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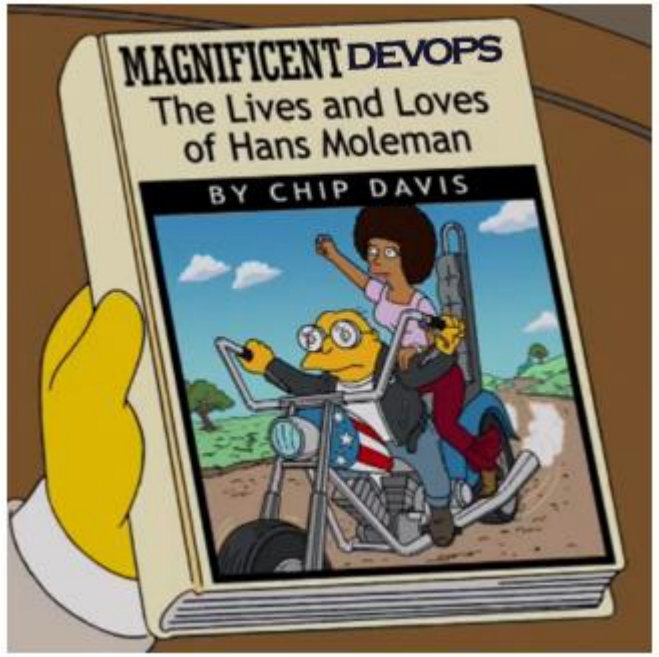
The life and times of a DevOps engineer

George Coldstream



Out on the high seas

So many nautical technologies

- Kubernetes service deployments
  - Harbor HA deployed via Helm and ArgoCD
  - Migration plan in preparation for a change Control to replace current prod Harbor.

- Kubernetes security
  - Secrets and Cert-Manager TLS
  - Cilium (network policies and kernel level monitoring)

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ArgoCD

- Kubernetes controller to deploy, update, and monitor applications and services on a cluster/s
- App of apps based deployments allowing you to deploy all required apps and services in one go

