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CloudNativeCon

North America 2019

Everything You Need To Be A GitOps Ninja

Alex Collins & Alex Matyushentsev

<http://bit.ly/gitops-workshop-help>



Everything You Need To Be A **GitOps** Ninja

Get ready!

For the hands-on, now's a good time to:

1. Connect WiFi
2. Join our Slack: <http://bit.ly/gitops-slack>
(#gitops-workshop)
3. Login in to github.com
4. Test you can push a commit to github.com
5. Install Kustomize and Git

Overview



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**“What”
and
“why” of
GitOps**

**Discus
sion**

**Hands-on
deploying,
upgrading, and
troubleshooting
a GitOps app**

<http://bit.ly/gitops-workshop-help>

Who Are We?



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Alex Collins is a Principal Engineer working on Intuit's Modern SaaS platform. Previously he was the EMEA Software Architect on QuickBooks Online based in London, as well as a blogger and author.

Who Are We?



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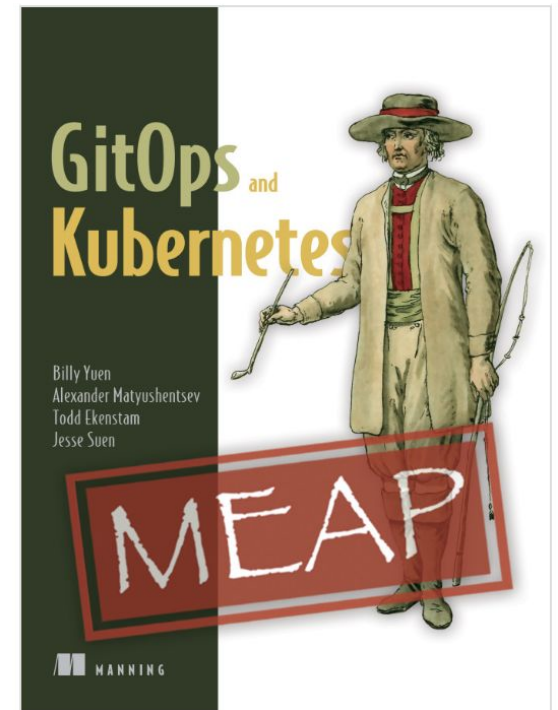
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Alexander Matyushentsev is a Principal Engineer in the Intuit Modern SaaS team. He is focused on building tools which makes it easier to use Kubernetes. He is a core contributors to "Argo Workflows" and "Argo CD" projects.

He's also an author on "GitOps and Kubernetes".



