

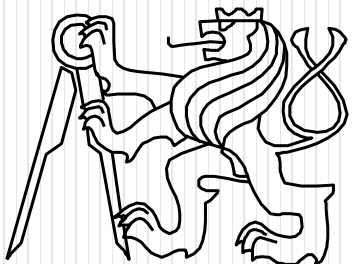
# Enterprise Java (BI-EJA)

## Technologie programování v jazyku Java (X36TJV)

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Letní semestr 2010/2011, přednáška č. 10

<https://edux.fit.cvut.cz/courses/BI-EJA>

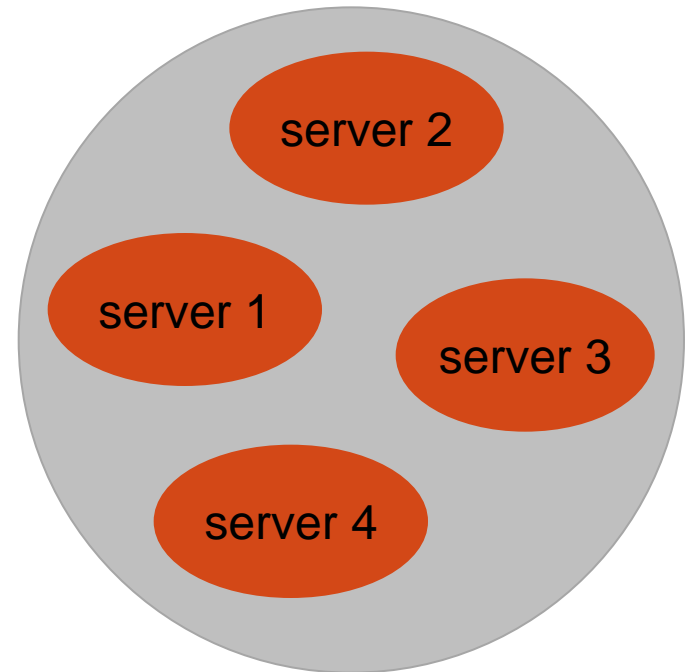
<https://edux.feld.cvut.cz/courses/X36TJV>

# Agenda

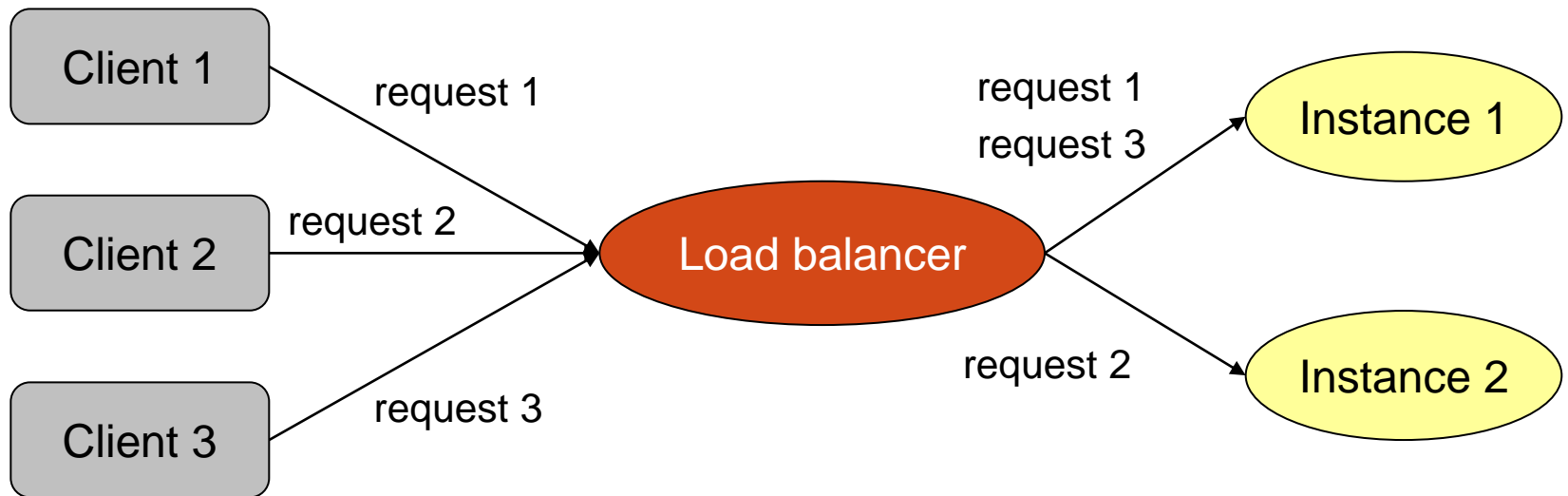
- Clustering
  - Load balancing (rozdělování zátěže)
  - Failover (překonání chyby)
- GlassFish 3.1

