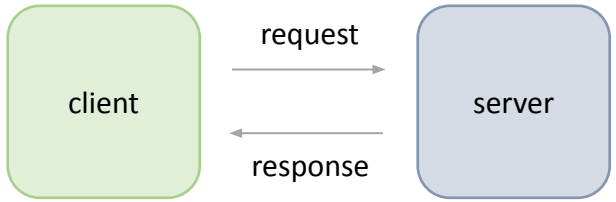
Synchronous vs asynchronous communication

request-response



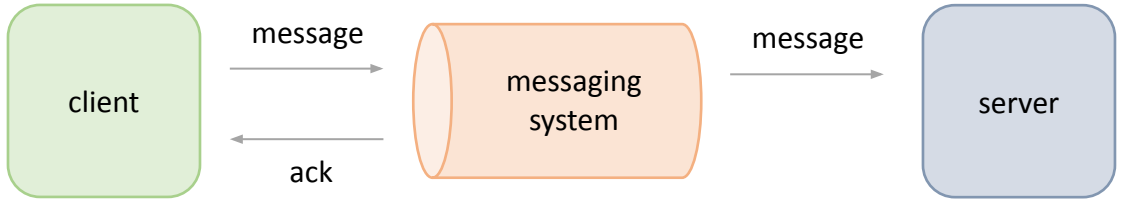
synchronous

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.

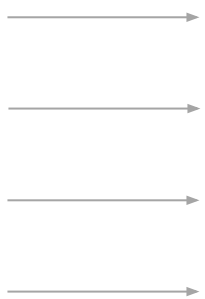
cons

- 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.

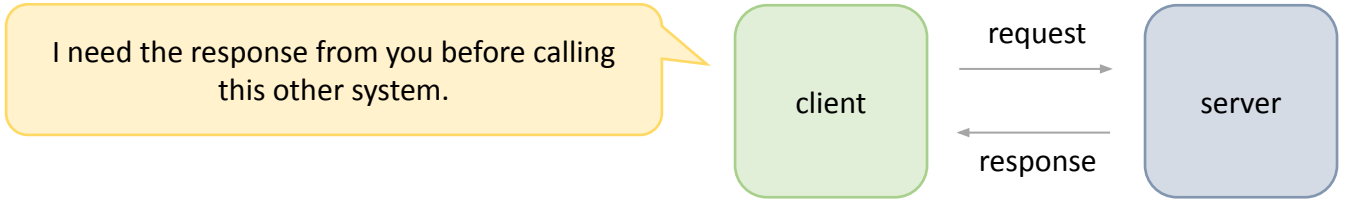
Add more servers to parallelize processing.

Keep draining messages at its own pace.

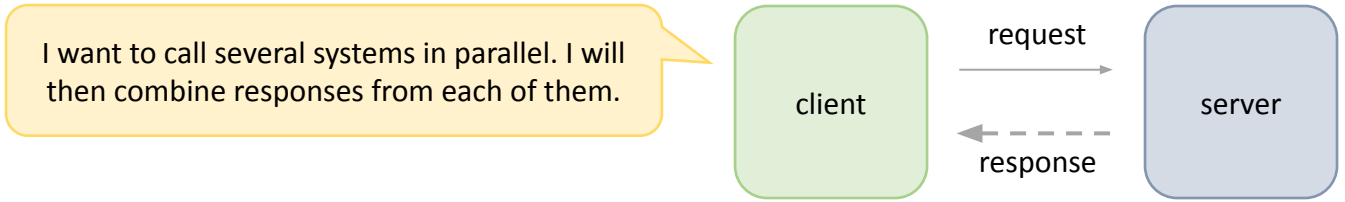
cons

- Increased system complexity.
- Operational overhead.

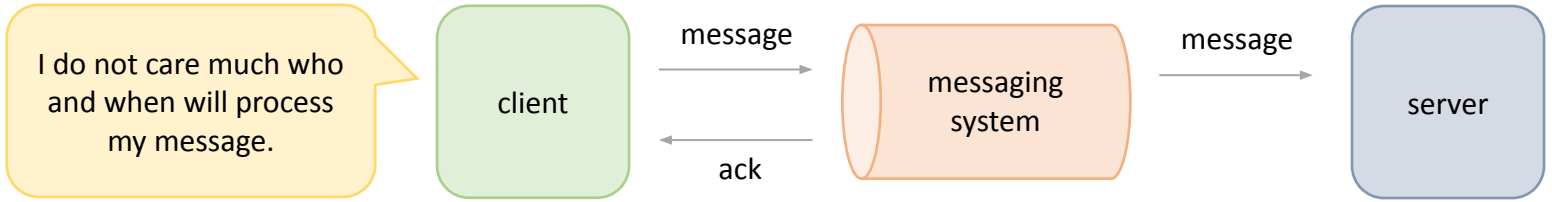
Synchronous vs asynchronous communication



synchronous request-response



asynchronous request-response



asynchronous messaging