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## Harbor in Action: NS's Journey towards implementing and adopting an OSS registry

Presenters

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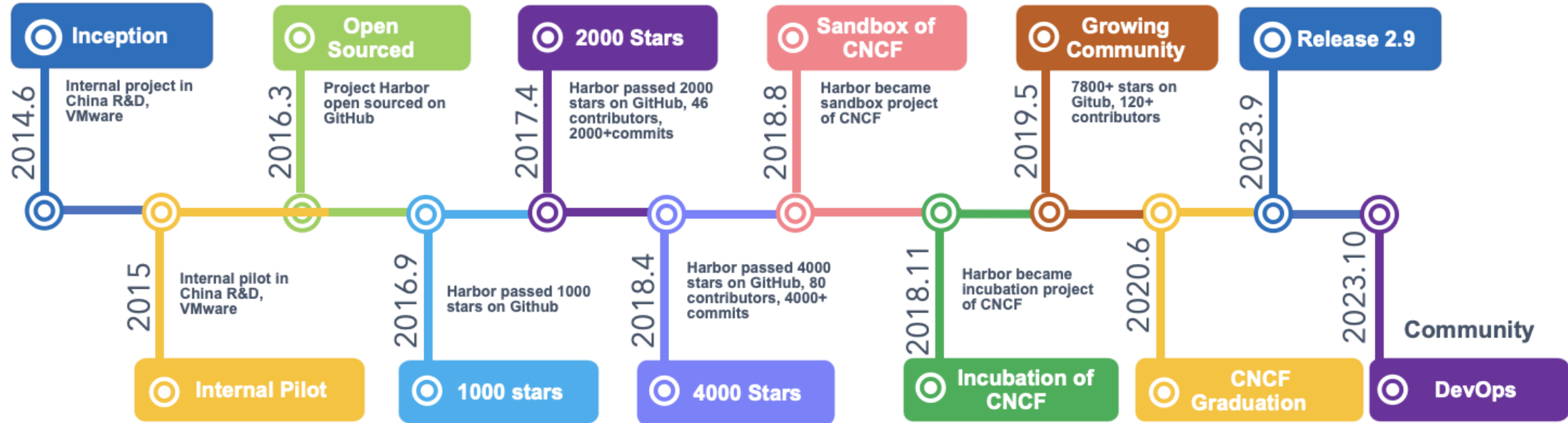


# Project Harbor and the community



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# Harbor Timeline



[CNCF Project Harbor Journey Report!!!](#)

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# 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

x

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# Harbor Release 2.9

- Security Hub
- Customizable Info Banner
- Adding support for Notation(notary v2)

...What to expect in Harbor 2.10(end of the year)

- SBOM support 
- ...

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# Most active contributors



Container Registry by 8gears



**Giant Swarm**

vmware®

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# Who is using Harbor



Obviously :)

Get your org listed

<https://github.com/goharbor/harbor/blob/main/ADOPTERS.md>

# Project Harbor

- 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

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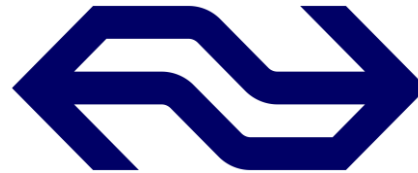


# Join us!

- 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 SHURE YOU SIGN UP: [lists.cncf.io/g/harbor-users](https://lists.cncf.io/g/harbor-users)

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# The NS Harbor Journey



# Who am I



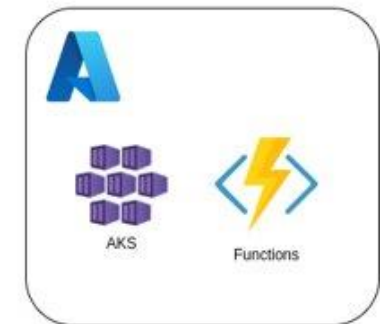
# The NS (container) landscape

- Four landing zones
- Public / private cloud
- Different:
  - Tooling
  - Way of working
  - Accessibility
  - Policies