# Cluster

- Klastř je seskupení několika instancí aplikačního serveru
- Pro klienta vypadá klastř jako jeden aplikační server
- Pro aplikaci je klastř téměř transparentní



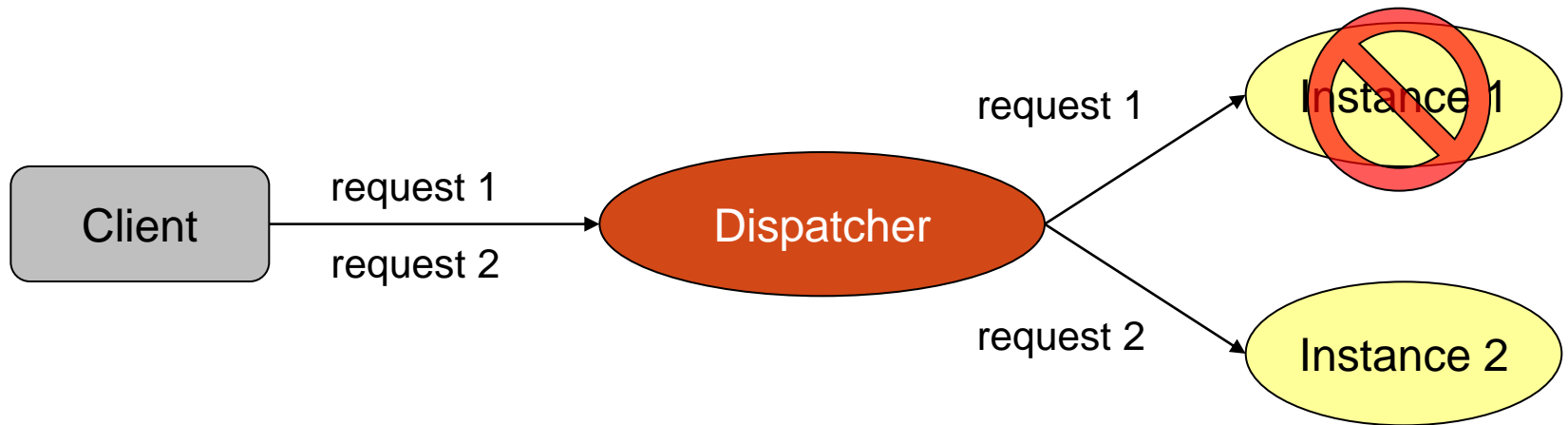
# Load Balancing



# Distribuce požadavků

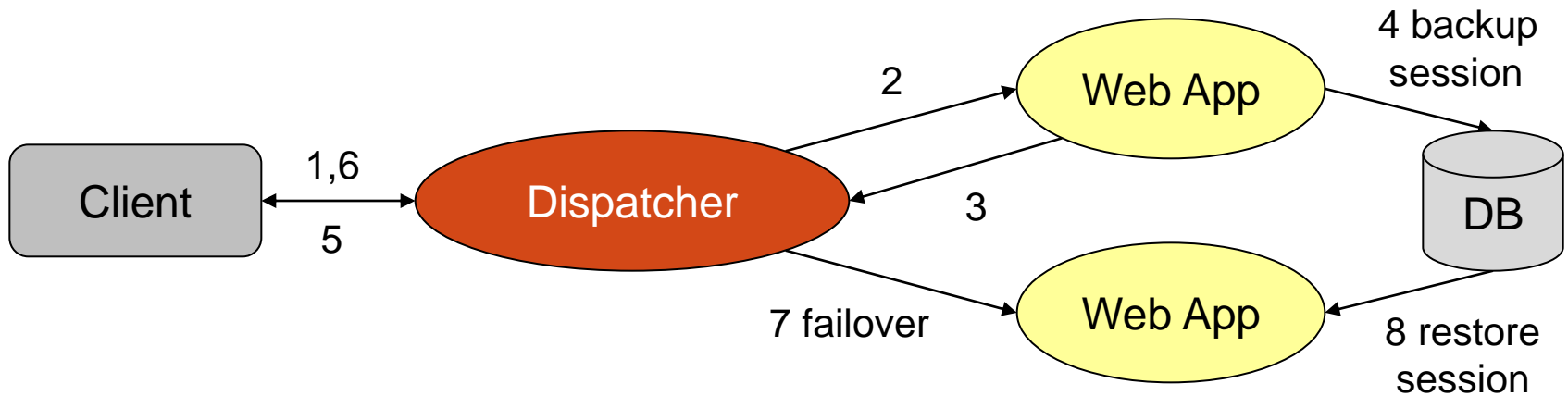
- round-robin algorithm
- response-time or first-available algorithm
- least-loaded algorithm
- weighted algorithm
- random

