Kubernetes Conformance - Shanghai (Deep Dive)

Hosted by the CNCF.

Kevin Wang (Huawei), Srinivas R Brahmaroutu (IBM)
Agenda

- Lessons Learned
- Contributing conformance tests
  - Criteria
  - How to contribute conformance tests
Why it takes long time to run conformance tests?

- Can take 1-3 hours to pass (If everything goes fine)

- It takes more time to finish
  - In case of any failure encountered during conformance testing
  - Some tests don’t fail fast
How to run behind GFW, or offline

● VPN
  ○ Setup VPN and add proxy config to docker-daemon

● Or, preload all the images required
Identify areas of coverage
- Pod spec for example
- Write new tests vs promote old tests

Identify API coverage
- Using apisnoop ([https://github.com/cncf/apisnoop](https://github.com/cncf/apisnoop))

Conformance test suite keeps growing on every minor release.
Coverage includes many core features

- Node
- Pod
- Volumes
- Networking
- Kubectl
- Security
- ...

Coverage
Conformance Test

- Write a e2e test/use existing e2e test
  - Merged by the owning SIG
- Check if that test meets conformance criteria
  - Tests GA feature
  - Works for all providers
  - Works for all architecture
  - Does not rely on internet, other special binaries
  - Stable and Consistent
- Submit PR for SIG Architecture approval
Conformance Test Document

Conformance Test
- List of all tests part of each release
- A very high level description of test
- Link to source code
- Versioning information

Conformance document helps
- Coverage
- Basic understanding to help debugging test failures

Example: KubeConformance-1.11
New Conformance areas:

- Pods must behave the same way regardless of how these vary
  - CSI - Container Storage Interface
  - CRI - Container Runtime Interface
  - CNI - Container Networking Interface
Thank You / Q&A

Kubernetes Conformance Program

Guidelines to Conformance Test Development

Kevin Wang
Github: kevin-wangzefeng
Twitter: kevinwzf0126

Srini Brahmaroutu
Github: brahmaroutu
Twitter: brahmaroutu

CNCF Conformance WG
- Mailing List
- Slack: slack.k8s.io #k8s-conformance
- 4th Wednesday of every month at 11 AM PT
- Agenda Doc