



Standardization in Software Delivery

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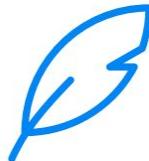


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Bonjour!

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TEKTON



S K A F F O L D



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Agenda

History of Standards

- Recent history of containers
- Longer history of containers
- Standards and Paris
- The Box that Changed the World

Standardization in Software

- Examples
- Standardization and Innovation
- Delivery and Security

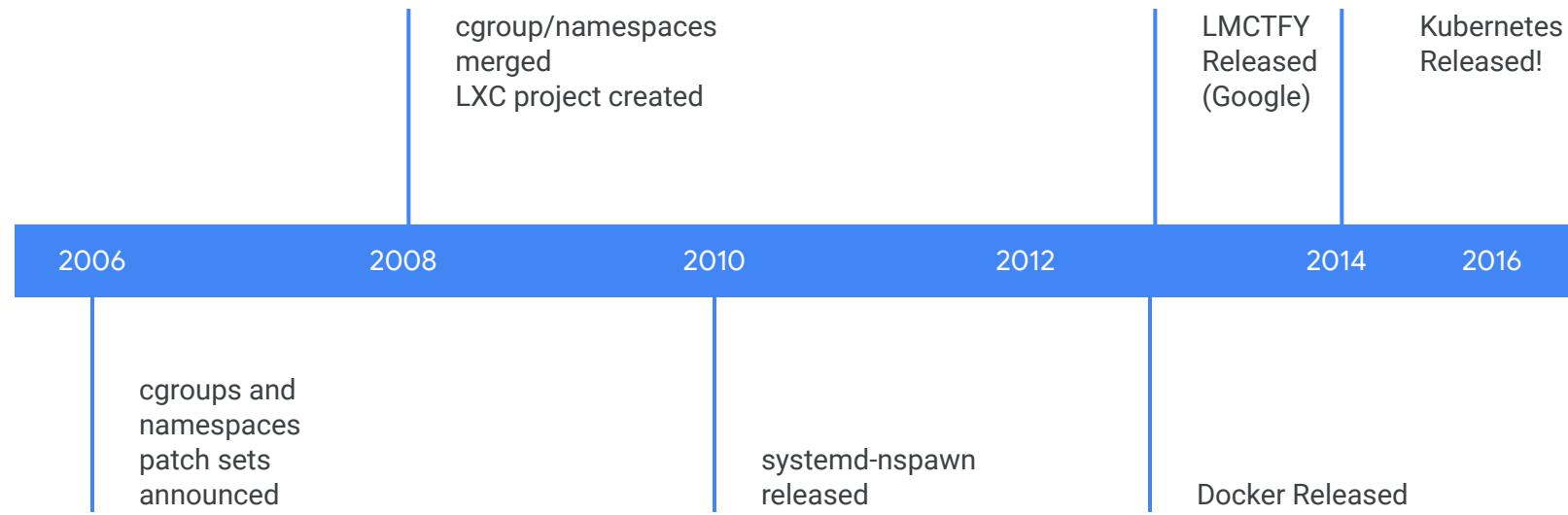
Tekton & the CDF

- Tekton Vision
- Tekton & The CDF
- Roadmap

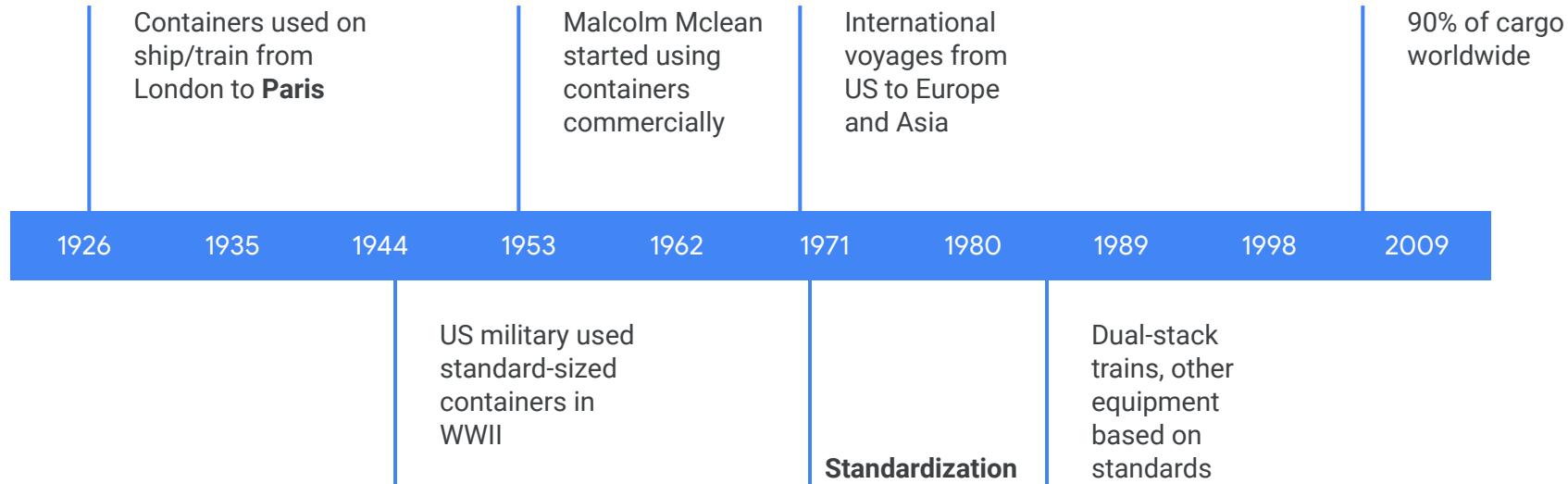
Standards, Containers, (And Paris!)



