Three Types of Microservice Components

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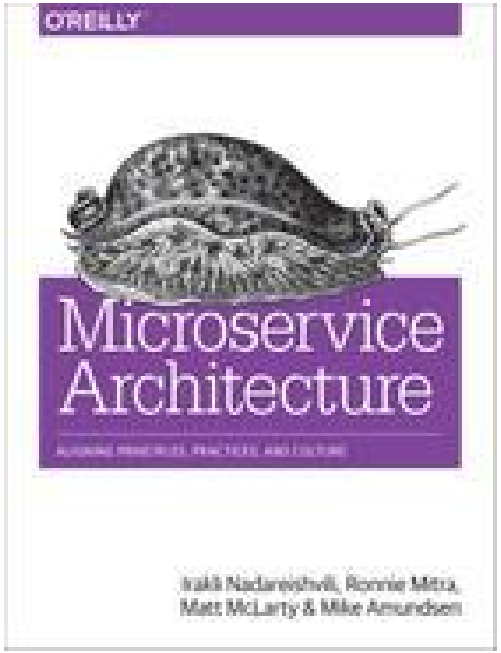
CAUTION: Half-baked thinking ahead


O'REILLY
Microservice Architecture
Irakli Nadareishvili, Ronnie Mitra,
Matt McLarty & Mike Amundsen


Release It!
Second Edition
Design and Deploy
Production-Ready Software
Michael T. Nygard
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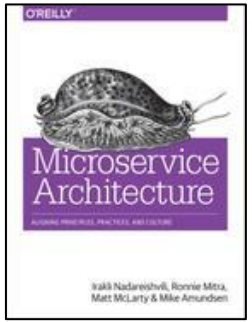
Microservices

Loosely-coupled components running in a resilient, engineered system



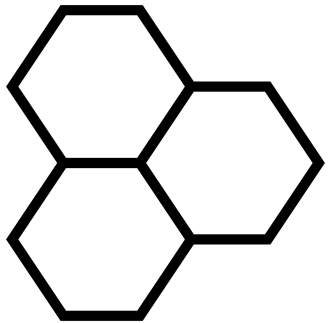
"Nygaard Stability Patterns"

- **Timeout (stop waiting)**
- **Circuit Breaker (reroute during failure)**
- **Bulkhead (contain damage)**
- **Steady State (automated clean-up, purges, etc.)**
- **Fail Fast (decide to stop processing)**
- **Handshaking (negotiation, health checks, etc.)**

- Caching : A capacity pattern referenced here, too

Three Types of Microservice Components

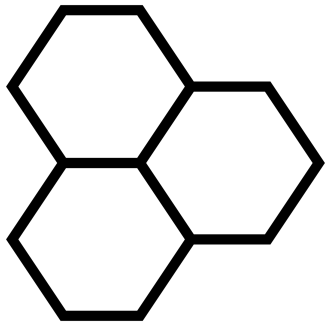
- Stateless (compute)
- Persistence (storage)
- Aggregation (choreography)



Stateless Microservice

- Simple processors (converters, translators, etc.)
- No dependence on other microservices
- No local data storage (disk I/O)

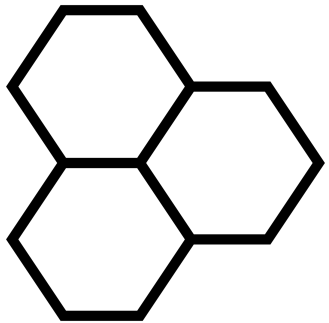
- *Caching*
- Fail Fast



Persistence Microservice

- Simple (local) storage (reads and/or writes)
- Disk I/O dependent
- Possibly VM, one-U, dependent

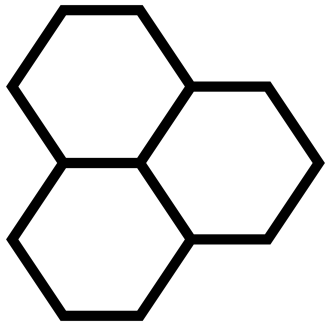
- *Caching*
- Fail Fast
- Timeout
- Circuit Breaker
- Steady State



Aggregation Microservice

- Depends on other ("distant") microservices
- Network dependent
- Usually Disk I/O dependence, too

- *Caching*
- Fail Fast
- Timeout
- Circuit Breaker
- Steady State
- Handshaking
- Bulkhead



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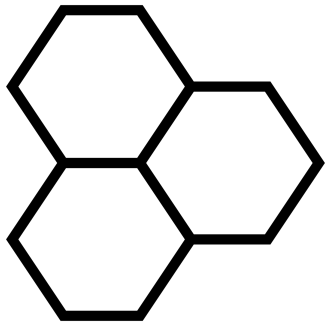
- Stateless
- Persistence
- Aggregation

Apply Nygaard's Stability Patterns to improve the health of your components and your system.



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