kubernetes

Kubernetes Vagrant CI / CD

GitHub Project Repo: kubernetesVagrant

Sample of Work of fully automate build, deploy, validate containers locally. Deploy on a k8s cluster and validations.

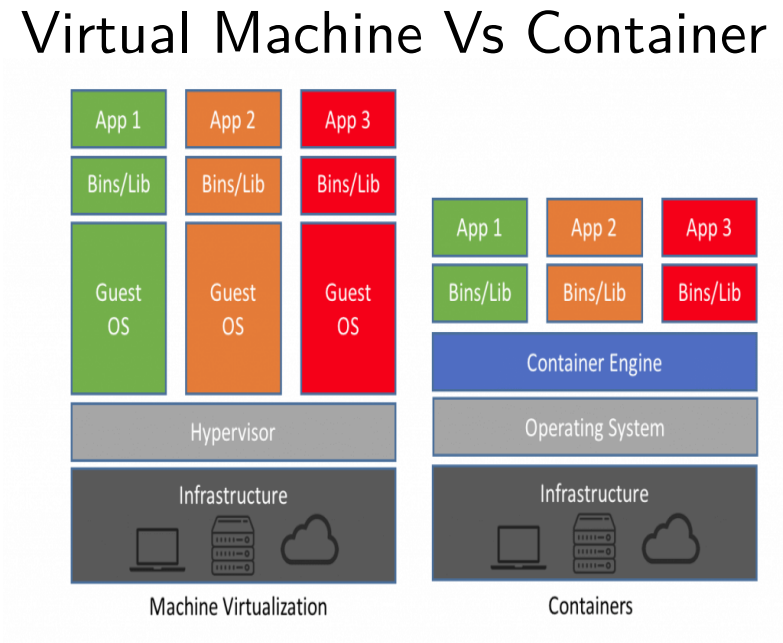
September 30, 2021

Outline I

Outline II

High level description

- VM Vs Container.
- What is a Pod (pea pod)?
- Container Runtime Interface(s) (CRI).
  - Docker.
  - Podman.
  - CRI-O.
- Docker Vs Podman.
- What is actually k8s?



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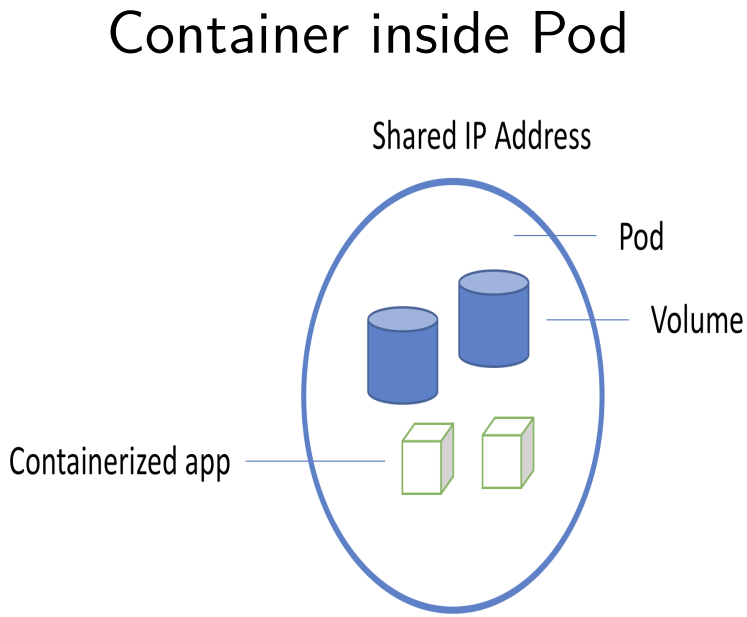

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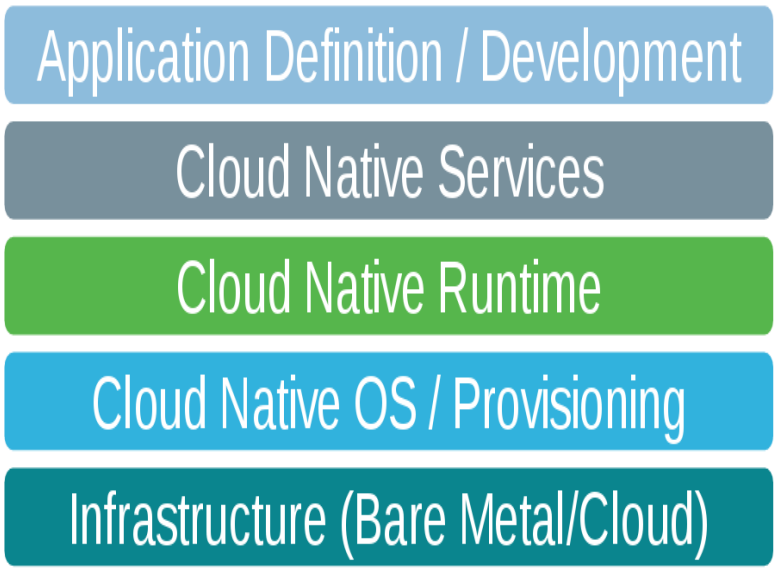

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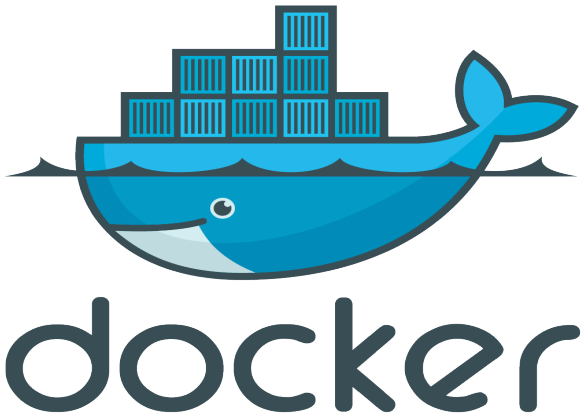

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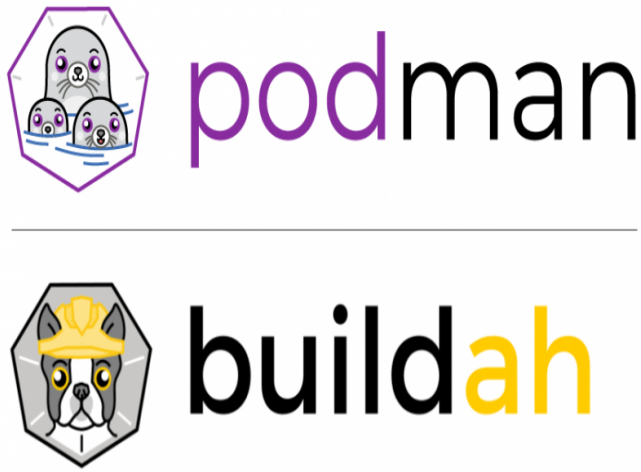

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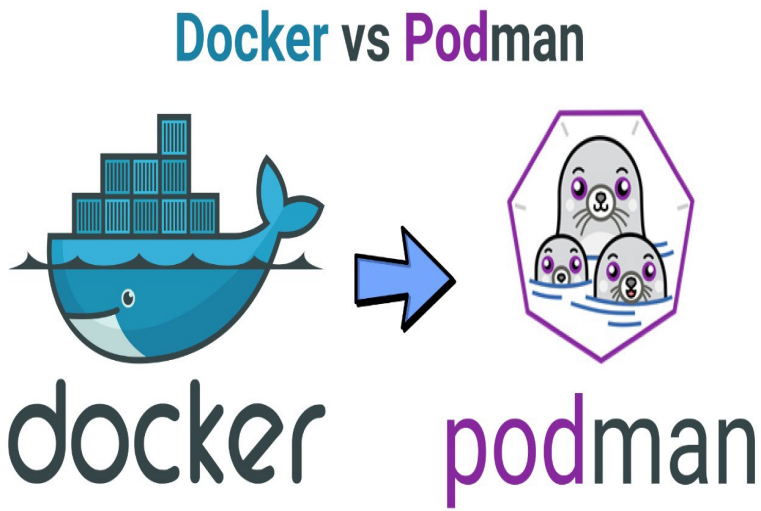
Read about it



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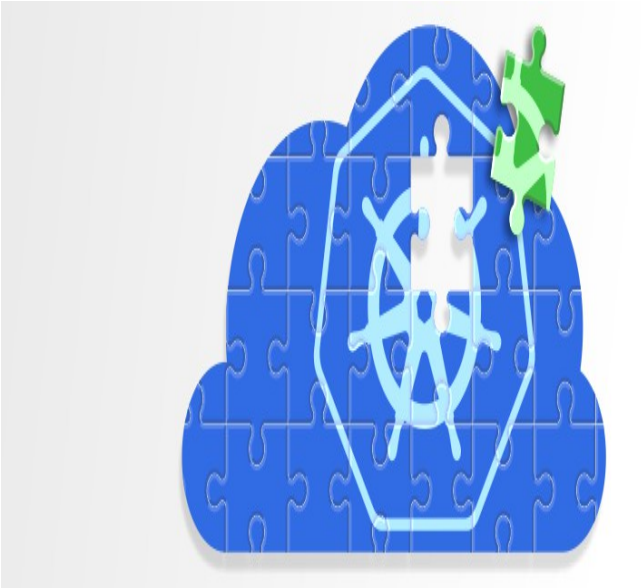
Is a puzzle of elements



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Problems / Desires / Solutions on CI / CD

Assessment Requirements

- CI / CD (Locally / Remotely).
- Everything As a Code
- Validation Locally!!!
- OS / Infra. dependencies.

Justification of Requirements

- Works on my PC, why not on Cloud?
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- Solution has to be reproducible locally. Exactly as cloud.
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- Why Ansible?
- Are there any benefits of this tool?
- Ansible works on ssh how it will work locally?
- How it can interact with Containers, k8s, Cloud, tests?

