Requirements of a Distributed Messaging Queue's Design

Learn about the requirements of designing a distributed messaging queue using a strawman solution.

We'll cover the following ⌃

- Requirements
  - Functional requirements
  - Non-functional requirements
- Single-server messaging queue
- Building blocks we will use

Requirements

In a **distributed messaging queue**, data resides on several machines. Our aim is to design a distributed messaging queue that has the following functional and non-functional requirements.

Functional requirements

Listed below are the actions that a client should be able to perform:

- **Queue creation:** The client should be able to create a queue and set some parameters—for example, queue name, queue size, and **maximum message size.**⤵
- **Send message:** Producer entities should be able to send messages to a queue that's intended for them.
- **Receive message:** Consumer entities should be able to receive messages from their respective queues.

- **Delete message:** The consumer processes should be able to delete a message from the queue after a successful processing of the message.

- **Queue deletion:** Clients should be able to delete a specific queue.