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DEVNET-2427

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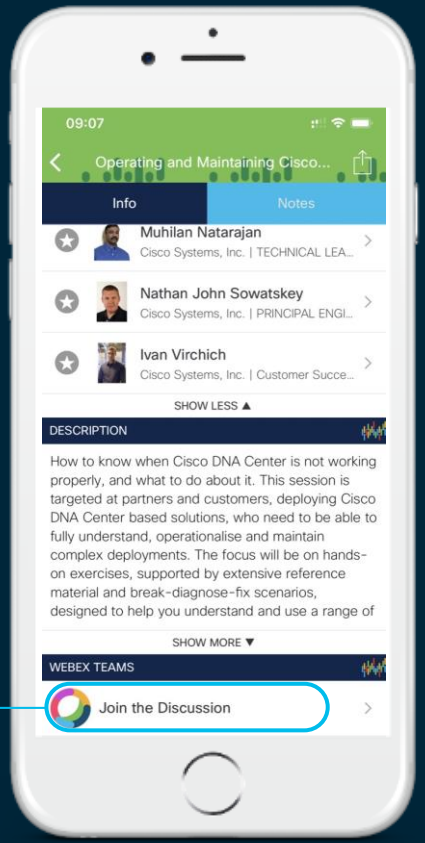
Cisco Webex Teams

Questions?

Use Cisco Webex Teams to chat with the speaker after the session

How

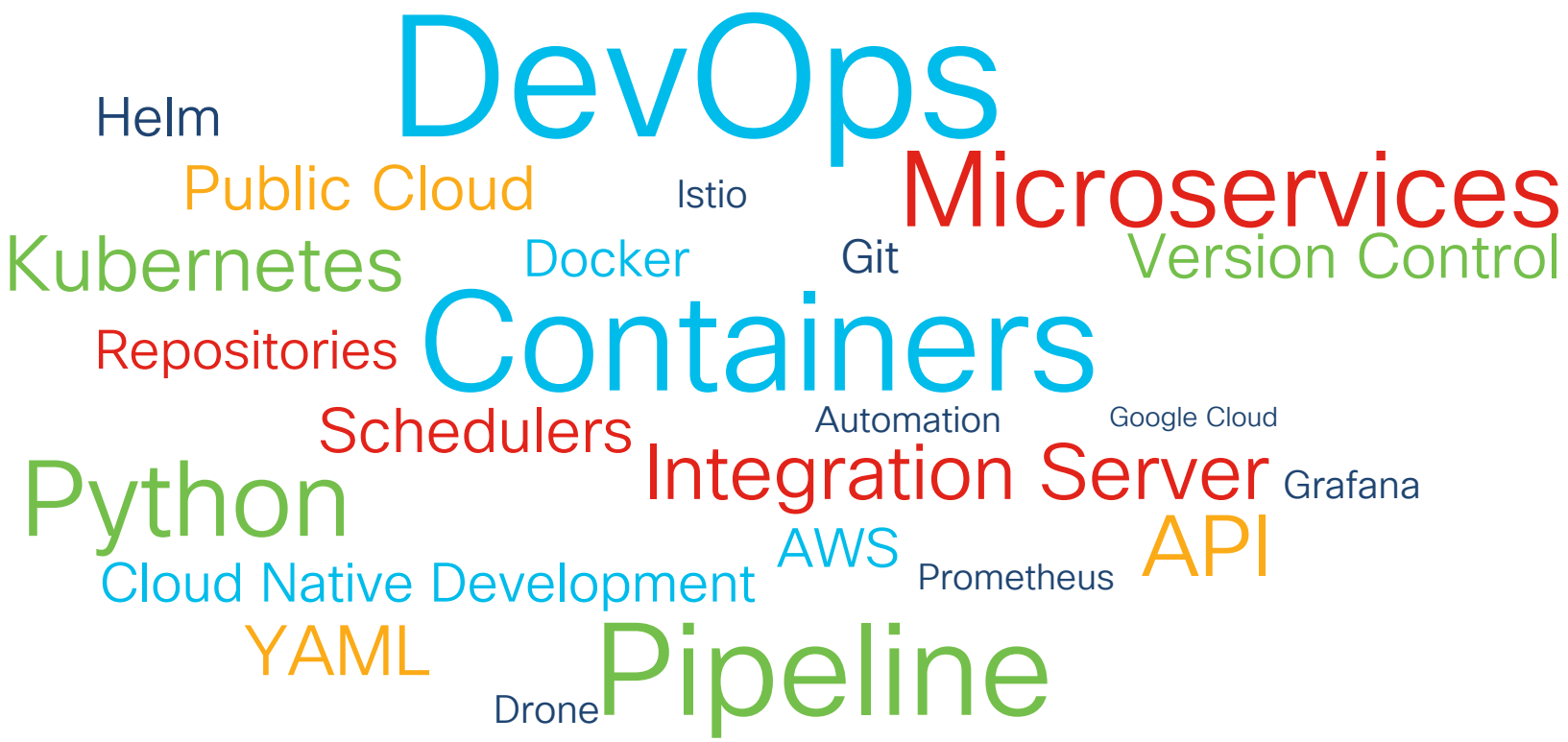
1. Find this session in the Cisco Events Mobile App
2. Click “Join the Discussion”
3. Install Webex Teams or go directly to the team space
4. Enter messages/questions in the team space