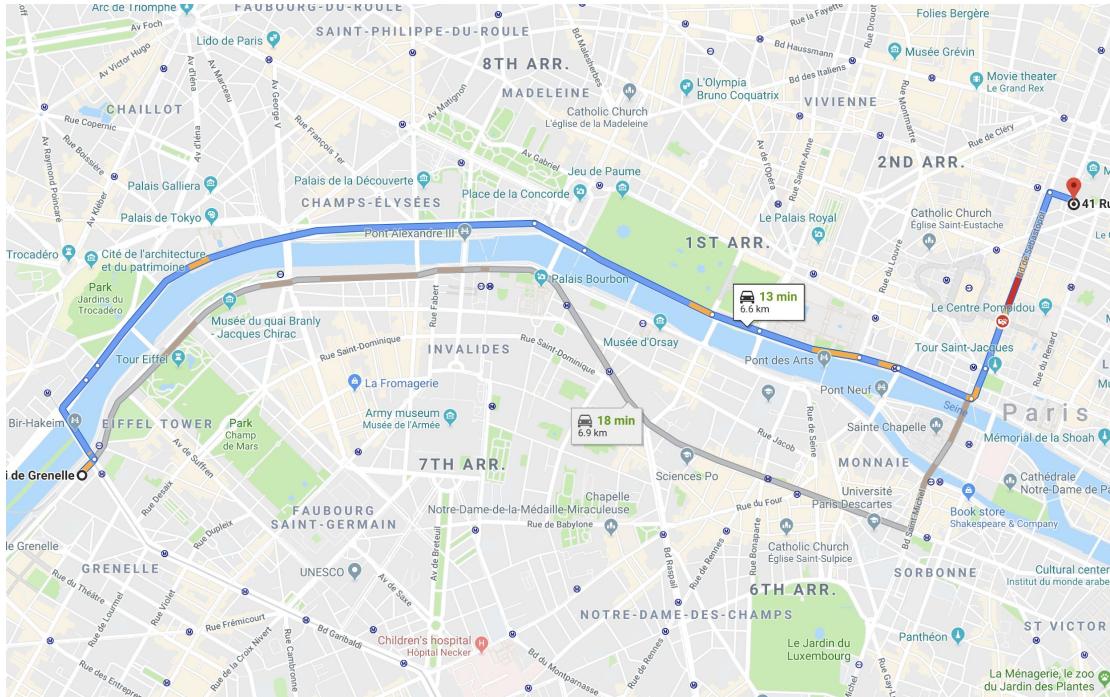
Software Containers - Recent History



Actual Containers - Prehistory

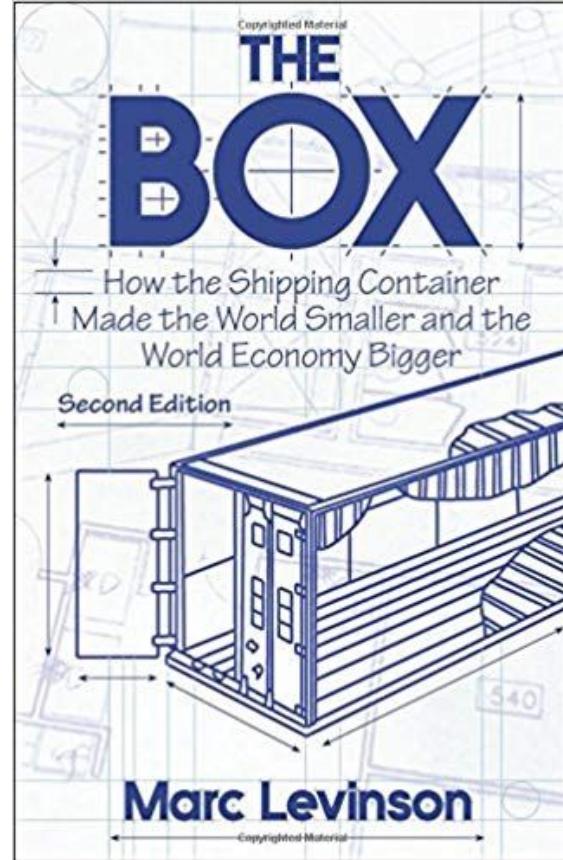


Standards - Paris





How did a box change the world?

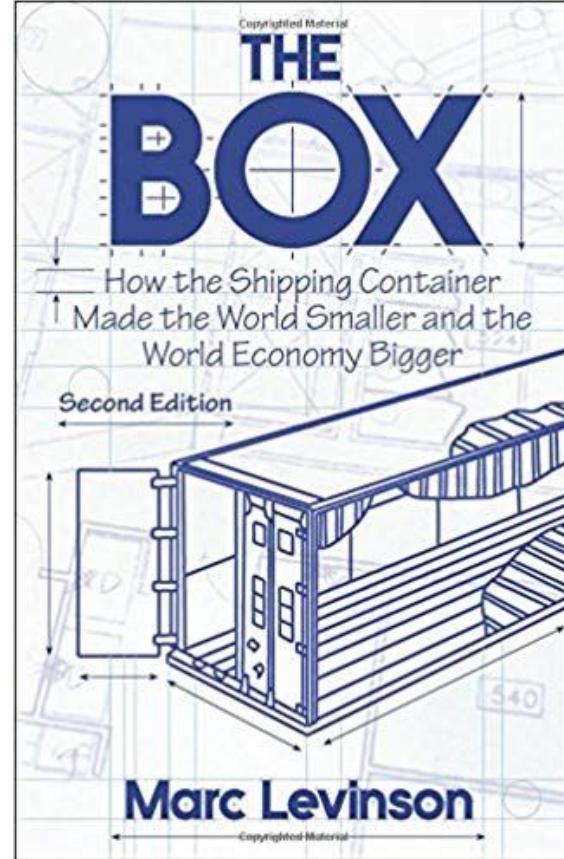


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**The box did not
change the world.**

The standards did.



