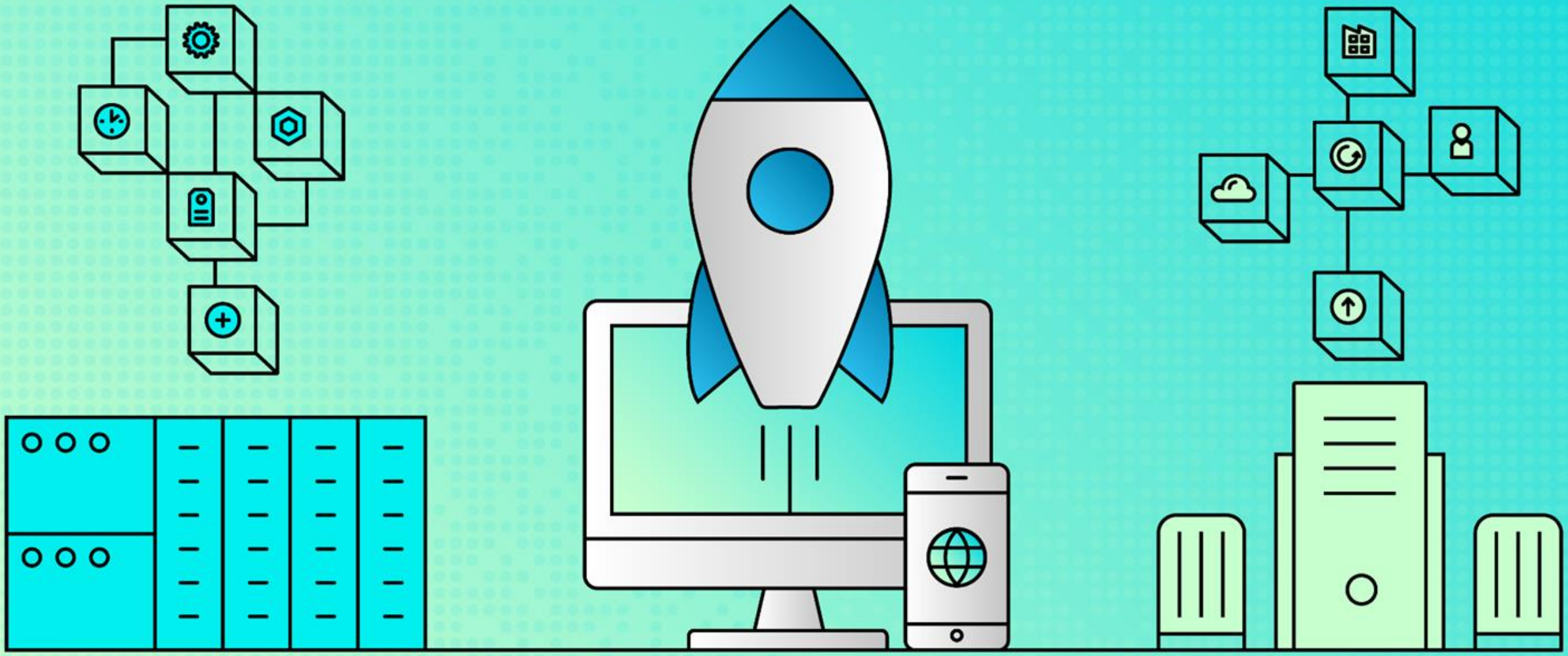
Ignition + Docker:
How to Use Containers for Faster Development