Private Cloud



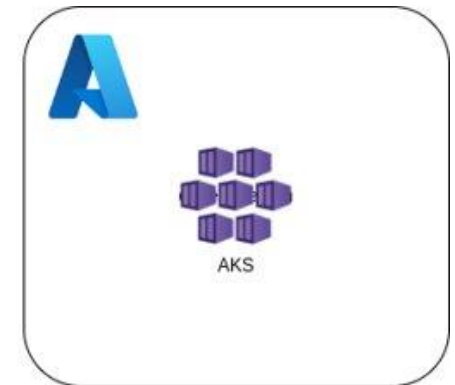
Public Cloud



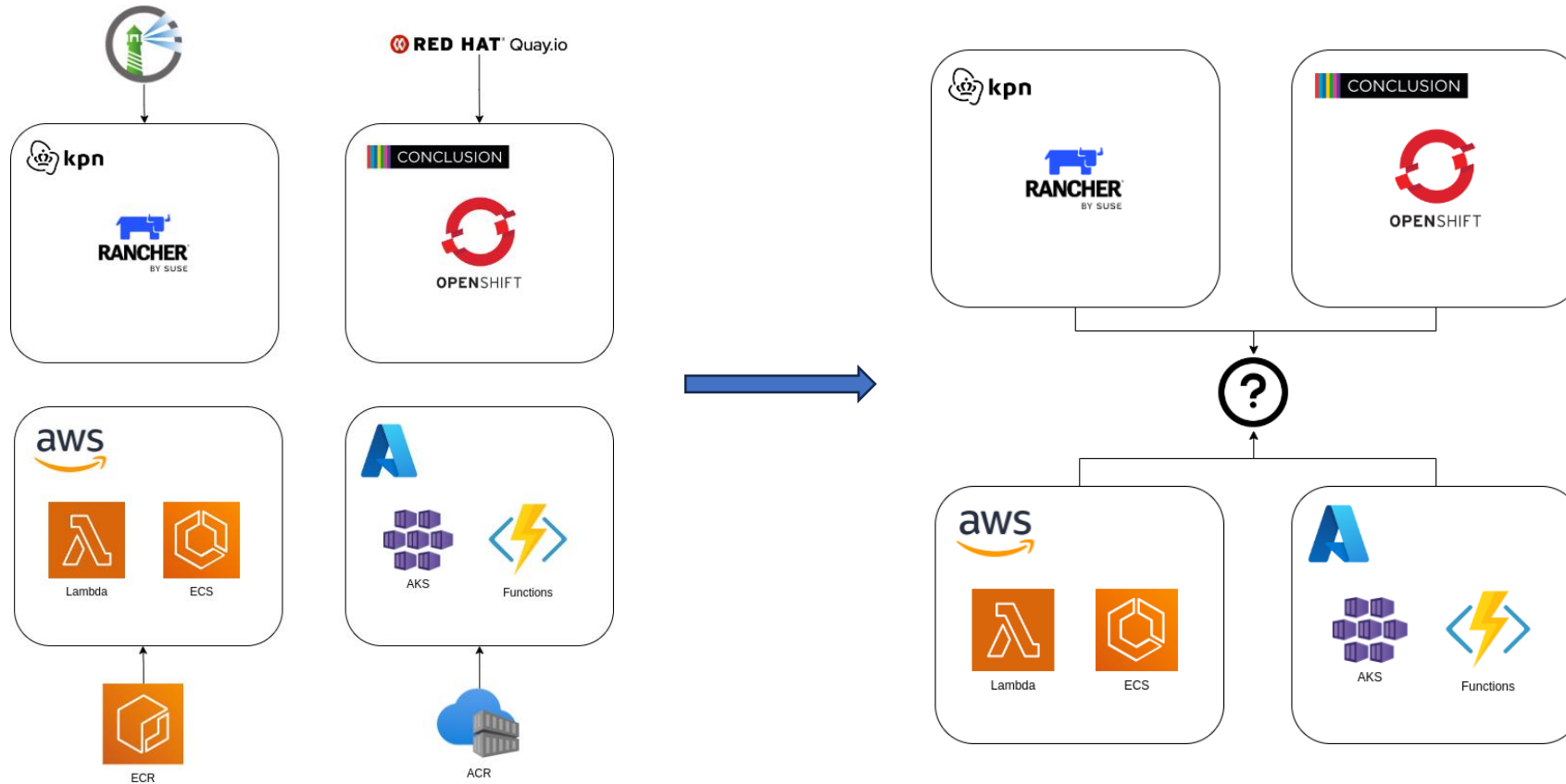
# Improve developer journey

- Reduce cognitive load of teams, by providing a "golden path"
- Self-service
- Automated
- Compliant / secure
- Operational sustainability

Public Cloud



# IDP in search for a central registry



# Choosing the right registry

- Identified the current landscape
- Defined requirements for:
  - Developers
  - Platform maintainers
- Created shortlist
  - ACR, ECR, Harbor and DockerHub Enterprise
- Validation



