins pipelines on PR / master
  - Triggers first pipeline

#### Jenkins X: on Pull Request

- Compiles + runs tests
- Creates preview docker image + helm chart
- Creates a Preview Environment and comments on the PR with a link to the app

### Jenkins X: on Release (push to master)

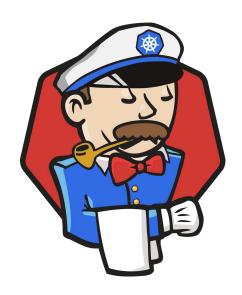
- Compiles + runs tests
- Creates semantic release version
- Publishes versioned artifacts, docker image & helm chart
- Promotes through all automatic environments, e.g. Staging

#### Jenkins X: promotion via GitOps

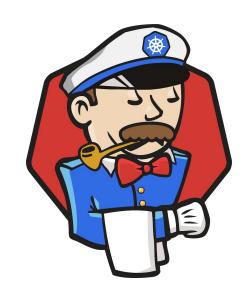
- Each environment stores its configuration as helm charts in a git repository
  - Configuration as code
  - All changes audited and easy to revert
  - Reuse the Pull Request workflow for changes
- To promote a version to, say, Production Jenkins X submits a Pull Request
  - The Promote step waits for the Pull Request CI build to complete, merge and for the environments pipeline to complete applying the change

#### Jenkins X: Summary

- Please try it out!
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# Jenkins X



https://jenkins-x.io/