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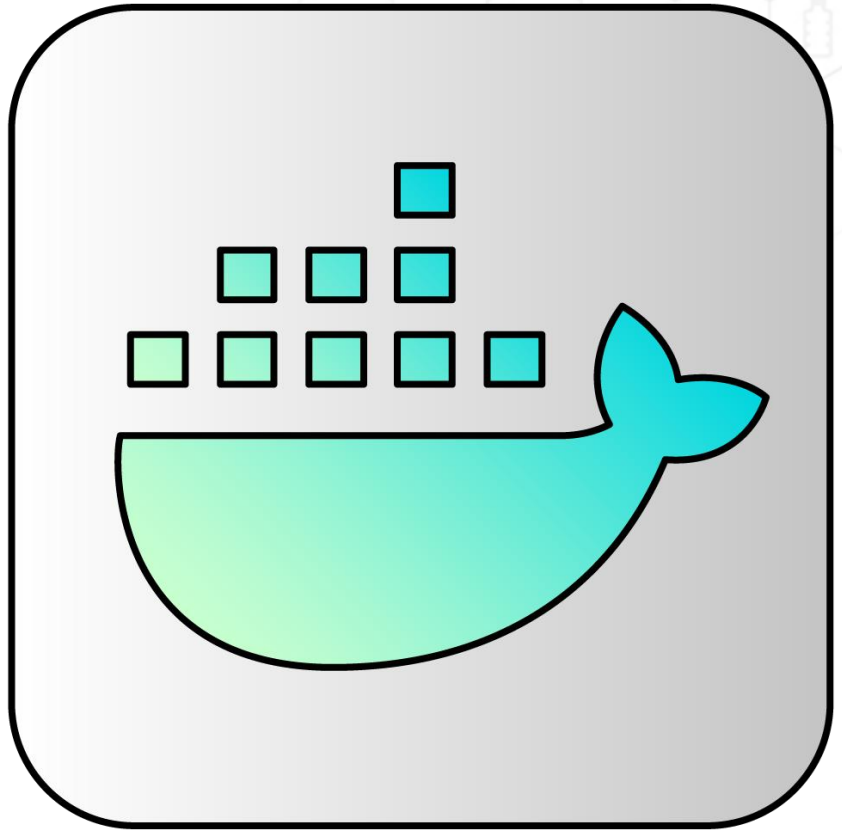
Agenda

- Introductions
- Containers Overview
- Development
- Testing
- Production
- Docker Resources
- Q&A



Containers Overview

What do containers bring to the table?

- Independent packaging of dependencies
- Isolated execution of your applications
- Minimal execution footprint
- Better density running Containers vs. VMs

... and more!

Development

Containers + Development

- Rapid spool-up and tear-down
- Modeling complex architectures
- Managing multiple projects independently

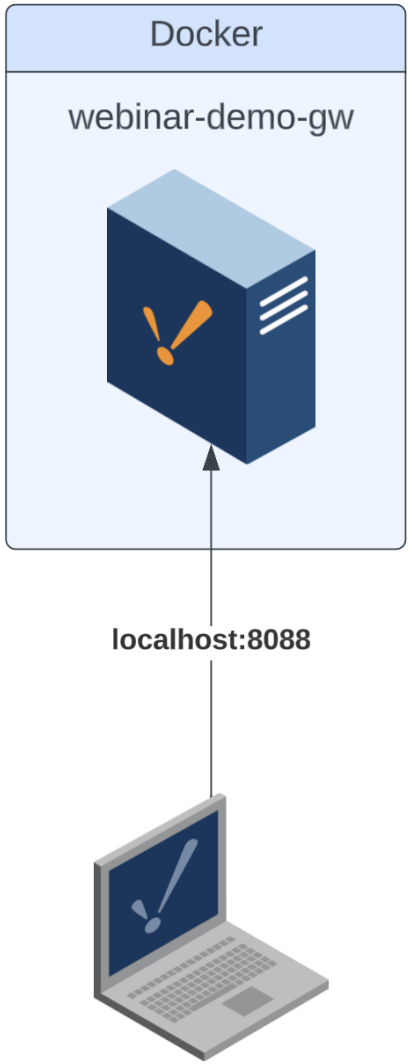
Development Demo

Technologies Used Today:

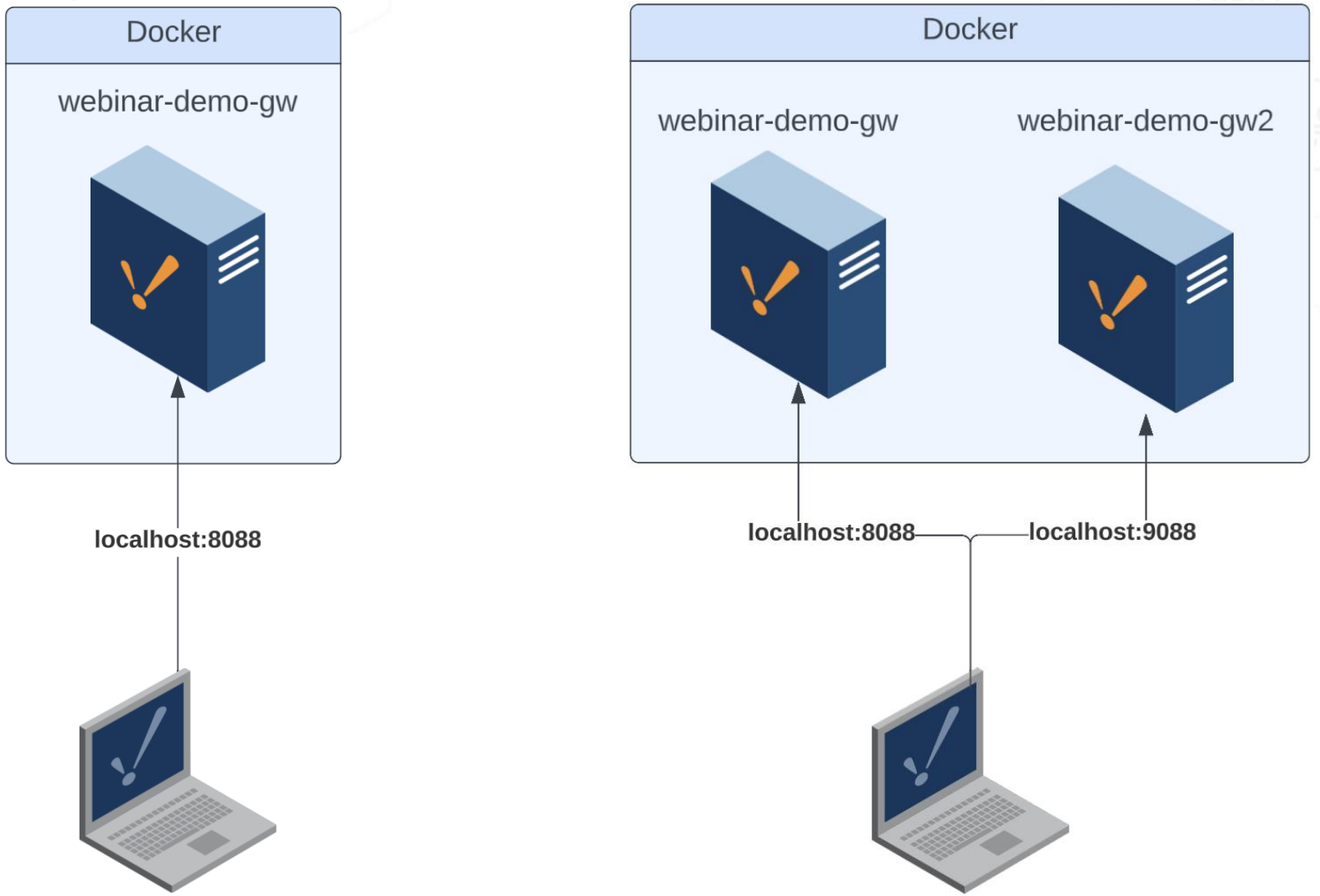
- Docker Desktop
- Docker Compose
- Traefik

