Advanced Systems Lab - Design

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System Overview

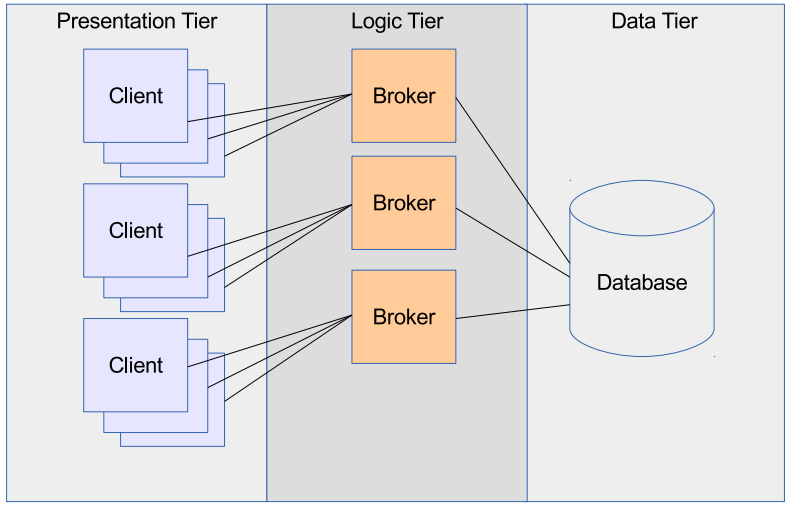

Figure : System Overview

The messaging system utilizes a single database instance. On the logic tier multiple broker instances may be running. Each broker serves a certain number of clients.

Database Schema

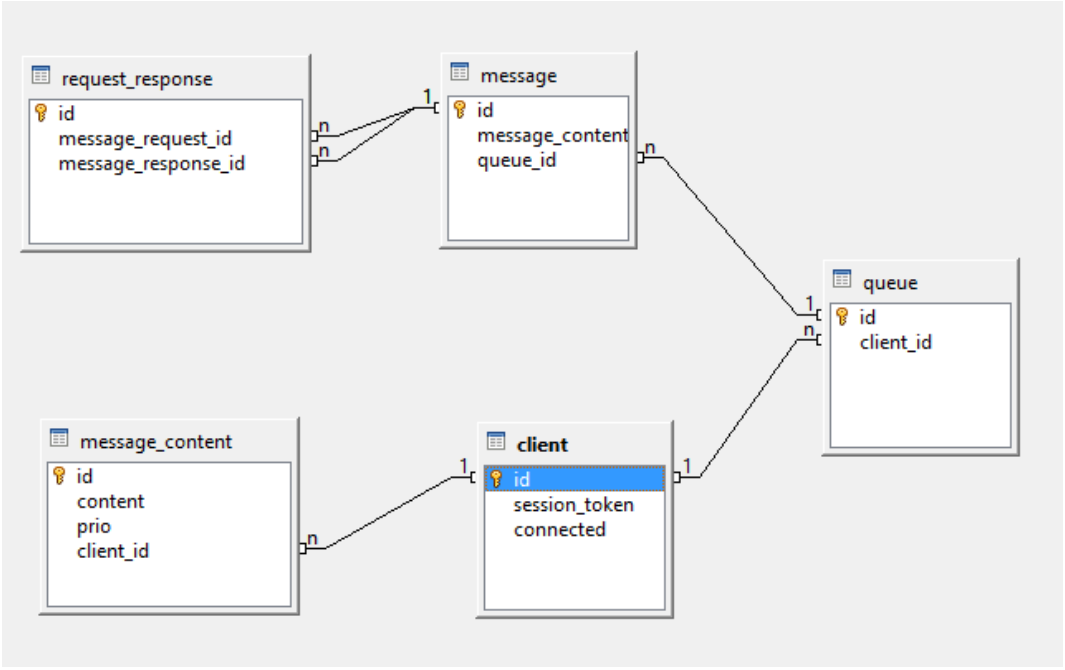

Figure : Database Schema

Server

- Threading
- Java NIO (Reactor or Leader/Followers)

http://www.kircher-schwanninger.de/michael/publications/lf.pdf

Client to Broker Communication

Describe Communication between clients and broker

- simplified http, only http post
- xml over http with fixed content-length

Are we allowed to use this:
http://docs.oracle.com/javase/7/docs/jre/api/net/httpserver/spec/com/sun/net/httpserver/HttpServer.html
HTTP in Java:
http://docs.oracle.com/javase/6/docs/jre/api/net/httpserver/spec/com/sun/net/httpserver/HttpExchange.html
-¿ Problem: no keep-alive -¿ bad...?

Client to Broker Communication (new)

Describe Communication between clients and broker

- Serialize POJO's and send it over the network
- Header: length of the Java object
- Body: serialized Java object
- Connection: keep alive, connection pool
- Security: no authentication

Client

Browser: good idea for development and management console.
But: cannot do many requests and measure them?

- May be implemented as a simple html page running in any browser
- Management console in HTTP?

Client

- Different clients are implemented in Java
  - Only send messages
  - Only read messages
  - Only do request/response
- Management console in HTTP
  - To start/stop the current action
  - To collect statistics

Communication Protocol

Communication Protocol used by client and server

Management Interface

Use JMX?

What experiments are performed

1. what kind of experiments are performed
2. how to perform measurements
3. where to store measurement results (Format, Use DB, etc)