# Failover



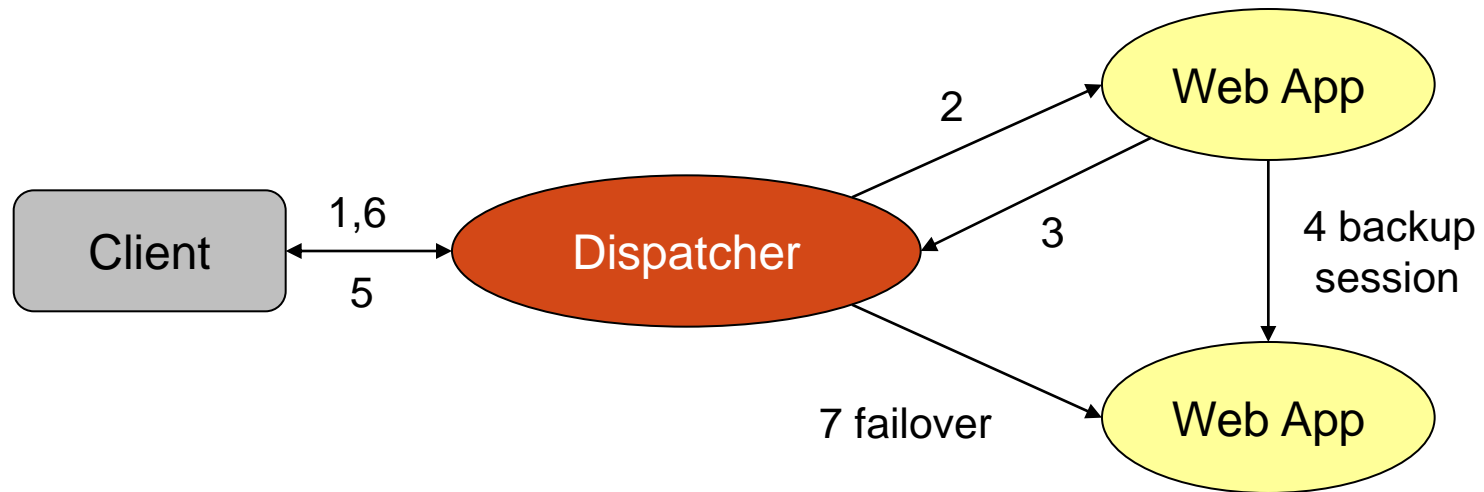
Požadavky, které nemají vedlejší efekt, lze bezpečně zopakovat