The Ultimate Bikeshed



Standardization in Software

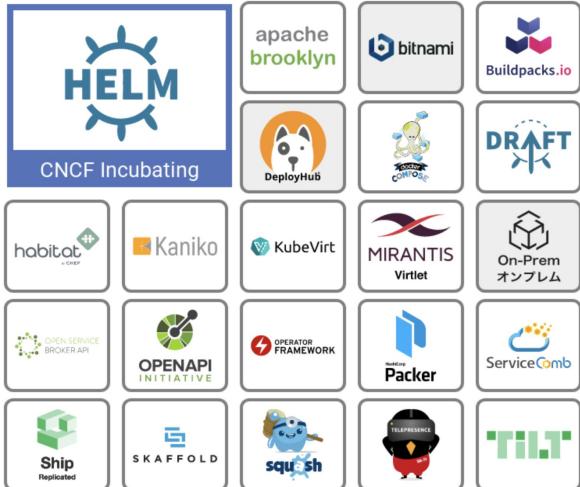


Software Standards

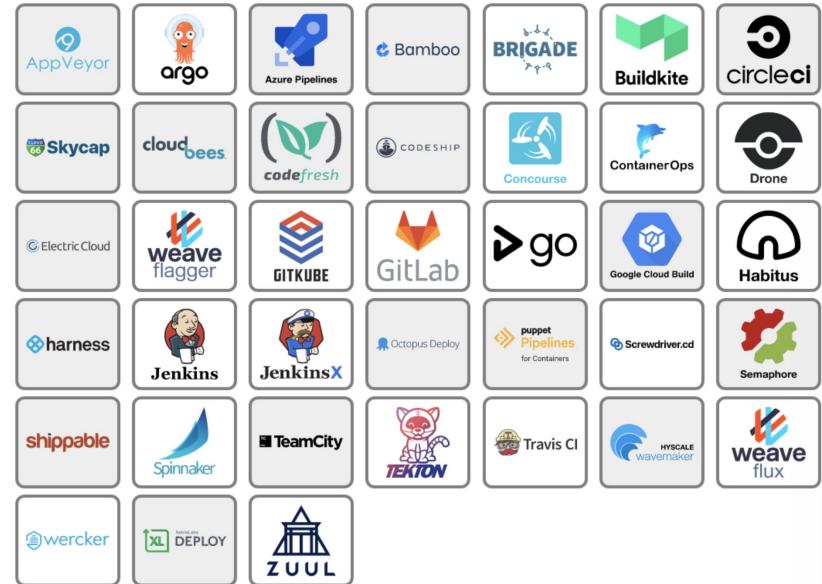
Standard	Body	Examples
C11	ISO	GCC, Clang, IBM XL C, etc.
POSIX	IEEE	Darwin, BSD, Linux, etc.
SMTP	93	Most email clients and servers
HTTP	IETF, W3C	Most browsers and servers
k8s conformance	CNCF, LF	53 Distributions, 33 Hosted platforms and 16 Installers
OCI Distribution	OCI, LF	dockerhub, gcr, ecr, jfrog, etc.
OCI Runtime	OCI, LF	containerd, kata, gvisor, etc.

Explosion!