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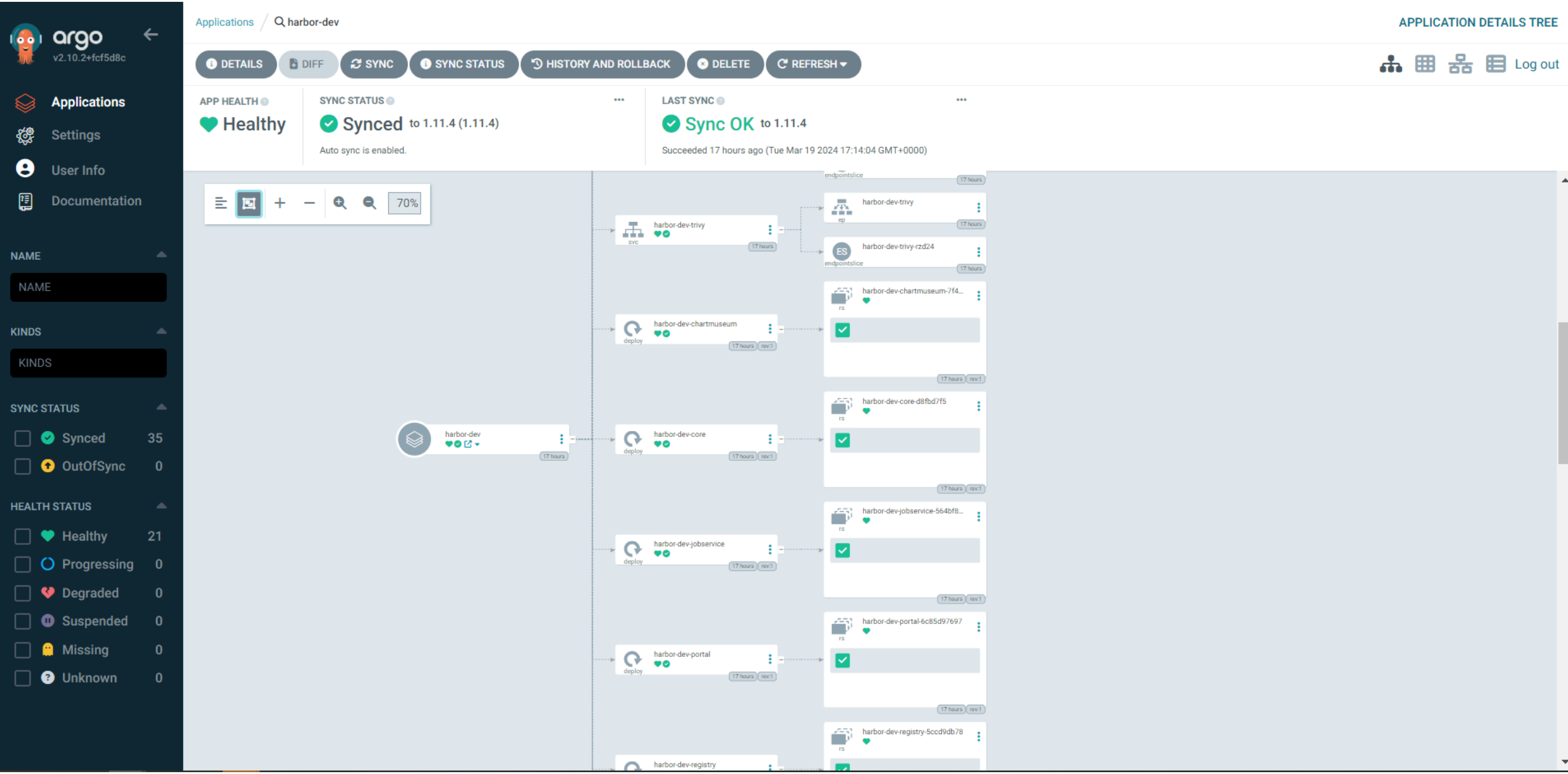

argo
v2.10.2+fcf5d8c
Applications
Settings
User Info
Documentation
NAME
NAME
KINDS
KINDS
SYNC STATUS
Synced 35
OutOfSync 0
HEALTH STATUS
Healthy 21
Progressing 0
Degraded 0
Suspended 0
Missing 0
Unknown 0
Applications
harbor-dev
APPLICATION DETAILS TREE
DETAILS
DIFF
SYNC
SYNC STATUS
HISTORY AND ROLLBACK
DELETE
REFRESH
Log out
APP HEALTH
Healthy
SYNC STATUS
Synced to 1.11.4 (1.11.4)
Auto sync is enabled.
LAST SYNC
Sync OK to 1.11.4
Succeeded 17 hours ago (Tue Mar 19 2024 17:14:04 GMT+0000)
70%
harbor-dev
harbor-dev-trivy
harbor-dev-chartmuseum
harbor-dev-core
harbor-dev-jobservice
harbor-dev-portal
harbor-dev-registry
harbor-dev-trivy-rzd24
harbor-dev-chartmuseum-7f4...
harbor-dev-core-d8fbd7f5
harbor-dev-jobservice-564bf8...
harbor-dev-portal-6c85d97697
harbor-dev-registry-5ccd9db78

High availability for Harbor

- Improved horizontal scaling, redundancy, and speed!
- Using Ceph backed OpenStack ‘S3’ object storage.
- Migration plan to move production Harbor from 2.5.2 -> HA 2.5.2 -> HA 2.7.4 (latest version that retains Chartmuseum before its deprecated in 2.8.0)