# Registry of choice: Harbor

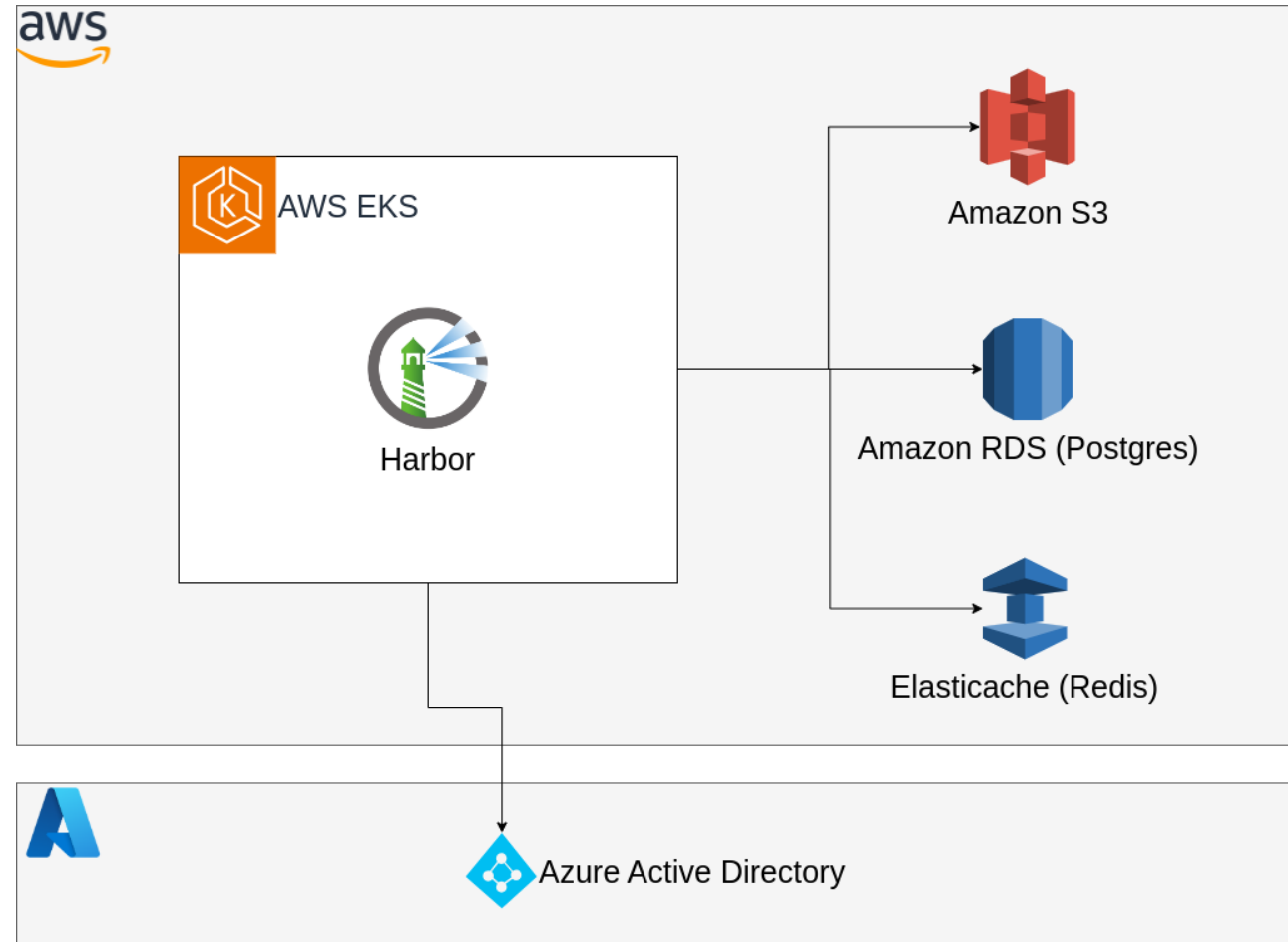
- Registry access
- Security features
- Artifact management
- Integration capabilities