<http://bit.ly/gitops-and-k8s>

<http://bit.ly/gitops-workshop-help>

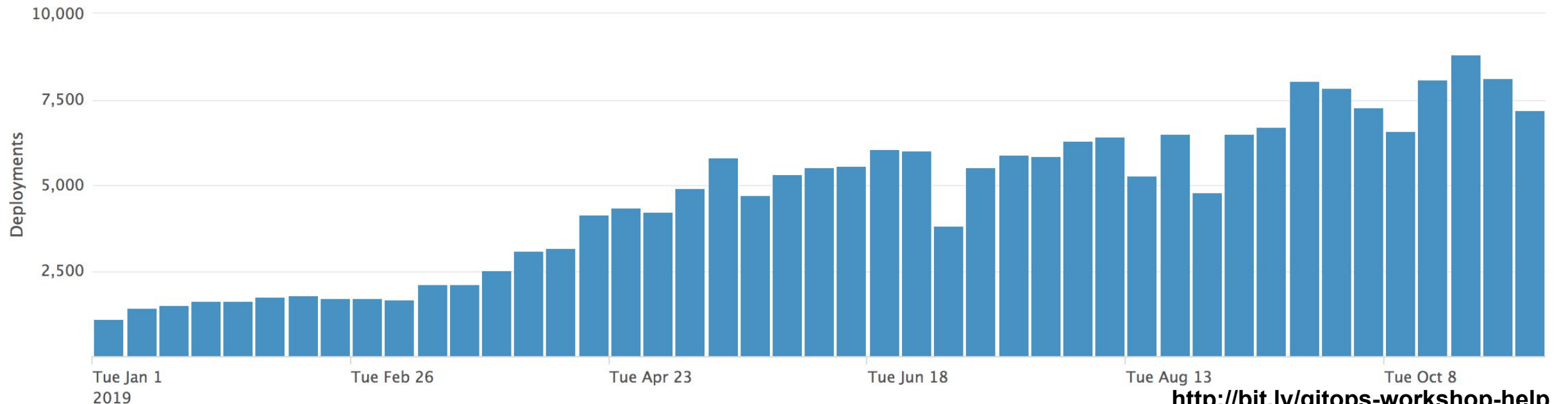
Some Intuit Statistics

intuit®

- 4 business units
- 30 business segments
- 1,200+ developers using Kubernetes

kubernetes

- 160+ clusters (Intuit managed)
- 6,600 nodes
- 5,400 namespaces
- 62,000 pods
- 1,300 deploys a day



<http://bit.ly/gitops-workshop-help>

Intuit and OSS



Admiral



Keiko



Argo

What Is GitOps



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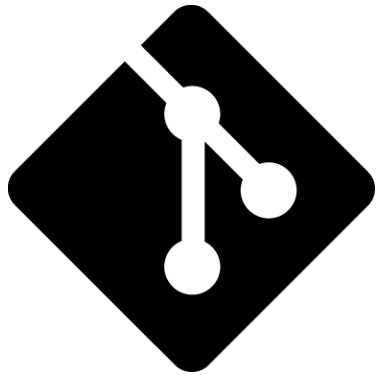


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- Your desired software system is described by files in Git
- An agent ensures the live system is in the same state as Git

What Is GitOps?



Git repo



Agent



Kubernetes
cluster

Useful

- Manifest generation tool
- CI system
- A way to group Kubernetes resources

Why GitOps?



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- Single source of truth
- Security, compliance, and auditing
- Developer centric
- Trivialises rollback
- Declarative
- Observable - detect configuration drift
- Velocity



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Demo: Poor Man's GitOps

<https://github.com/gitops-workshop/my-app>

<https://github.com/gitops-workshop/poor-mans-gitops>



Poor Man's GitOps: Problems



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- Security
- Observability
- Impact
- Latency
- Single tenancy



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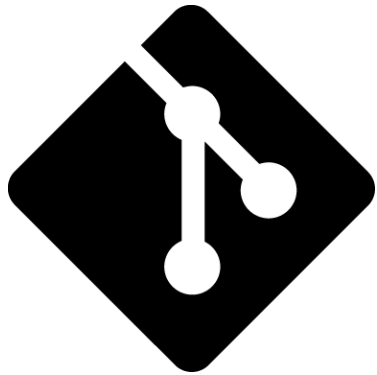
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Introduction to Argo CD



What Is Argo CD?