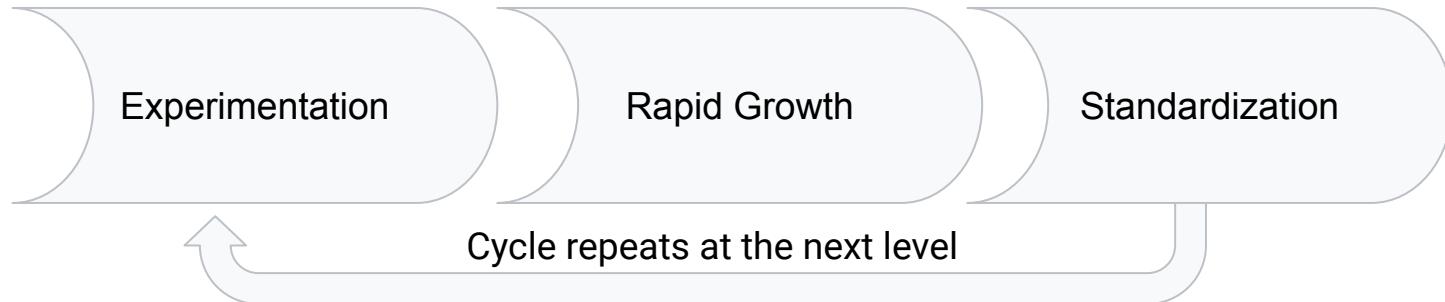
Application Definition & Image Build



Continuous Integration & Delivery

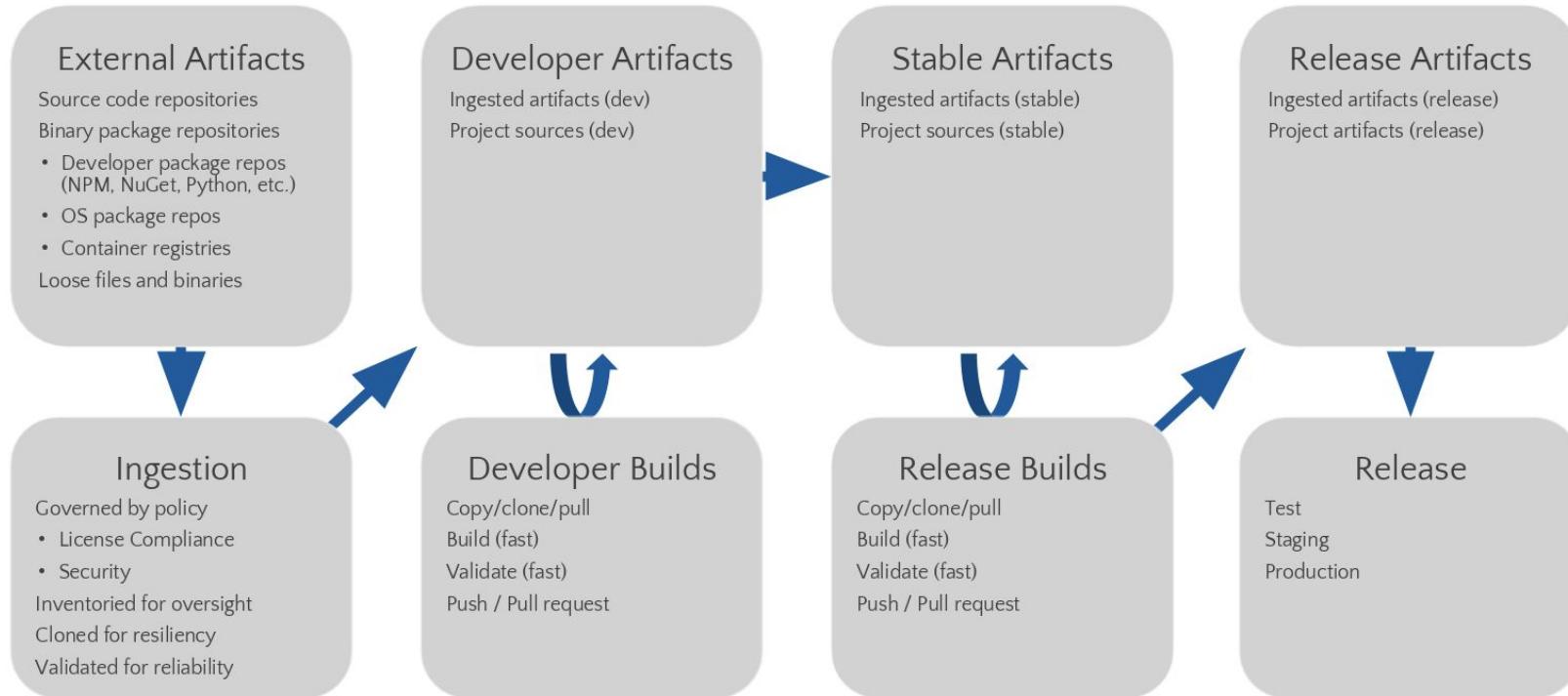


Phases of Innovation

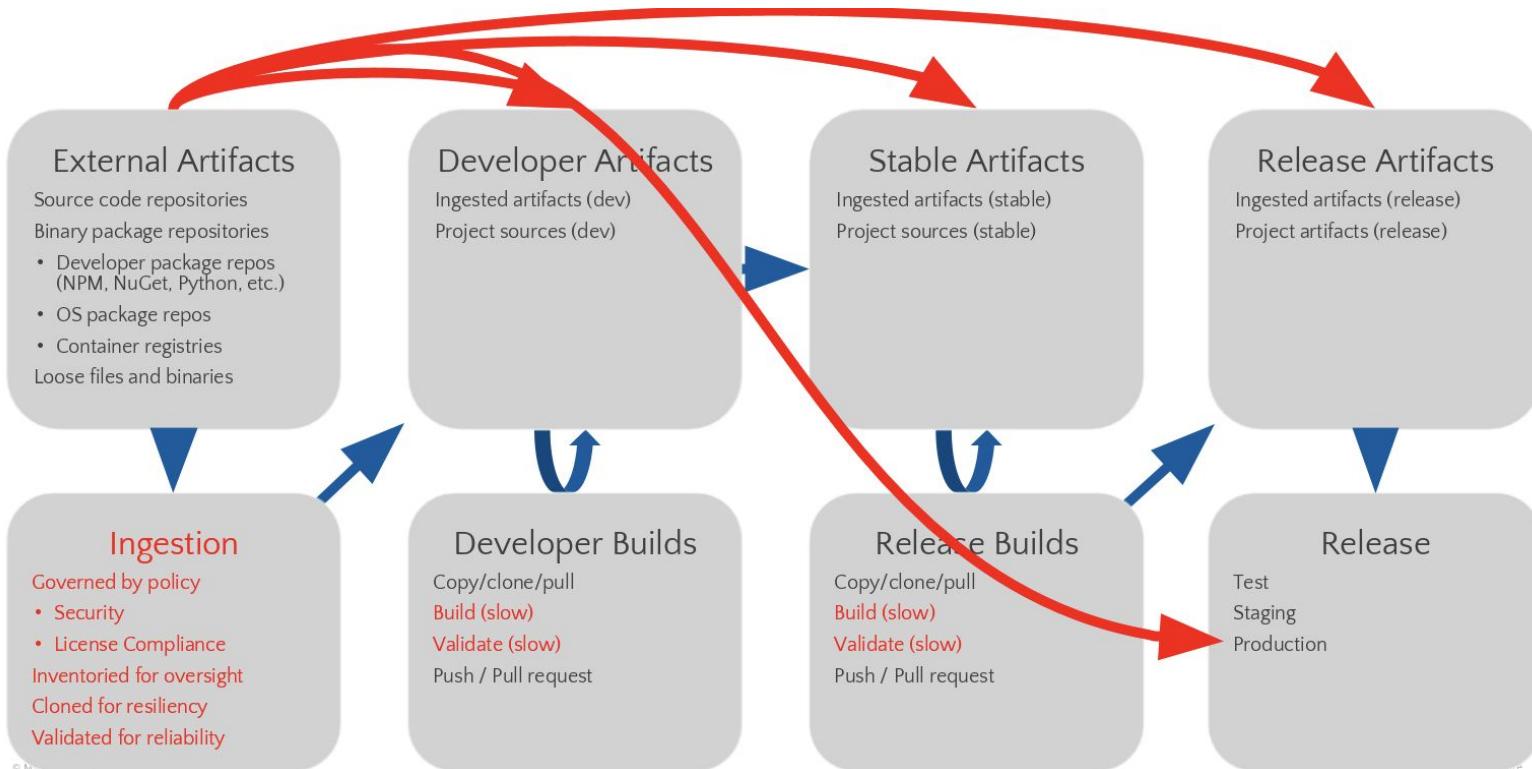


- Fast Progress
- Throwing lots of ideas at the wall
- Trying new things
- Early adopters drive growth
- A few ideas take off
- Brand new use-cases
- Explosion and fragmentation
- Early majority drives growth
- Progress slows
