

# Microservices Architecture

CSSE6400

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Microservices

Inspired by DDD

### Definition 1. Bounded Context

Logical boundary of a domain where particular terms and rules apply consistently.







## Definition 2. Service Cohesion Principle

Services are cohesive business processes. They are a bounded context.

### Definition 3. Service Independence Principle

Services should not depend on the implementation of other services.



### Corollary 1. Low Coupling

Services should have minimal coupling with other services.

## Corollary 2. No Reuse

Services do not reuse components from other services, to avoid dependencies.

## Choreography & Orchestration

**Choreography** Similar to event-driven *broker*

**Orchestration** Similar to event-driven  
*mediator*





Question

How bad is the coupling with choreography or orchestration?

### Question

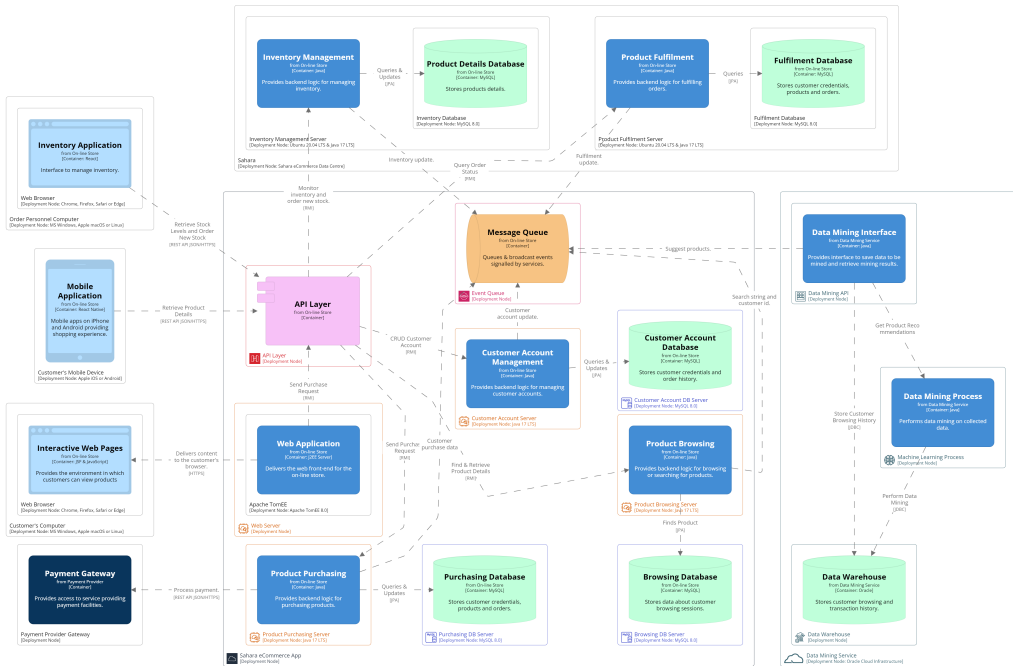
How bad is the coupling with choreography or orchestration?

### Answer

For a very large system, very bad.







Question

Are *browsing* and *purchasing* separate contexts?

### Question

Are *browsing* and *purchasing* separate contexts?

### Answer

- Are they a single business process or different processes?
- Do they share much or little data?

## Question

- What about *inventory management* and *browse*?
- How do they maintain a consistent product database?

## Pros & Cons

Modularity



Extensibility



Reliability



Interoperability



Scalability



Security



Deployability



Testability



Simplicity

