

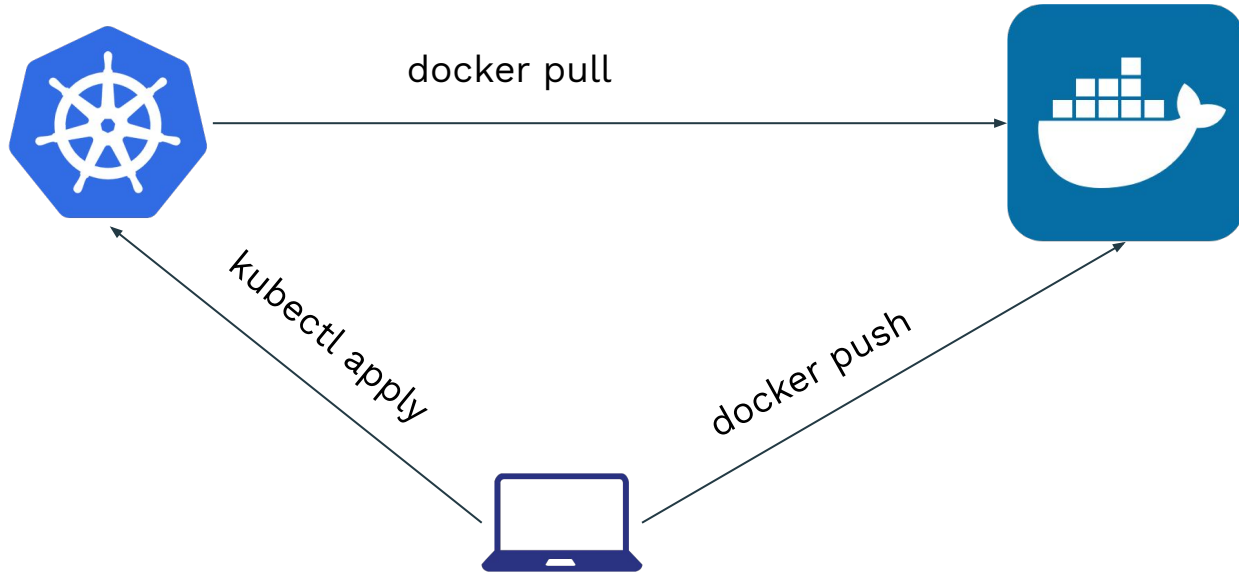
# Local Istio Development

John Howard / @howardjohn / Google



#IstioCon

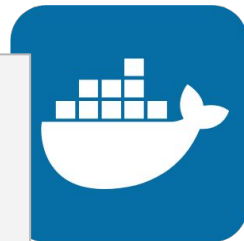
# Fully Cloud



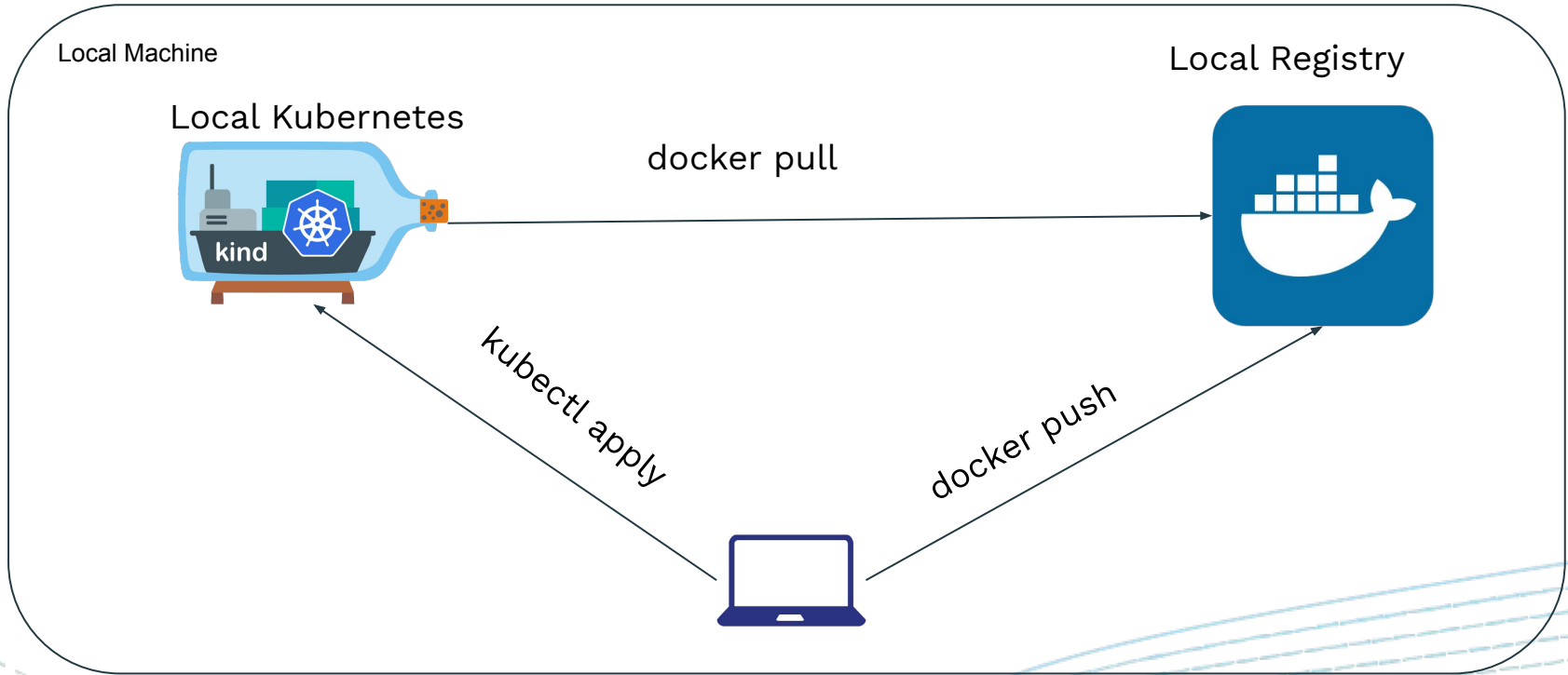
# Fully Cloud



- + No local resource utilization
- + Closely resembles production environments
- + Can test large scales
- Slow, especially without fast upload speeds
- Expensive