- "enterprise-grade" solutions are built
- Late majority and "Laggards" begin to drive growth

Ideal Software Supply Chain



Software Supply Chain - Actual :)



Tekton!

github.com/tektoncd



Following ▾

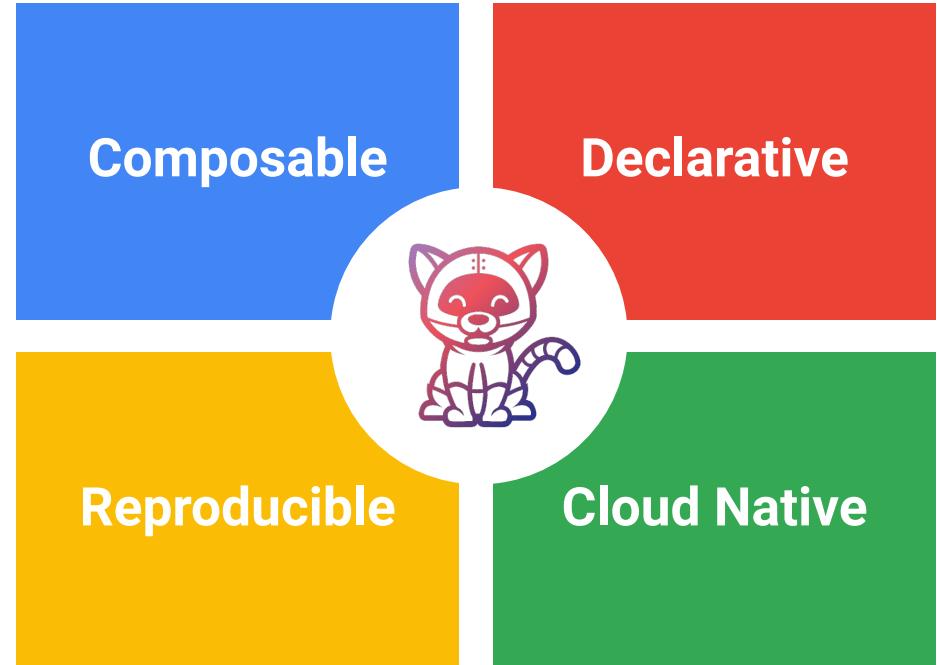
In essence, Kubernetes is the sum of all the bash scripts and best practices that most system administrators would cobble together over time, presented as a single system behind a declarative set of APIs.

