



The Distributed System Toolkit

Composite Containers for Modular Architectures

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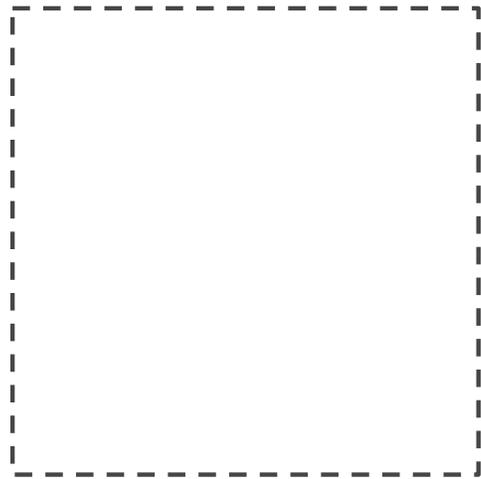


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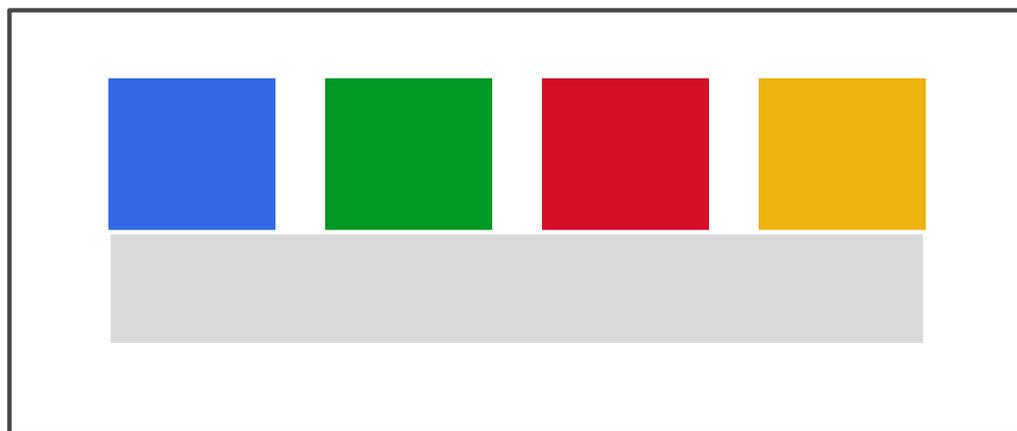
Modular Container Design



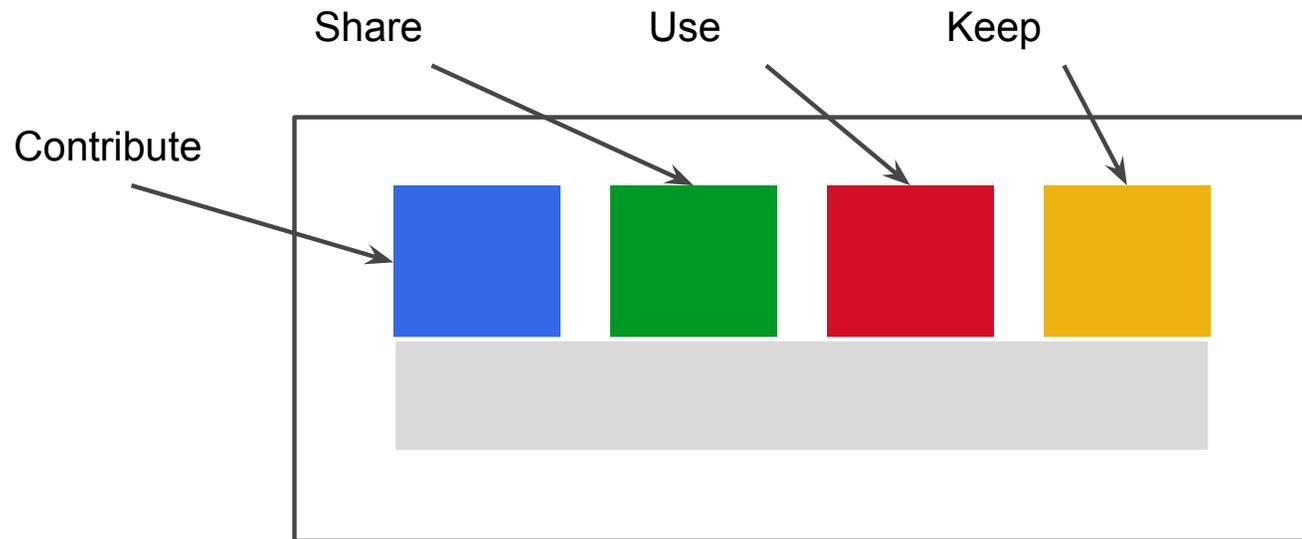
“Good fences make good neighbors” - Robert Frost