Possible Answers

- Written in Python 2/3. Developed and maintained by RedHat.
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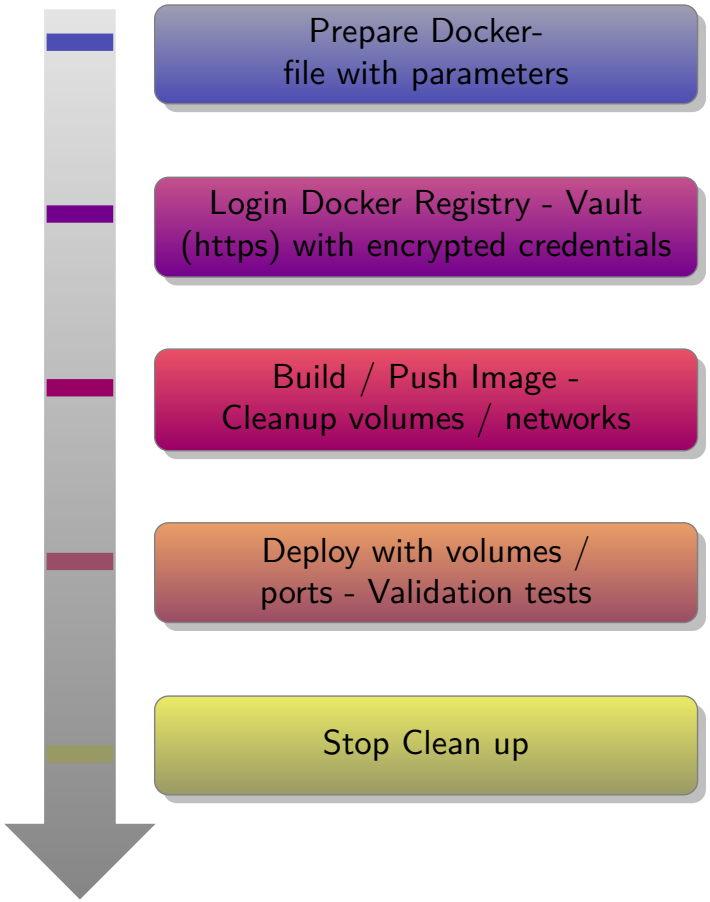
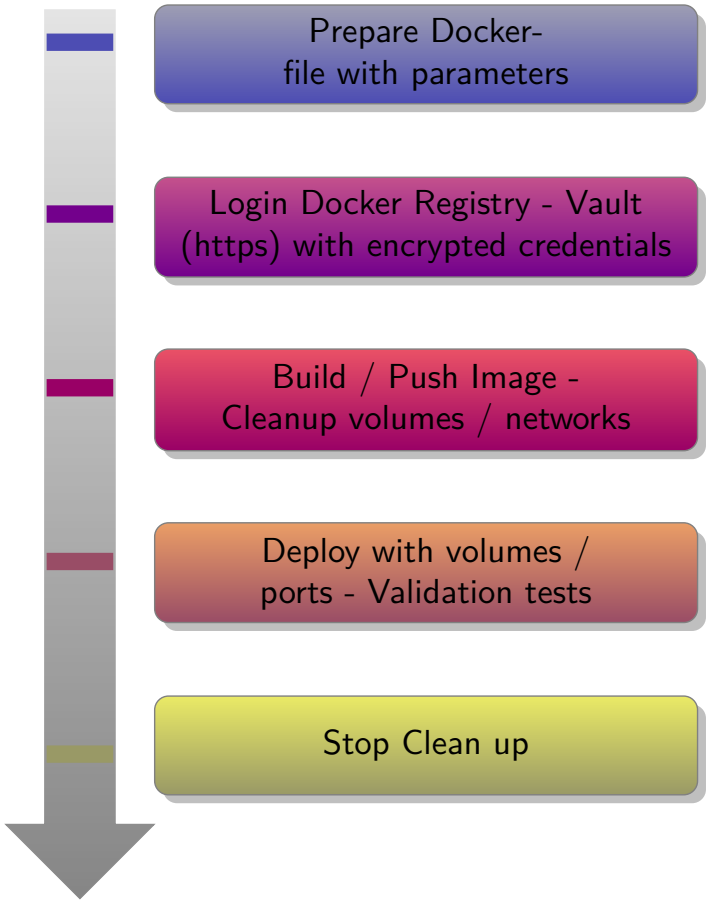


- Dockerfile (template).
- Vault (https).
- Any socket.
  - Azure Registry.
  - Build Dockerfile.
  - Push Image.
  - Login Azure.
  - Pull Image.
  - Run container (id).
- Deployment (volume).
- Validation (tests).
- Stop, Cleanup.

Local Procedure



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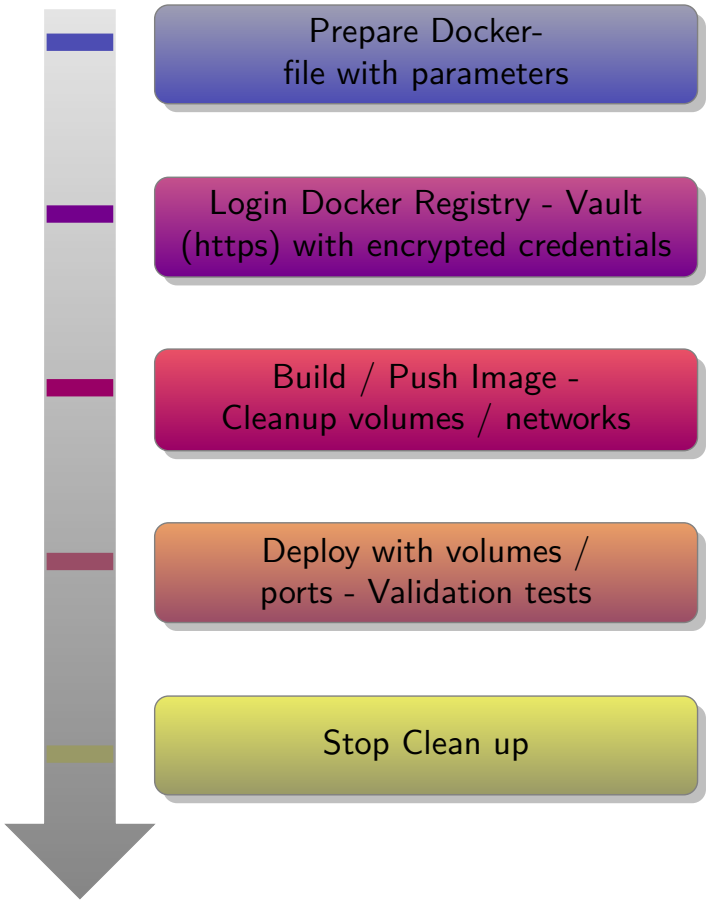

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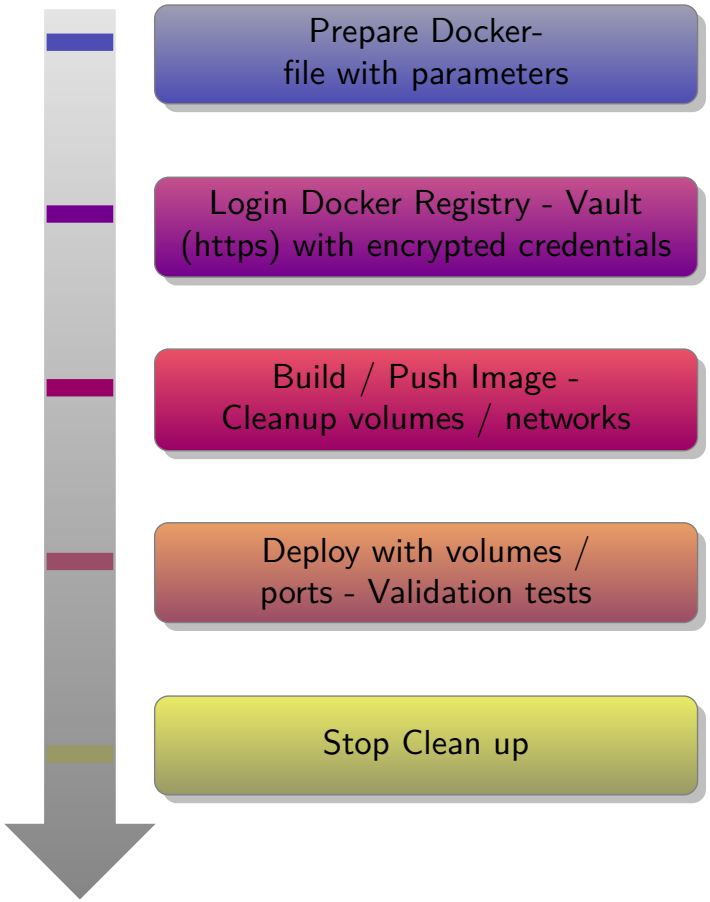

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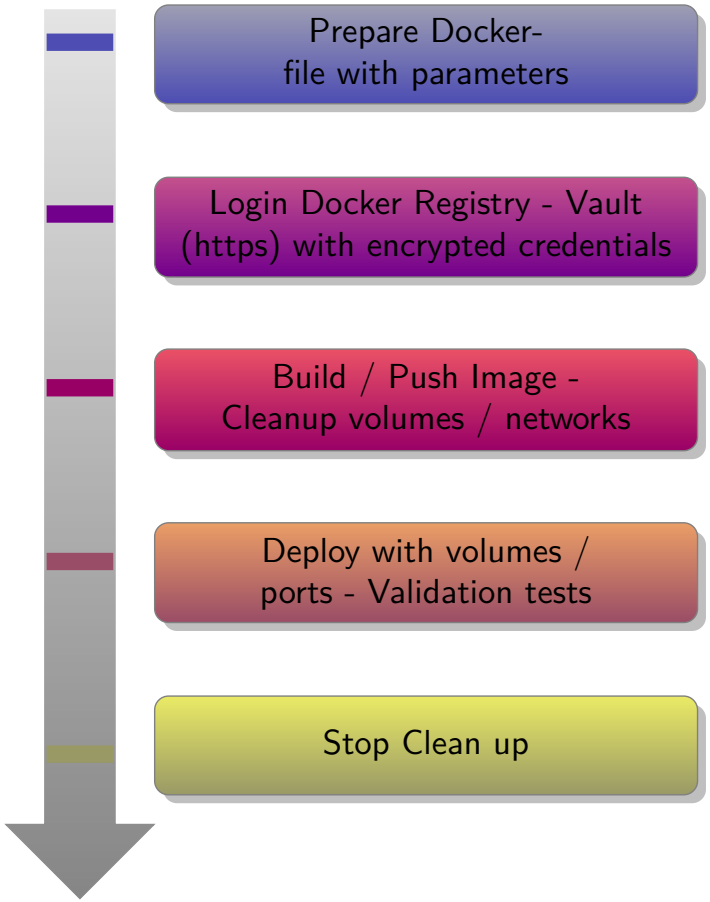

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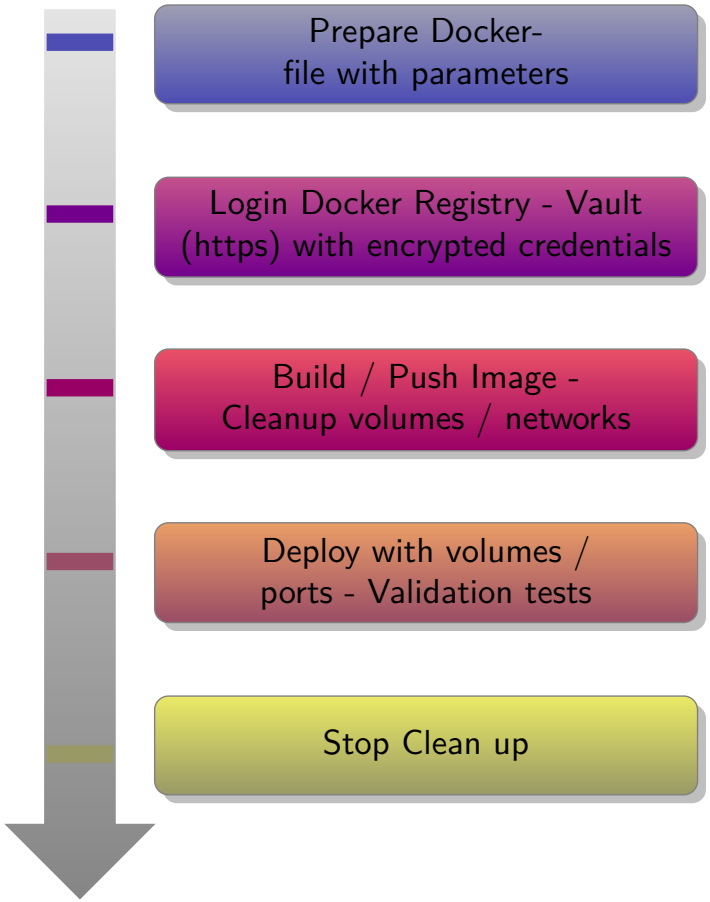

