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Intro to Longhorn

Open Source Cloud-Native Distributed Block Storage Built On and For K8s

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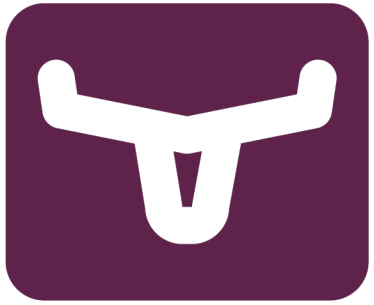


LONGHORN

Open Source
Distributed Block Storage Software
For Kubernetes
https://longhorn.io/

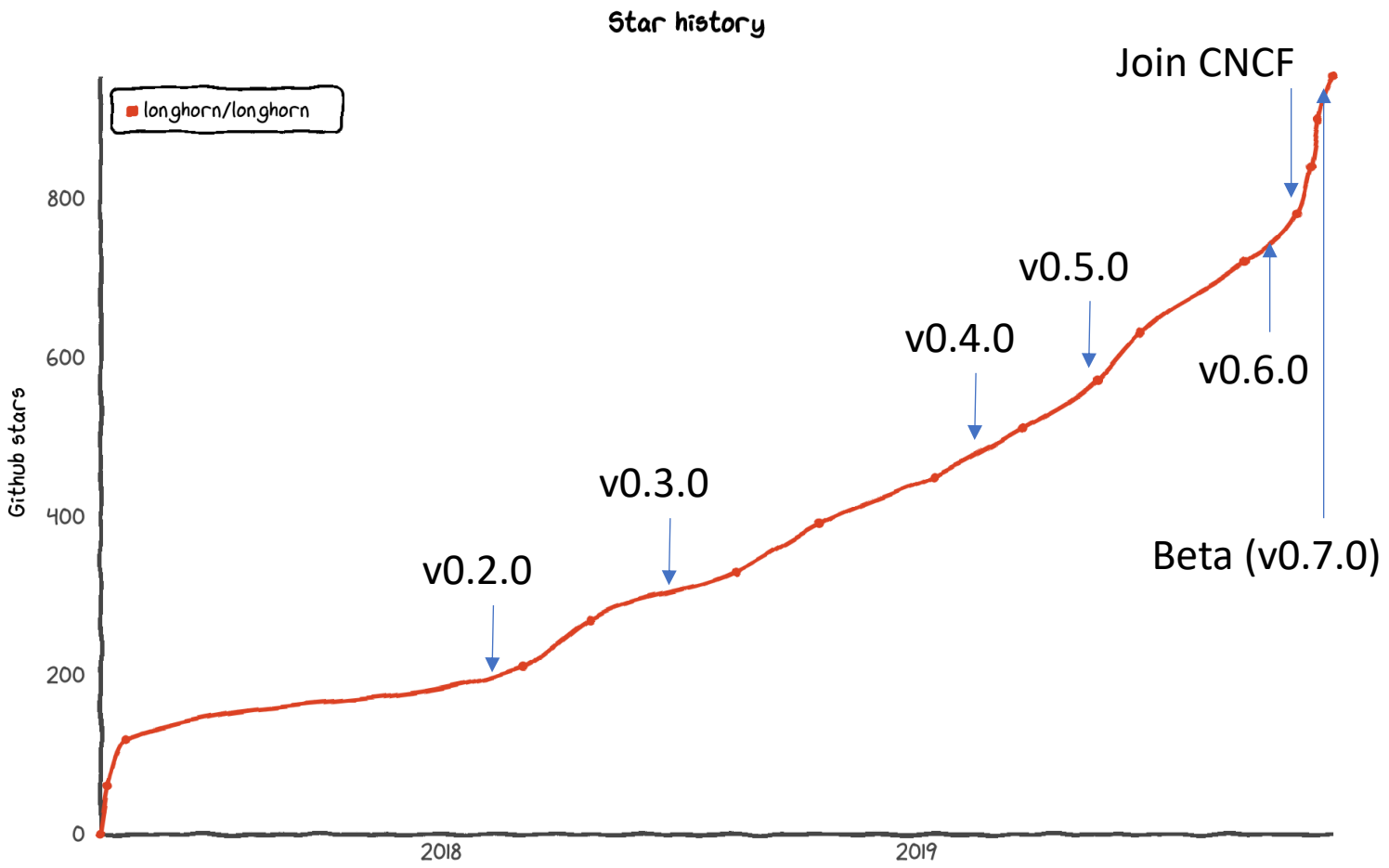
One click to add persistent storage support to any Kubernetes cluster