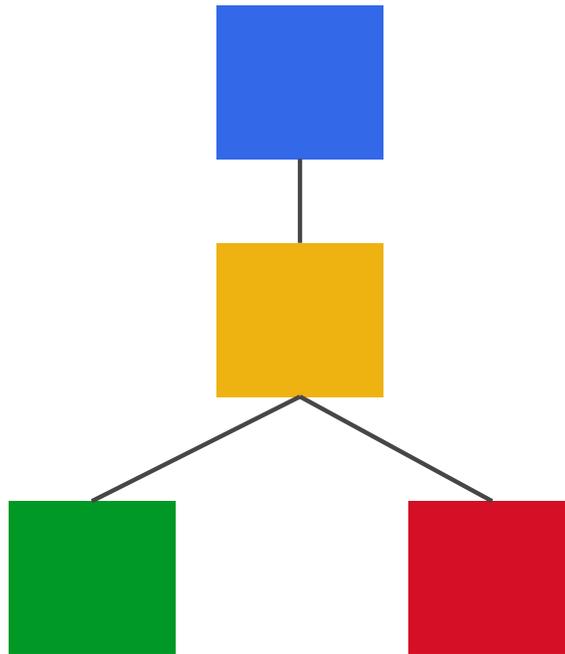
A Quick Look @ Your Code



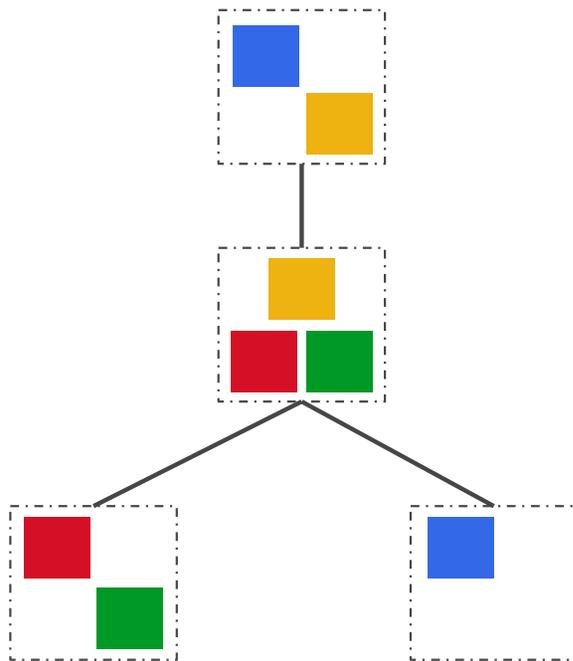
& Your Code Community



Quick Look @ Your Cluster



Your Next App. Design



Don't think of a container as the boundary of your application

A container is more like a class in an object oriented language.



Benefits...



Build applications more quickly

- Re-use existing containers in more places
- Build things that are easy to use
- Container boundaries are natural boundaries for teams



Benefits...



Build applications more reliably

- Leverage expert knowledge everywhere
- Only make mistakes once
- Only update the bits that need updating



Modular Container Design



- Separate concerns (e.g. “webserver”, “git syncher”)
- Build consistent experiences
- Avoid NIH



Requirements...



Sharing between containers

- Share namespaces (esp. PID, Network and IPC)
- Share filesystems



Requirements...