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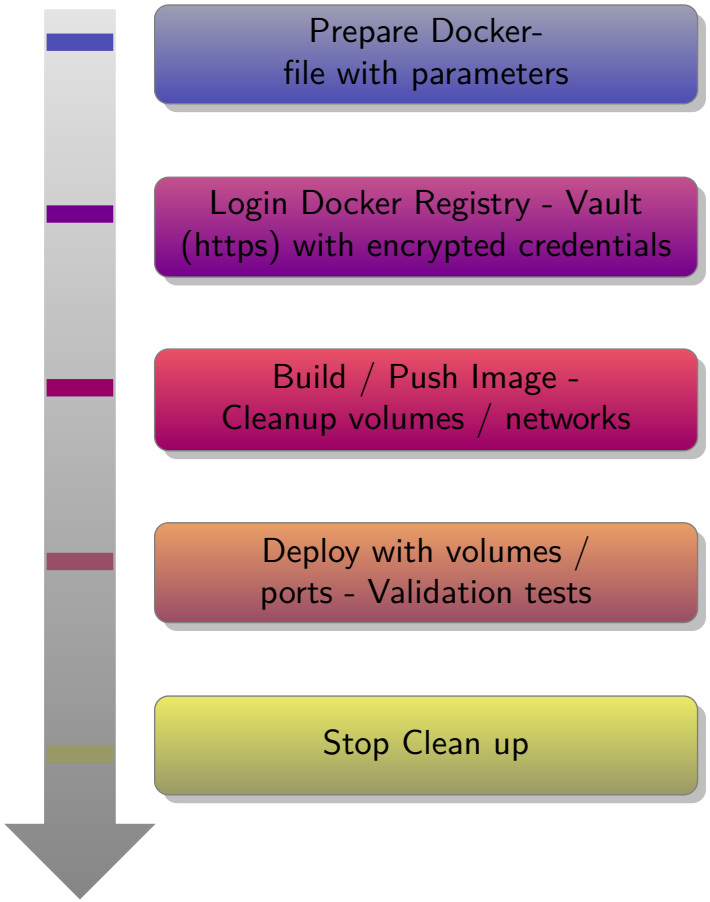

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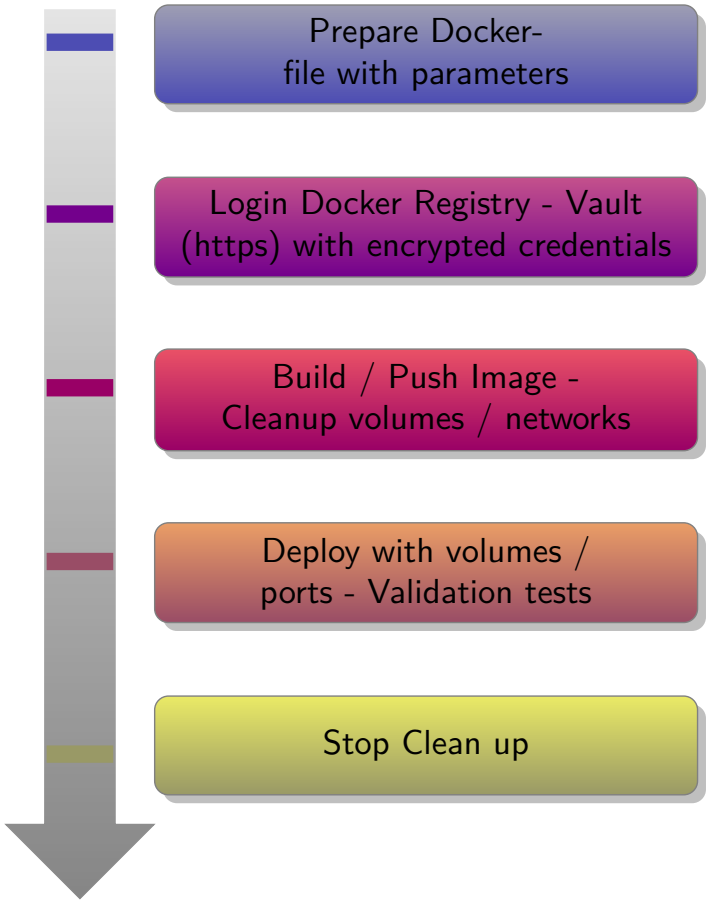

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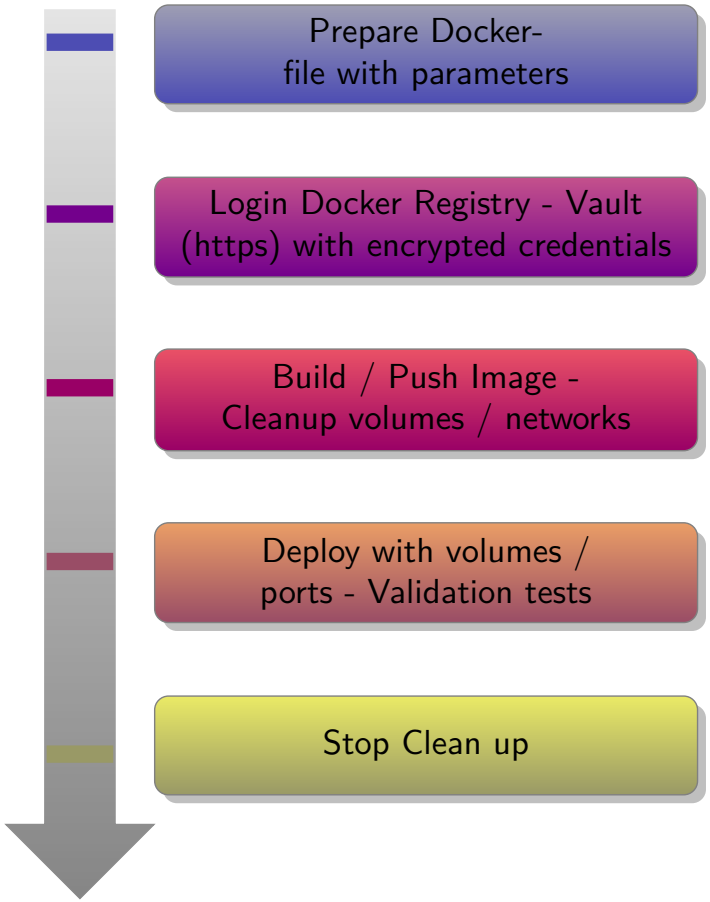

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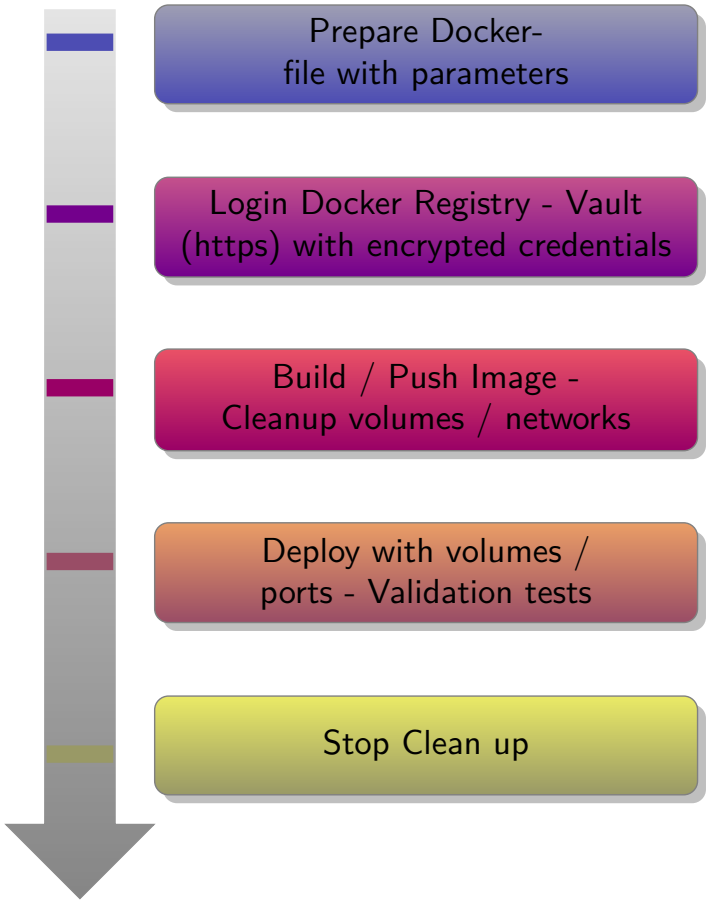

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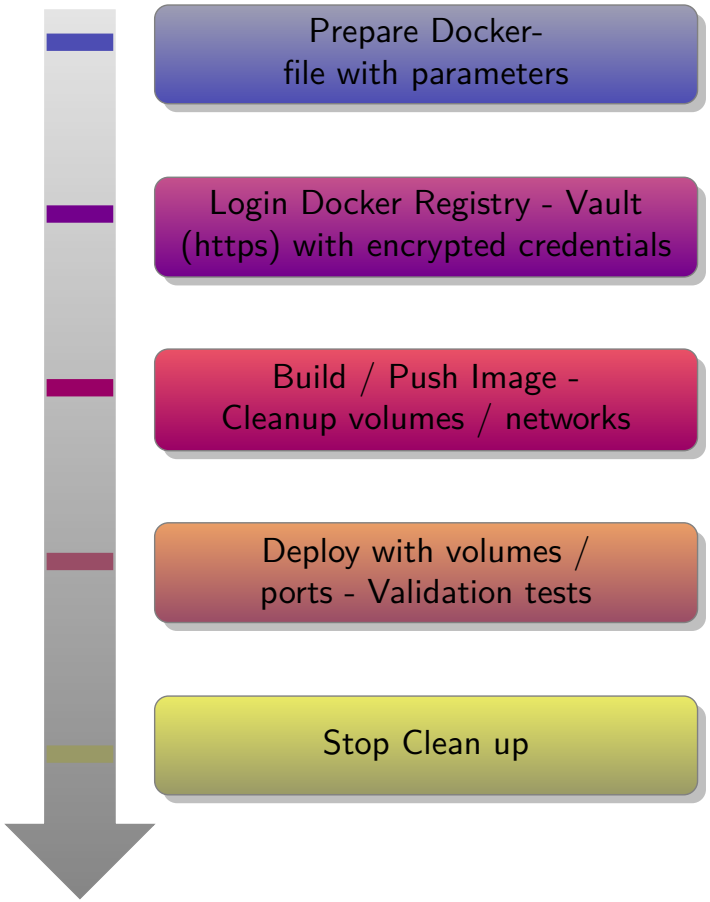

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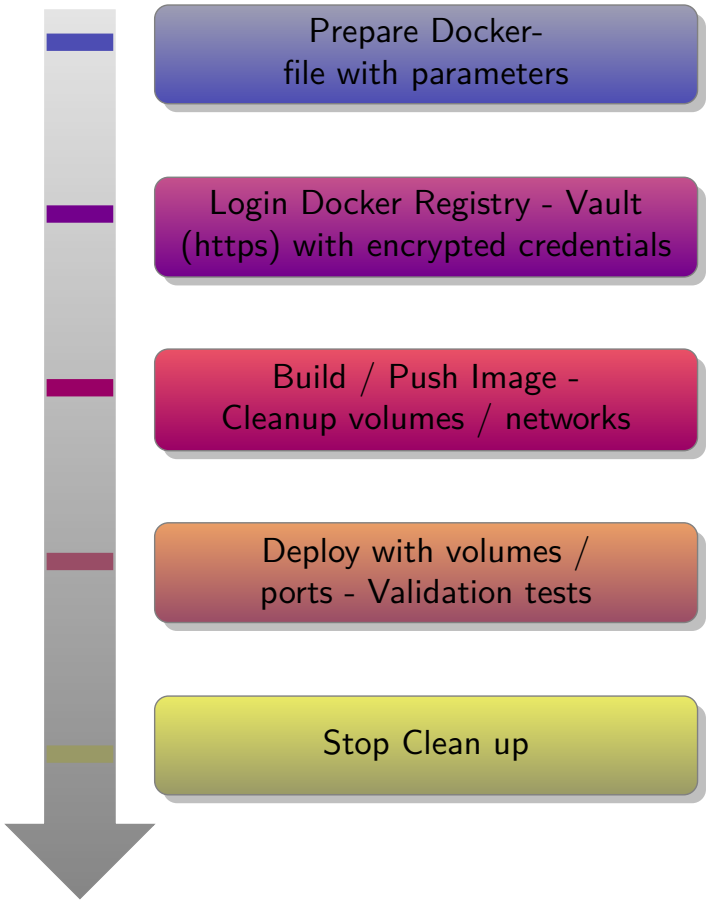