Compare Longhorn to legacy storage software

Legacy Storage Software	Longhorn
Implements sophisticated storage stack that includes disk management, storage virtualization, file systems and storage protocols	Leverages modern high-speed, high-capacity SSD/NVMe and proven Linux storage features
HA storage controllers that handle very high IOPS and throughput across the cluster, could become a bottleneck	Each volume is a set of independent microservices, orchestrated by Kubernetes
Hundreds of thousands lines of code, it's complex	40k lines of Golang code, broken into clean modules

History

- First started in September 2014
- First iteration (2014 – 2016) close source, written in C++
- Second iteration (2016 – 2018) open source, written in Go, build for Docker
- Third iteration (2018 – now) open source, written in Go, build on and for Kubernetes
- 12 formal releases since 2018
- 900+ stars in GitHub now



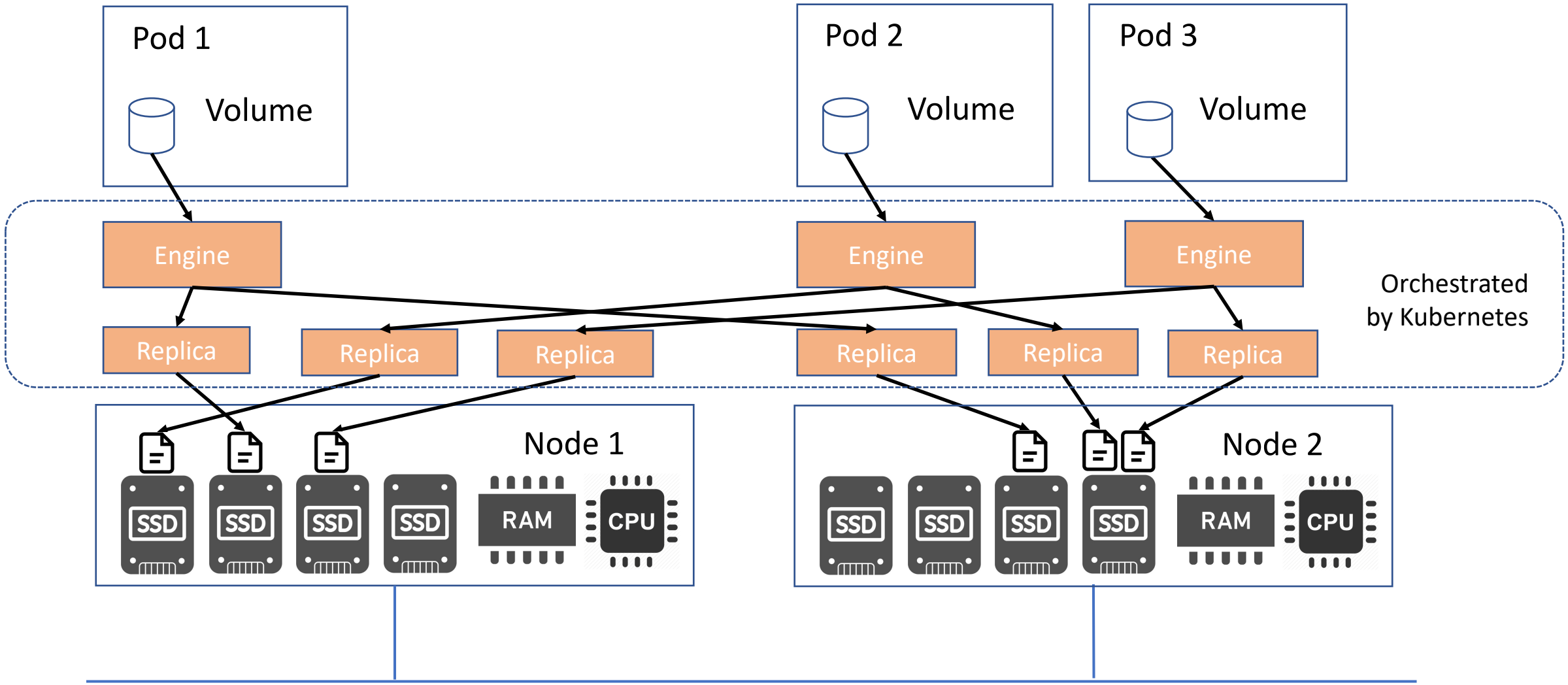
* From: https://star-history.t9t.io/#longhorn/longhorn