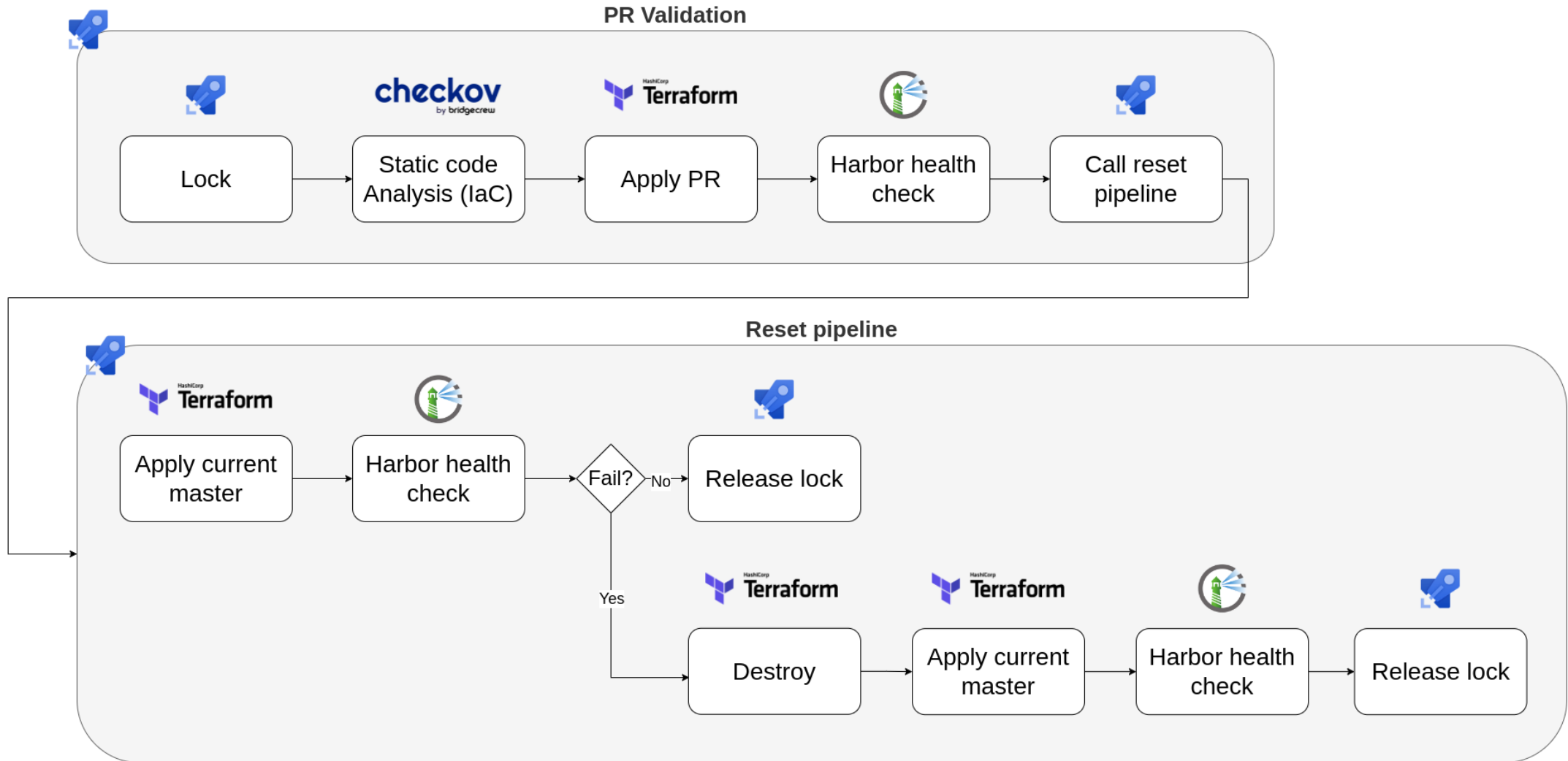


# Harbor within the NS - Infra

- EKS cluster
- S3 backend storage
  - Image layers
- AWS RDS Database
  - Project / configuration data
- Elasticache (Redis)
  - Session data
- OIDC SSO provider
  - Microsoft Entra ID (Azure AD)
- HA setup