Co-scheduling of containers

- Composition requires co-location



Requirements...



Parameterization of containers

- Configurable at runtime
- Documented and discoverable



Patterns...

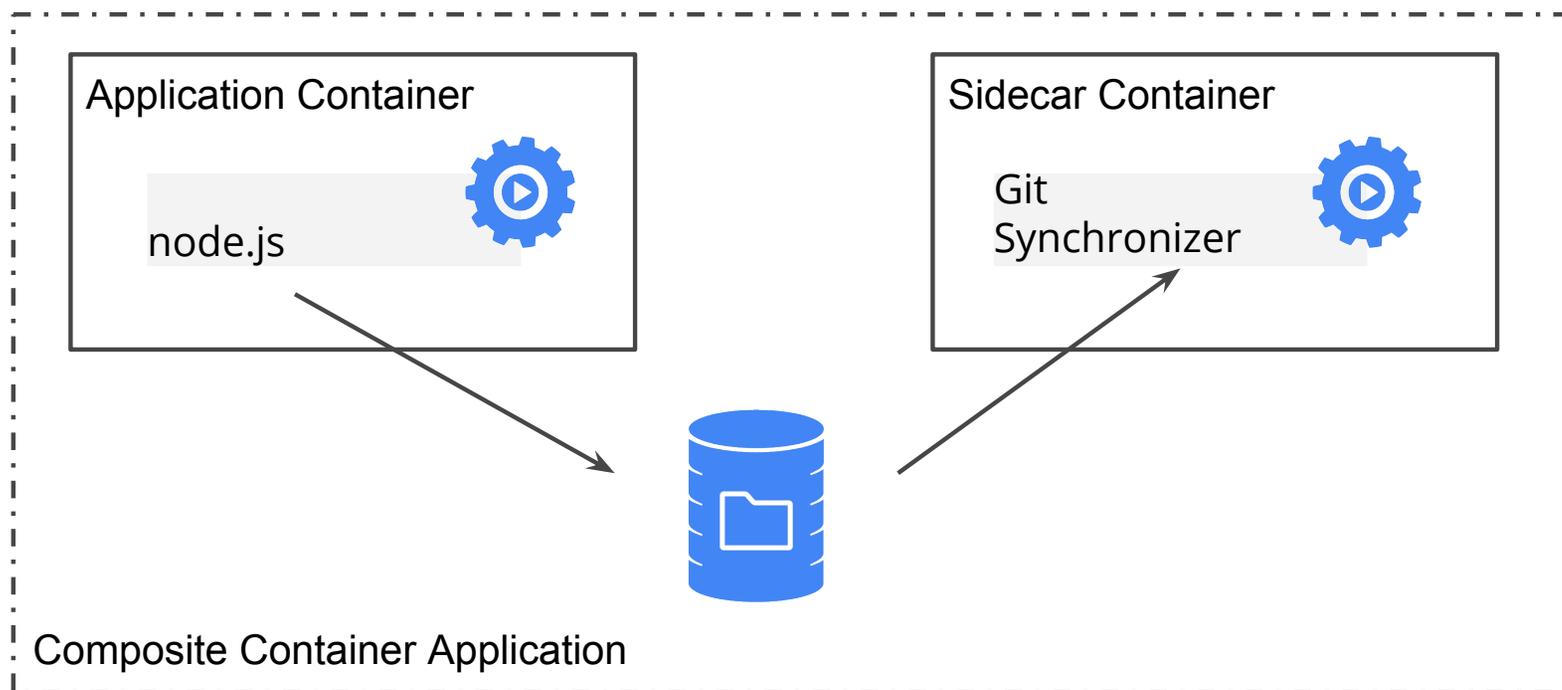


- Don't design in a vacuum!
- Don't think that you are special!
- Do share best practices and ideas!