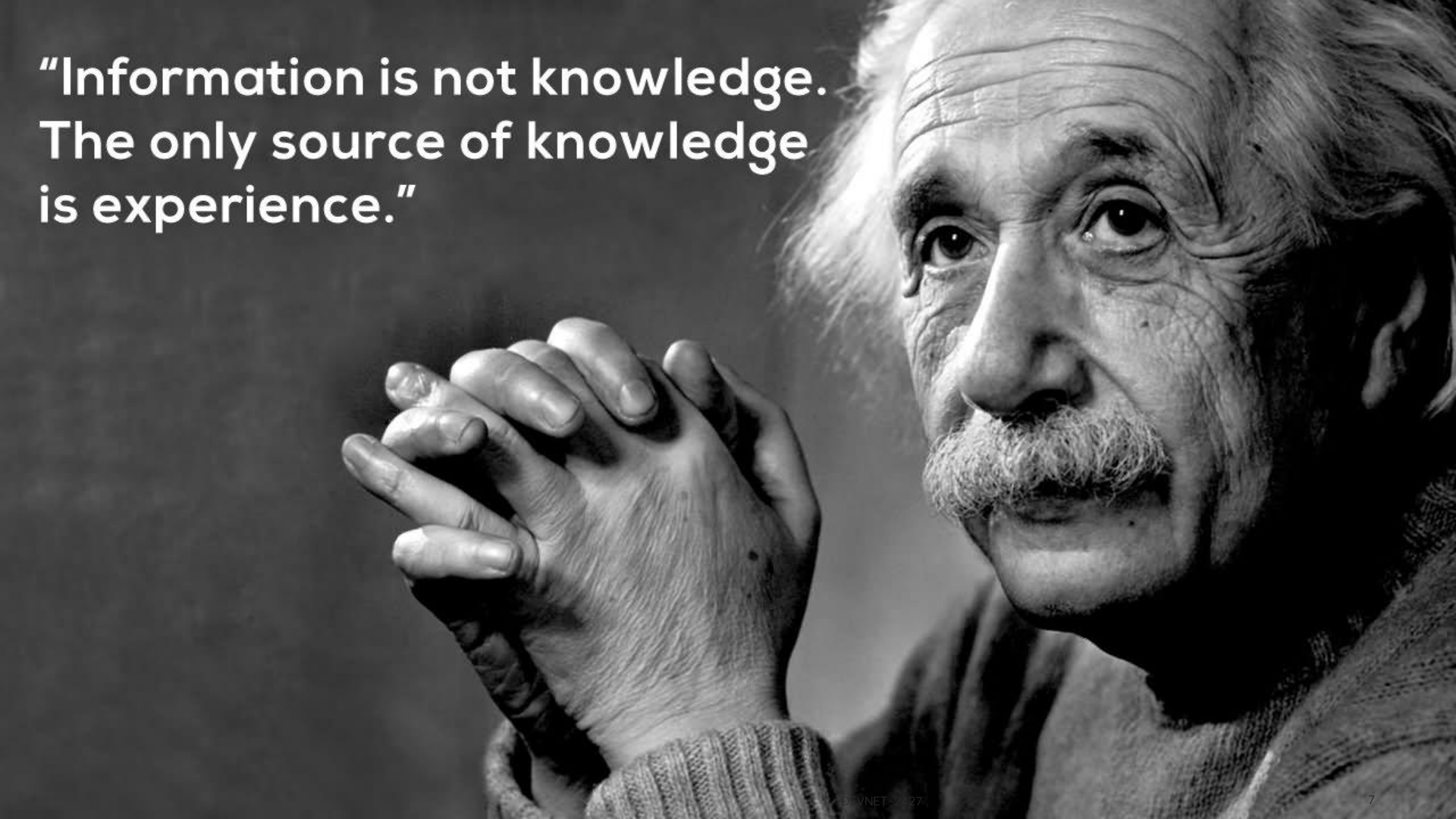


Agenda

- Introduction
- Helm
- Draft
- Skaffold
- Telepresence
- Okteto
- Conclusion

Introduction

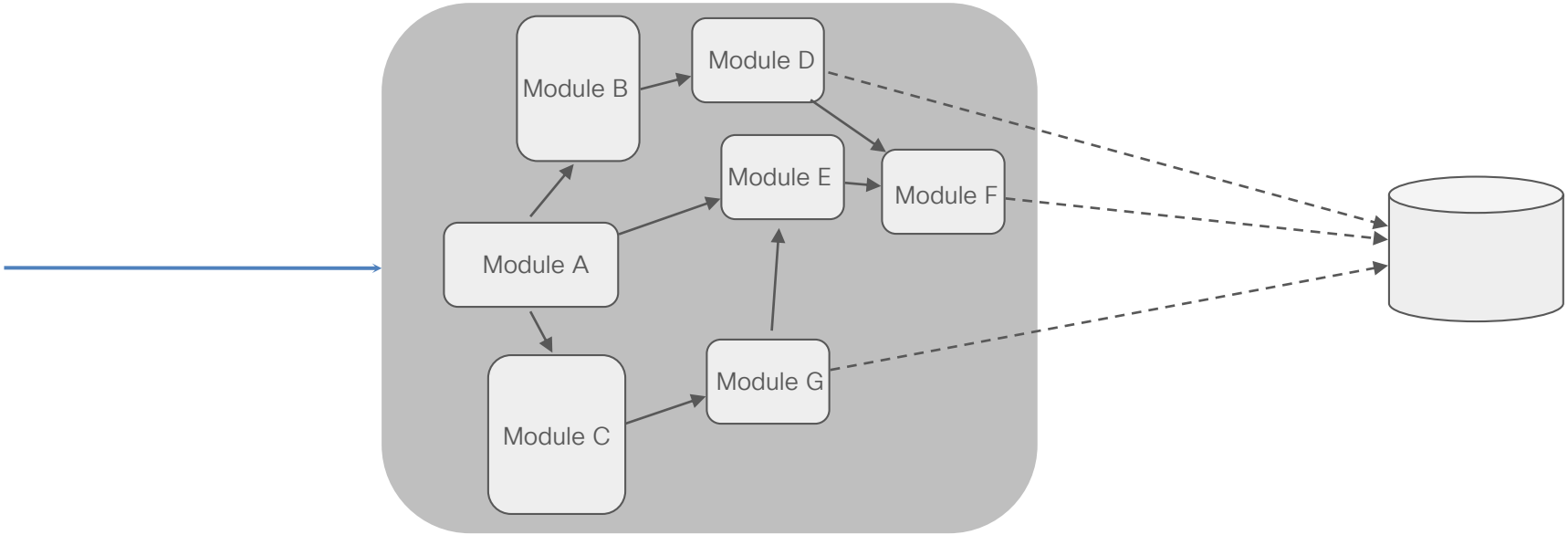