Development Demo

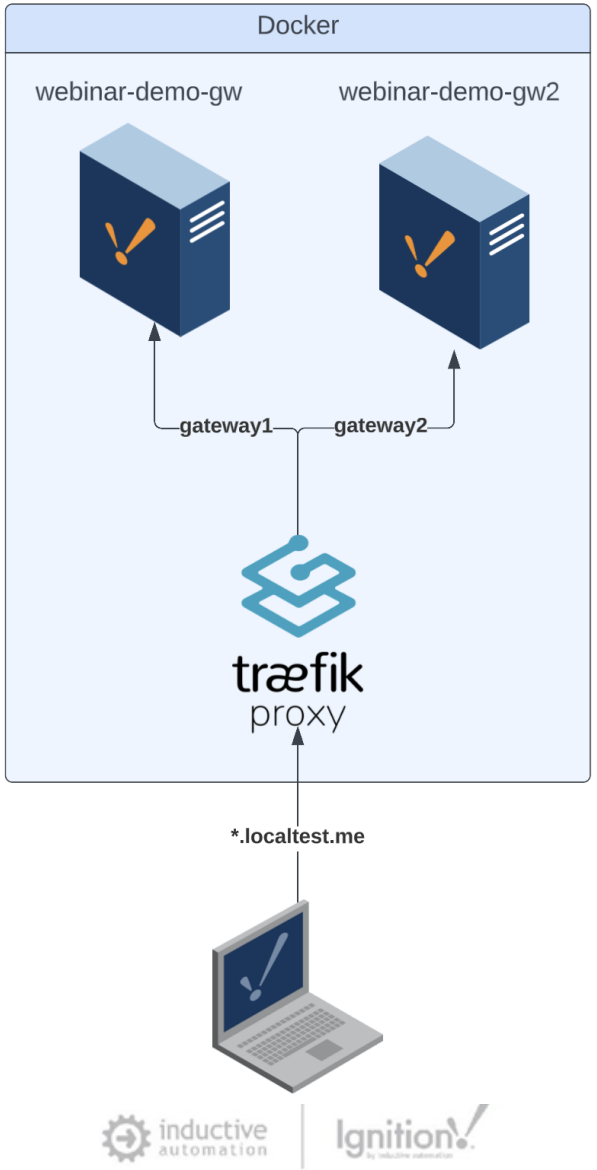
One Gateway Demo Architecture



Two Gateway Demo Architecture



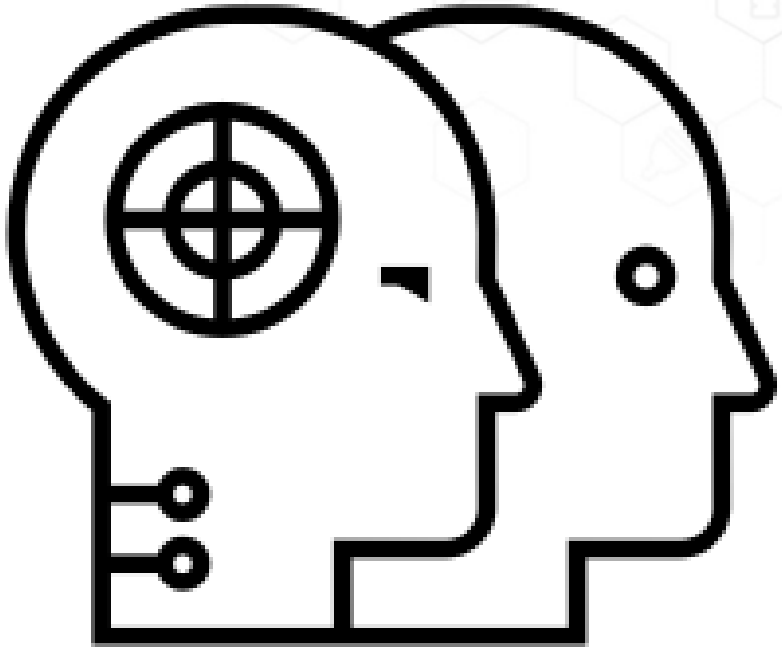
Traefik Demo Architecture



Leveraging Digital Twins for Testing

Digital Twinning

- Leveraging the `hostname` key to have simulated resources pointing to test resources.
- Creating multiple environments for Dev/Test/Prod
- Leveraging a container server to make developer gateways accessible to non-container leveraging users.