9:41 AM - 6 May 2019

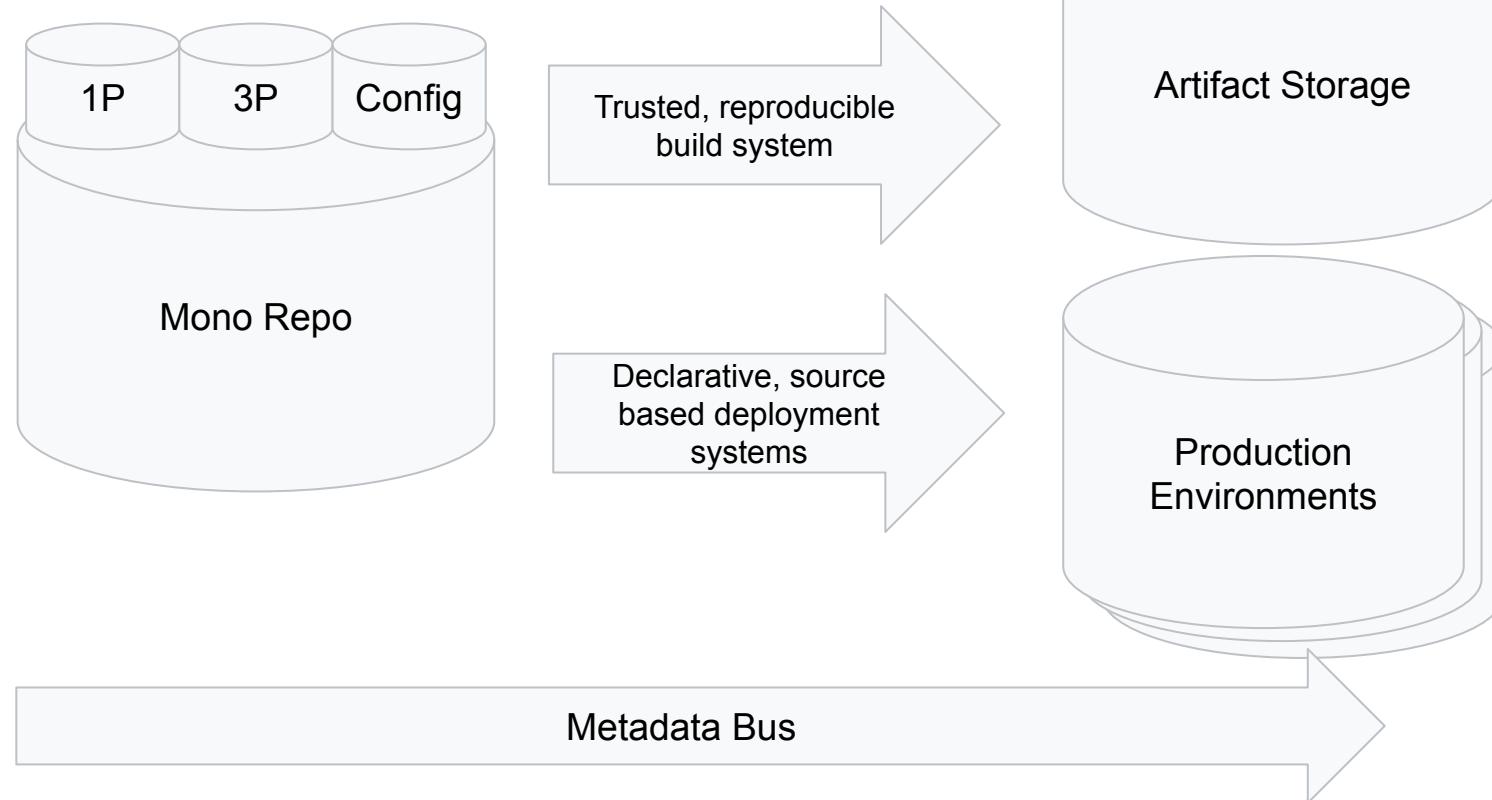


Tekton: Vision

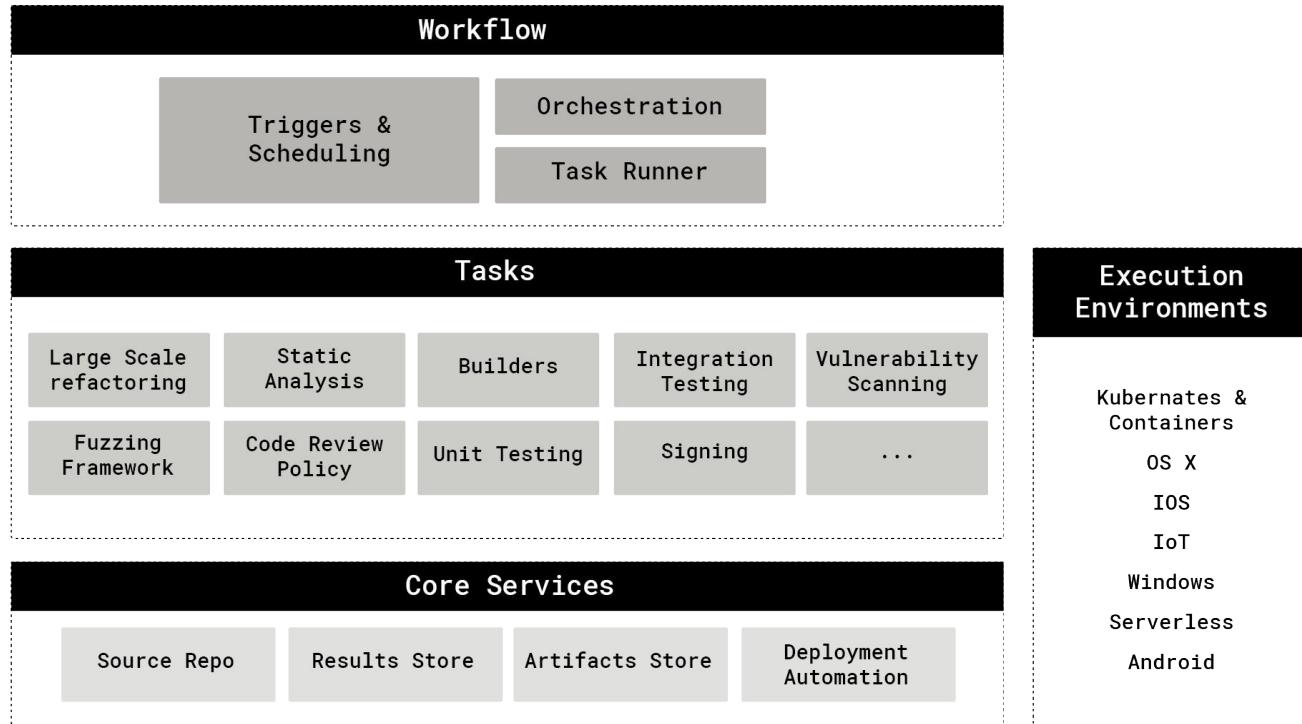
Improve the **usability** and **security** of software delivery for **everyone** through **standardization** and **cloud native** technologies.



Google's Delivery Pipeline



Tekton Pipelines: A Language for Software Delivery



Custom Resource Definitions

Hey kubernetes! Please create this cat for me.

Sorry, I only speak yaml.

Ah right. kubectl create -f mycat.yaml

Hmm, I don't know about the type "Cat".

Cat's have paws, they're fluffy, they have claws...

YAML!

Ahhh! kubectl create -f cat-definition.yaml

Now we're talking. Ah, that's what a "Cat" is.

Here's my cat: kubectl create -f mycat.yaml

OK, I'll keep that over here next to the Pods and Services.



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Custom Resource Controllers

Hey kubernetes! Do you have any cats?

Nope, no cats.

Hey kubernetes! How about now?

Nope, still none.

How about now?

Dude... This is Kubernetes. I'll tell you when I get one.

