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Your Philips Hue Light Bulbs Are Turned On By Kubernetes

Mark van Straten, Q42



PHILIPS

I WANT / JE VEUX

hue

PERSONAL WIRELESS LIGHTING

Available on the
App Store





hue
PERSONAL WIRELESS LIGHTING

PHILIPS



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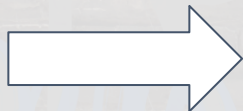
GRPC



2012



GAE



2014



GAE flex



2016



GKE



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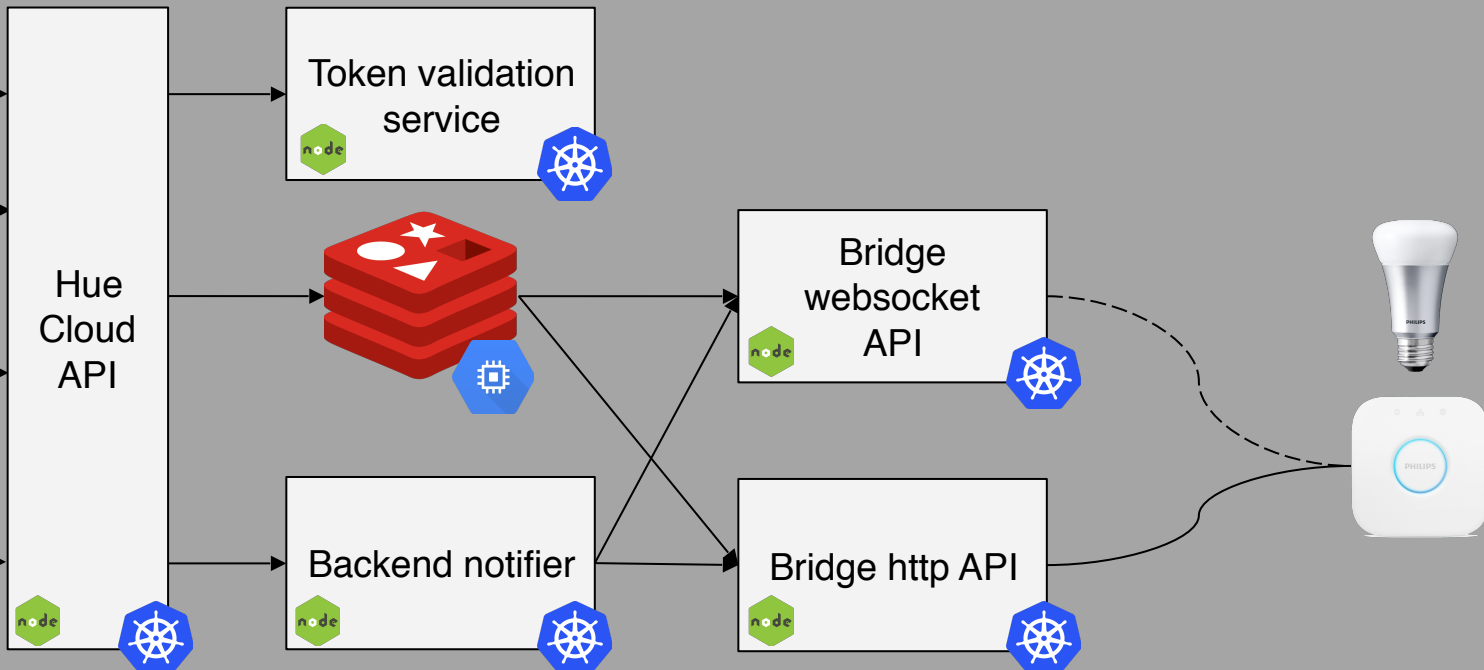


GRPC



IFTTT

amazon echo





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1 cluster 10 services
40 nodes 120 pods



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5 Developers



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Lessons Learned



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**Use circuit breakers to
prevent errors from
influencing your node**





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Google manages our nodes **BUT:** how to modify settings?

(<https://github.com/Q42Philips/king-kong>)



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+GRPC



Scaling long living idle websocket connections

(<https://goo.gl/uZJIjs>)



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1. Get replicas
2. Fetch metrics
3. Predict replicas
4. Scale



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Operations

- DevOps culture
- Measure everything
- Datadog alerting
- Kubernetes tooling





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Application Logging

- Emit metrics instead
- Only log what matters (warn/error)
- Use structured JSON logging
- Ours end up in BigQuery



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Things we are looking into

- Cluster federation
- Stateful set + PersistentVolumeClaim
- GKE node auto-upgrade
- DisruptionBudget



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Takeaways

- Microservices
- DevOps
- Extensibility
- K8s releases ... 



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Great monitoring is paramount



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Have a great KubeCon!

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