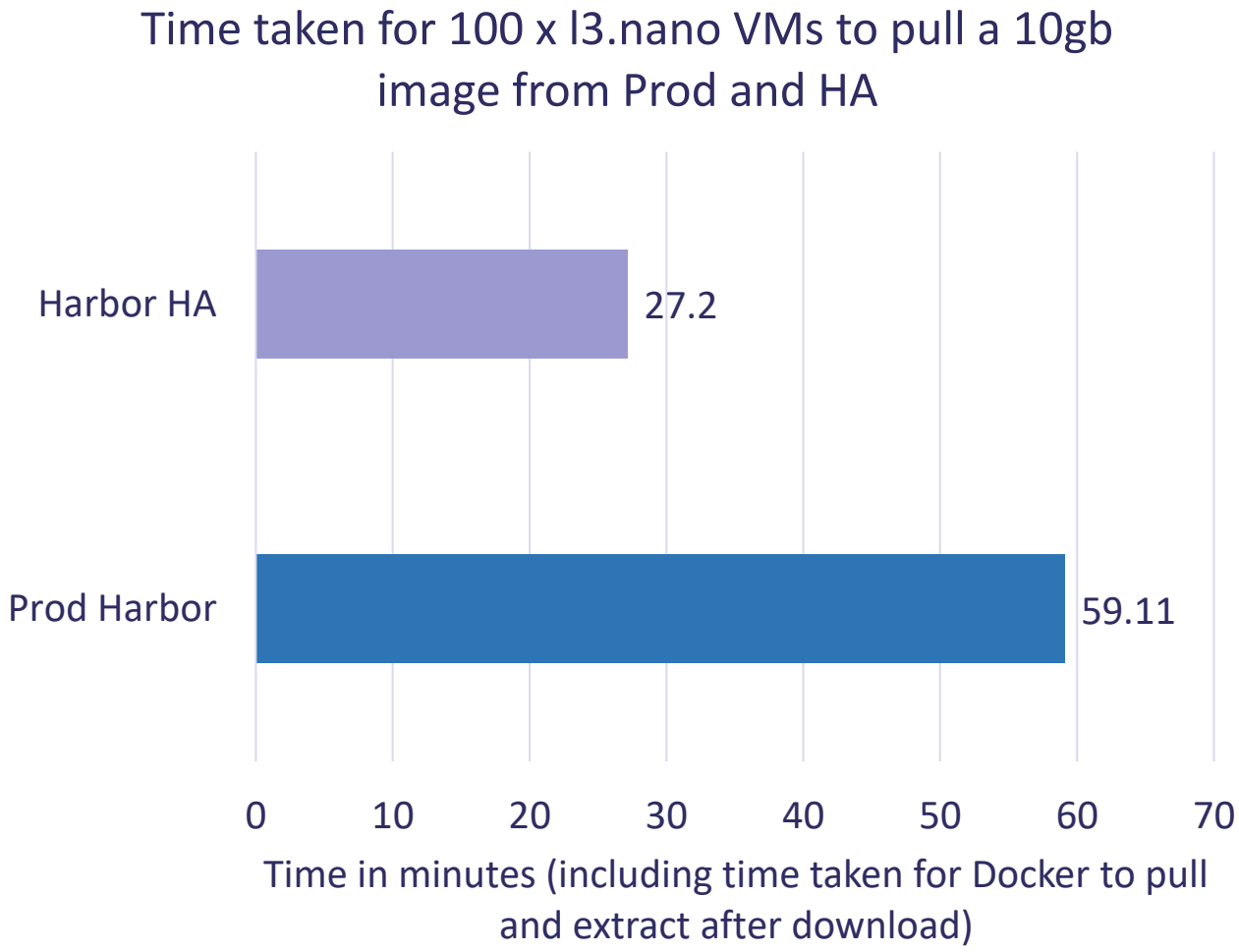
https://stfc.atlassian.net/wiki/spaces/CLOUDKB/pages/377421872/S3+On+OpenStack

Harbor HA benchmarks

Harbor HA running on Kubernetes cluster (3 x l3.nano control nodes 2 x l3.nano worker nodes), S3(Swift) backed storage.

Prod Harbor 8 cores, 128gb ram, 48tb storage.