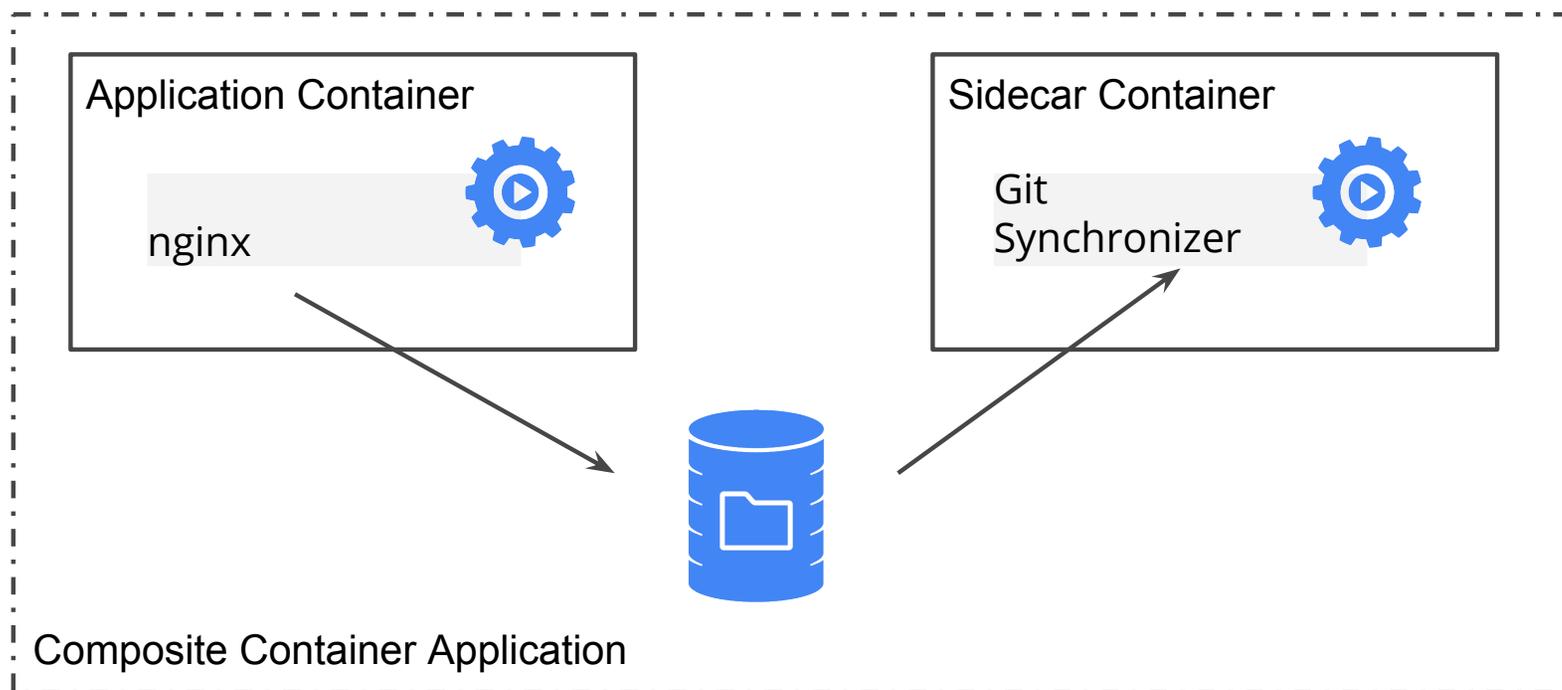
Sidecars

Sidecars extend and enhance



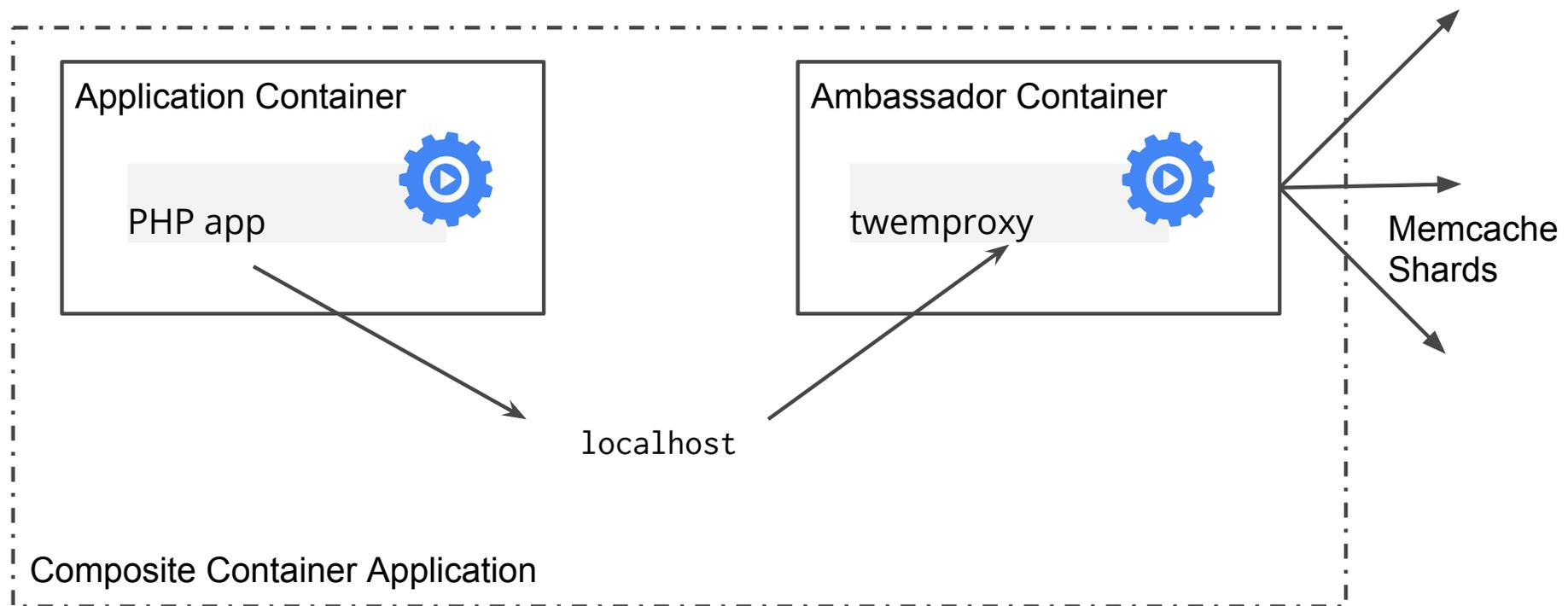
Sidecar Pattern

Sidecars extend and enhance



