

KubeCon | CloudNativeCon

Europe 2020

Virtual

Deep Dive: Harbor - Enterprise Cloud Native Artifact Registry

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Agenda

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- Harbor community updates
- Key deliverables in the latest V2.0
- Features in the next coming release V2.1
  - None-blocking GC
  - Proxy Cache
  - P2P preheat
  - Extended processor for user-defined OCI artifacts
- Our roadmap

Harbor Graduated!

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CONGRATS

CLASS OF 2020

Love, CNCF

HARBOR

Announcement: https://www.cncf.io/announcement/2020/06/23/cloud-native-computing-foundation-announces-harbor-graduation/

Harbor Community is Thriving

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GitHub Stars	Committers
12.3K+	200+

Contributing Companies	Contributors	Forks
50+	3000+	4000+

Commits	GitHub Views/Visitors	Downloads
12K+	60K+/11K+	5K+

14 Maintainers across 5 companies

Harbor Community

data source: https://harbor.devstats.cncf.io/ & https://github.com/goharbor/harbor/graphs/traffic (till 2020/07/15)

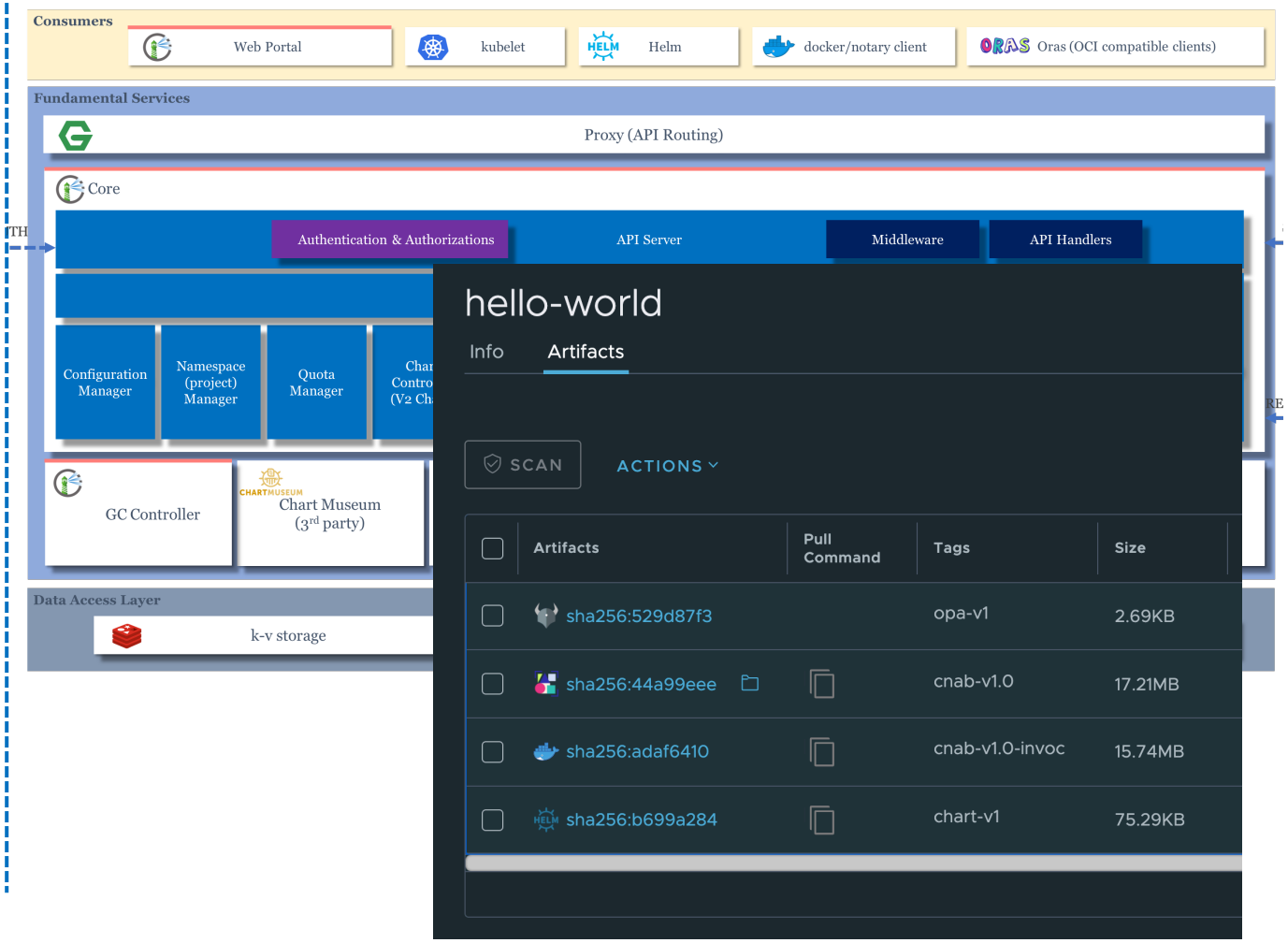
V2.0: Key deliverables

Registry for cloud native artifact:

- Leverage distribution's /v2 API to manage artifacts other than container images (helm charts, OPA bundles, CNAB)
- Aggregated view for different artifacts under a project/repository.
- Consistent management workflow.
- Refined process for managing artifacts' metadata.
- Filled in the gap for manifest list support.

Enhancements:

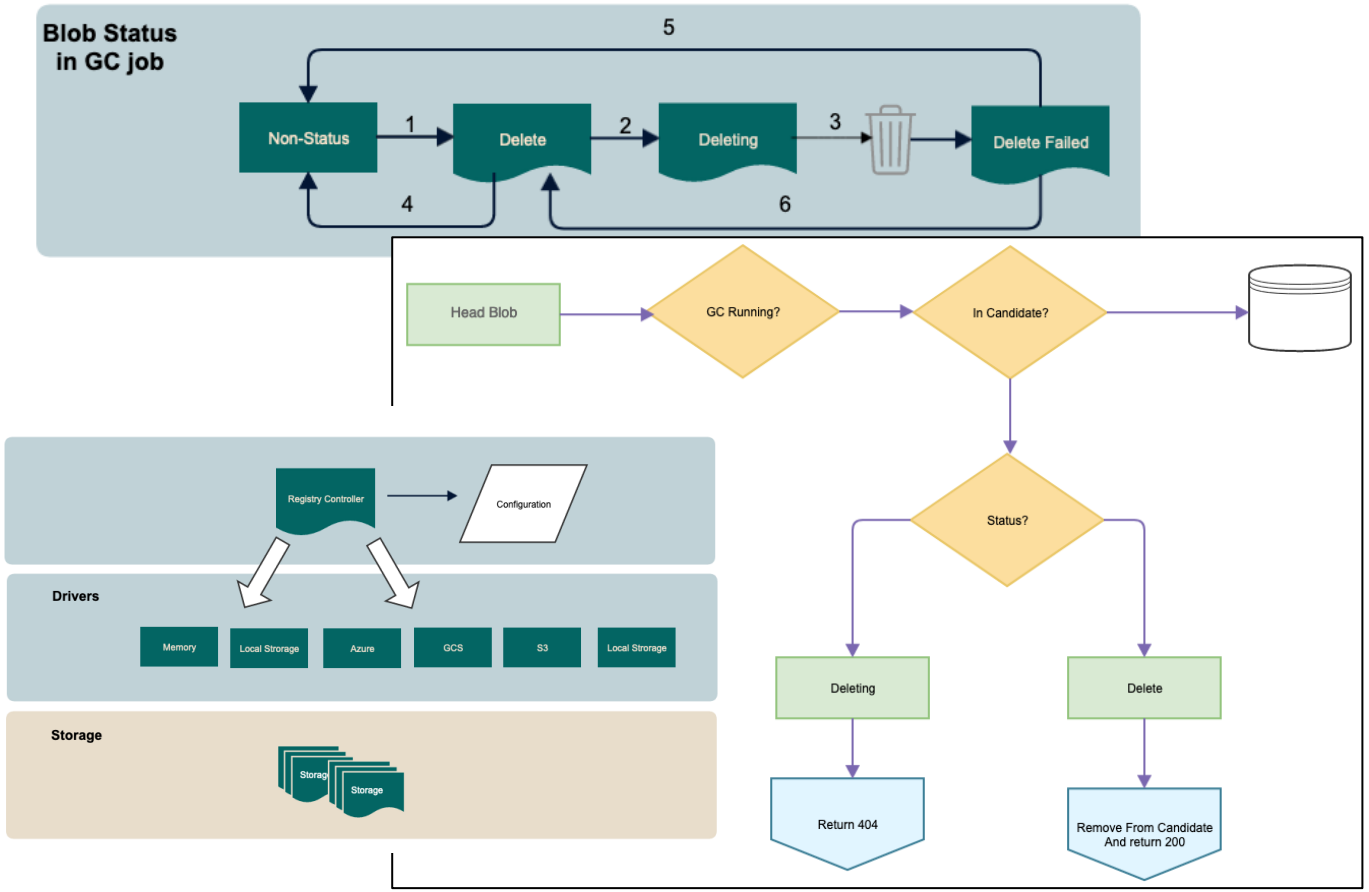
- Trivy is the default scanner
- Enable TLS communication across internal components.
- Individual expiration for robot accounts