# Database Replication



- global HTTPSession ID
- backup frequency and granularity

# Memory Replication (1)

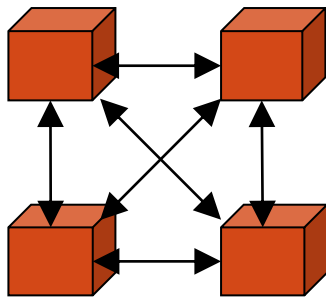


- „restore session” není potřeba
- výkonově lepší než ukládání do databáze

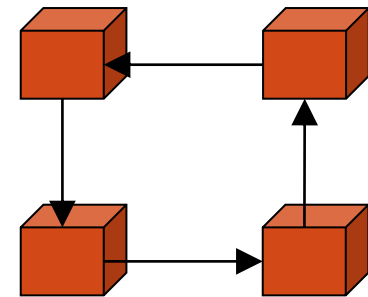


# Memory Replication (2)

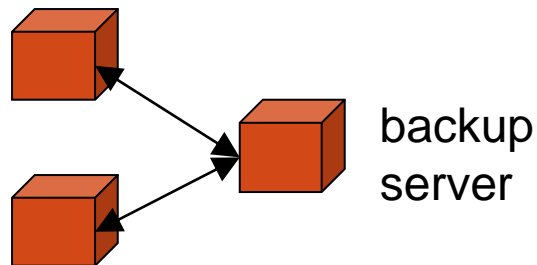
Multi-servers replication



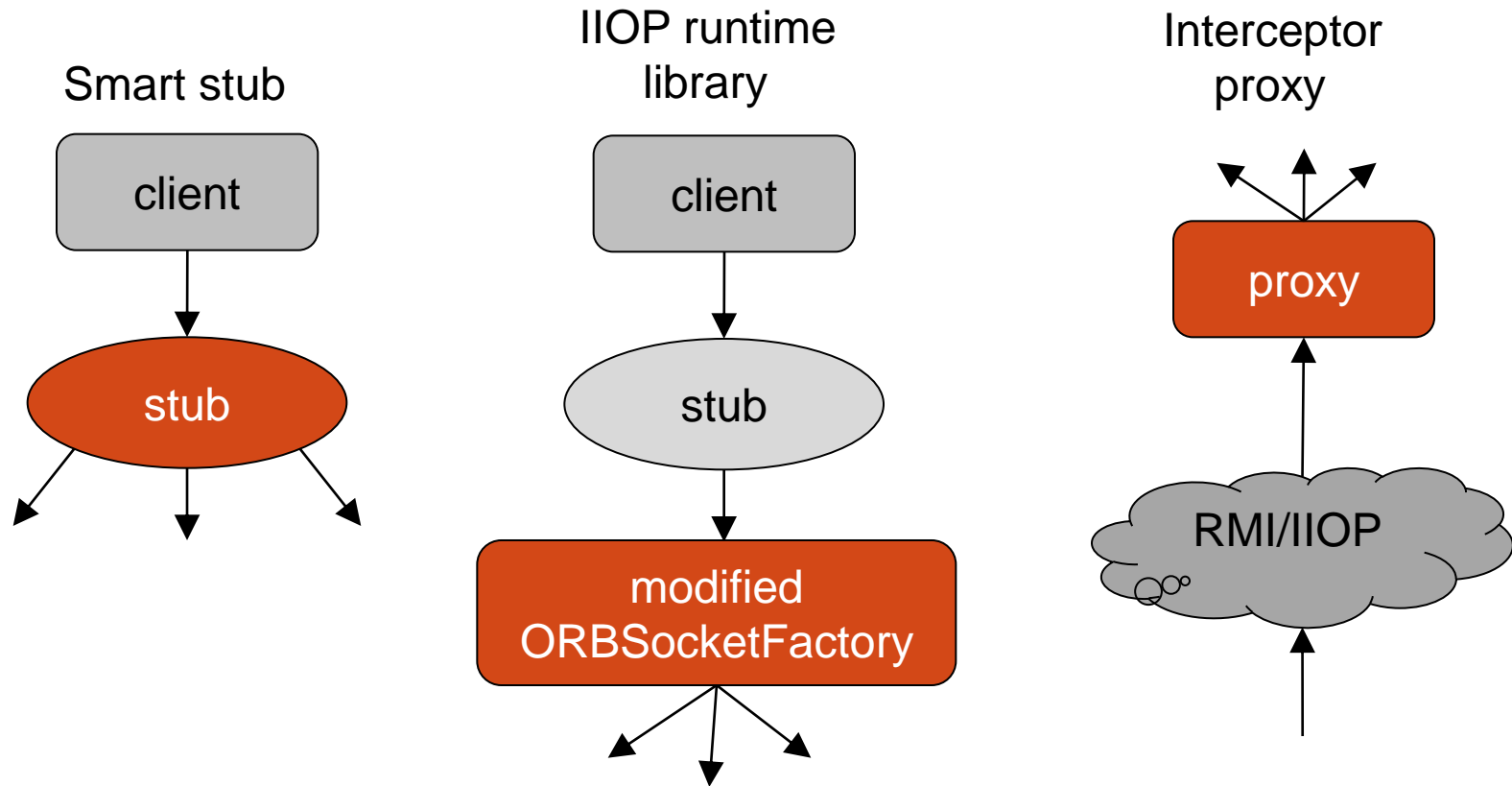
Paired servers replication



Centralized server

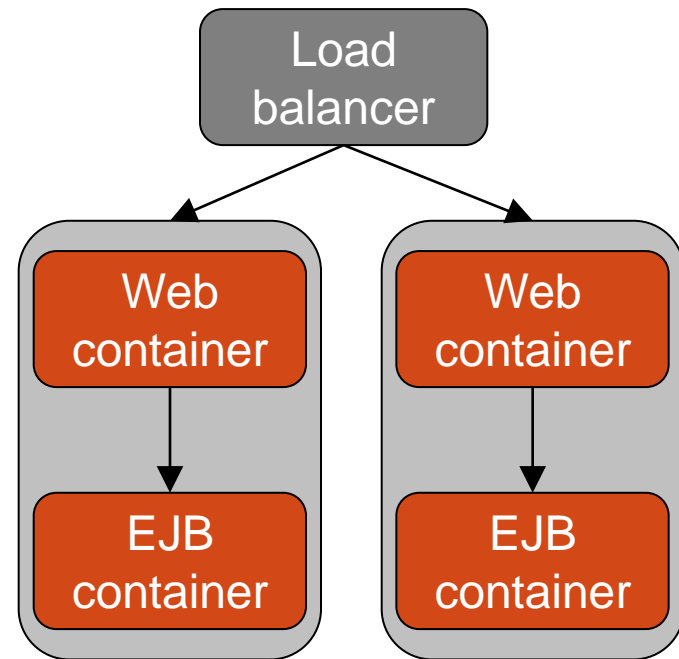
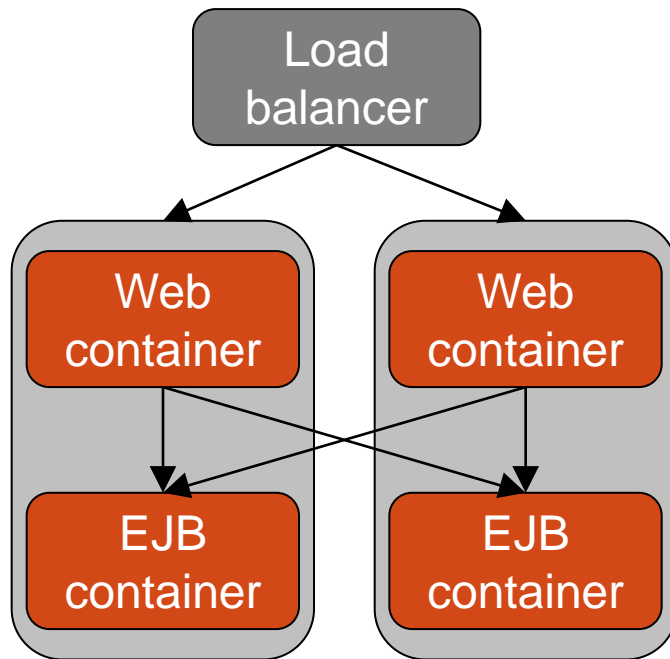