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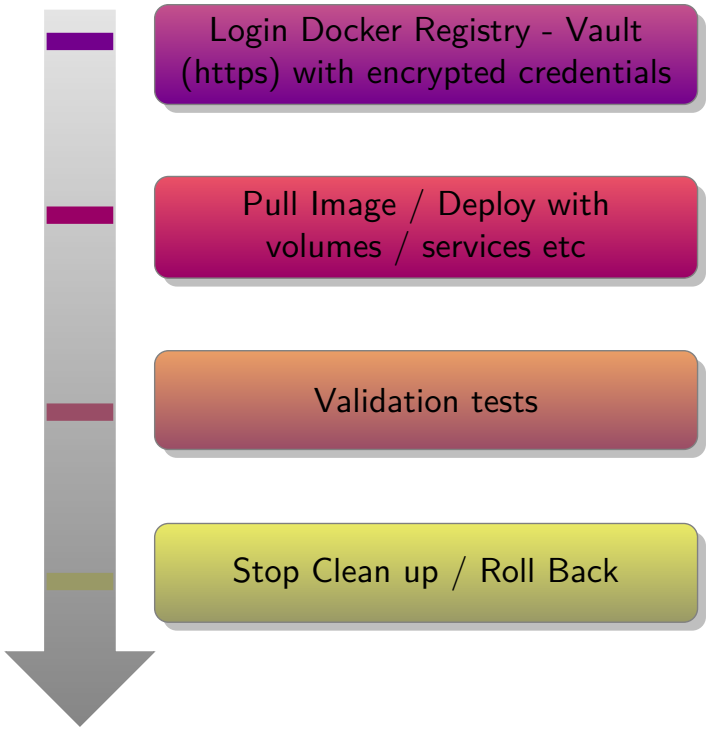

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  - Azzure Registry.
  - Bitnami.
- Deployment (volume).
- Logout Azzure.
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  - Selenium (ui).
  - Sonar (code).
  - Kerberos.

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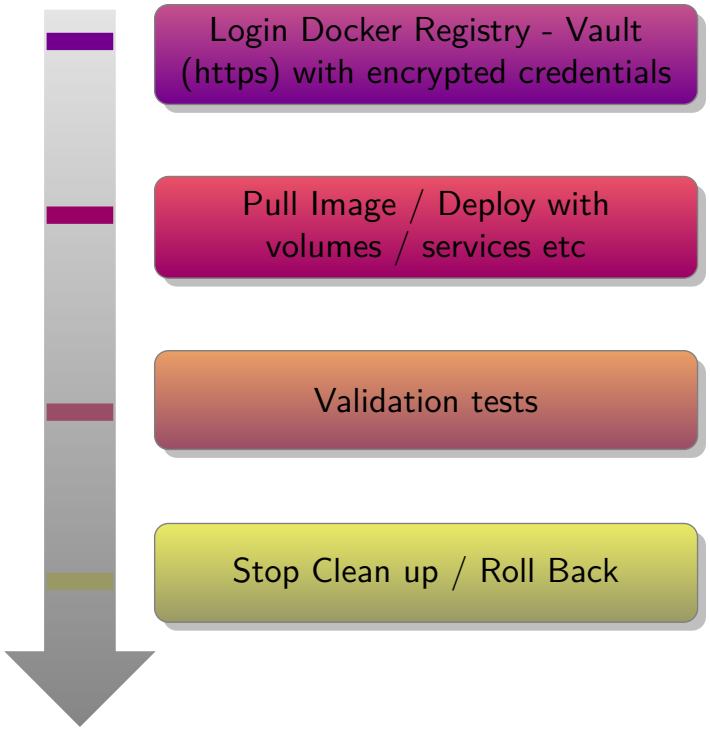

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- Notifications.

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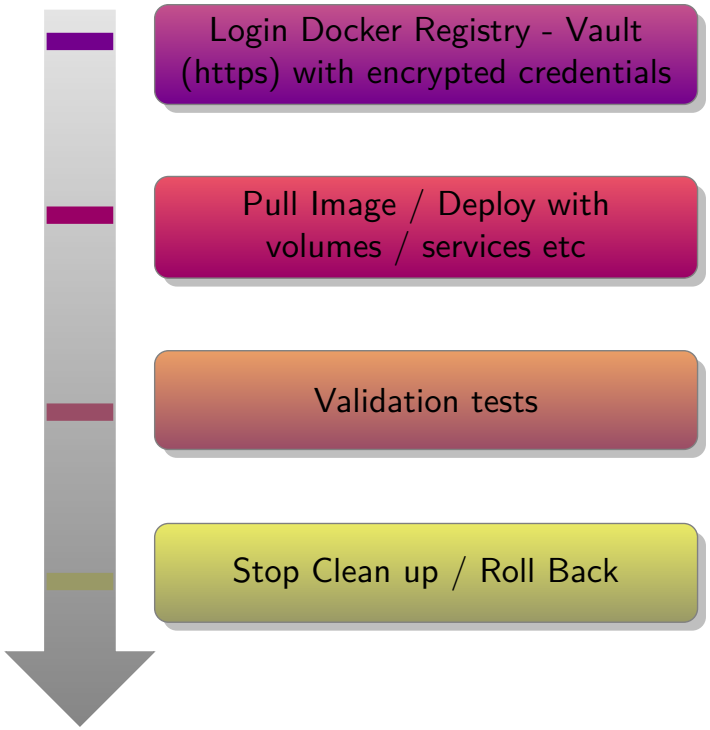

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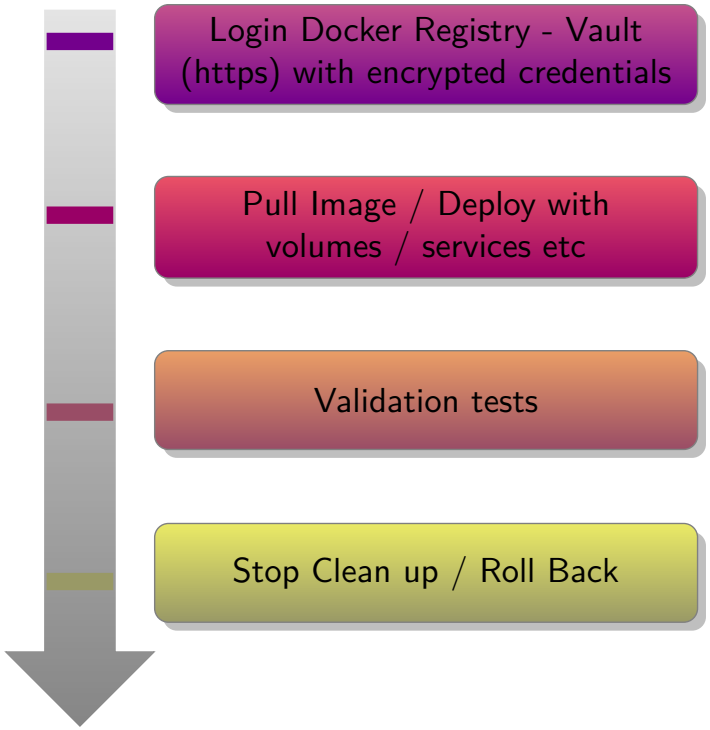

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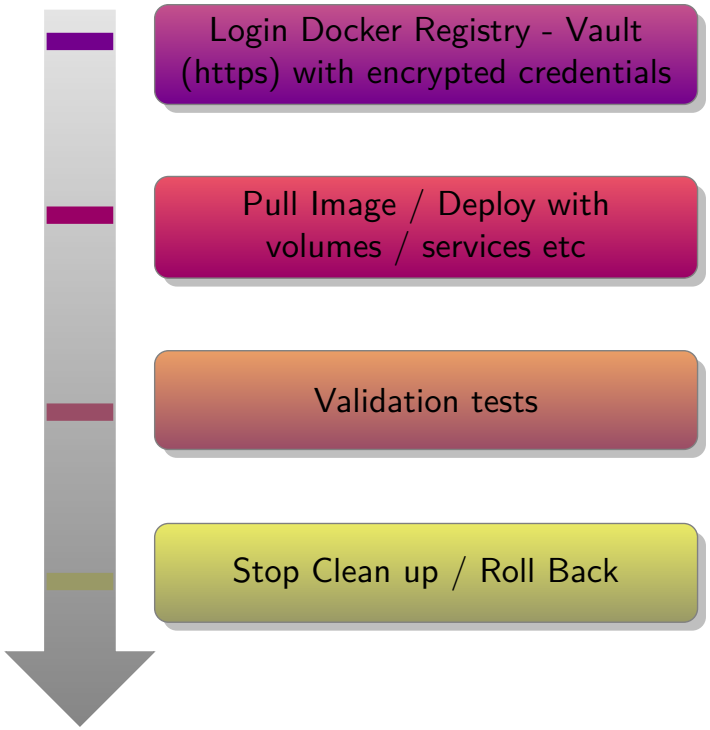

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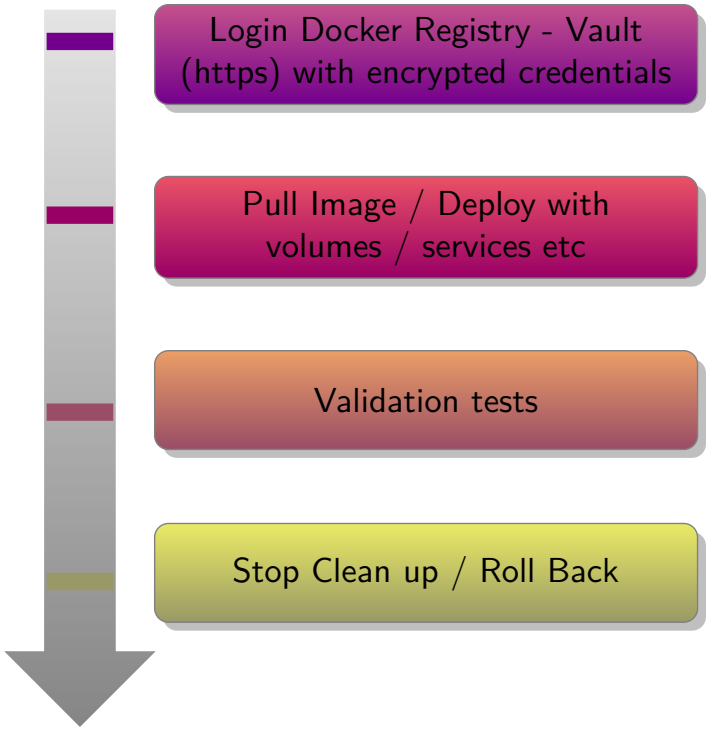