Git repo

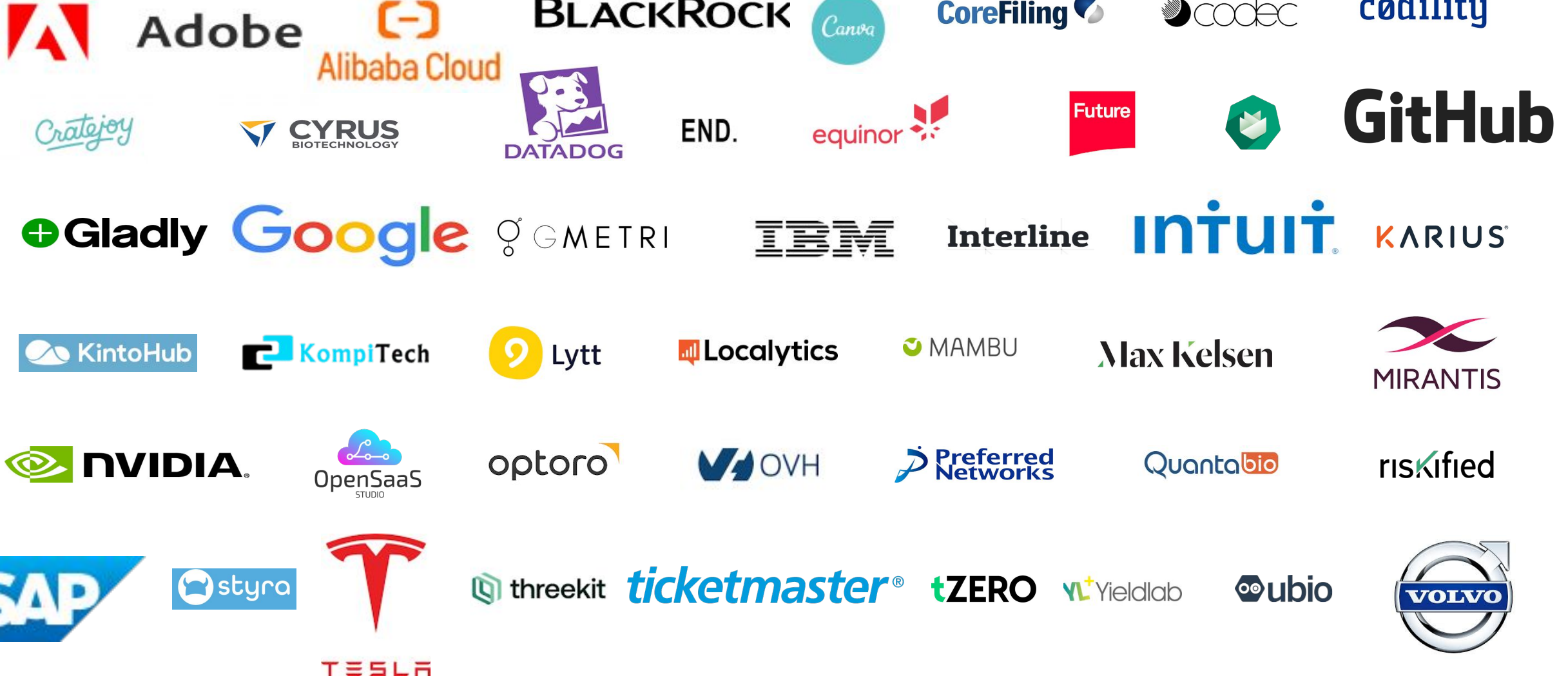


Agent



Kubernetes
cluster

Argo Community



Argo Stars



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argoproj / argo-cd

Unwatch 71

Unstar 2k

Fork 334

Code

Issues 170

Pull requests 27

Actions

Security

Insights

Settings

Stargazers

All 1,974

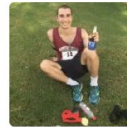
You know 1



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andreschaffer

Stockholm, Sweden

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Denmark, Copenhagen & Odense

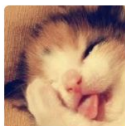
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Savemech

Russia, Moscow

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zhixiangjoy

Joined on Nov 6, 2015

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Joined on Jul 28, 2018

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Demo: Argo CD

<https://cd.apps.argoproj.io>





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Hands-On

<http://bit.ly/gitops-handson>



DigitalOcean

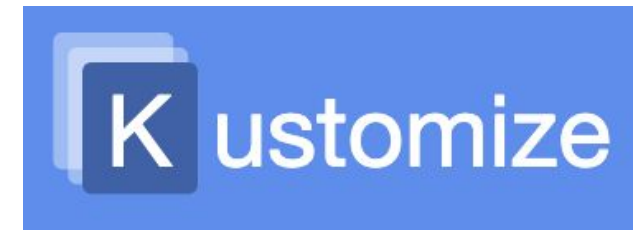
Thank you to Digital Ocean
for hosting the Argo CD
instance in this hands-on.



What Is Kustomize?

- A CLI tool for templating YAML
- It works by applying one or more **overlays** to a **base** set of manifest

Kustomize is great for apps you use yourself.



What Is Helm?



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- A CLI tool to package apps into “**charts**”
- A **chart** is a tarball containing, meta-data, e.g .name and version, templated YAML files, default “values”.

Helm is great for packaging an app for others to install.



Helm or Kustomize or other*...?

If you need to package apps to share with other people choose Helm, otherwise Kustomize.



<http://bit.ly/state-of-config-mgmt>

Also Jsonnet, Replicated Ship, raw YAML



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GitOps Secrets

<https://github.com/gitops-workshop/secrets>





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**[https://github.com/argoproj/argo-cd/
stargazers](https://github.com/argoproj/argo-cd/stargazers)**







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Find Out More?

Come find us at the Intuit booth S47.



SCAN ME