Latest release: Longhorn v0.7.0 (Beta)

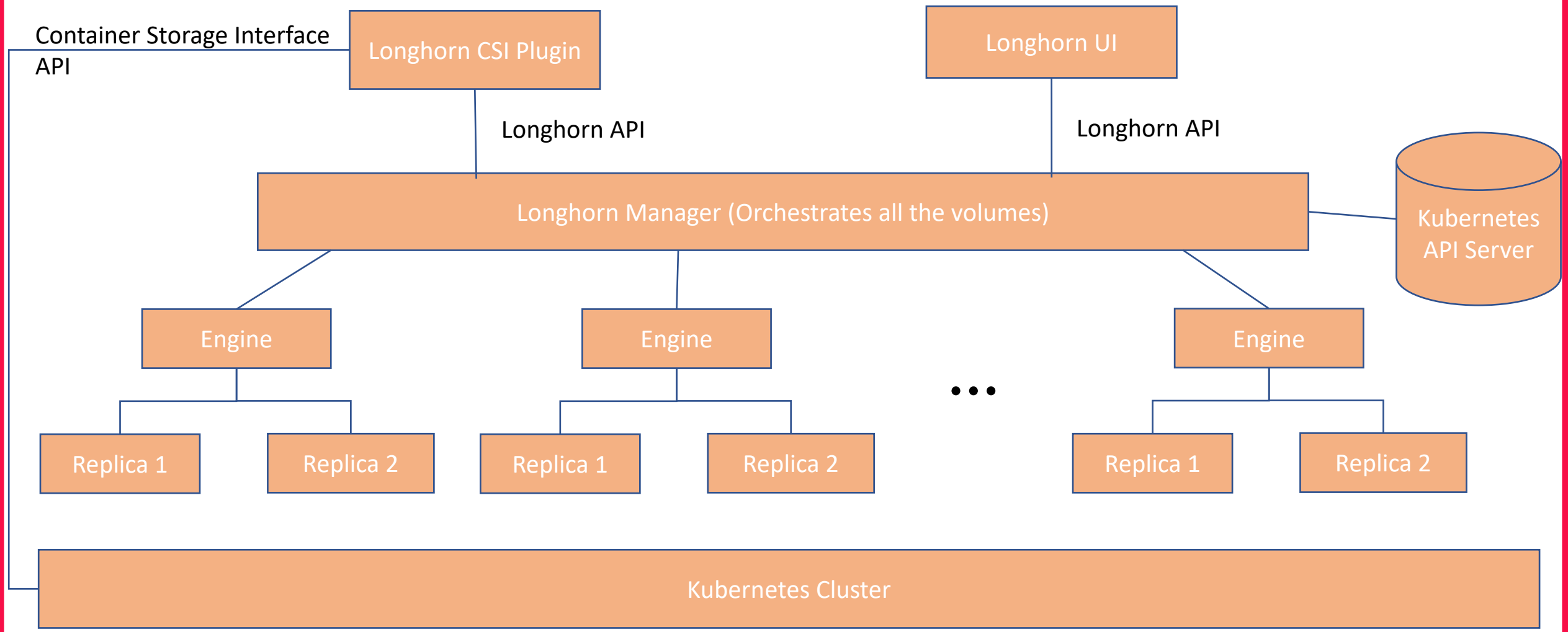
- Enterprise-grade distributed block storage software for Kubernetes
- Volume snapshots
- Volume backup and restore
- Storage Tag for node and disk selection
- Cross-cluster disaster recovery volume with defined RTO and RPO
- Live upgrade of Longhorn software without impacting running volumes
- Intuitive UI
- One click installation
- And more!

Live Demo

Longhorn Architecture - Engine



Longhorn Architecture - Manager



Community

- 900+ GitHub Stars
- Monthly community meeting at 9 am Pacific Time on the second Friday morning
  - See https://github.com/longhorn/community
- 300+ Users in the Slack channels
  - #CNCF/longhorn https://slack.cncf.io/
  - Migrating from #RancherUsers/longhorn-storage
- Contributions are welcome!

Target in 2020

- Reach 1.0 GA
  - Includes features like volume resizing, performance metrics, QoS, et cetera
- Increase community by 10x
  - Includes both user community and developer's community
- Reach incubator level in CNCF

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Q & A

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