OK, thanks!

OK, just got a cat, it's here:

Thanks, I'll do some cat stuff with it.

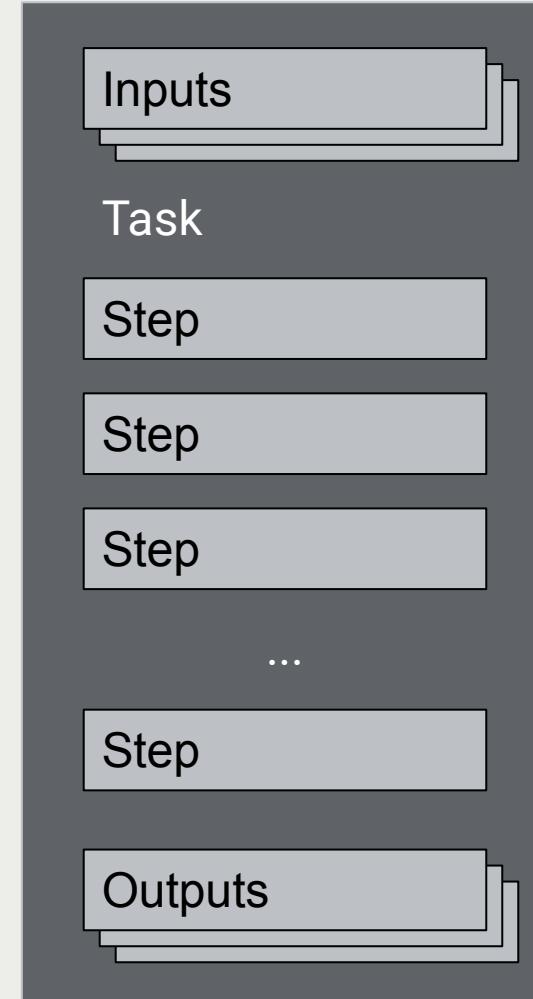
You do you.



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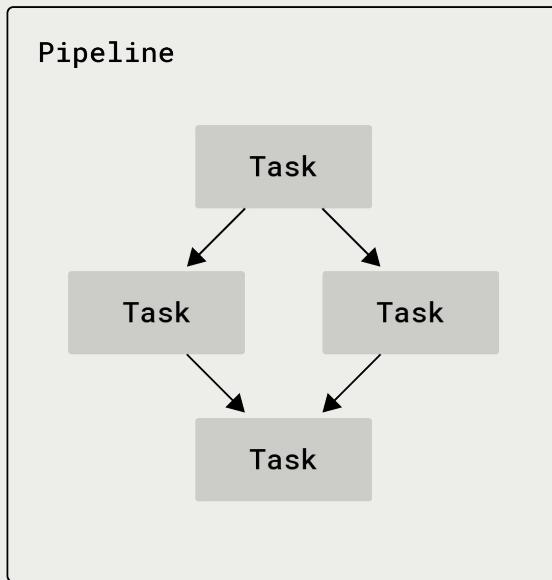
Tekton Task CRD

- Sequence of steps
 - Run in sequential order
 - Run on the same k8s node
- Typed inputs and outputs

