

Adventures in Stateful Applications on Kubernetes



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Cloud Native Citizens



THE TWELVE FACTORS

I. Codebase

One codebase tracked in revision control, many deploys

II. Dependencies

Explicitly declare and isolate dependencies

III. Config

Store config in the environment

IV. Backing services

Treat backing services as attached resources

V. Build, release, run

Strictly separate build and run stages

VI. Processes

Execute the app as one or more stateless processes

VII. Port binding

Export services via port binding

VIII. Concurrency

Scale out via the process model

IX. Disposability

Maximize robustness with fast startup and graceful shutdown

X. Dev/prod parity

Keep development, staging, and production as similar as possible

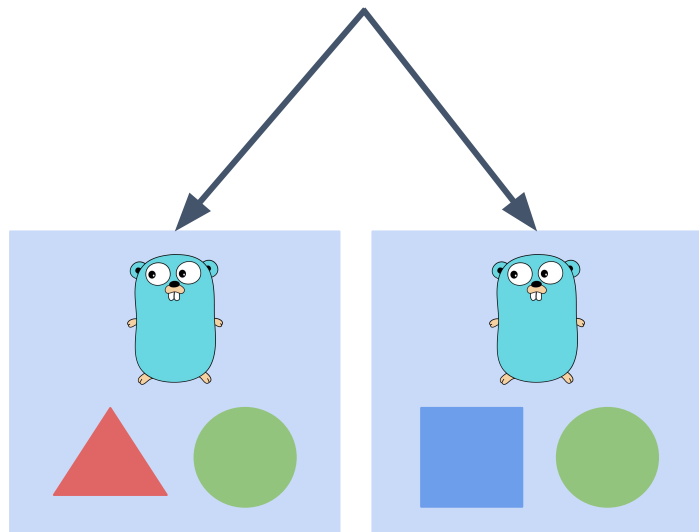
XI. Logs

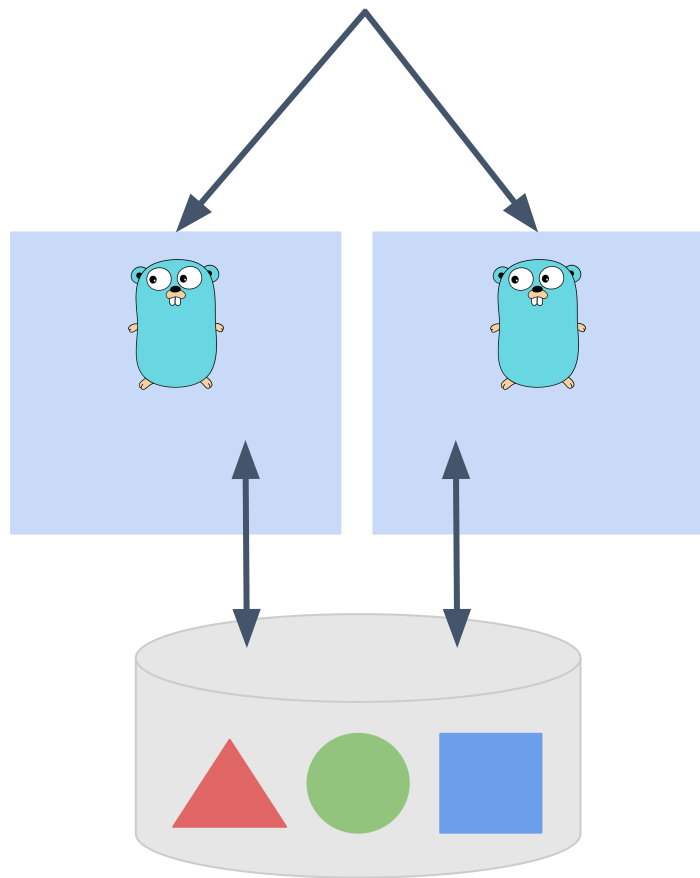
Treat logs as event streams

XII. Admin processes

Run admin/management tasks as one-off processes







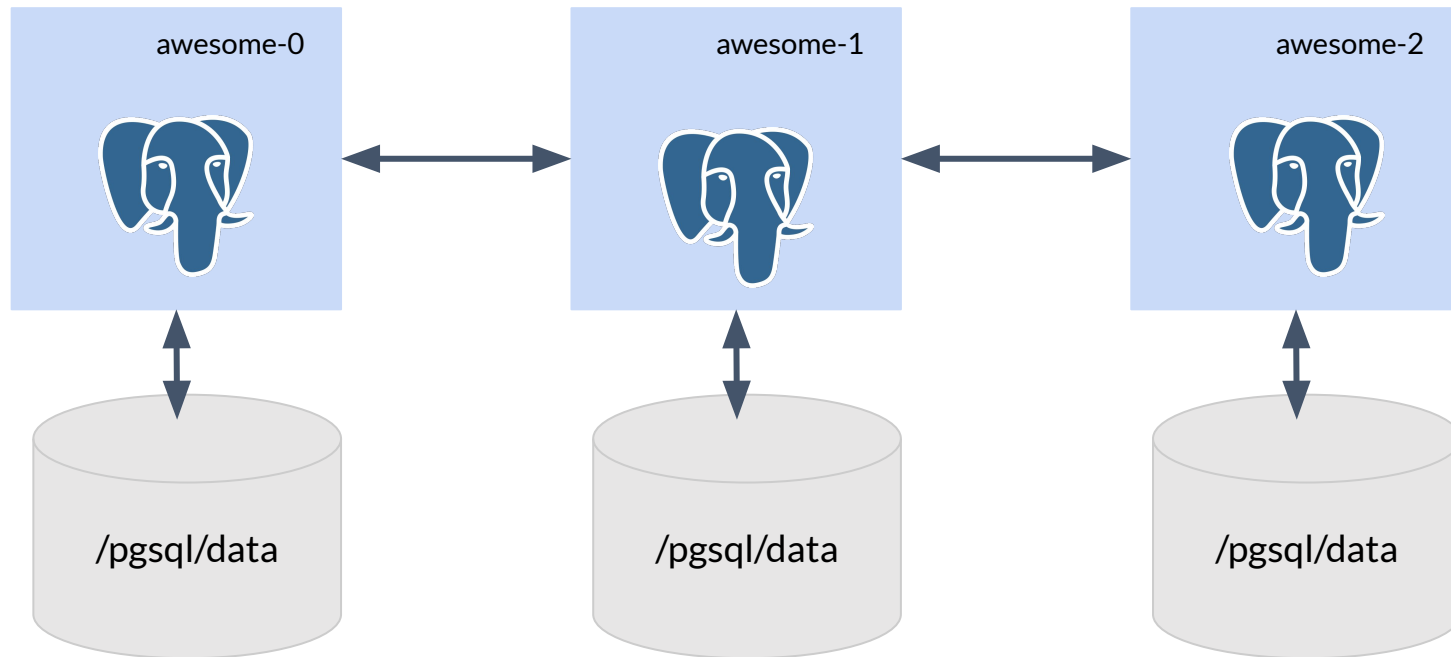
Persistent Data



awesome-0.awesome.example.svc.cluster.local

awesome-1.awesome.example.svc.cluster.local

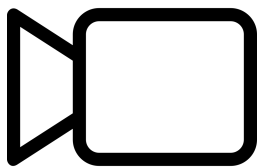
awesome-2.awesome.example.svc.cluster.local