“Information is not knowledge.
The only source of knowledge
is experience.”

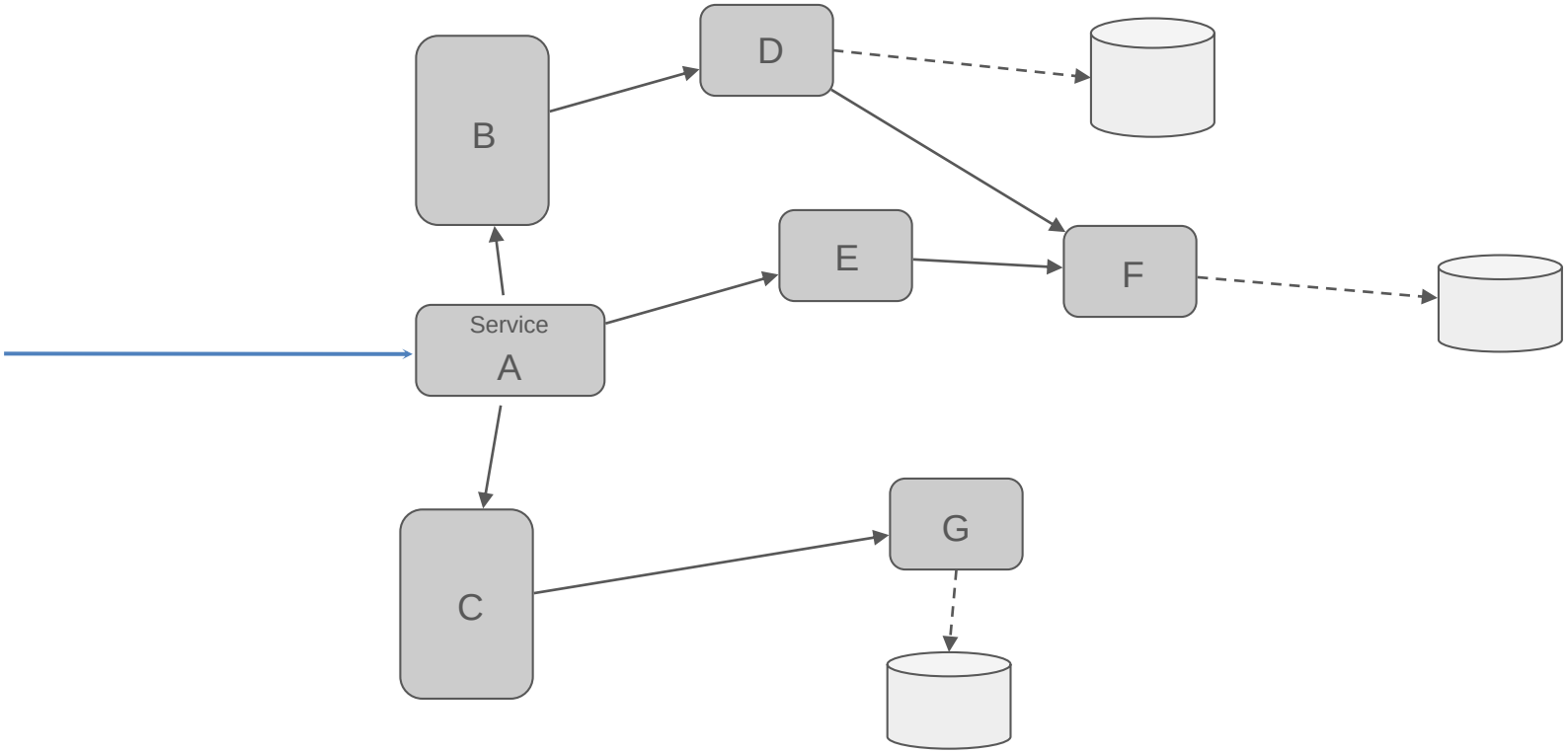
Dev:Network — Developer Technology Landscape (Version 1.0)