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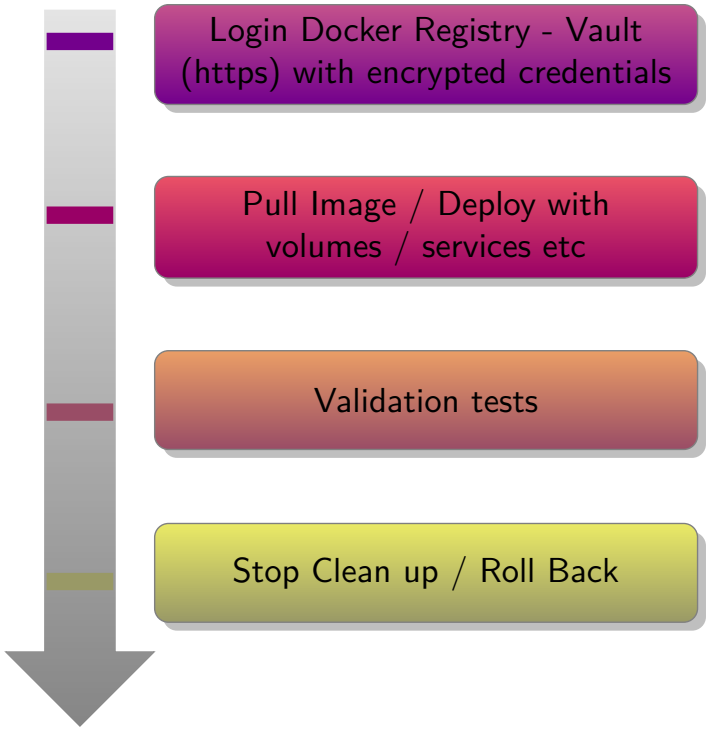

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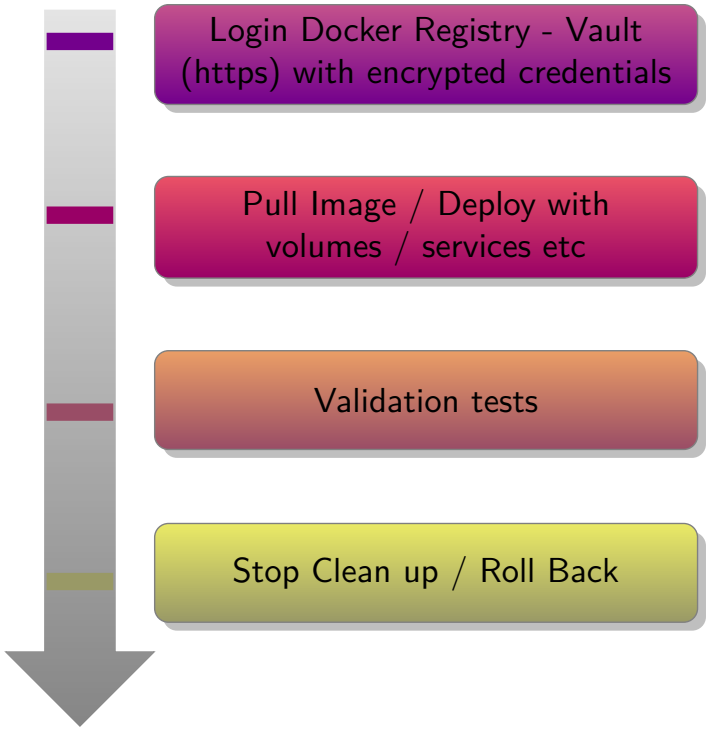

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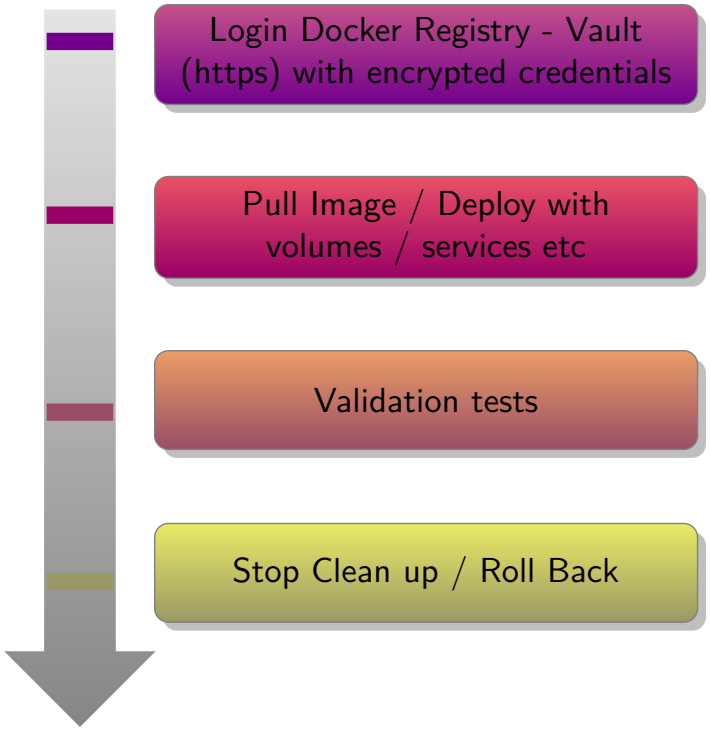

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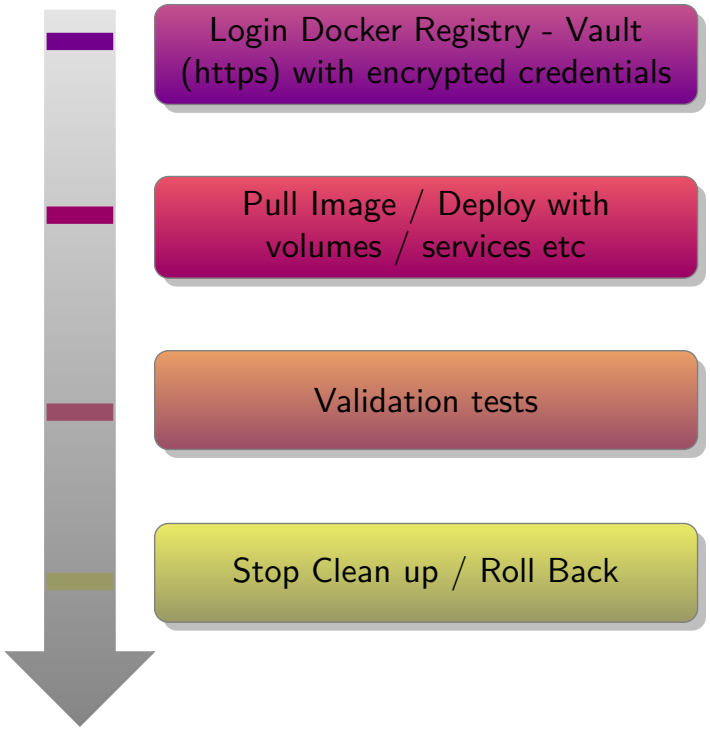

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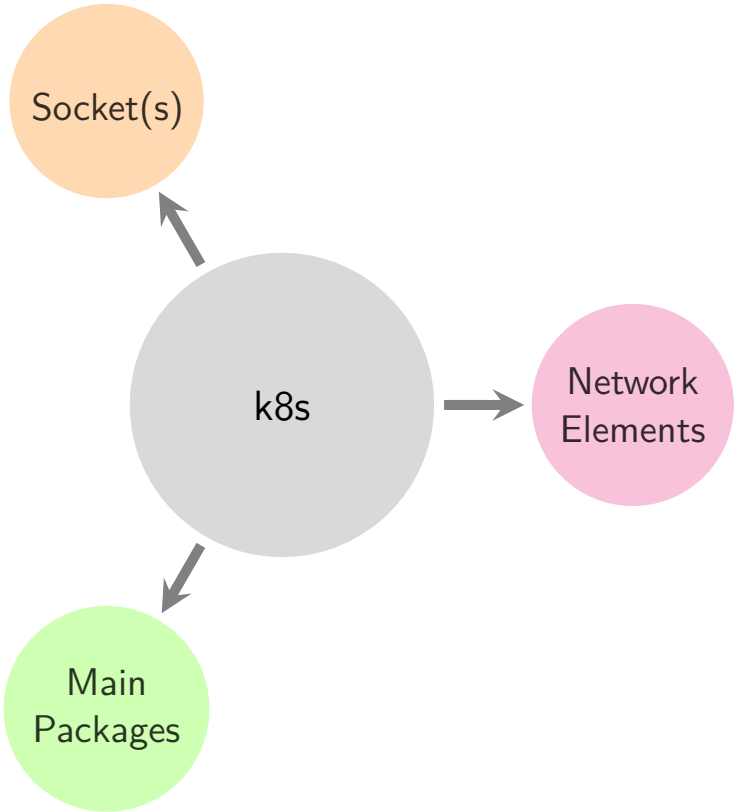

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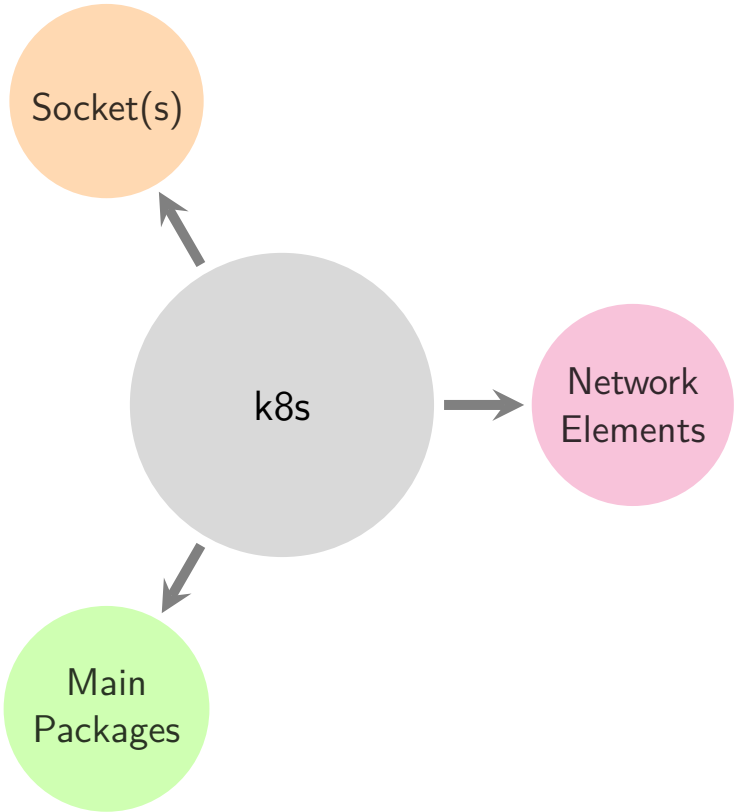

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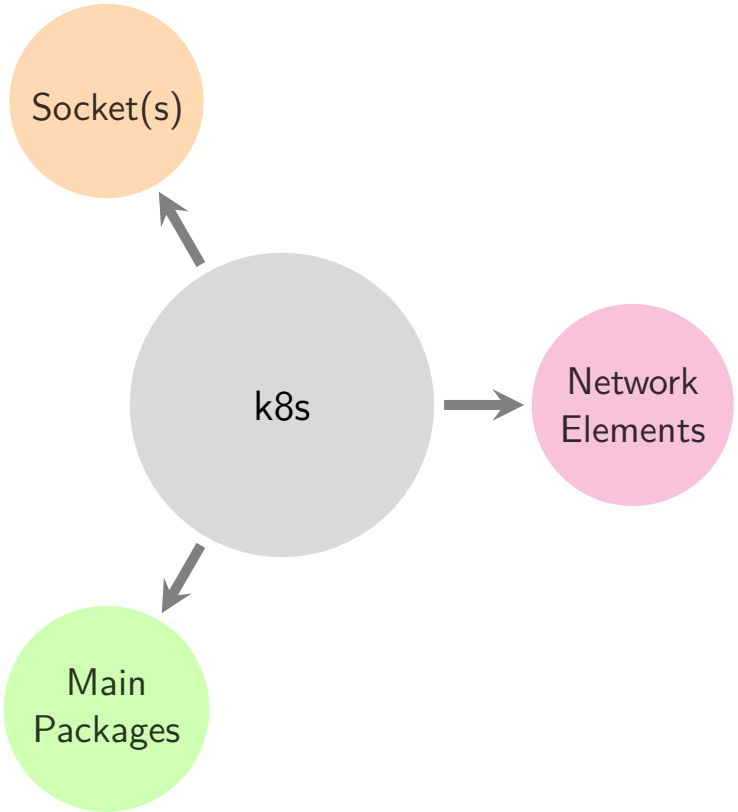

