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Course status

- On the course: 128
- Situation open: 8
- Discontinued: 23

- First exercise submitted: 21 (25.09.2023 19:30)
- About 10 repos in course-gitlab looked active.

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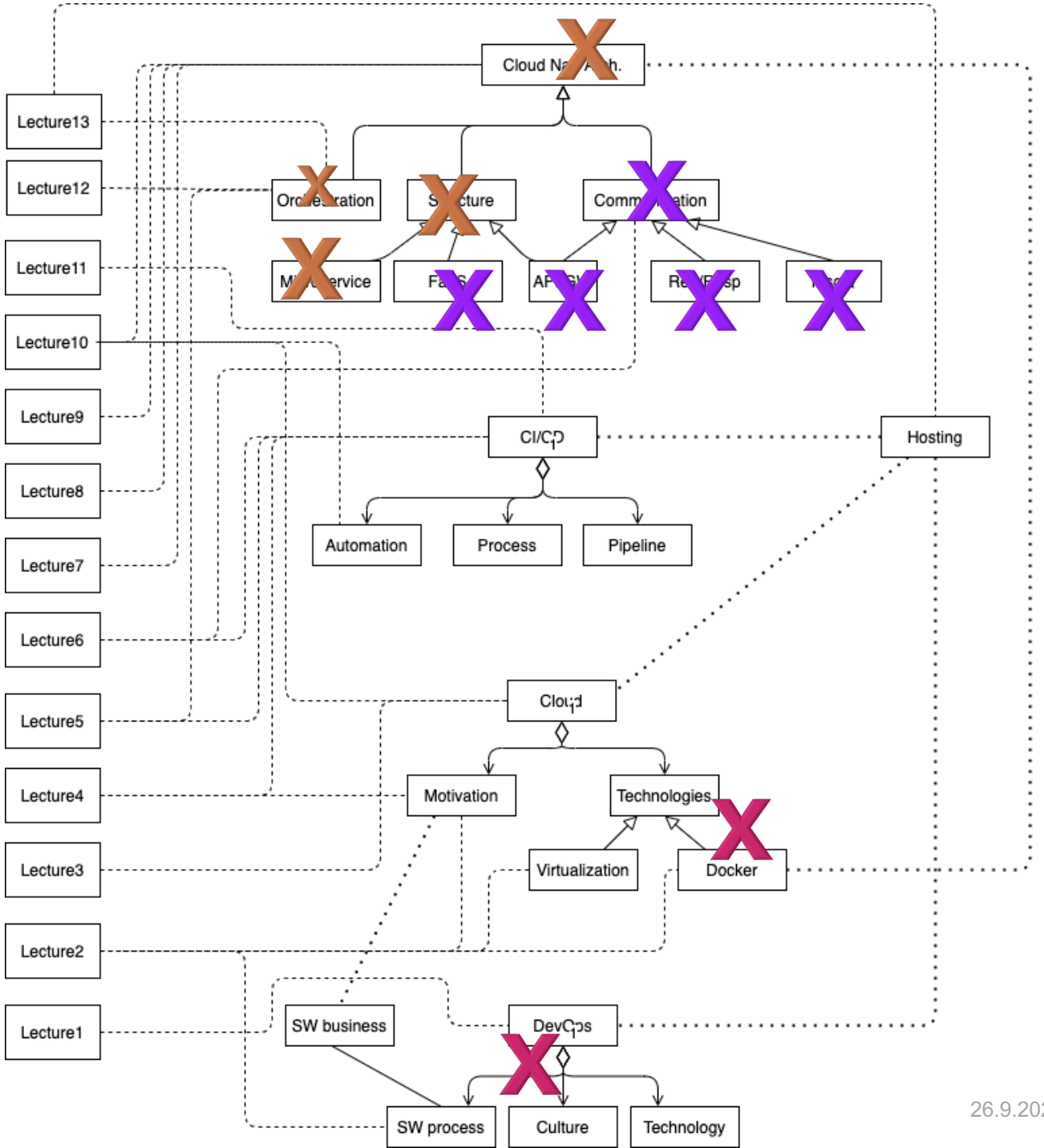
Content map