Designed by DevNetwork.com - May 2014

Remember the Monolith?



Microservices



Ideal software development environment

Replicable

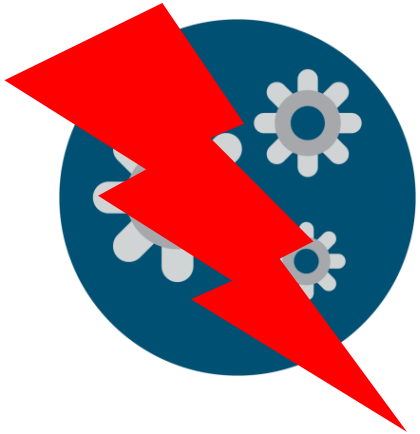
Integrated

Efficient

Laptop

Everything installed locally

Replicable



Integrated

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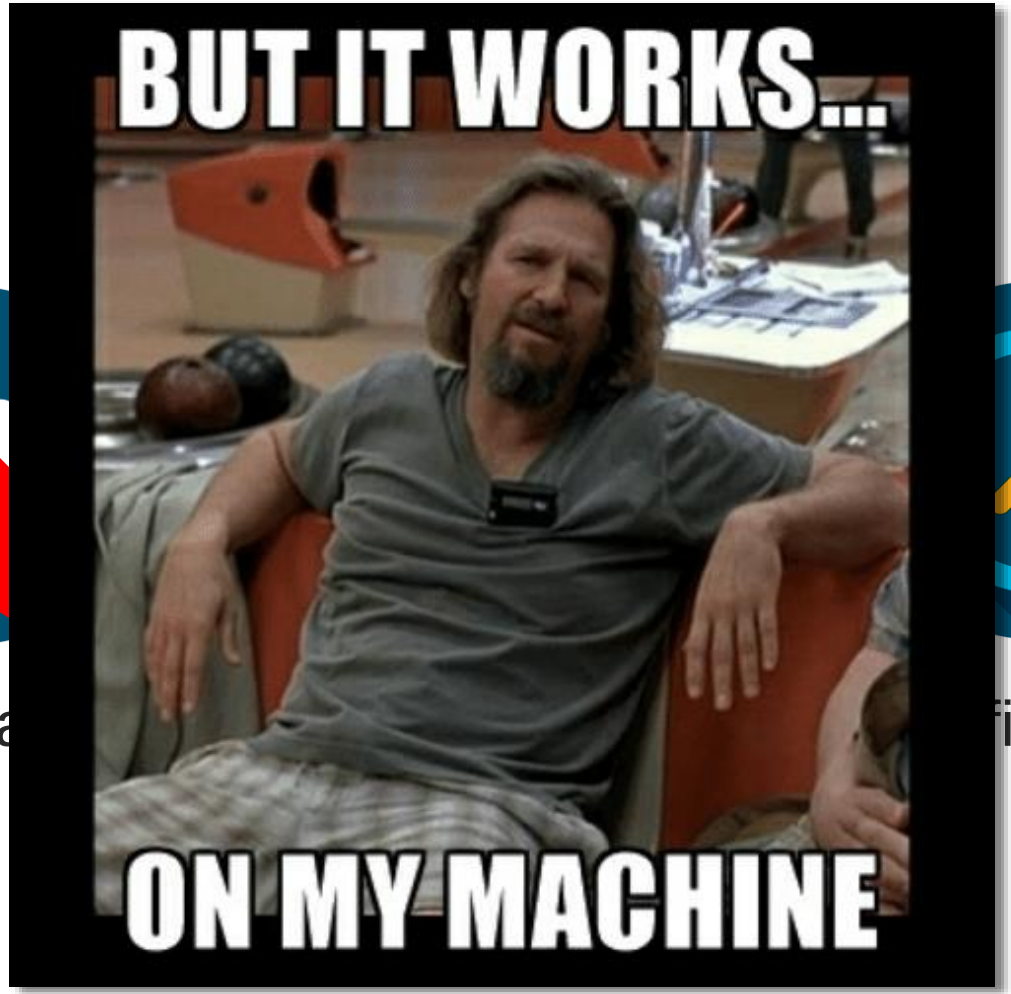
Everything