# EJB Clustering

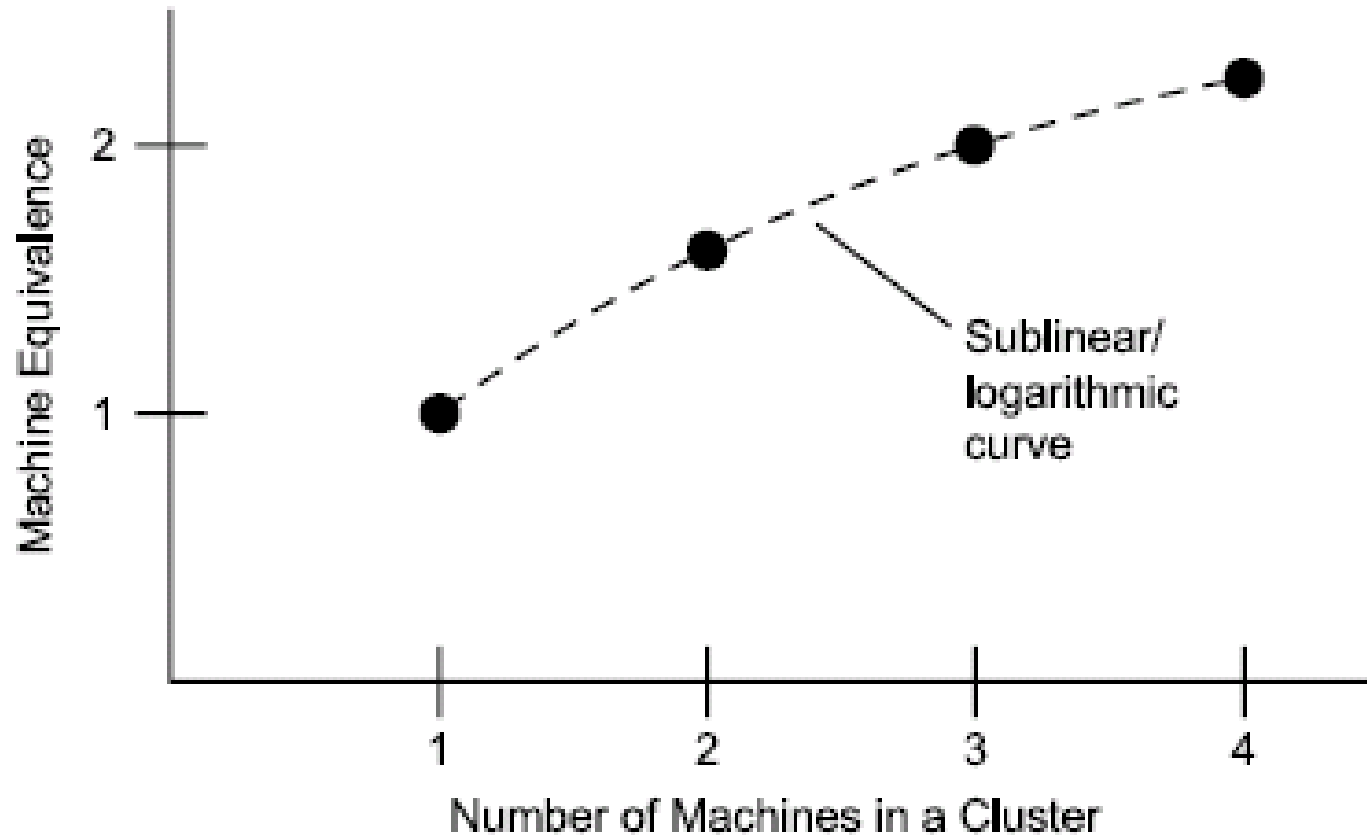


# Mýty

- failover dokáže zcela eliminovat chyby – NE!
- každou aplikaci lze pustit v klastru – NE!
- distributed structure vs. collocated structure