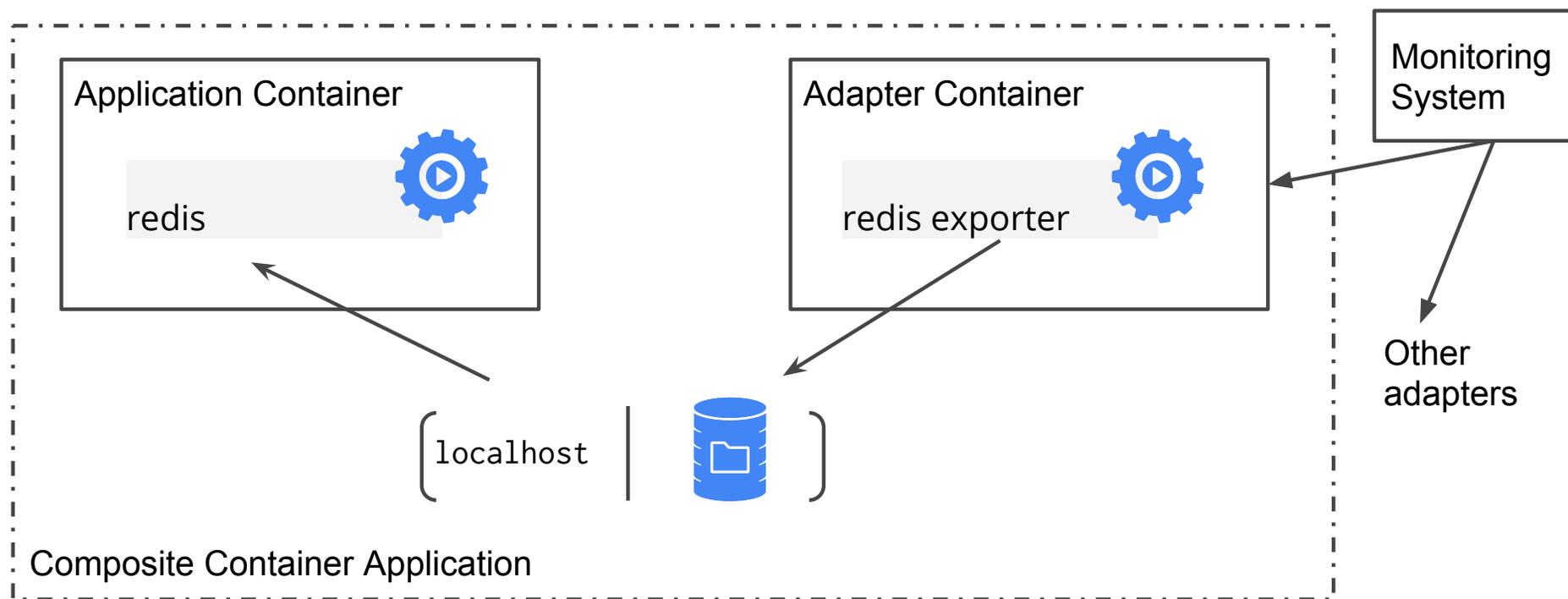
Ambassador Pattern

Ambassadors represent and present



Adapter Pattern

Adapters normalize and abstract



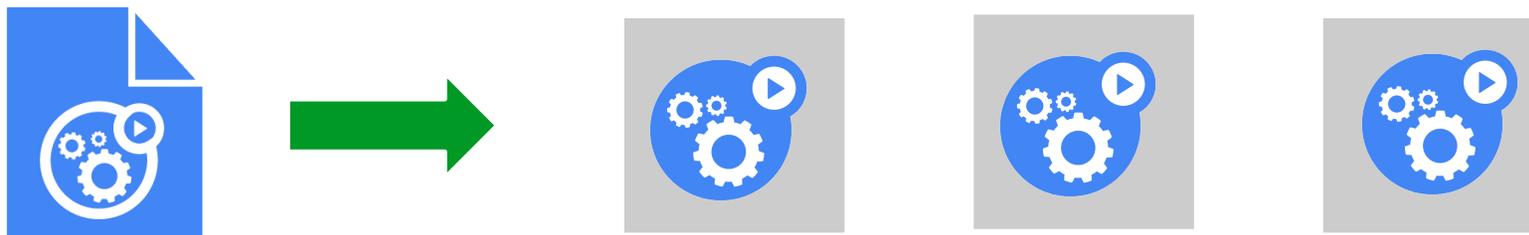
Demo