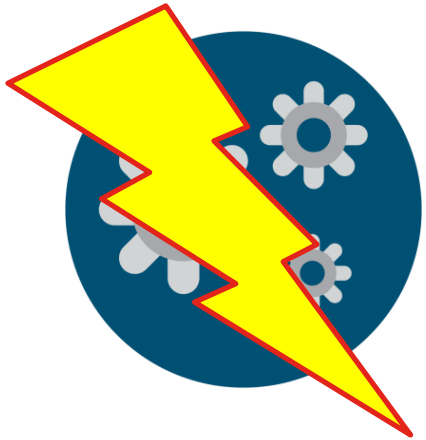
Replica

ficient

Vagrant

Virtual Machines for development

Replicable



Integrated

Efficient

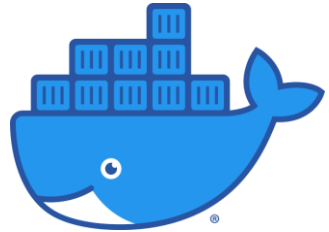
Vagrant

Virtual Machines for development

Replica

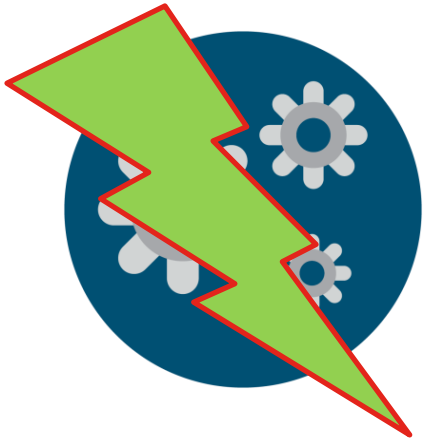
Efficient

Docker



- Build, ship and run any application anywhere
- Processes are lightweight, isolated and portable

Replicable



Integrated

Efficient

Docker

- Build, ship and run any application anywhere
- Processes are lightweight, isolated and portable

Replicable icient

Kubernetes

- Containers scheduler
- Declarative, adaptive to errors

Replicable

Integrated

Efficient

Kubernetes

- Containers scheduler
- Declarative, adaptive to errors

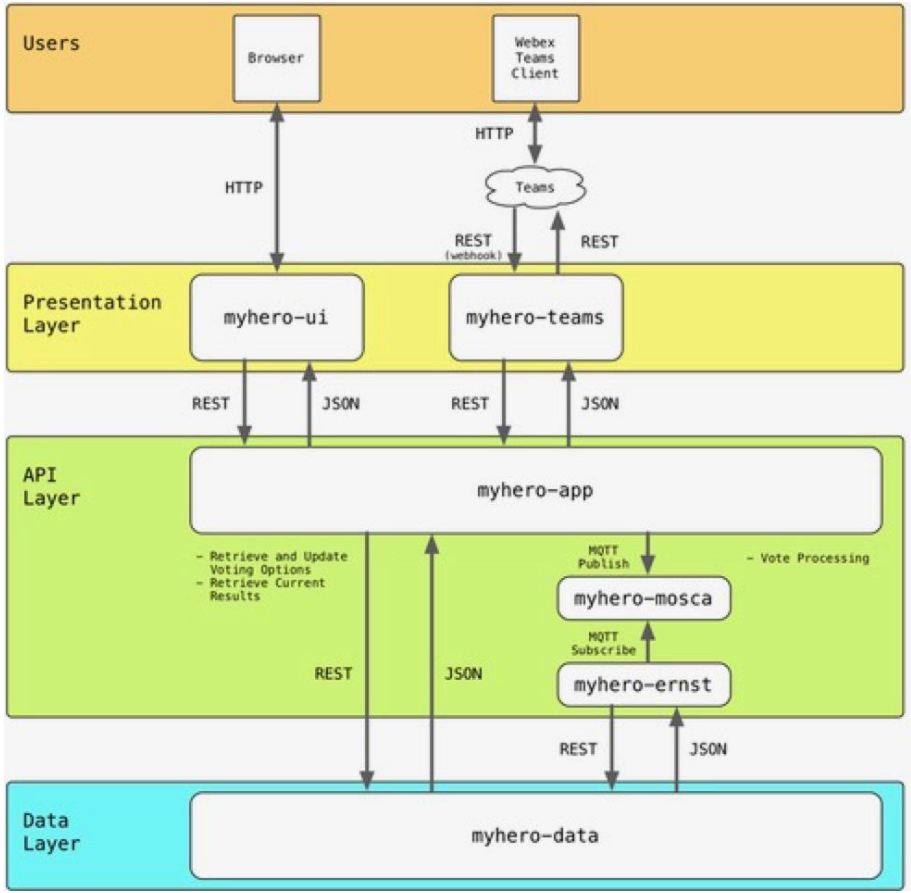
Repli nt

Helm

Why a package manager?

