HARBOR
The Container Registry

FOSDEM ’22
Orlin Vasilev
whoami

- Orlin Vasilev aka Orlix
- Father of two
- CNCF Ambassador
- SysAdmin/Developer/DevOps/SRE
- DIY person
- Community Manager for Harbor (@VMware)
Agenda

Intro to Harbor 101
Demo - install and configure
Community
Harbor 101

• Harbor is an open source registry, currently the only CNCF Graduated project in the Container Registry category!

• Mission: to be the trusted cloud native registry that stores, signs, and scans content. The mission is to provide cloud native environments the ability to confidently manage and serve container images and related artefacts.

• Started as VMware internal project back in 2014, open sourced in 2016, donated to CNCF in 2018, and Graduated in 2020
Harbor Timeline

- **Inception** (2014.6): Internal project in China R&D, VMware
- **Open Sourced** (2016.3): Project Harbor open sourced on GitHub
- **Internal Pilot** (2015): Internal pilot in China R&D, VMware
- **2016.9**: Harbor passed 1000 stars on GitHub
- **2016.11**: Project Harbor open sourced on GitHub
- **1000 stars** (2016.9): Harbor passed 1000 stars on GitHub
- **2017.4**: Harbor passed 2000 stars on GitHub, 46 contributors, 2000+ commits
- **2018.4**: Harbor passed 4000 stars on GitHub, 80 contributors, 4000+ commits
- **2018.8**: Harbor became sandbox project of CNCF
- **2019.5**: Harbor became incubation project of CNCF
- **2020.6**: Harbor passed 4000 stars on GitHub, 80 contributors, 4000+ commits
- **2021.10**: Harbor became incubation project of CNCF
- **2022.2**: Harbor became incubation project of CNCF
- **FOSDEM '22**: Growing Community
- **Community**

**Timeline Highlights**:
- 2018.4: Harbor passed 4000 stars on GitHub, 80 contributors, 4000+ commits
- 2018.8: Harbor became sandbox project of CNCF
- 2019.5: Harbor became incubation project of CNCF
- 2022.2: FOSDEM '22

**Key Milestones**:
- Project Harbor open sourced on GitHub (2016.3)
- Harbor passed 1000 stars on GitHub (2016.9)
- Harbor passed 2000 stars on GitHub (2017.4)
- Harbor passed 4000 stars on GitHub (2018.4)
- Harbor became sandbox project of CNCF (2018.8)
- Harbor became incubation project of CNCF (2019.5)
- Growing Community (2022.2)
So why Harbor?

• Community and community support

• Free and OpenSource - supported by CNCF

• CNCF Graduated - well adopted and great maturity level

• **Self Hosted!** (many are providing it as a Service)

• Self deployment can bring great benefits for corporations and compliance (SOC/SOC2/FedRamp etc...)
Architecture
Key features

Access Control
- RBAC
- AD/LDAP integration
- OIDC
- Robot account

Replication
- Multiple filters
- Flexible scheduling
- Heterogeneous registries
- Helm Chart replication

Vulnerability Scanning
- Flexible scanning policies
- Elaborated scanning

Content Trust
- Digital signature
- Provenance of images

Helm Chart Mgmt
- Helm Chart repository
- Same user experiences as image management

Web Portal
- Ease of use
- Batch operations

Restful API
- API for integration
- Nested Swagger UI

Multi Deployments
- Docker Compose
- Helm Chart
- BOSH
DEMO

Local Install - create project and user
Push image
Scan image and inspect image

Setup Replication
What’s new in 2.4

• **Distributed tracing**
  Add tracing capabilities to Harbor for enhanced troubleshooting, identifying performance bottlenecks etc.

• **Additional Features**
  - Support Harbor instances replication with Robot Account, more details see the [guide](#).
  - Support Stop All and single scan job.
  - Support exclusions and rate limit to Replication Rules.
  - Enable OIDC auth based user deletion
  - Schedule synchronise from DB to Redis.
  - Harbor is now built using Golang v1.17.2 as of this release.
  - Bump up Trivy 0.20 which adds support for go.sum scanning.
COMMUNITY
JOIN US!
## Community

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stars</td>
<td>16K+</td>
</tr>
<tr>
<td>Forks</td>
<td>4000+</td>
</tr>
<tr>
<td>Commits</td>
<td>11K</td>
</tr>
<tr>
<td>Contributors</td>
<td>200+</td>
</tr>
<tr>
<td>Members</td>
<td>2500</td>
</tr>
<tr>
<td>Maintainers</td>
<td>14</td>
</tr>
</tbody>
</table>
Contributors & Maintainers

14 Maintainers
200+ Contributors
65+ Companies
36+ Countries

Source: https://harbor.devstats.cncf.io
Users of Harbor
Partners of Harbor
JOIN US!

Web: goharbor.io
Github: github.com/goharbor
Slack: slack.cncf.io (#harbor and #harbor-dev)
Twitter: @project_harbor
By-weekly Community Meetings: https://zoom.us/j/734959521
Email groups:
lists.cncf.io/g/harbor-users
lists.cncf.io/g/harbor-dev
Really Join us! :) Tech Docs Working Group on it’s way!

Harbor Technical Documentation Working Group

Great way to start your open source and CNCF Journey

Full support of the team to get you set up and ready to create your first PR

MAKE SURE YOU SIGN UP: lists.cncf.io/g/harbor-users
Get in touch

Twitter: @OrlinVasilev
Slack (CNCF, Kubernetes): Orlix
GitHub: OrlinVasilev