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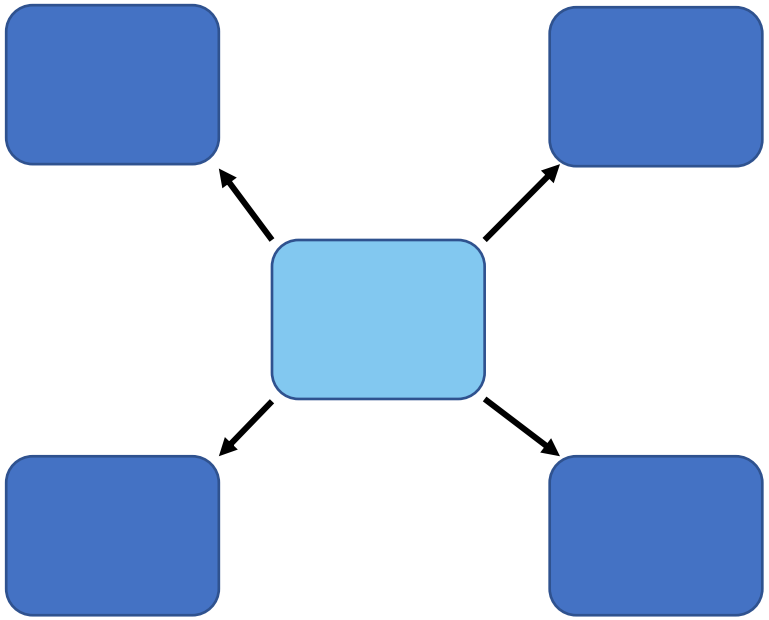
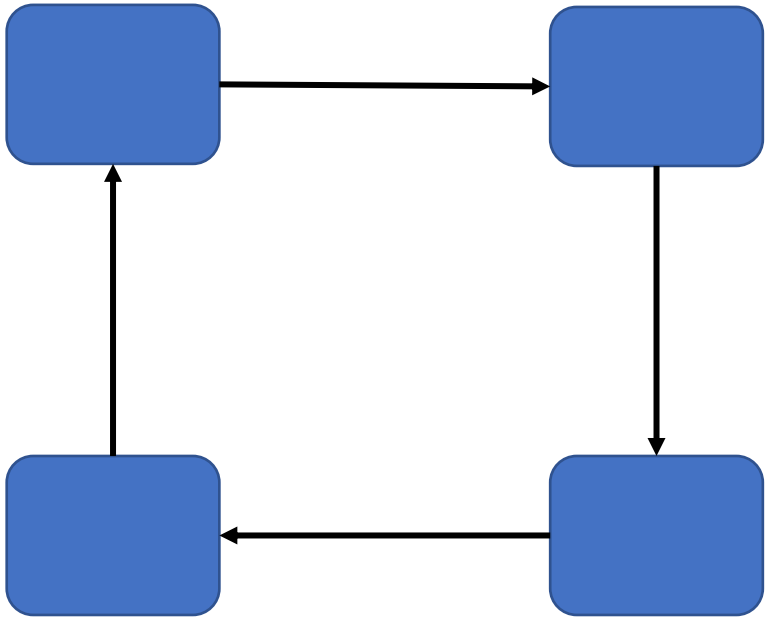
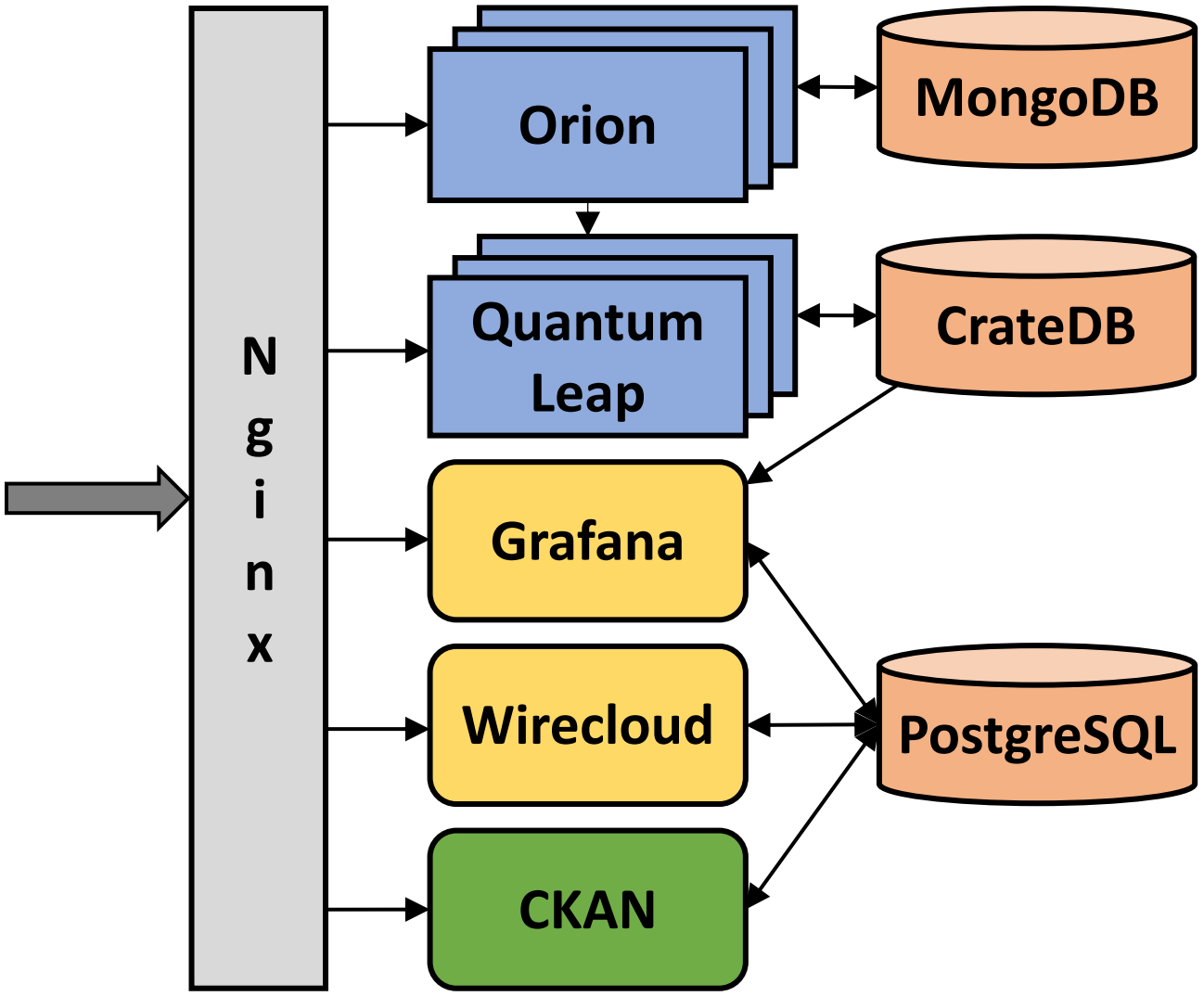
Cloud-native should support Orchestration vs Choreography