V2.1: New Garbage collector

“Non-blocking” Garbage Collector:

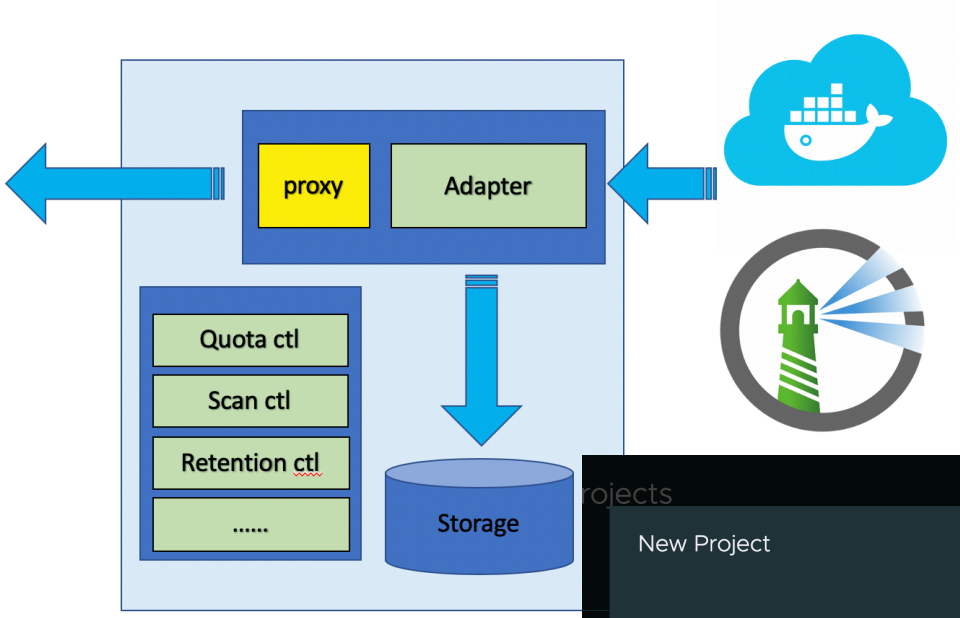
- GC without putting the whole registry to “read-only”.
- GC handler to access storage directly.
- Remove the dependency on distribution binary for deleting blob data.
- ”dry-run” a GC job to estimate the space to be released.
- Workflow to trigger and monitor a GC job remain the same in v2.1
- Merged into master branch

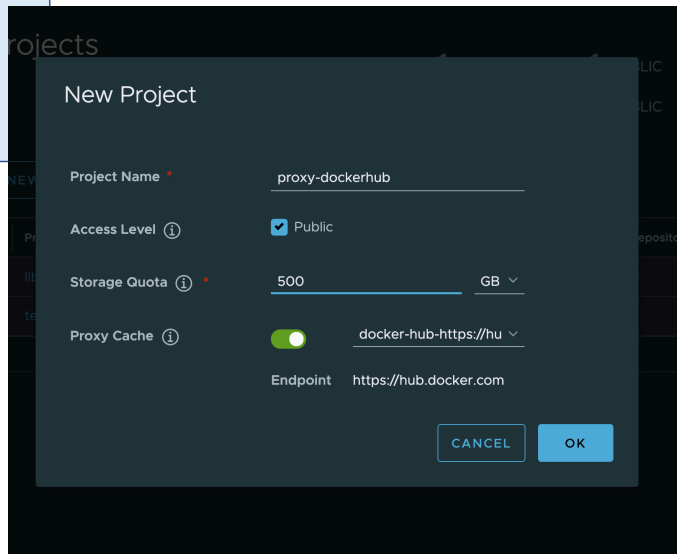


V2.1: Proxy cache project

Proxy cache:

- Provide the “proxy” capability at project level.
- Reuse the adapters created for replication, adding the ”tee” capability.
- Proxied artifacts are considered “local”
- Management policies can be applied to proxied artifacts, incl. quota, scan …
- Merged into master branch





V2.1: P2P Preheat

P2P Preheat:

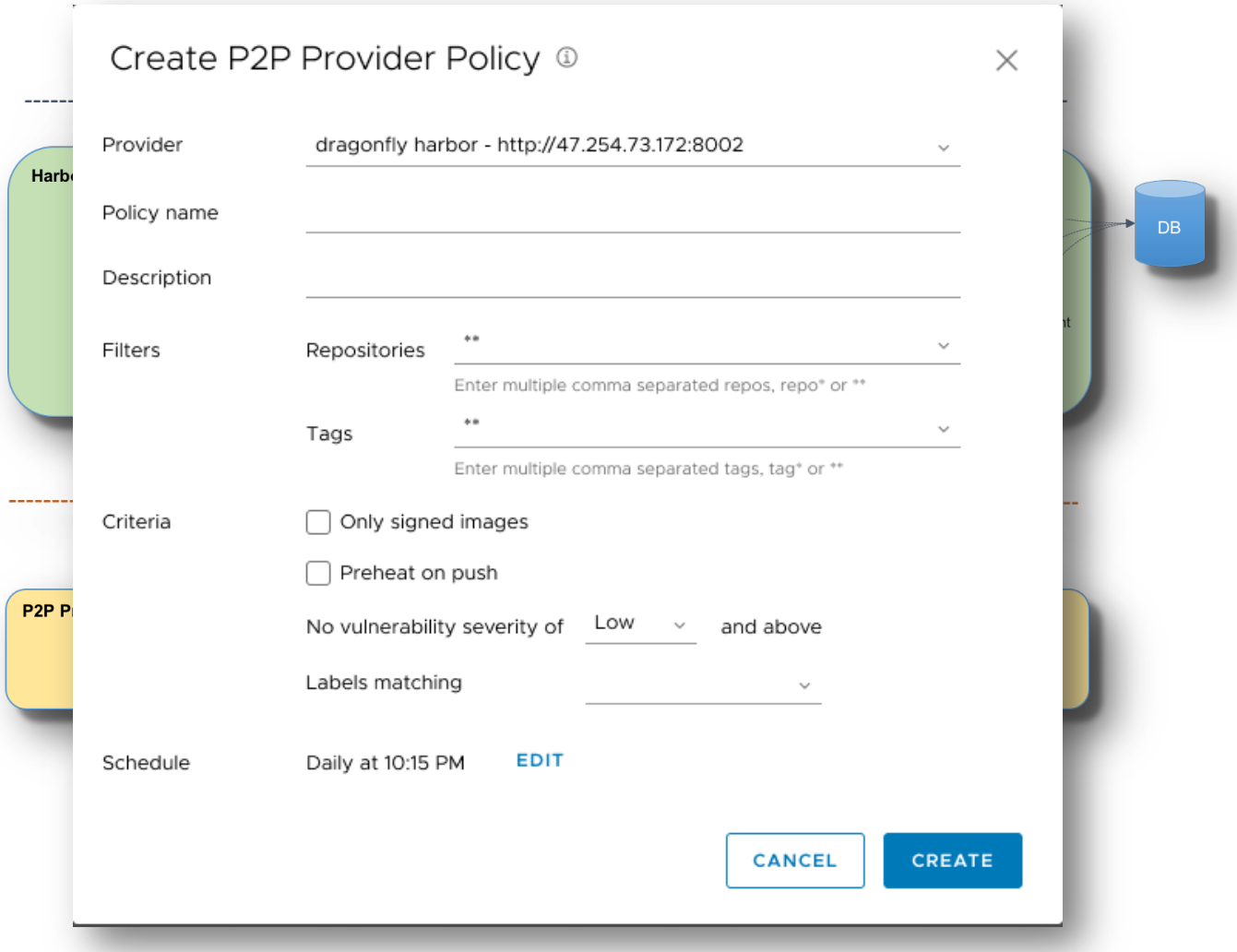
- Define adapter interface to integrate with P2P engines
- Distribute the deploying content to the P2P network(heat the P2P network) in advance
- Policy-based thereby automated
  - Per repos/tags/labels/signatures/vulnerabilities