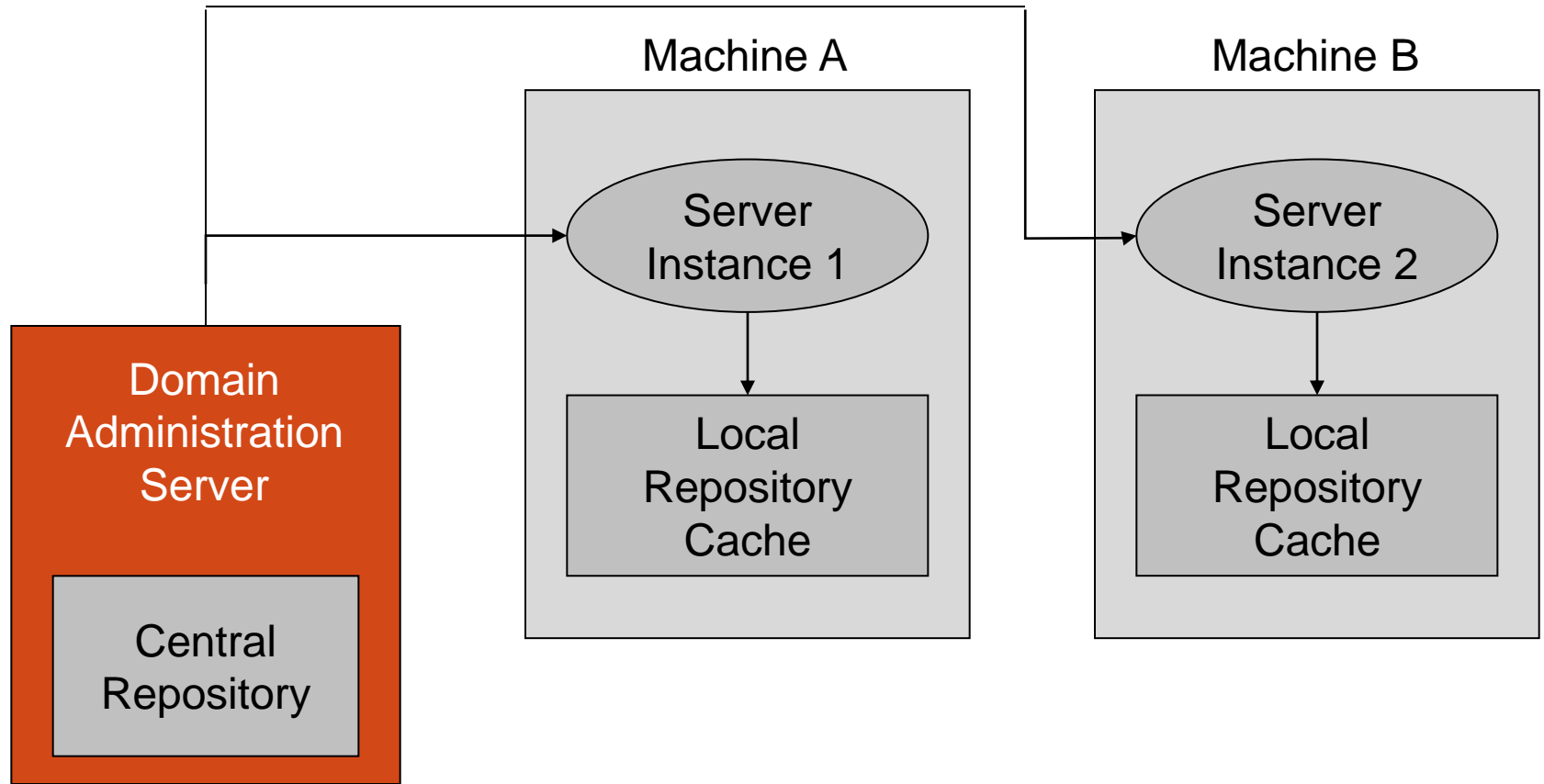
# Machine Equivalence



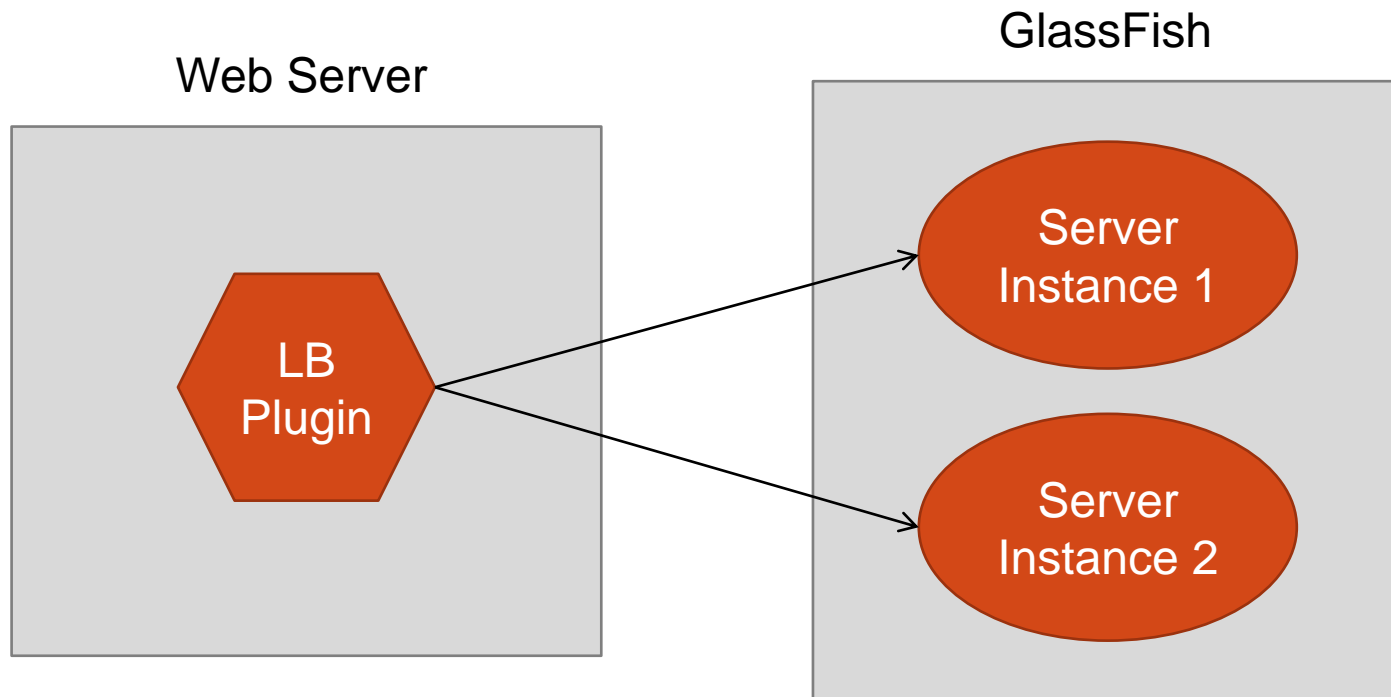
# GlassFish Components

- Domain
- Domain Administration Server (DAS)
- Server instance
- Central repository
- Local repository cache