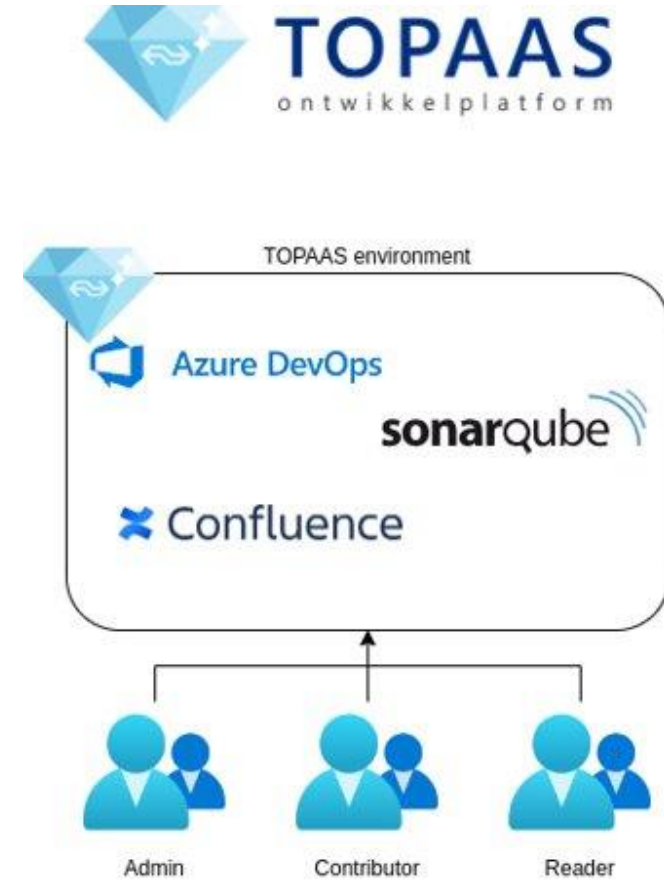


# Harbor within the NS – Development

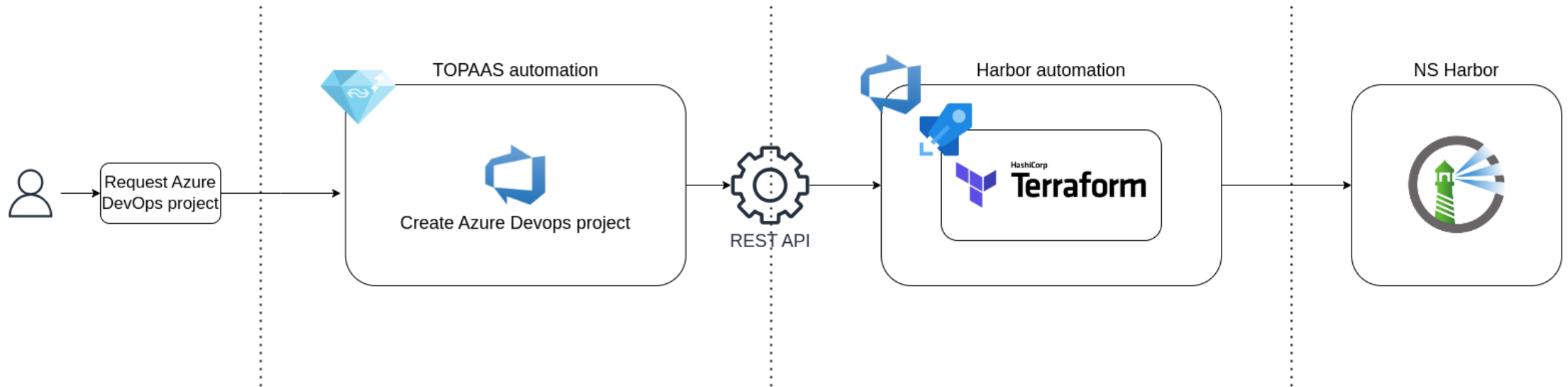


# Team onboarding

- Team onboarding within the NS:
  - Managed by TOPAAS
  - Teams are assigned a TOPAAS environment
  - Self-service tool selection
  - RBAC
- Harbor onboarding integrated with TOPAAS onboarding