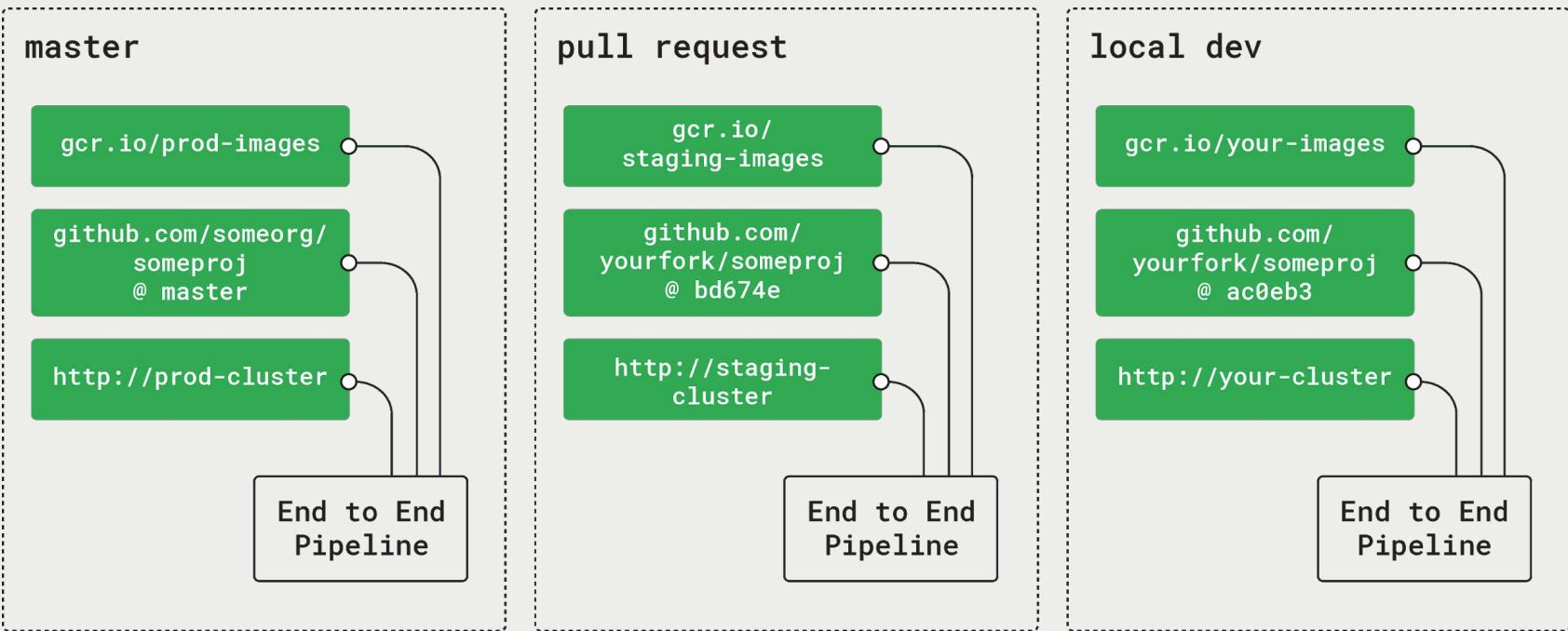


Tekton Pipeline CRD

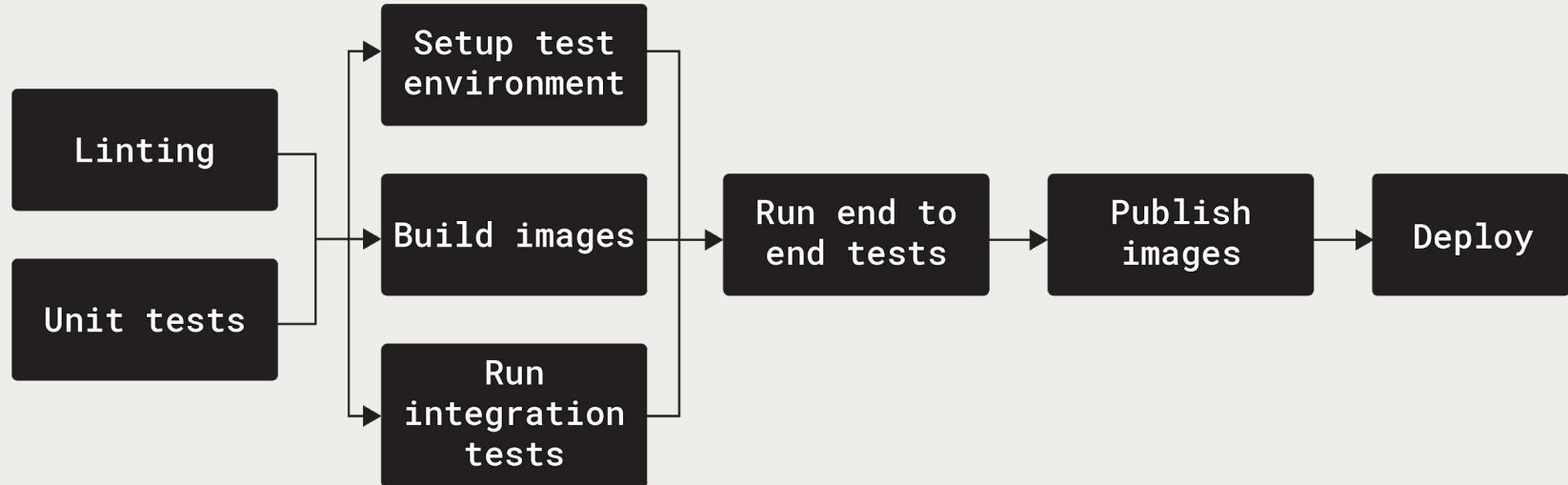
- Language for describing abstract delivery processes
- Defined as graph of tasks
 - Sequentially/Concurrently
- Execute Tasks across cluster
- Type-safe inputs and outputs



Tekton Pipelines: usage



Tekton Pipelines: example



Tekton: Who

- Contributors from:
 - Google
 - CloudBees
 - Red Hat
 - IBM
 - ... and more!
- New contributor friendly!
- github.com/tektoncd





CD.FOUNDATION

A Neutral Home for the Next Generation
of Continuous Delivery Collaboration

Safety, Velocity and Reliability - Pick
Three



Sysdig

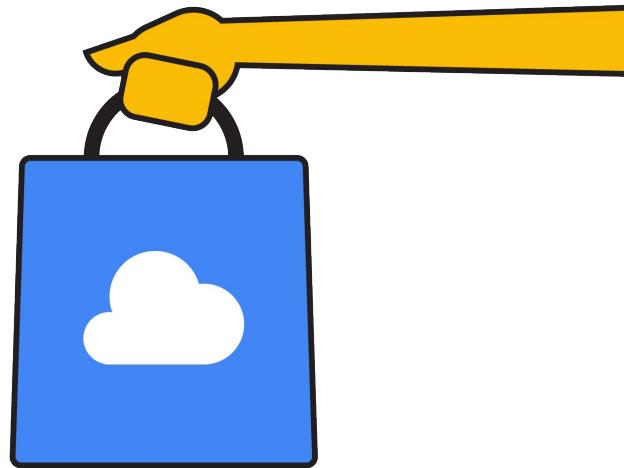


Conclusion

- Paris has a long history with containers!
- Technology is fun and important, but **standards are necessary** to change the world.
- Software security has never been as important as it is today, **we need to take this seriously** as an industry
- Tekton and the CDF are trying to make software delivery **safe, fast and easy**

Questions?

Interested in contributing? Integrating?	CONTRIBUTING guide at github.com/tektoncd/pipeline/
Vendor? End User Company?	http://cd.foundation github.com/cdfoundation
My Contact Info	dlorenc@google.com github.com/dlorenc twitter.com/lorenc_dan



Roadmap

- CDF
 - KubeCon Barcelona summit on May 20
 - KubeCon Shanghai summit in June
 - Industry standard CICD "levels" for security and compliance
- Tekton
 - Shared Catalog!
 - More features in Pipelines:
 - Event triggering
 - Conditional execution
 - PullRequest/SCM support
 - And more!
 - More projects, with Pipelines at the core!