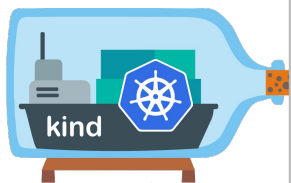
# Local Cluster + Registry



# Local Cluster + Registry

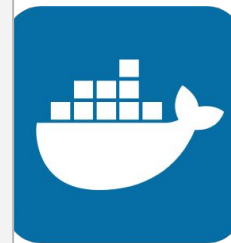
Local Machine

Local Kubernetes

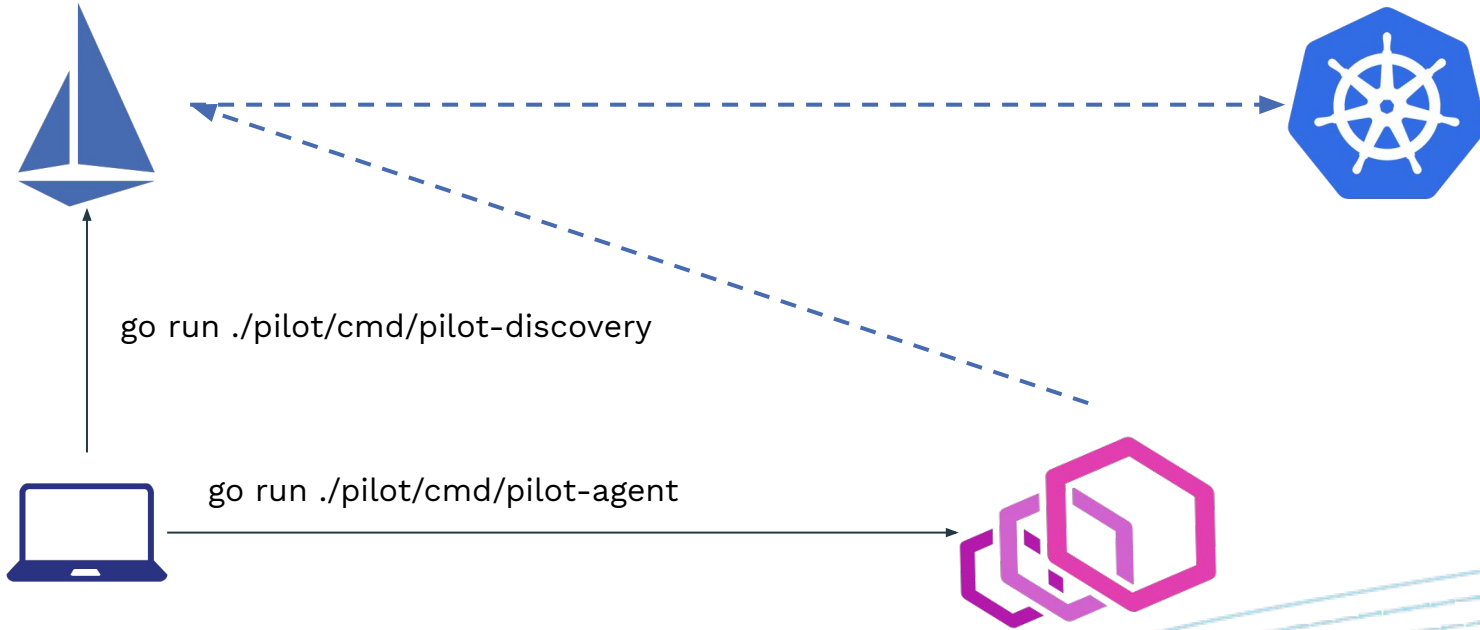


- + Fast! Image transfers are over localhost
- + Reproducible configuration with other developers and Istio tests
- + Easy to setup bespoke clusters, including enabling alpha features and multicluster
- Local resource utilization
- Some overhead of Kubernetes and docker images
- Attaching a debugger is not trivial

Local Registry



# Fully Local



# Fully Local



go run ./pilot/cm



go run ./pi

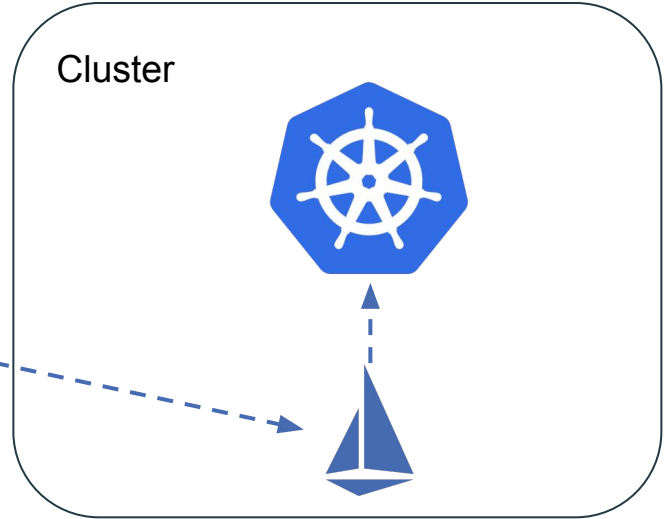
- + **Fast!** Bottleneck is go compilation time
- + Trivial to enable debugger or run from an IDE
- Very different from production environment, may not be representative
- Harder to test actual traffic, especially iptables
- May be dependant on local environment
- Challenging to have multiple proxies