- Deploying an app means applying multiple manifests for multiple microservices
- Hand-written manifests are error-prone
- Application lifecycle management is hard
  - Create, install, upgrade/rollback, delete, status, versioning
- Helm is a package manager (like yum or apt) but for kubernetes
- Repo of pre-defined **template** charts (manifests bundles)
- Benefits: customization, reusability, reliability, multi-env, collaboration

Example microservices-based application



Without Helm

```
# start baseline microservices (pods + svcs)
kubectl -n myhero apply –f k8s_myhero_data.yml
kubectl -n myhero apply -f k8s_myhero_mosca.yml
kubectl -n myhero apply -f k8s_myhero_ernst.yml
kubectl -n myhero apply -f k8s_myhero_app.yml
kubectl -n myhero apply -f k8s_myhero_spark.yml
kubectl -n myhero apply -f k8s_myhero_ui.yml

# create ingress
kubectl -n myhero apply -f k8s_myhero_ingress.yml
```

With Helm

```
helm install myhero-0.1.0.tgz
```

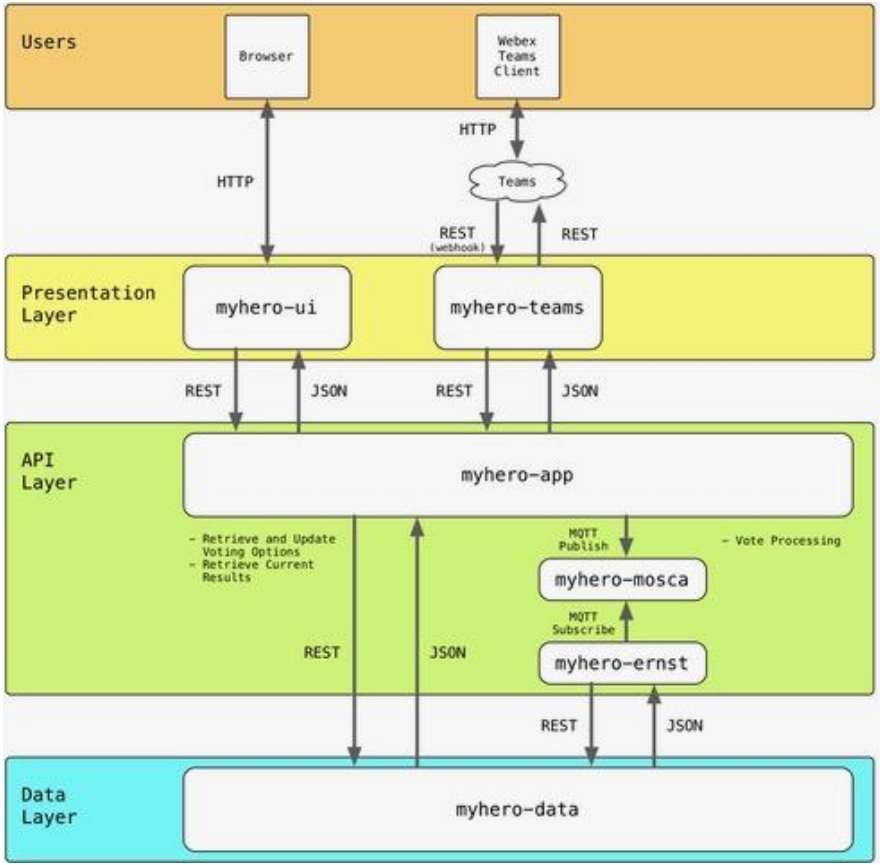
Draft

Why Draft?

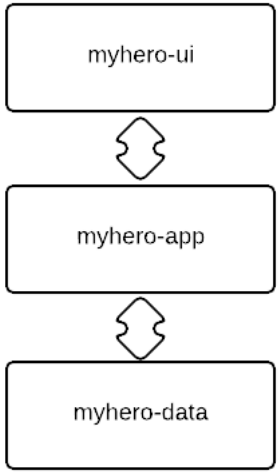
Fast feedback loop

- Testing new code requires developers to:
  - ✓ Build a new image
  - ✓ Publish that image
  - ✓ Update k8s deployments with the new image
- Draft hides that tedious process so they can focus on their code
- Pros:
  - ✓ Simple, easy to use, minimal, lightweight
  - ✓ Great for plain application
  - ✓ Auto-generate Dockerfile and k8s manifest
  - ✓ Language packs for most programming languages
- Cons:
  - Manual process
  - Needs Helm