GitHub: https://github.com/stfc/cloud-deployed-apps/tree/harbor



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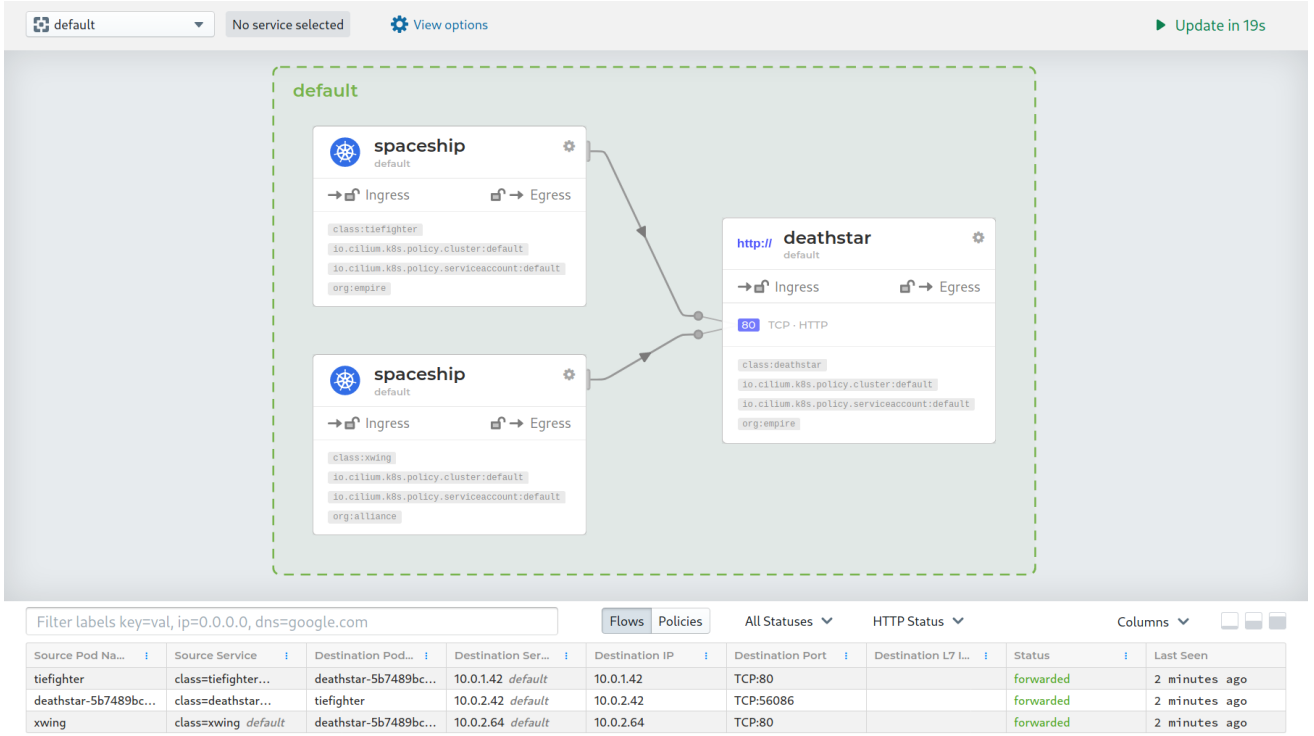
Cilium + Hubble

- Cilium is a high performance cloud native networking (CNI), built upon eBPF to provide, secure, and observe network connectivity between Kubernetes workloads.



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Switch stacking in the management layer (with Martin Summers)

- Stacking Dell s3048-ON switches **would of** provided improved redundancy, expandability, and simplicity in the management layer. Allowing up to 6 switches to be managed as one, especially cool if config mgmt driven with Ansible!
- **But…** Dell as of OS10 has dropped support for stacking completely : (

Read more: https://stfc.atlassian.net/wiki/spaces/SC/pages/337510448/Dell+OS+10+-+VLT+and+removed+support+for+switch+stacks

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Thank you!
Any questions?

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