# Remote Istiod, local proxy



go run ./pilot/cmd/pilot-agent





# Remote Istiod, local proxy

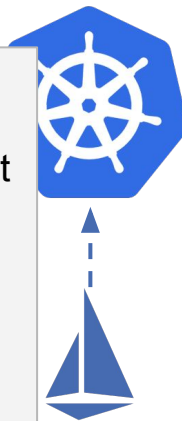


go run ./pilot/cmd



- + Rapid iteration
- Very different from production environment, may not be representative
- Harder to test actual traffic, especially iptables
- May be dependant on local environment
- Challenging to have multiple proxies

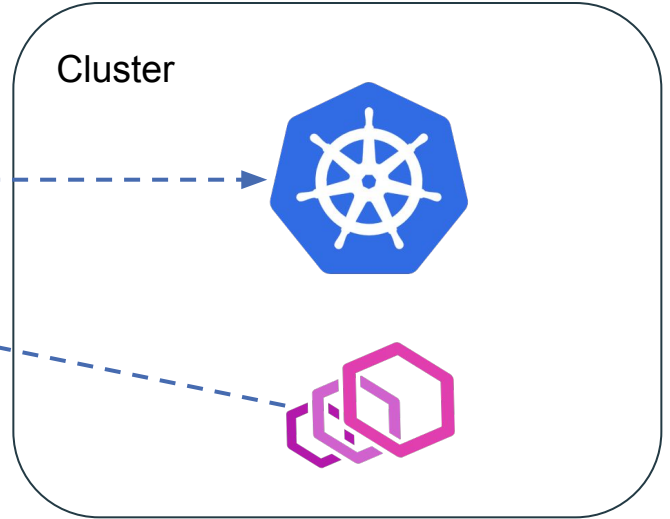
Cluster



# Local Istiod, remote proxy



go run ./pilot/cmd/pilot-discovery



# Local Istiod, remote proxy



go run ./pilot/cmd/pilot-discovery



- + All of the benefits of running Istiod locally
- + Can easily test real traffic, complex microservices, etc
- Requires Cluster to Local network connectivity

Cluster



# Plain Envoy



envoy -c envoy-config.yaml

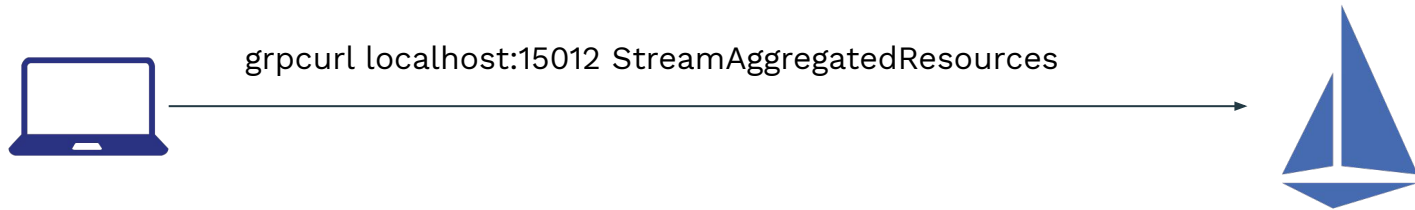


# Plain Envoy

- + Fastest - bottleneck is typing speed
- + No Istio dependency. Great for minimal Envoy bug reproductions
- + Great for rapid iteration of Envoy options
- Very different from production environment
- May be challenging to reproduce Istio configurations



# Direct clients



#IstioCon



# Direct clients



grpcurl

- + Fastest - bottleneck is typing speed
- + No envoy dependency
- + Complete control over requests
- Very different from production environment
- May be challenging to reproduce Istio requests



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# Thank you!

For more information:

- <https://github.com/howardjohn/local-istio-development>

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