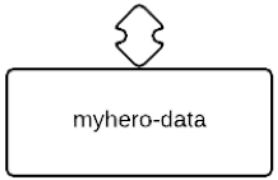
Example microservices-based application



Example microservices-based application



Example microservices-based application



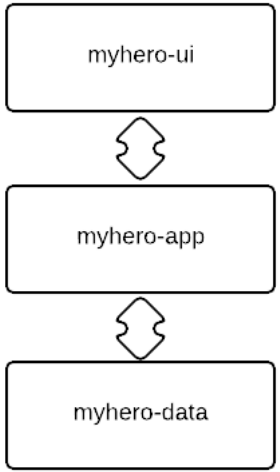
Skaffold

Why Skaffold?

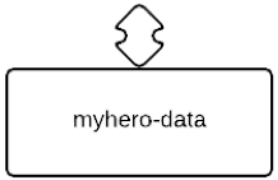
Fast feedback loop

- Testing new code requires developers to:
  - ✓ Build a new image
  - ✓ Publish that image
  - ✓ Update k8s deployments with the new image
- Skaffold hides that tedious process so they can focus on their code
- Pros:
  - ✓ Mini CI/CD for local deployments
  - ✓ Auto-detect changes
  - ✓ Flexible workflow
  - ✓ Built-in integrations
  - ✓ No need for Helm
- Cons:
  - Might be overkill
  - More complex setup

Example microservices-based application



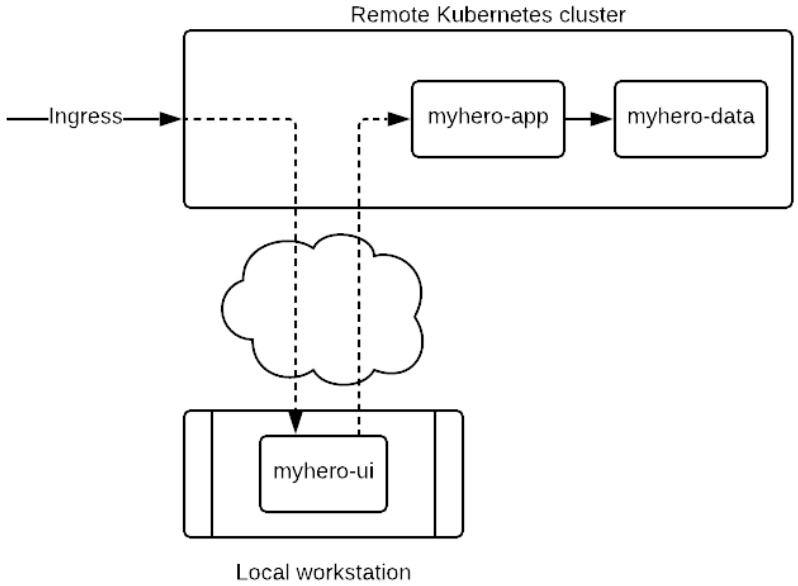
Example microservices-based application



Telepresence

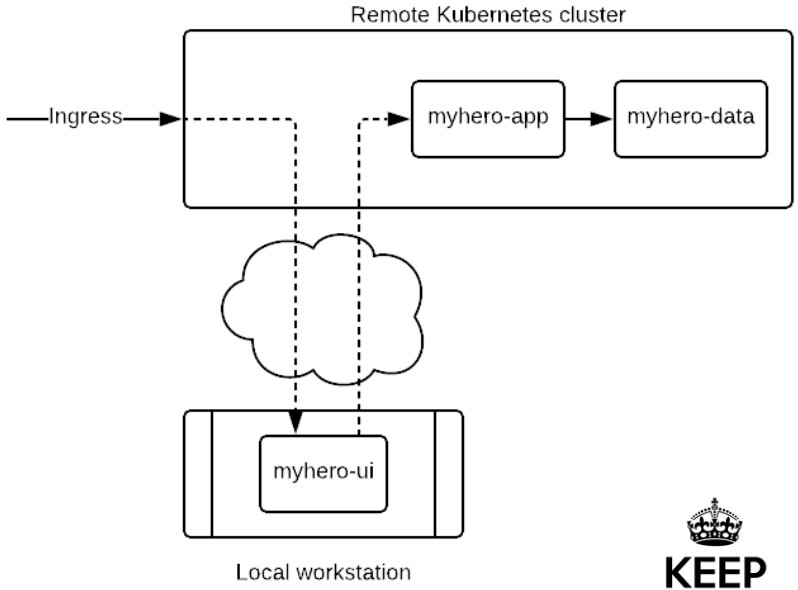
Why Telepresence?

- Developers working locally on a microservice need to go through the build-publish-deploy process to test it in a remote environment (QA, staging, testing or production)
- Telepresence enables **transparent** connectivity from a local microservice to a remote cluster
  - ✓ Additional deployment
  - ✓ Swap deployment



Why Telepresence?