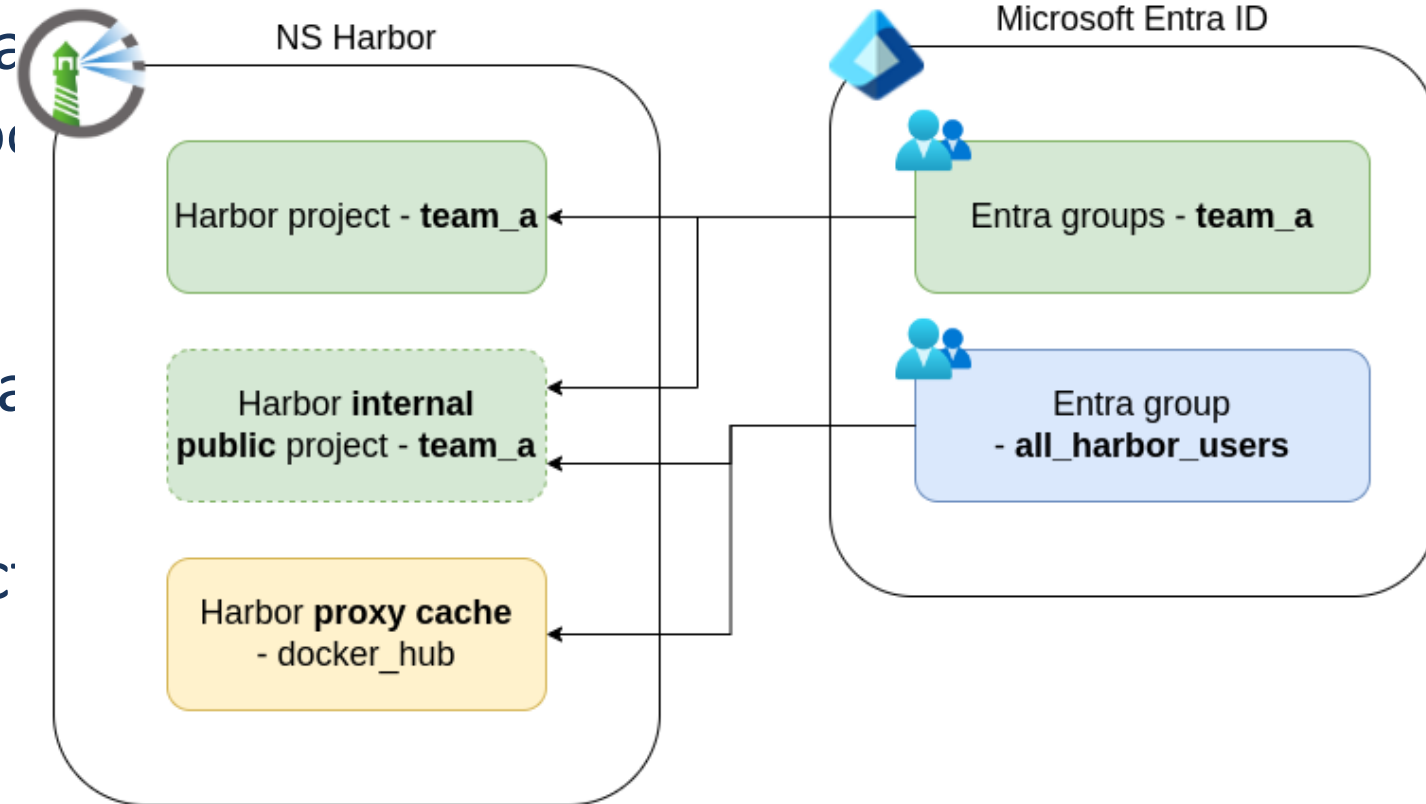


# Harbor onboarding



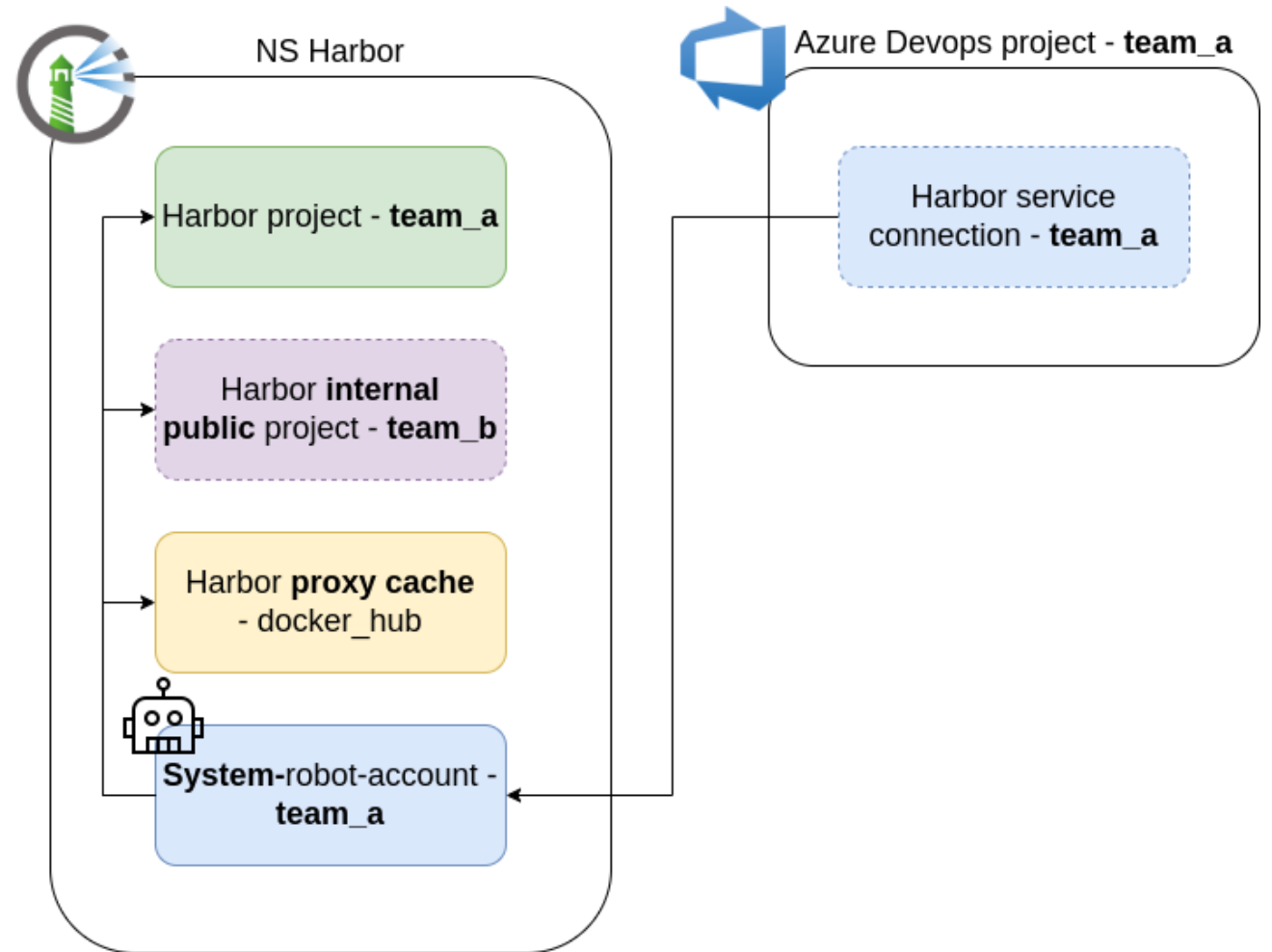
# Harbor project setup

- A default project for each team
  - Entra groups mapped to Harbor roles
  - Project quotas
- Optional "internal public" team project
- Access to proxy cache project



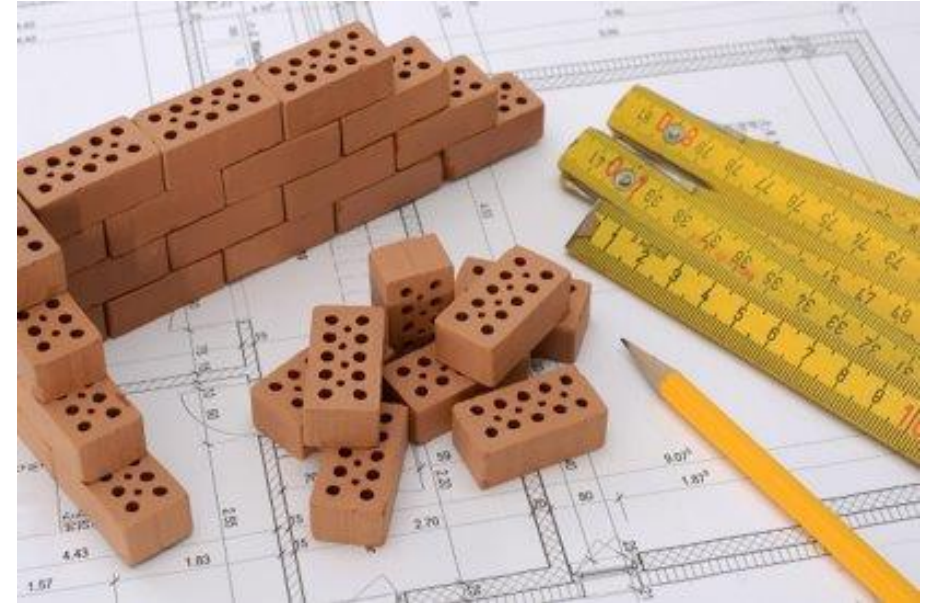
