

# DYNAMOS: Dynamic Adaptive Microservice-OS

For data-exchange scenarios

- Master Software Engineering, University of Amsterdam
- Create 'atomic' microservices, to be combined for different use cases
- Middleware to orchestrate services, restricted by ***programmable policy***

# Data exchange marketplaces

AMdEX

AMdEX translates your data sharing agreements into machine-readable policies, that can automatically be enforced.

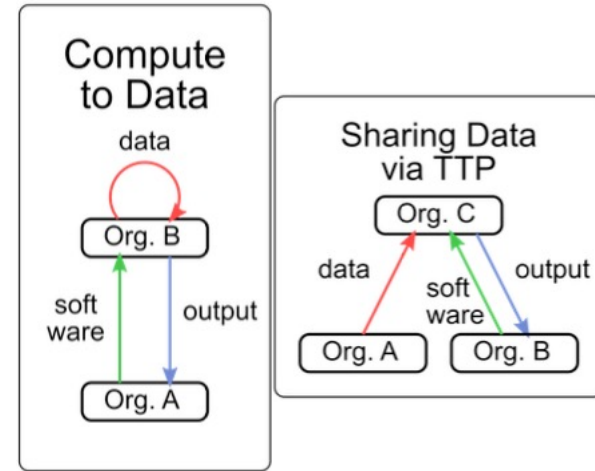


## Use cases:

- Medical: analysis on patient data
- Federated Machine Learning (Predictive maintenance on airline data)
- Sharing anonymous sensor data (smart buildings)

# Goal

- Orchestrate microservices aligned with data-sharing archetypes
- Create **Trust**; the system will follow policy
- Create algorithms to optimize on extra-functional properties (Green IT, server load, optimal archetype selection)
- Self-adaptivity, deployments, archetypes and configurations can change **per request**



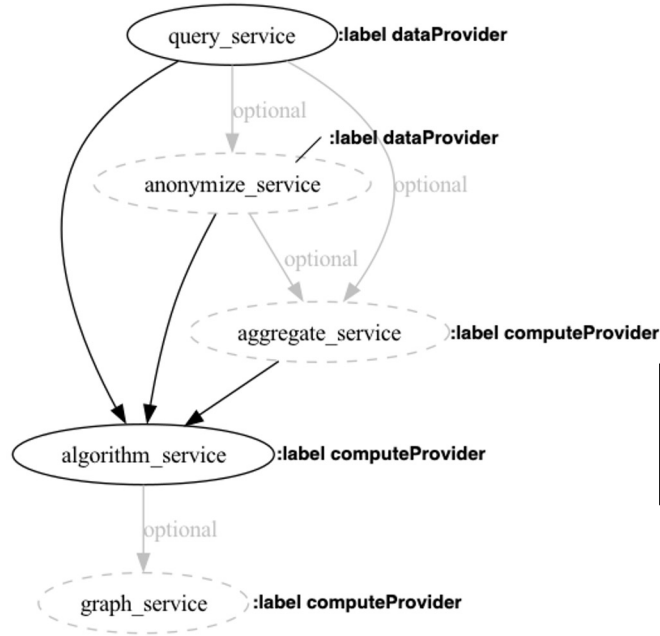
**Archetypes<sup>1</sup>**

# How it works



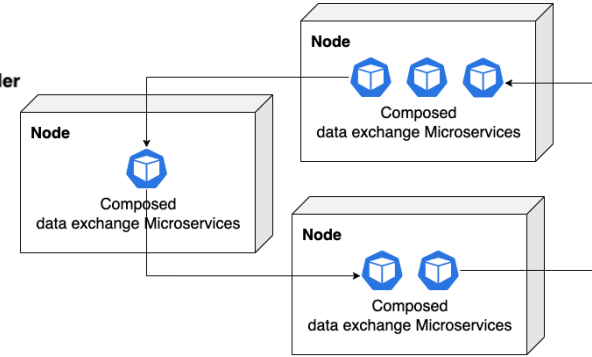
1.

Check policy and additional requirements



2.

Generate microservice chain



3.

Create single-use data-exchange jobs

# Next steps



- Experiment with additional data-sharing archetypes
- Link Fabric into DYNAMOS
  - Full distributed scenarios
  - Sharing large datasets
  - Move control plane components into the network
- <https://delaat.net/ofc/>