Demo



Stateful Computations



105

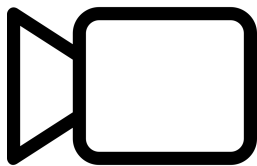
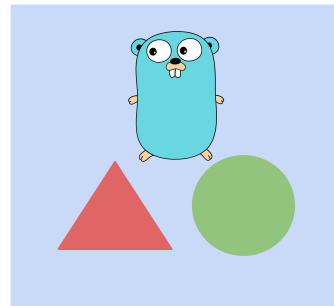
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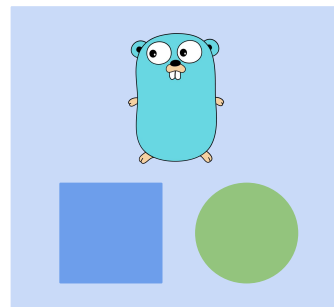
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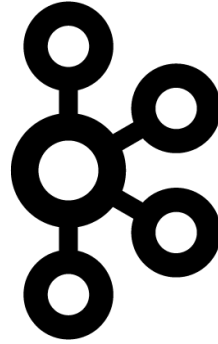
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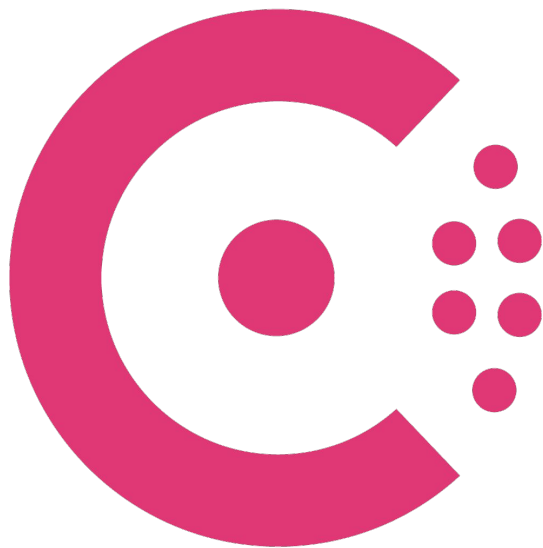
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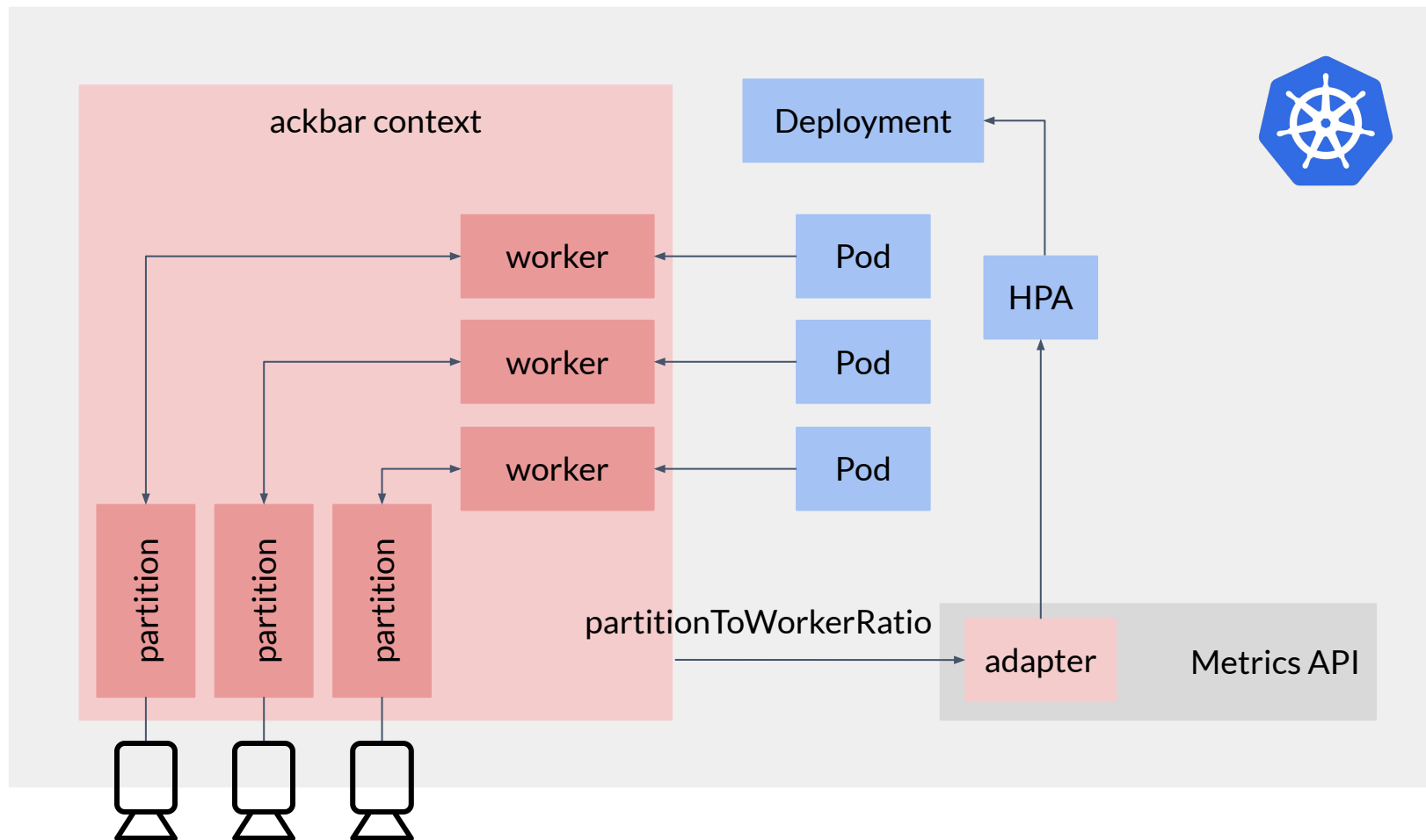






<https://github.com/bespinian/ackbar>





Demo

<https://www.menti.com/al1an7bdbfrj>



Thanks!

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