FIWARE platform architecture



FIWARE Core Component

Dashboard Component

Data Management Component

Database

Access control, proxy server

FIWARE access control components (Keyrock, Wilma and AuthZForce) are not included in this document.

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Cloud Native - Why

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Cloud-native – what/how?

1. **Packaged as lightweight containers**
2. **Developed with best-of-breed languages and frameworks**
3. **Designed as loosely coupled microservices**
4. **Centered around APIs for interaction and collaboration**
5. **Architected with a clean separation of stateless and stateful services**
6. **Isolated from server and operating system dependencies**
7. **Deployed on self-service, elastic, cloud infrastructure**
8. **Managed through agile DevOps processes**
9. **Automated capabilities**
10. **Defined, policy-driven resource allocation**

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Cloud-native and development

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Cloud-native and operation

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Cloud-native and end user

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Cloud-native and business

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Cloud-native and sustainability

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Microservices

- Modular and decomposed ?
- Service-oriented ?
- Distributed ?
- Message-oriented ?
- Independently developed ?
- Independently deployed ?

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What do you remember from the previous courses?

- Properties of an Agile (e.g. Scrum) team?

- Self-organizing ?
- Cross-functional ?
- Co-located ?
- 7 +- 2/4 ?

Issues with microservices

- Decoupling from the monolithic system
- Database migration and data splitting
- Communication among services
- Service orchestration complexity

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Some definitions

- If an app is "cloud-native," it’s specifically designed to provide a consistent development and automated management experience across private, public, and hybrid clouds.
- A native cloud application (NCA) is a program that is designed specifically for a cloud computing architecture.
  - NCAs are designed to take advantage of cloud computing frameworks,
  - which are **composed of loosely-coupled cloud services**.
  - That means that developers must break down tasks into separate **services that can run on several servers in different locations**.
  - Because the infrastructure that supports a native cloud app does not run locally, NCAs must be **planned with redundancy** in mind so the application can withstand equipment failure and be able to re-map IP addresses automatically should hardware fail.

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Next week (3.10)

- About the first exercise (post morten)
  - To prepare: think what was stupid in the exercise
- Communication architectures and technologies
  - Videos and material available later today
- Introduction to next exercise