# Repair Service with(in) C*.
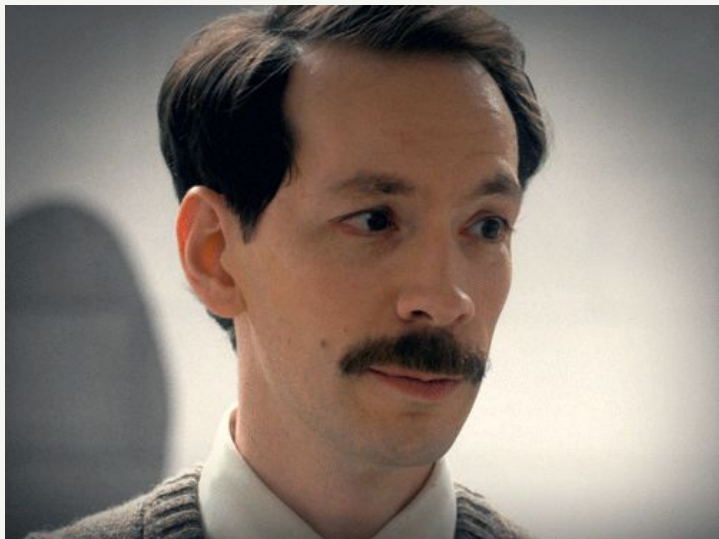
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# Agenda.

- Challenges in keeping the data consistent

- State of Repairs Today

- Ideal world for repair

- Repair Service @ Netflix

- Roadmap

# State of **Repairs in C\*** community these days.

You're very brave.

# Challenges in keeping data consistent.

- Multi region deployments
- PB's of data
- Types of repairs
  - *Incremental repairs?*
  - Subrange repairs
- Low consistency writes on high throughput clusters
- Flaky networks/ flaky hardware

# Today's state of Repairs

- Not easy to setup and orchestrate
    - Reaper(http://cassandra-reaper.io/)
    - Tickler
    - Custom repair orchestration
- Stuck repairs
- Failed repairs
- Long running repairs

# Ideal world for Repairs.

- Easy to setup
  - Something that Cassandra dev/ admin should not worry about
- Natural as part of C* architecture
  - Forget about repair, yet your data is consistent, but tune it if needed
- Does not put too much burden on the system
- Resilient for failures (Hardware, network and data)

# Repair Service @ Netflix

- Decentralized (distributed), self-schedulable, self-healable and self-monitoring service to keep the data consistent across nodes and data centers

- Flaky HW/ flaky network does not impact Repair Service.

- No extra setup needed, Always ON by default, C* tries to keep your data consistent, can be tuned using table properties

- Not to put extra load on C*, yet repair intelligently

- Tune GC_GRACE_SECONDS based on repair durations when needed

- Monitor repair thread pools to avoid stuck repairs

# Future of this project

- Data aware repair / infectious repair

- Adaptive scheduling, load for repair

- Drifted range repairs

- Integrating as part of C* @ Netflix

- As part of Priam(C* sidecar) now, C* would be the ideal home for it

- Similar JIRA - 10070
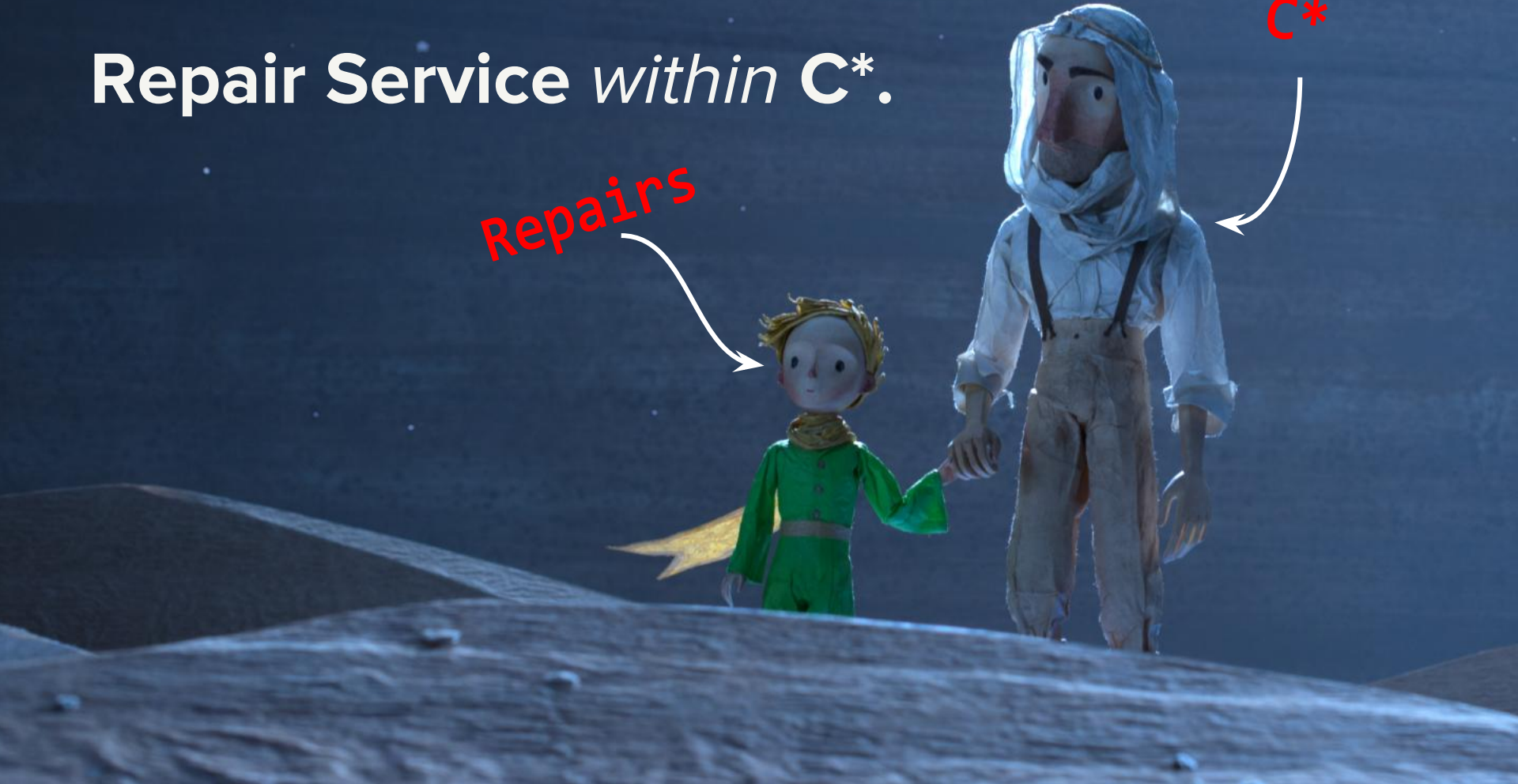
PRIAM

**Repair Service**


cassandra

Repair Service

Repair Service *within* **C\*.**

Repairs

C\*

# Take away

Let's change C* from *hopefully* consistent to *eventually* consistent

Thank you.

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