# Harbor integrations – Azure DevOps connection

- Service connection available in every Azure DevOps project
- Cross project access
- Secret rotation handled by integration

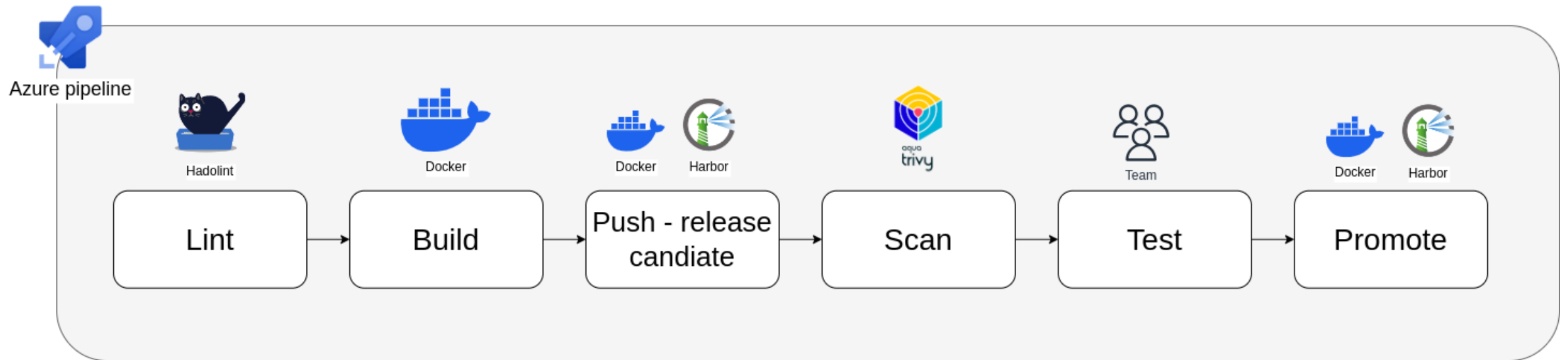


# Harbor integrations - Azure DevOps templates

- Shared repository with reusable pipeline "building blocks":
  - Build, deploy, test, publish
- Standardize and improve quality of the CI/CD flow
- Reduce team toil