# Architecture



# Load Balancing (1)



# Load Balancing (2)

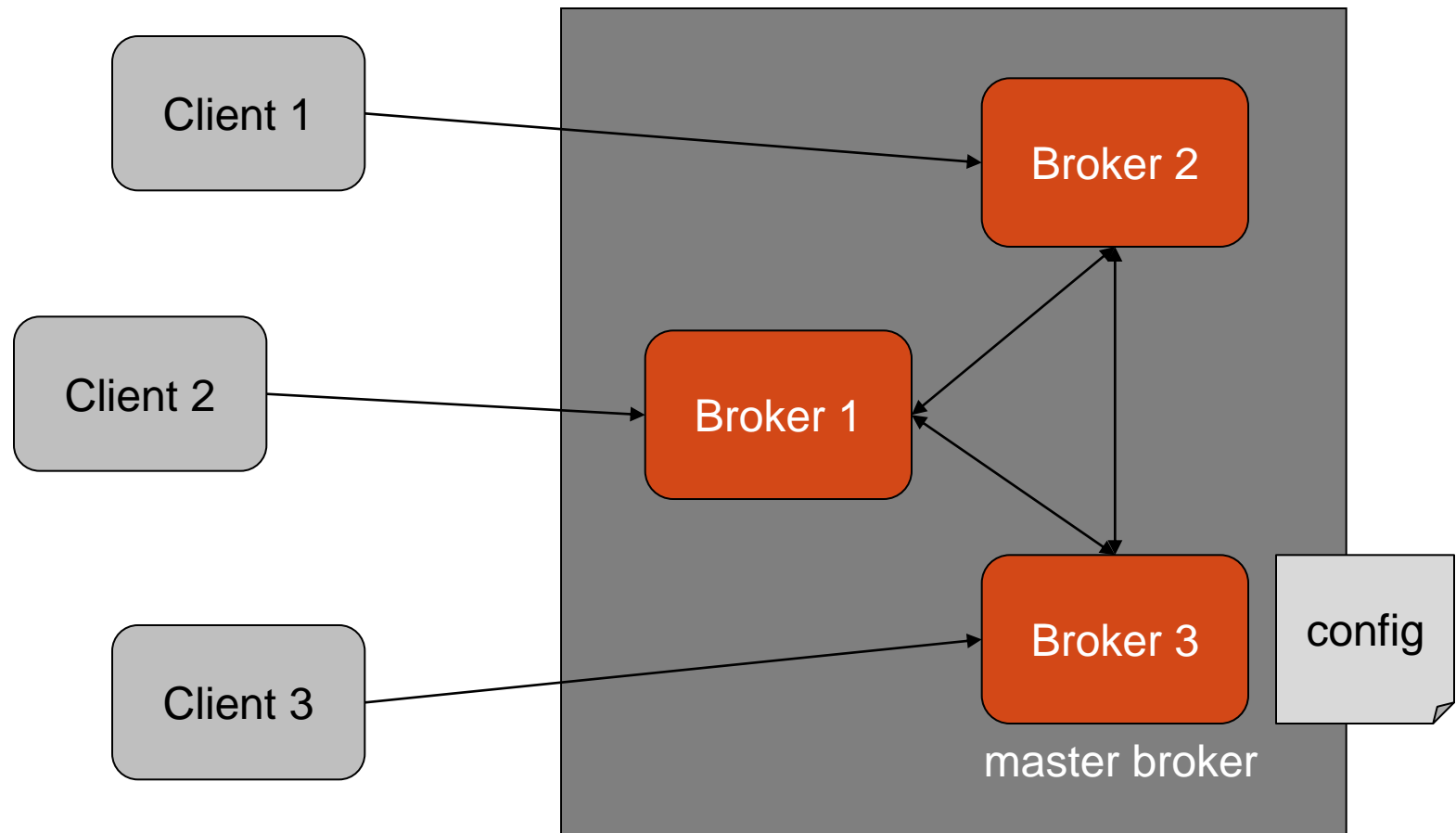
- Sticky round-robin
- Reverse proxy functionality
- Health check mechanism
- Idempotent URL retries
- Quiescence



# Session Persistence

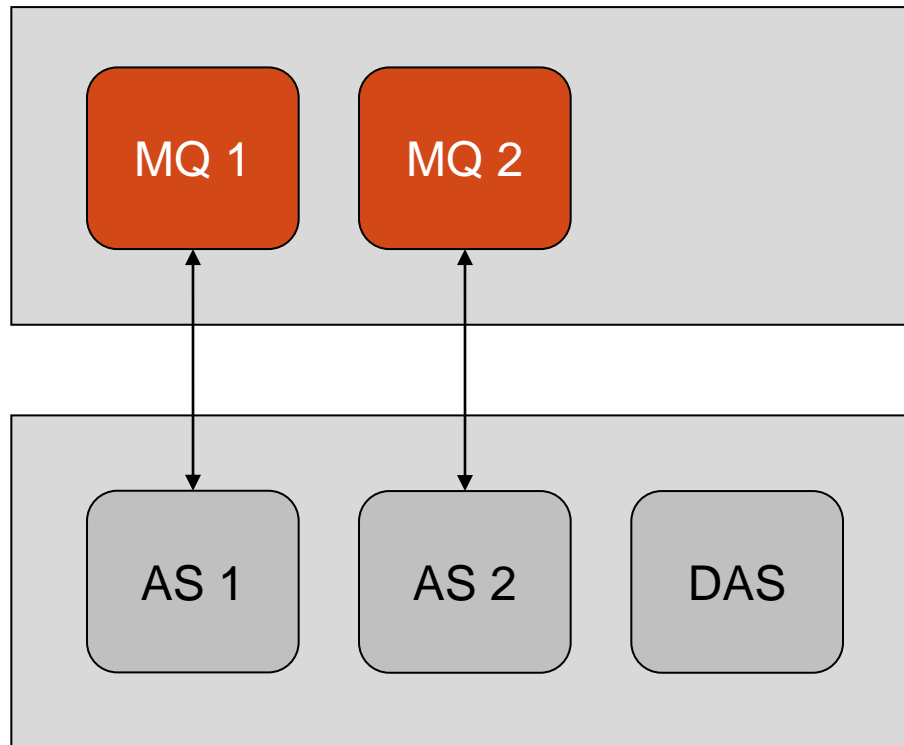
- Frequency
  - web method
  - time-based
- Scope
  - session
  - modified-session
  - modified-attribute

# JMS Cluster



# Dedicated Brokers

Each server instance has an associated broker



# Otázky & odpovědi

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