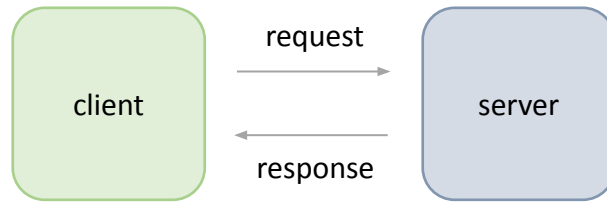


Synchronous vs asynchronous communication

request-response



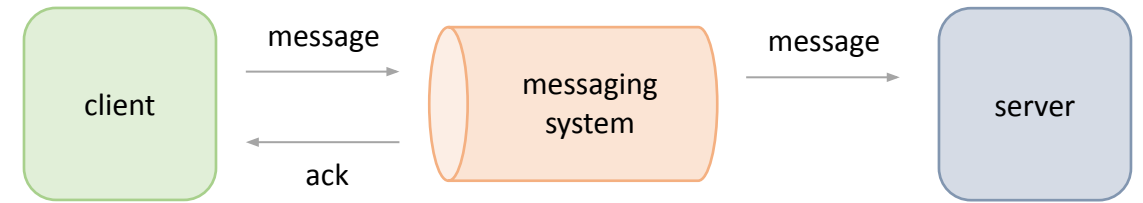
synchronous

client waits for the response
to come back

asynchronous

client does not wait for the
response to come back

asynchronous messaging



Synchronous vs asynchronous communication

request-response

pros

- Easy and fast to implement.

cons

- What should the client do when the server is not available?
- What should the client do with failed requests?
- What should the client do when the server gets slower?
- What should the server do when there is a sudden traffic spike?



asynchronous messaging

pros

- Decouples the client from the server.

Keep messages and send them later.

Re-send failed messages.

Add more servers to parallelize processing.

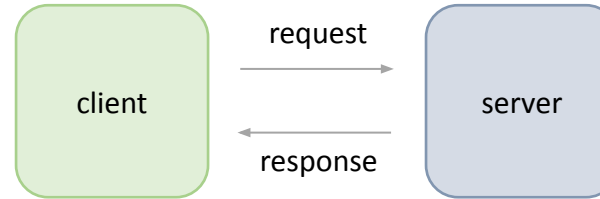
Keep draining messages at its own pace.

cons

- Increased system complexity.
- Operational overhead.

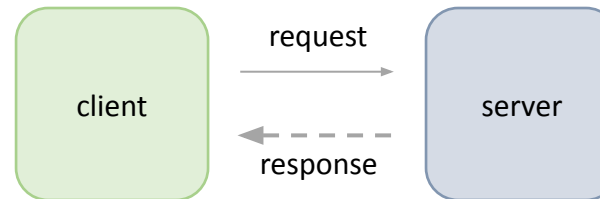
Synchronous vs asynchronous communication

I need the response from you before calling this other system.



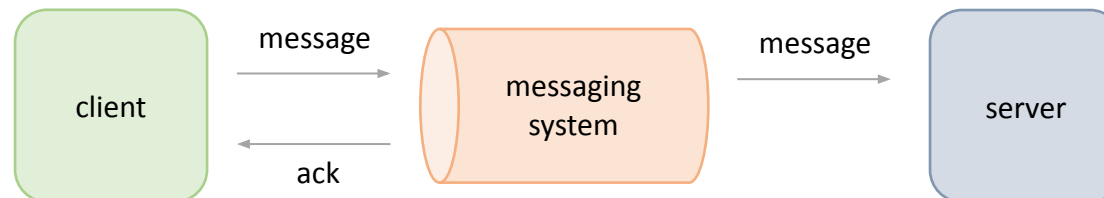
synchronous
request-response

I want to call several systems in parallel. I will then combine responses from each of them.



asynchronous
request-response

I do not care much who and when will process my message.



asynchronous
messaging