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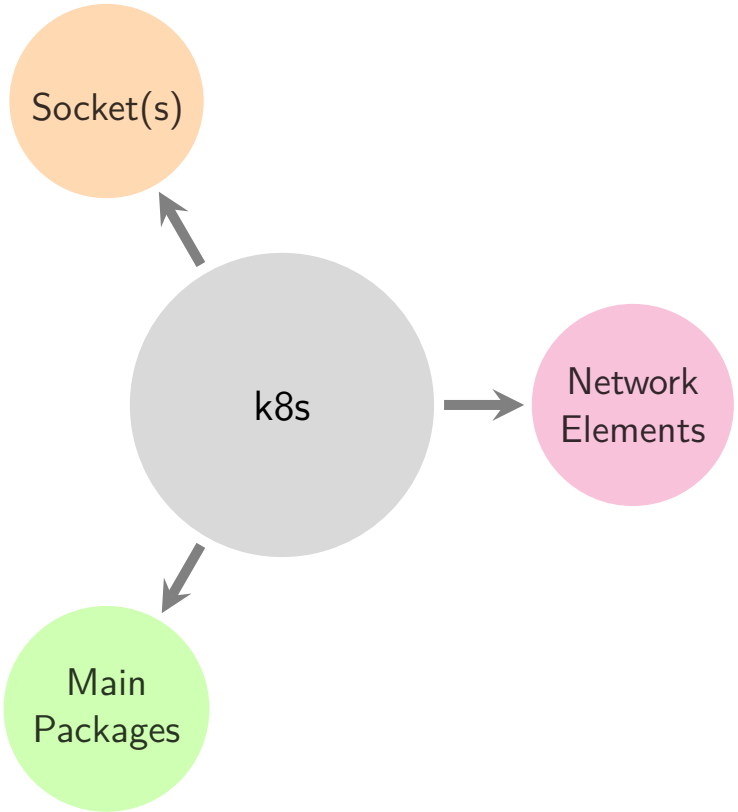

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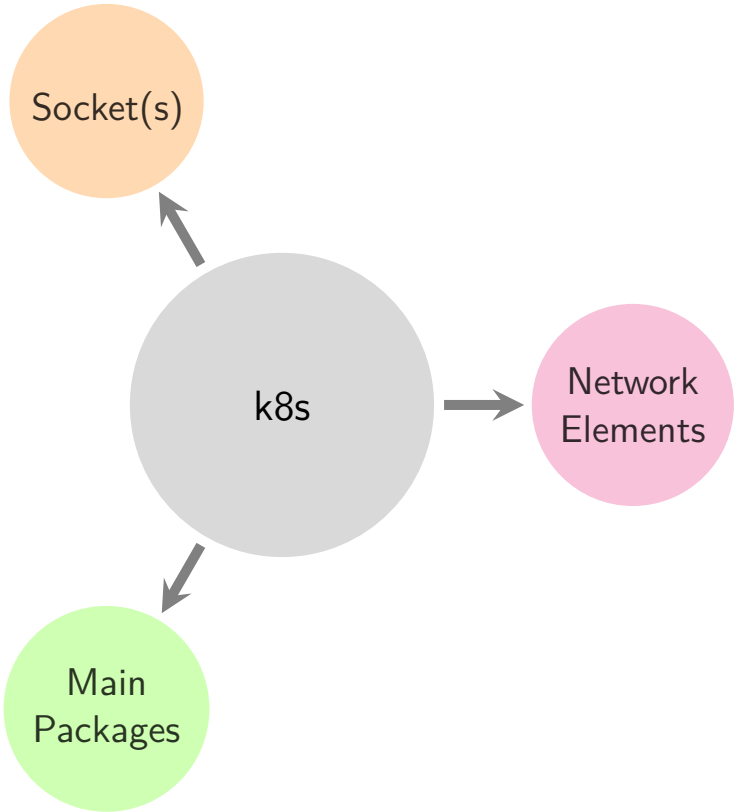

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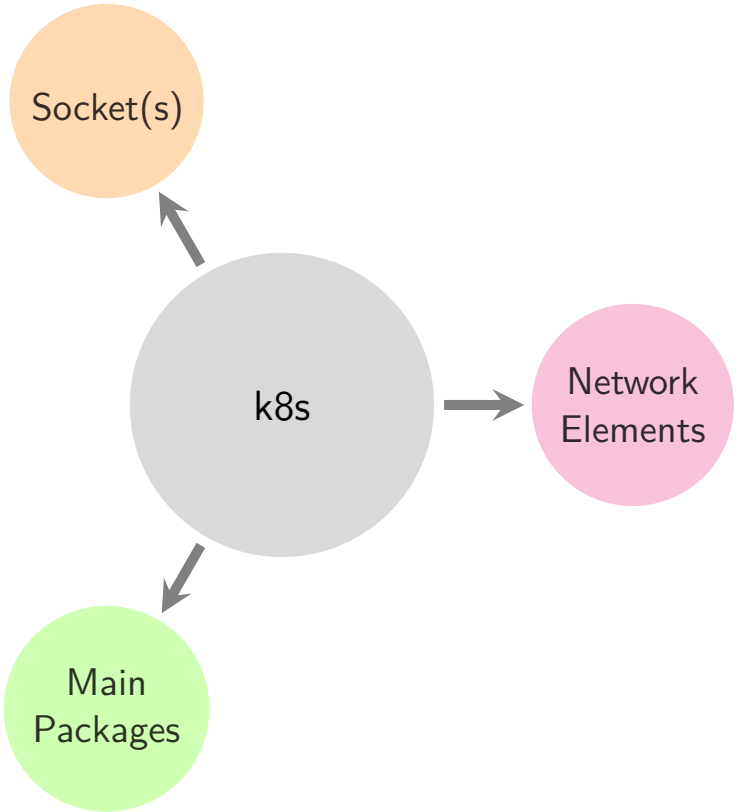

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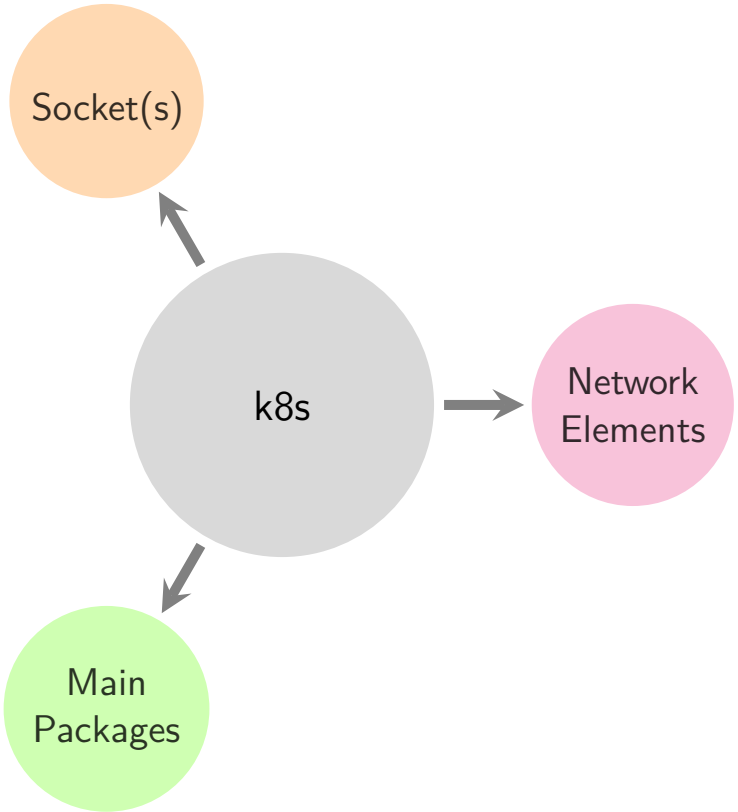

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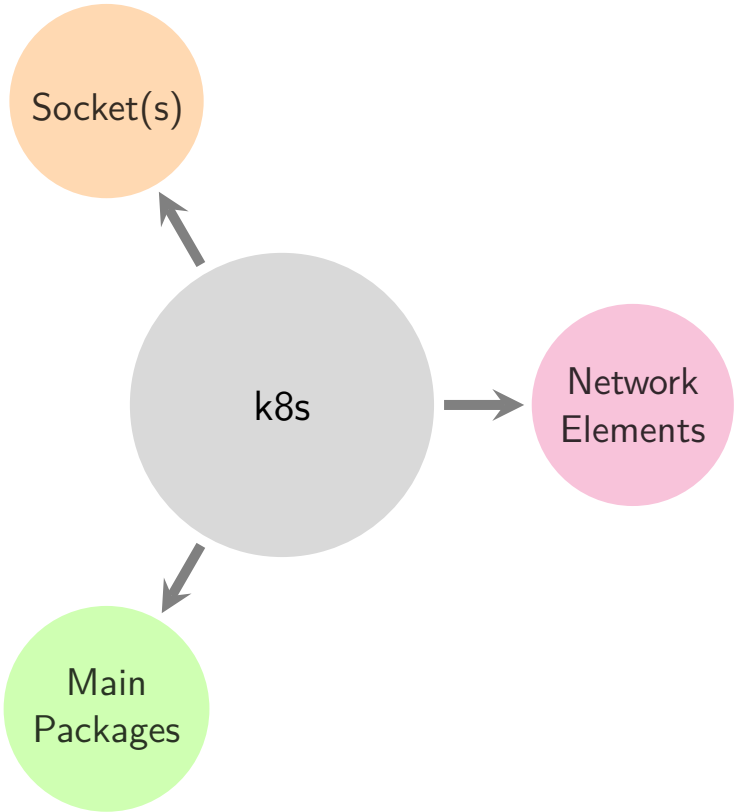

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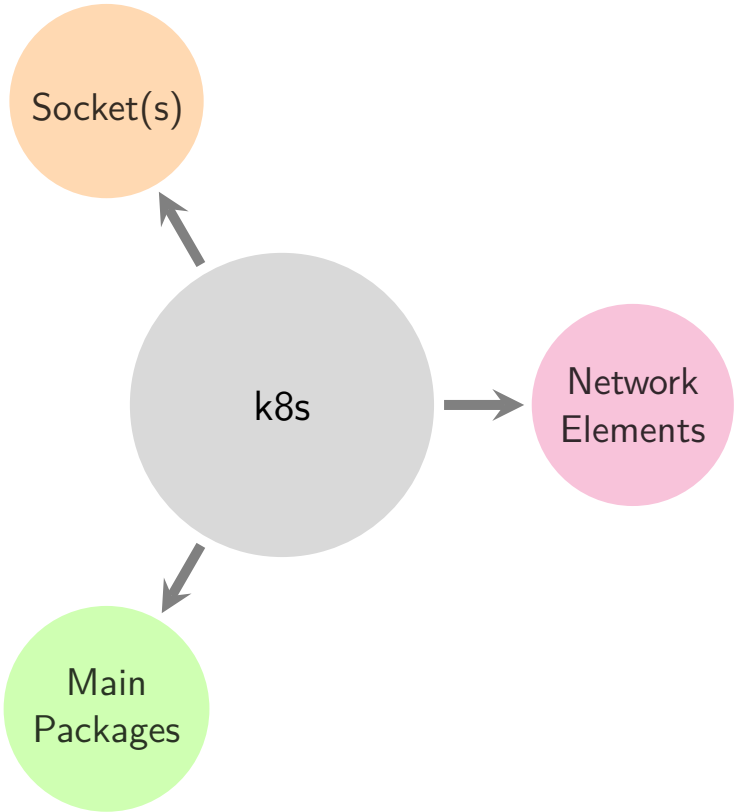