Engines:

- Dragonfly
- Kraken

Deliver by P2P workgroup

- contributors from VMware, Alauda, Tencent, NetEase, Alibaba and Uber



proposal #142

V2.1: Extended Artifact Processor

OCI artifacts support:

- Harbor supports managing and distributing the artifacts that following the OCI spec from V2.0
- Extra metadata provided by Harbor via the data processors

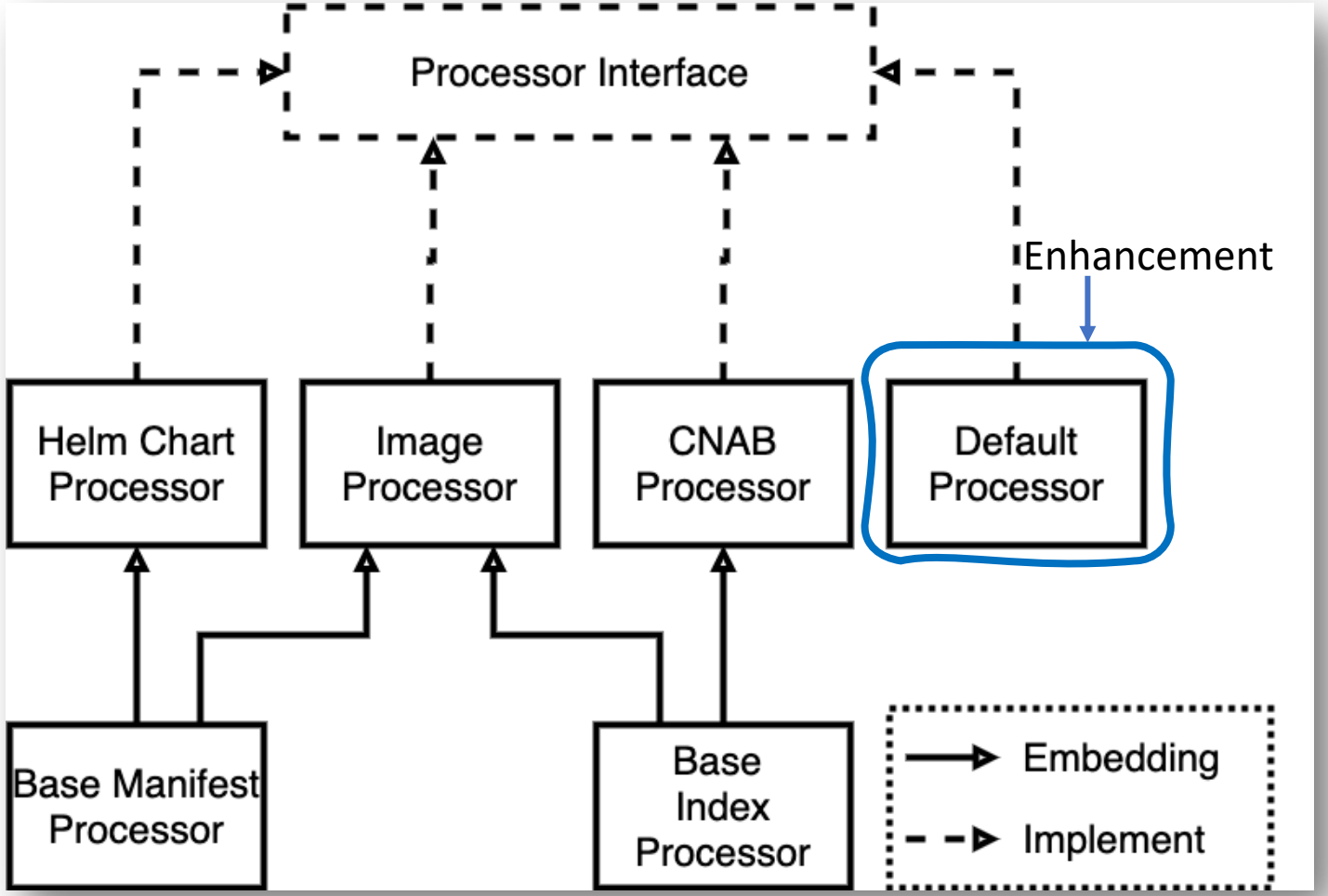
Shortages of current processors:

- Specified processors for the well-known standard artifact kinds (Chart, CNAB etc.)
- No extra metadata provided for the none-standard(user-defined) artifacts by the default processor

Extend the artifact processor:

- Define a simple metadata spec based on the OCI annotations
- Identify and extract the related metadata marked with annotations then returned by API

Deliver by CaiCloud team



proposal #143

Our Roadmap

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1 Management

- Non-blocking GC
- K8s Operator
- Windows Containers
- Observability
- Backup & Restore
- IAM&RBAC

2 Image Distribution

- P2P Distribution
- Proxy Cache
- Networking(IPV6)

3 Extensibility

- User-defined Artifact
- Interrogation Service++(Sisdig)

source: https://github.com/goharbor/harbor/blob/master/ROADMAP.md

Collaborations

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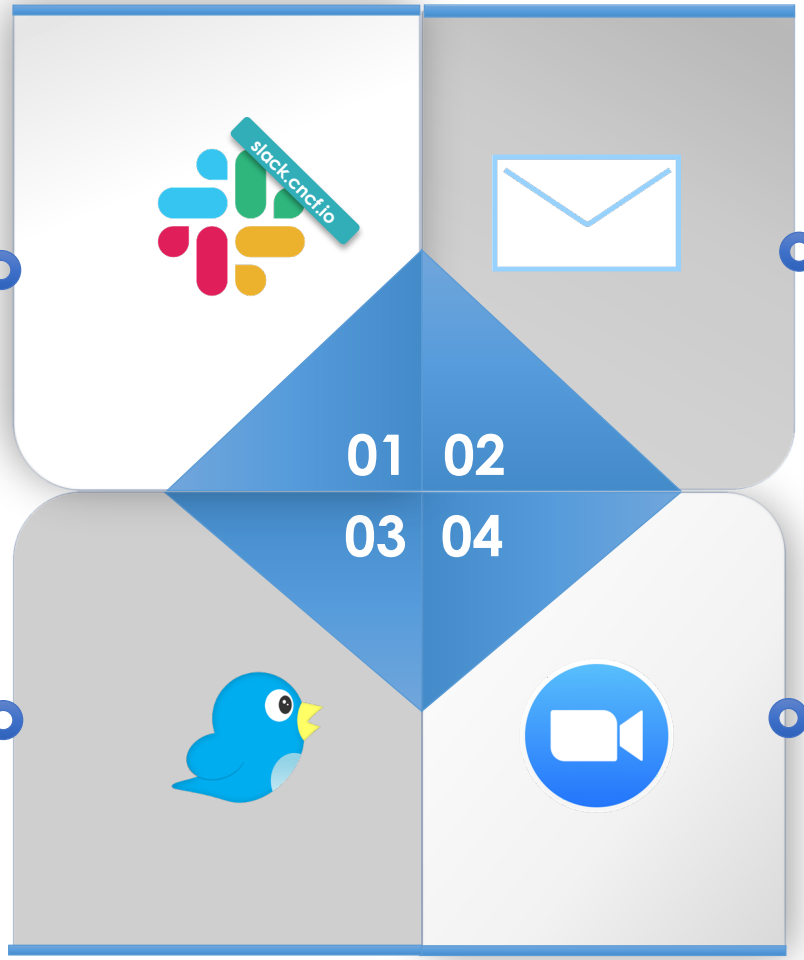
Demo ENV

demo.goharbor.io
Sign up for an account

#harbor
#harbor-dev



lists.cncf.io/g/harbor-users
lists.cncf.io/g/harbor-dev

github.com/goharbor/community/blob/master/MEETING_SCHEDULE.md

APAC + EU zone: 9pm UTC+8 time zone
Americas + EU zone: 1pm Pacific time zone

@project_harbor

Q&A

Welcome any questions?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CONNECTED