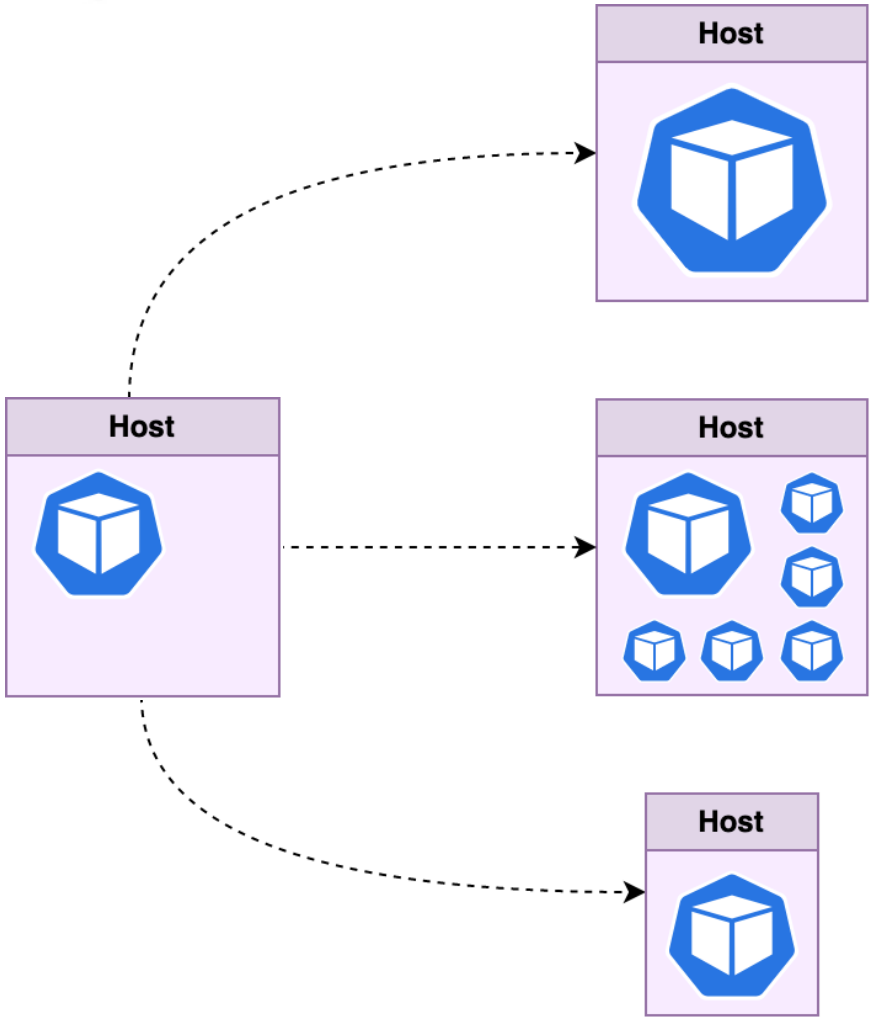
Production

Resource Optimization

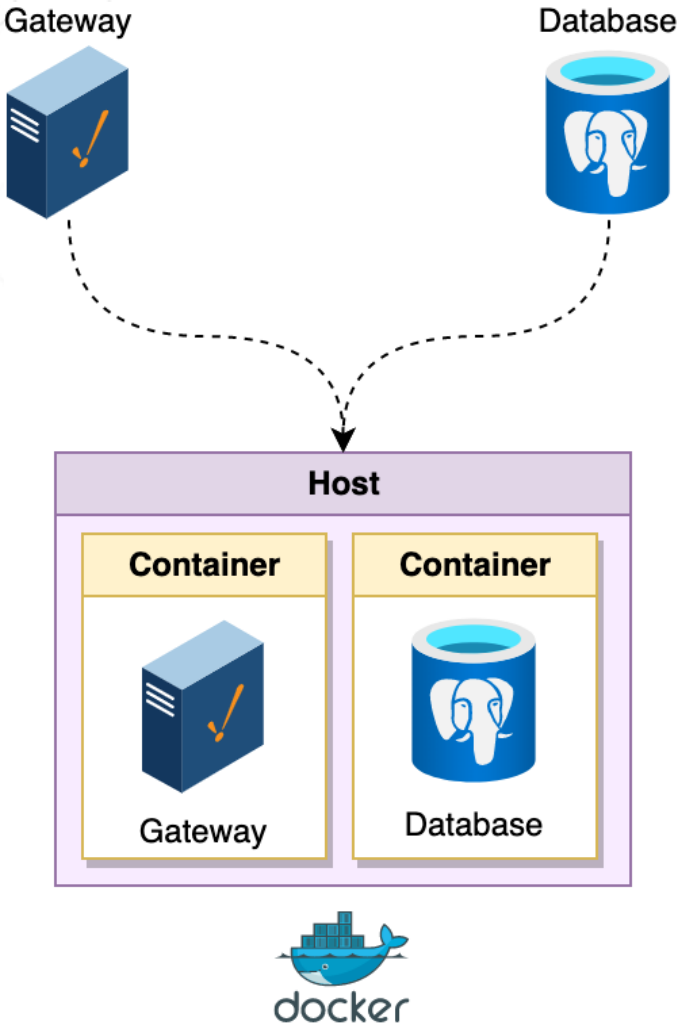
Orchestration

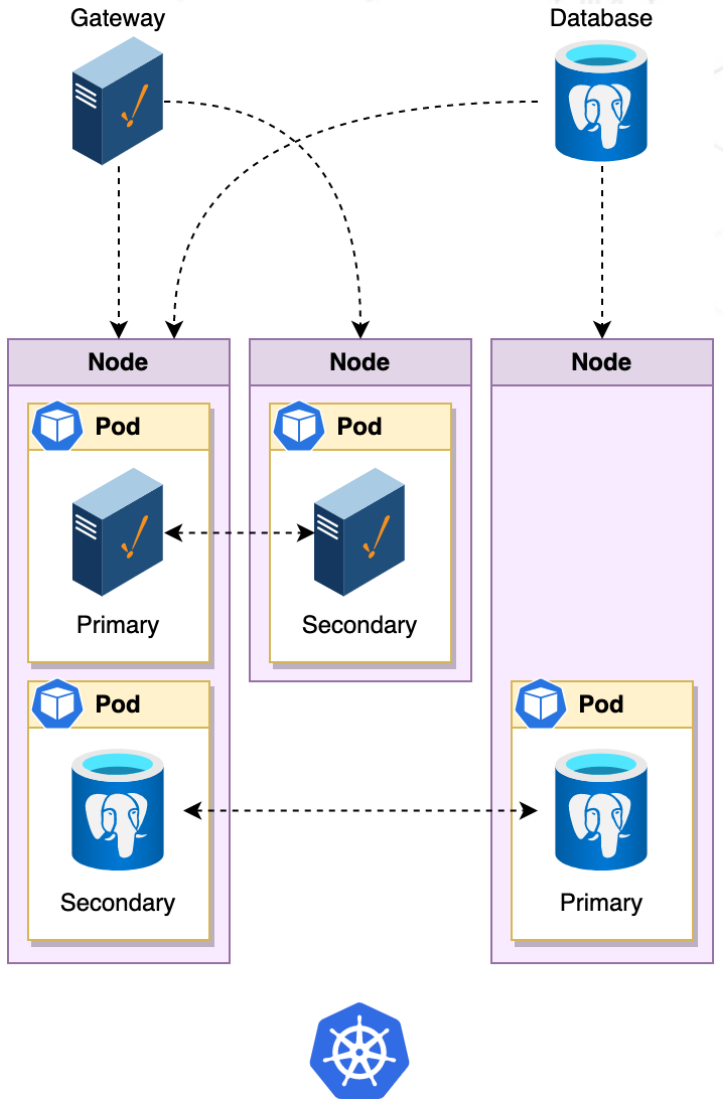
Monitoring

Production – Resource Optimization



Production – Orchestration

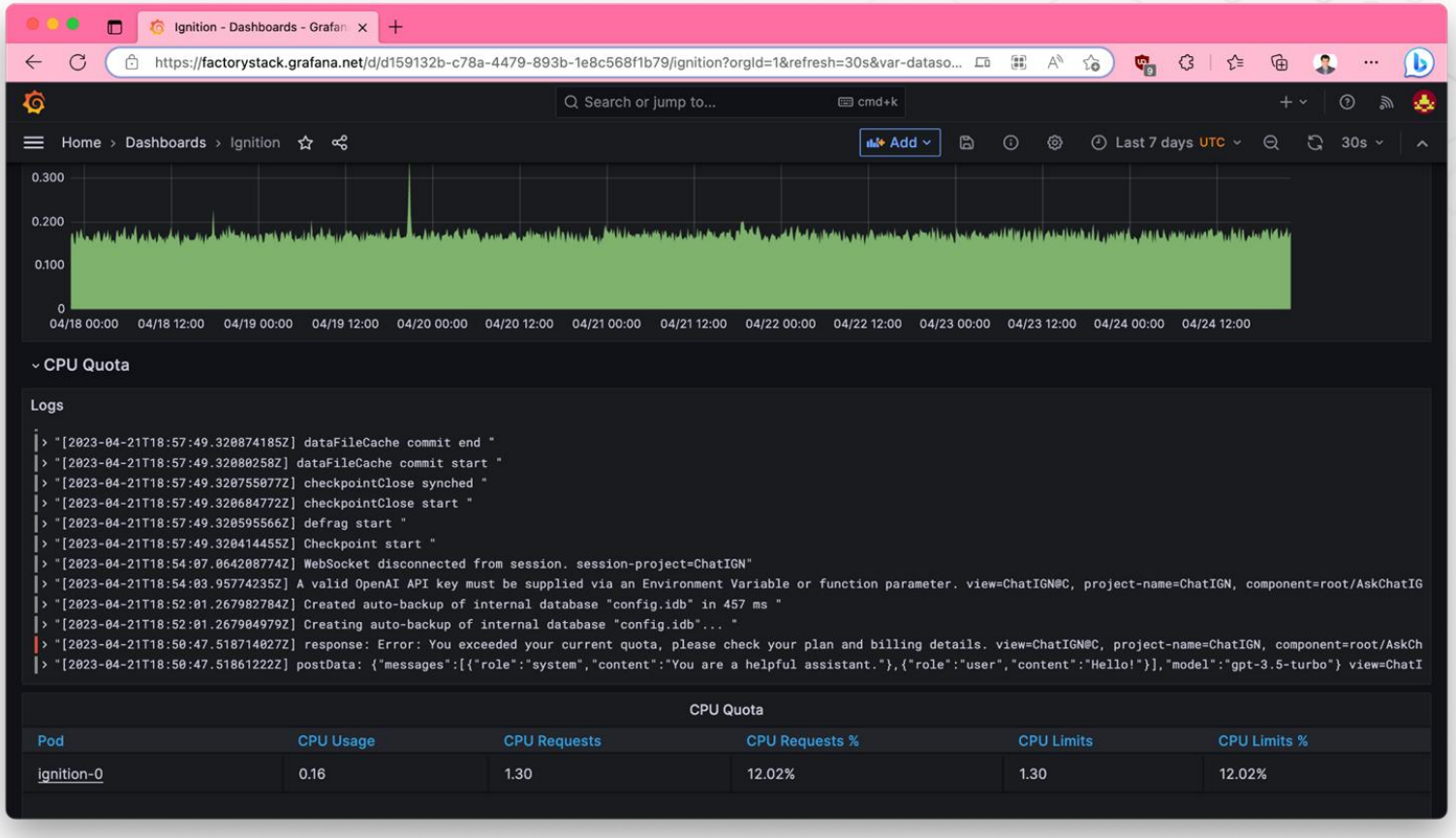




Production – Monitoring

“Observability”

- Health checks
- Metrics
- Logs
- Alerts
- SLOs



Additional Resources

- Ignition Container Image Documentation
  - https://docs.inductiveautomation.com/display/DOC81/Docker+Image
- Inductive University - Ignition+Docker Elective Studies Course
  - https://www.inductiveuniversity.com/courses/elective-studies/ignition-with-docker
- BW Design Group Development Docker Image
  - https://github.com/design-group/ignition-docker
- BW Design Group Traefik Guide
  - https://github.com/design-group/traefik-proxy
- BW Design Group Project Templates
  - https://github.com/design-group/ignition-docker-project-template
- FactoryStack™ – containers in Production:
  - https://www.4ir.cloud/factorystack

Github Gist w/ Links

BW Design Group Project Templates

ignition-docker-project-template

gateway

ignition-iiot-project-template

publisher

broker

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postgres-docker-project-template

gateway

database

pgadmin

mssql-docker-project-template

gateway

database

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Questions & Comments

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