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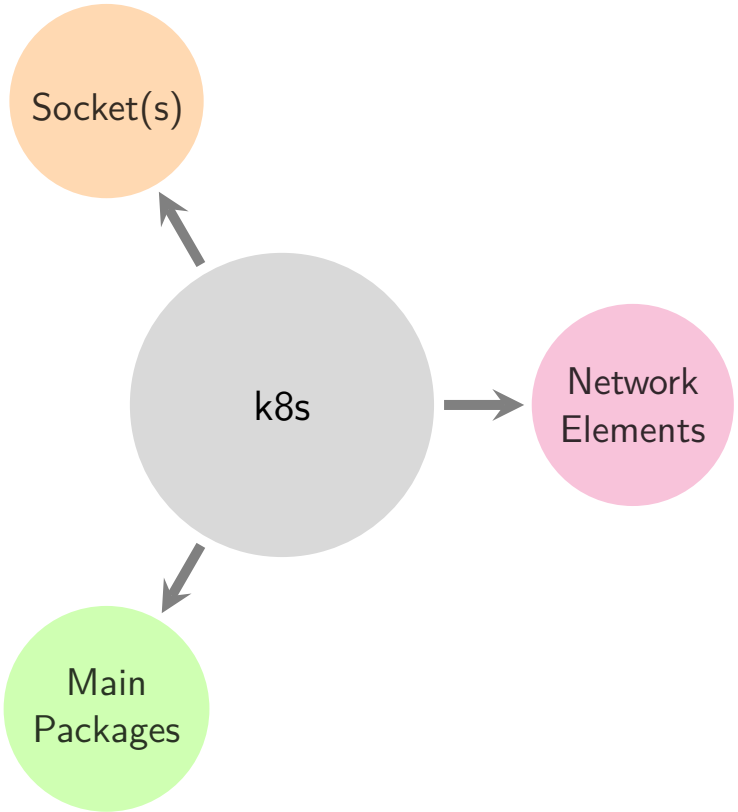

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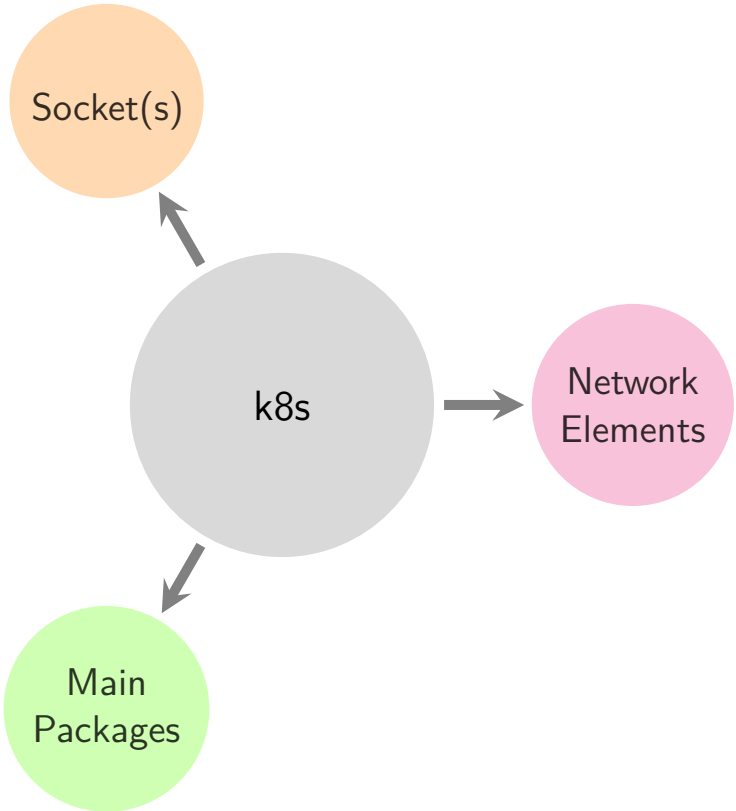

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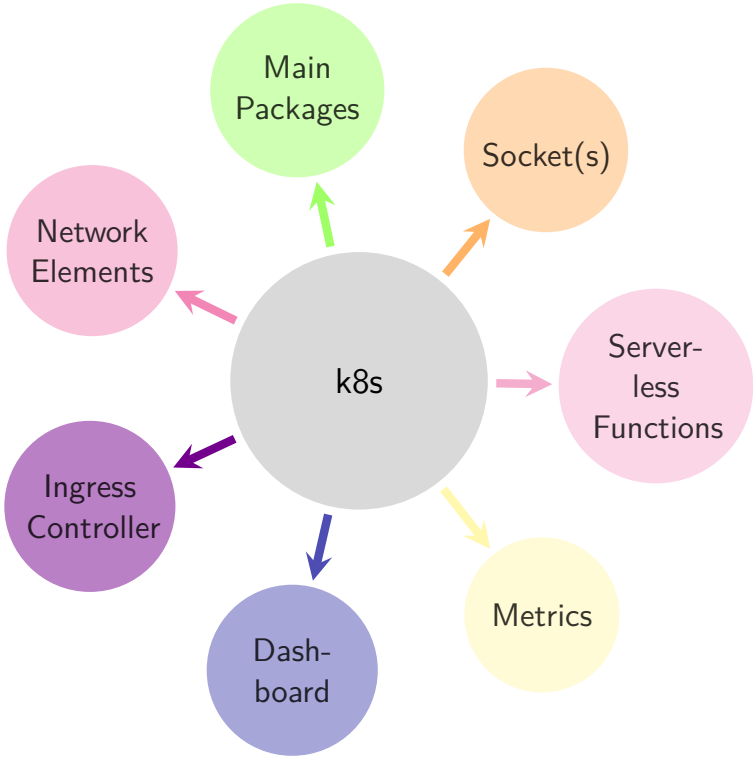

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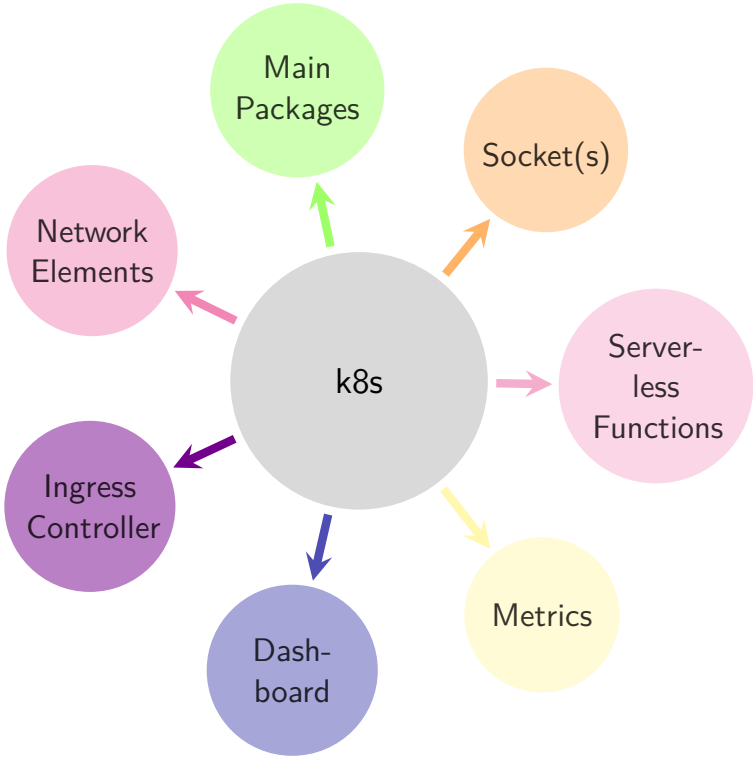

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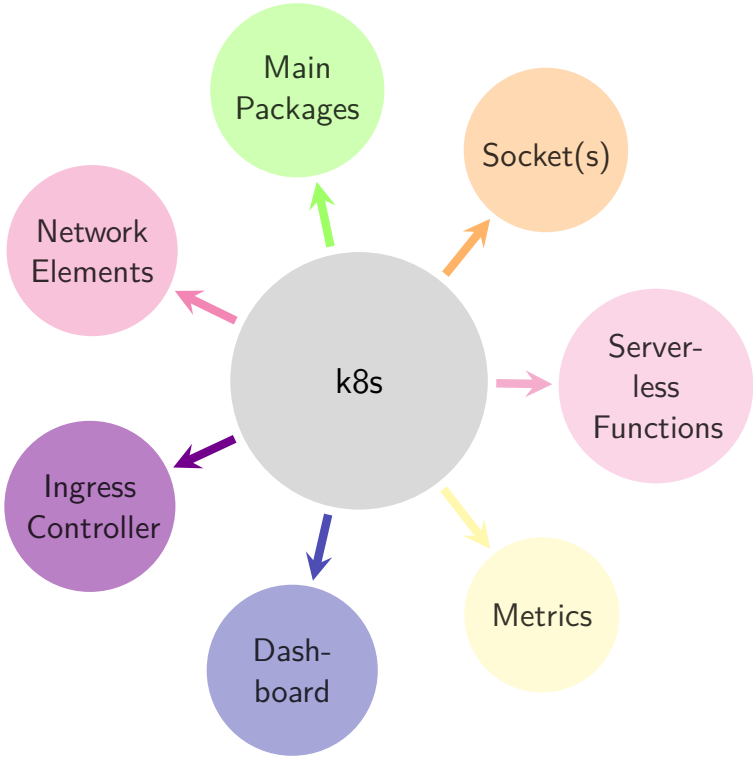

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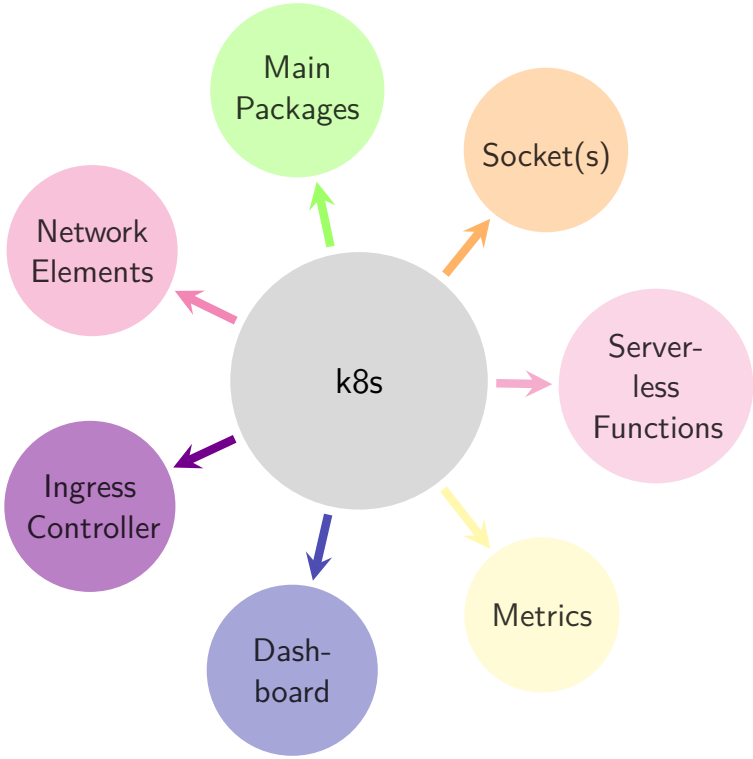