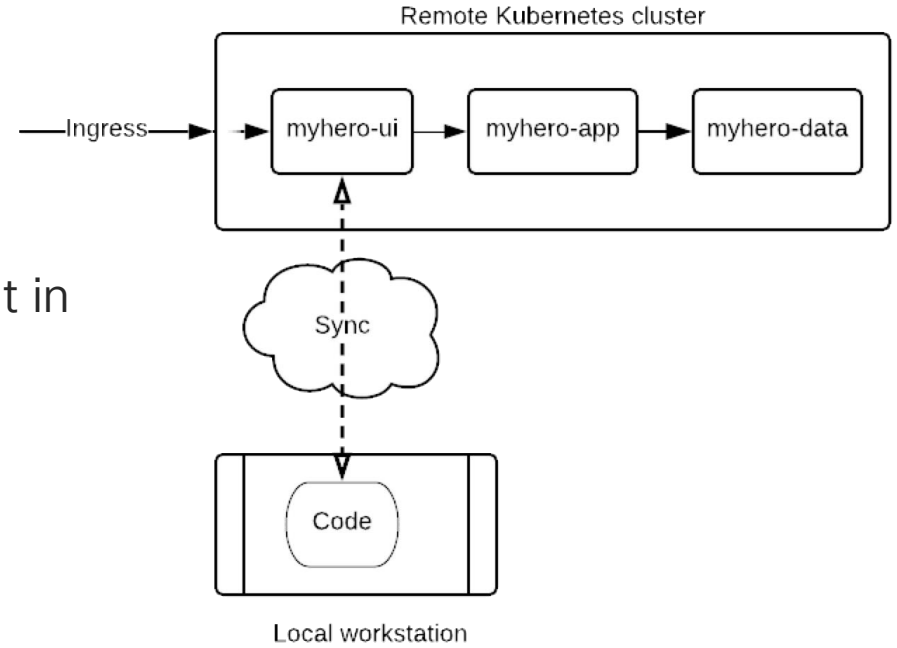
- ✓ **Local debugging**
- ✓ Instant feedback
- ✓ **Interact** with remote env
- ✓ Use your own tools (ie. IDE)
- ✓ Minimal resources
- ✓ No k8s ops



Okteto

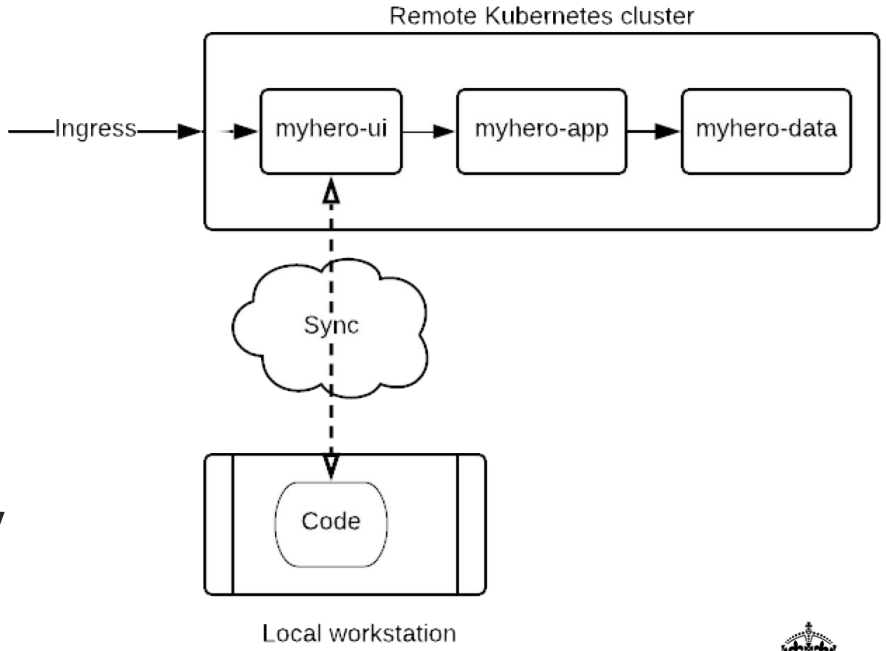
Why Okteto?

- Developers working locally on a microservice need to go through the build-publish-deploy process to test it in a remote environment (QA, staging, testing or production)
- Developers want to:
  - Code locally using their own tools
  - Test code *live* in a remote cluster
  - Avoid operating Docker or Kubernetes



Why Okteto?

- ✓ Instant feedback
- ✓ **Deployed** in remote env
- ✓ Use your own tools (ie. IDE)
- ✓ Minimal resources
- ✓ **Collaborate** with shared env
- ✓ No docker/k8s ops



Conclusion

Why not use everything?

Why not use everything?

Questions?

cs.co/juliodevops

cs.co/julioblog

Got more questions? Stay in touch!

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