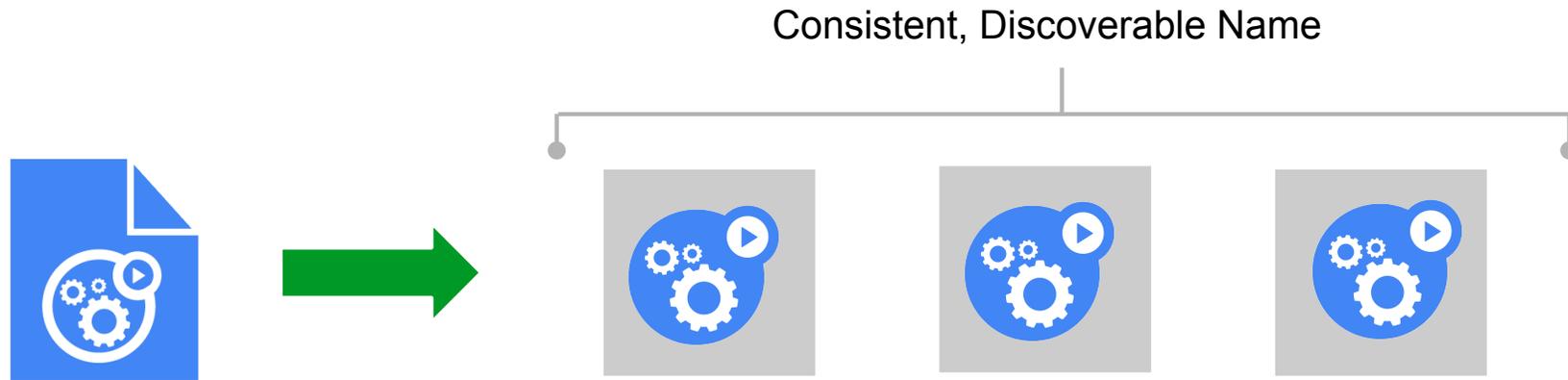
From Legos to Starships



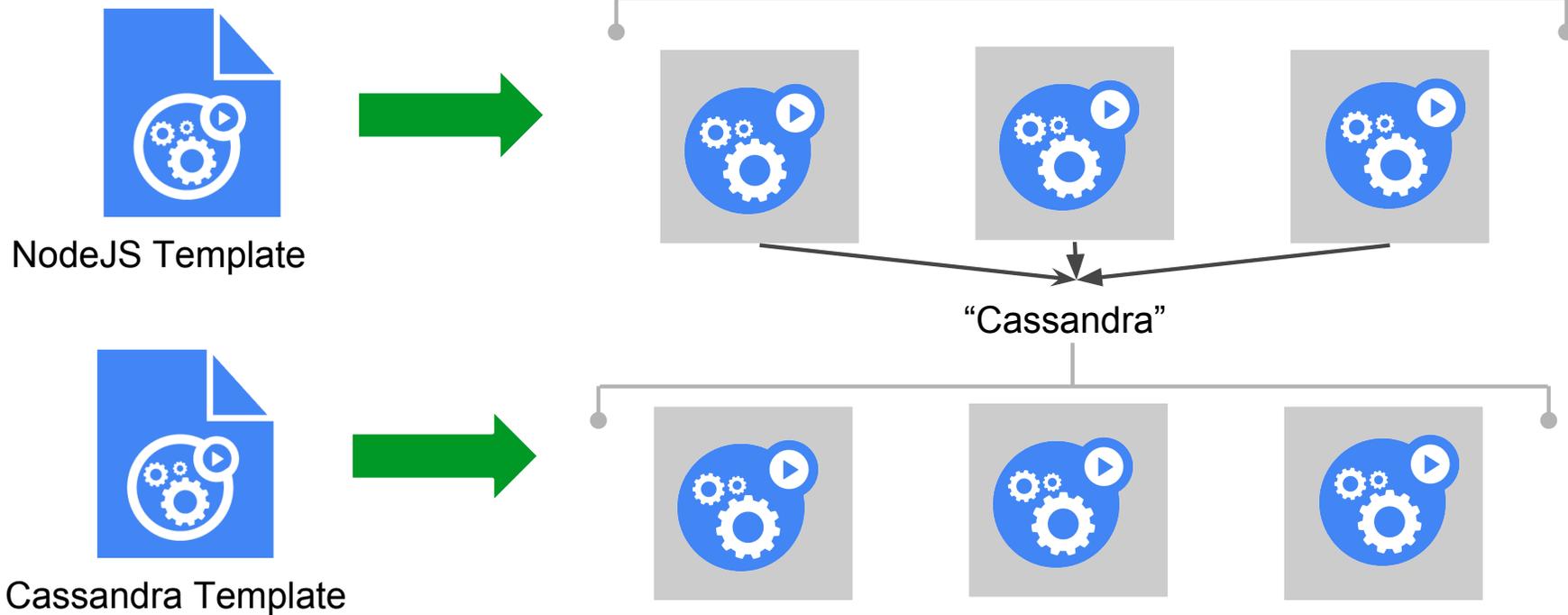
Replication



Micro-Service Load Balancer



Complete Application

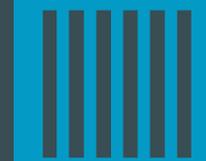




Thank you

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github.com/GoogleCloudPlatform/kubernetes



dockercon

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