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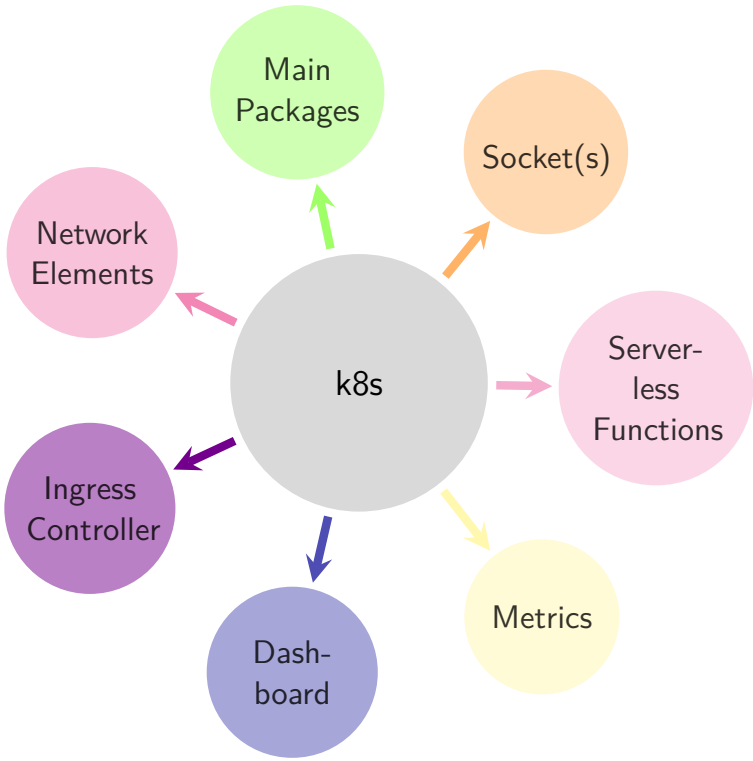

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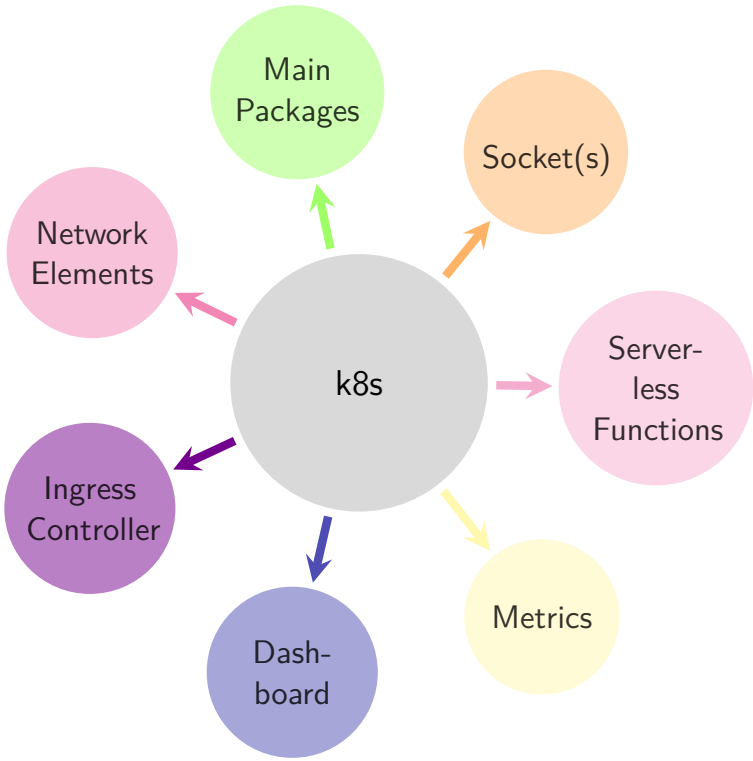

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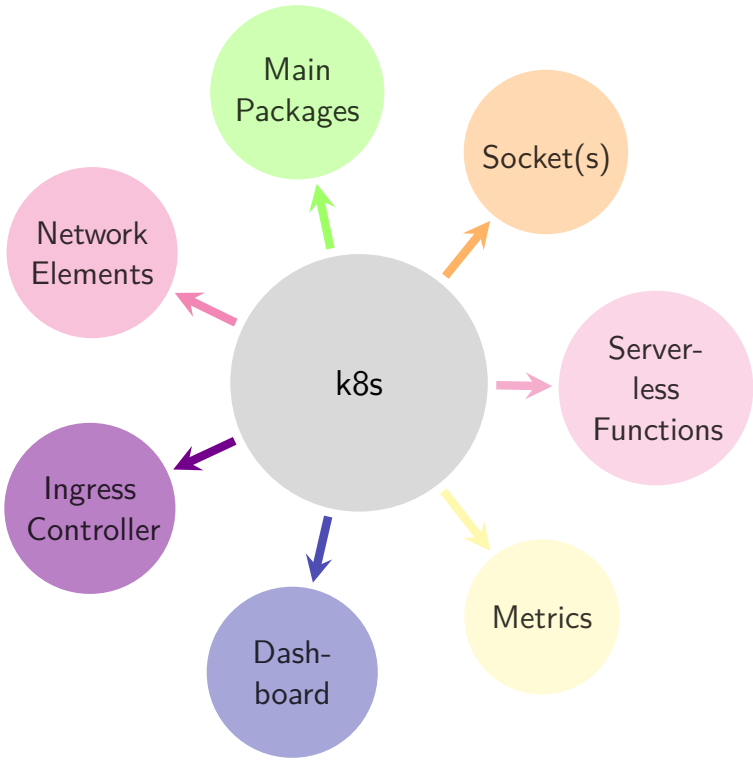

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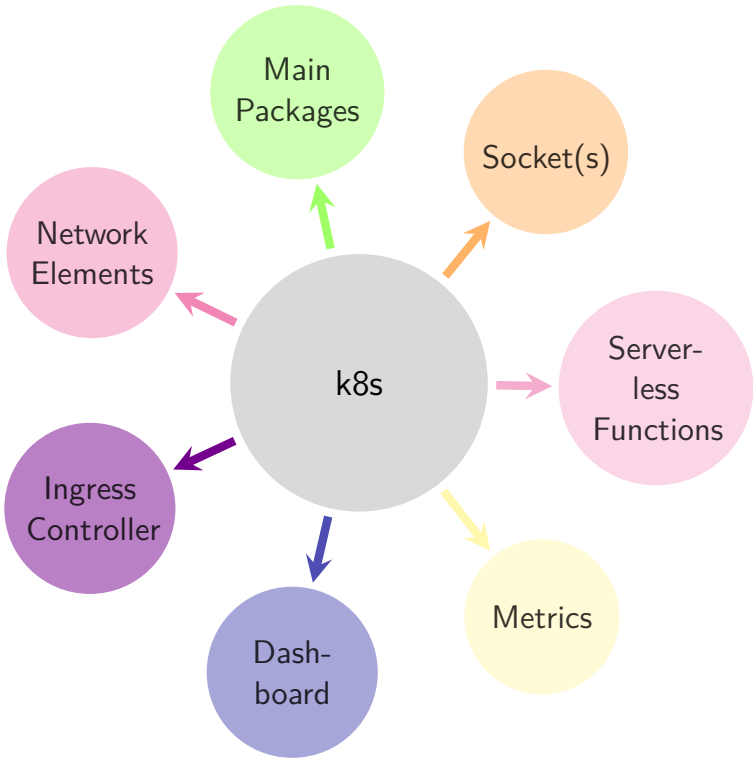

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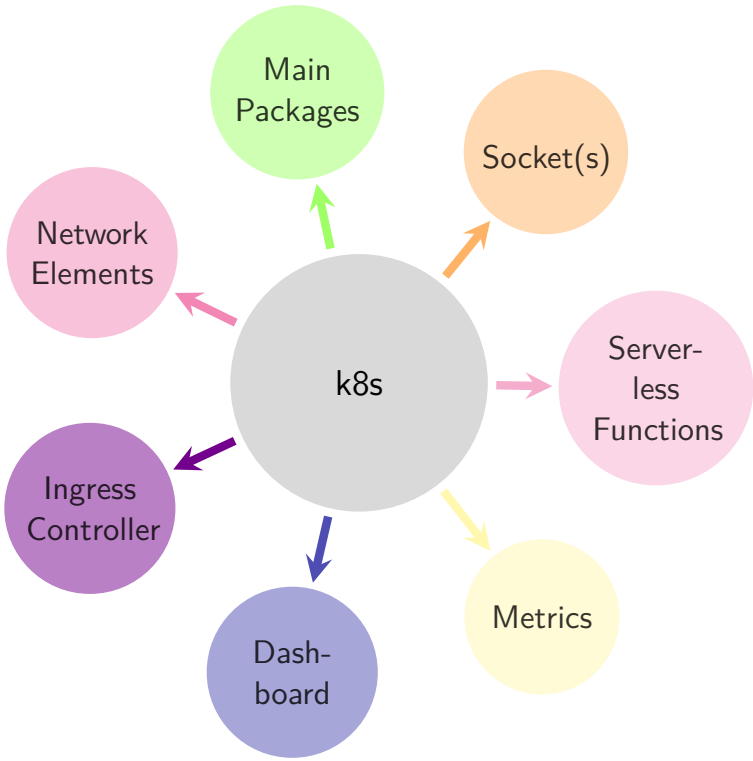

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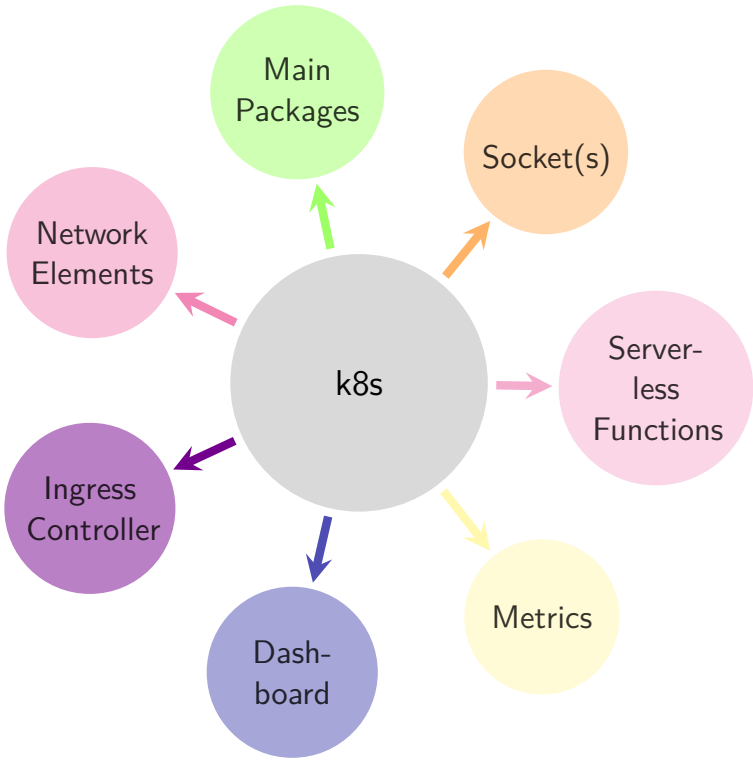

Coming up: Demo

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- In section “CI / CD” page “3” Problems / Desires / Solutions on CI / CD.
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Extra Notes

- Demo on CI / CD build / deploy / validation and error handling cases.
- Both the CI / CD and Kubernetes project are provided as open source contribution. The Presentation was written in LaTeX

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Coming up: Q & A

References I

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GNU Operating System
available at https://www.gnu.org/licenses/lgpl.html.

Author: K. Community
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