# Harbor integrations - Azure DevOps templates



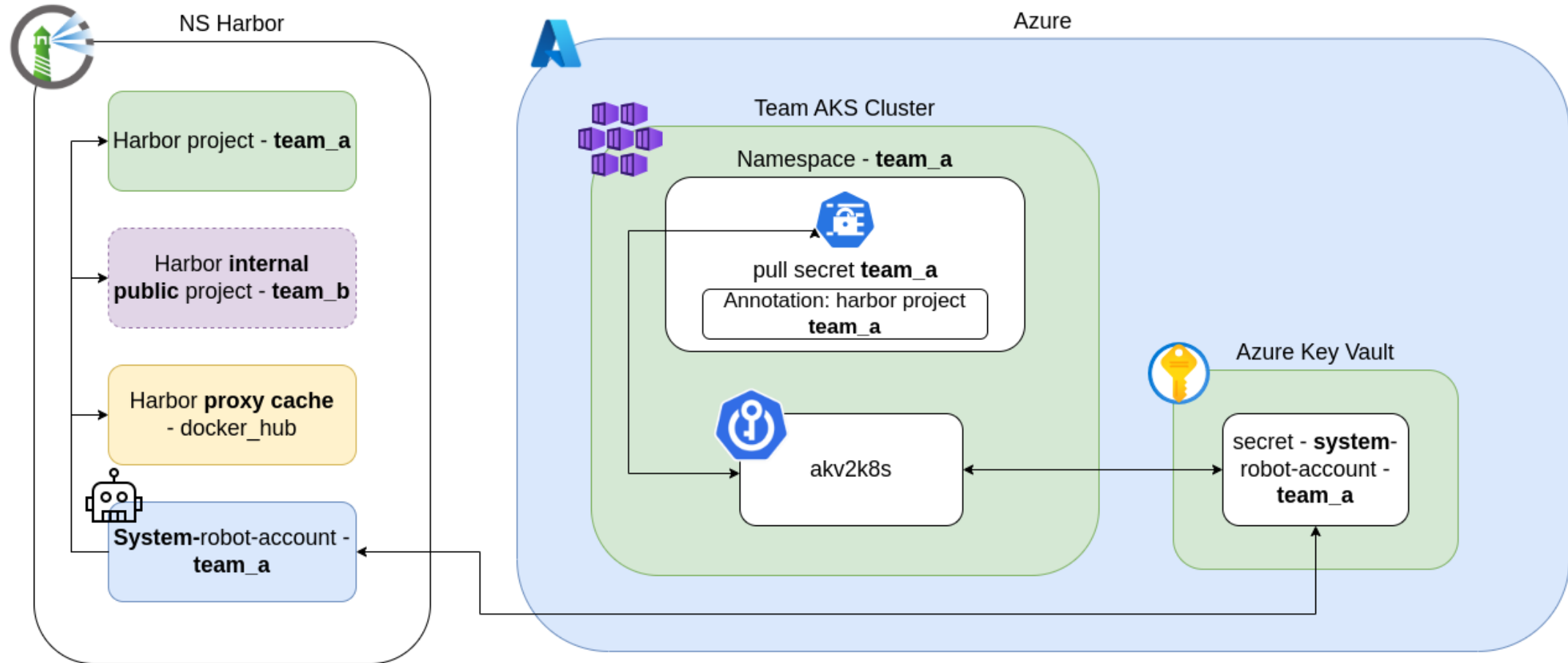


# Harbor integrations – Kubernetes

- Automated secret rotation
- Multi-tenant support
- Cross project access



# Harbor integrations – Kubernetes



# Harbor within the NS – Scale of use

- Projects: ~300
- Active users: ~500
- Repositories: ~1.100
- Artifacts: ~30.000
- Storage usage: ~3.5 TB



# Harbor within the NS – Lessons learned

- Creating Harbor integrations, accelerates the adoption process
  - "Golden path" vs enforce mode
- Retention rules contribute to maintainability
- Open-source project
- Short communication lines end users



# Harbor within the NS – Future plans

- Leveraging additional built-in Harbor features:
  - Default retention policies
  - Vulnerability reports feedback loop
  - SIEM connectivity
- Multi cloud presence
  - Replication
  - Traffic routing
- Support SBoM generation





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