Messaging with Ruby

using Redis & zeromq

advanced k/v store → data structure server

disk-backed, in-memory store

is Redis a NOSQL DB, a cache or a messaging server?

Redis as queue server

Lists

- lists of binary-safe strings (length prefixed byte array)
- push/pop on both ends: can be used as queues
- LPUSH + RPOP / RPUSH + LPOP
- BRPOP/ BLPOP blocks until items are available
- blocking queue means queue without polling

Redis as pubsub server

Publish / Subscribe

- does not involve key/value storage
- realtime, channeled messaging
- (UN)SUBSCRIBE to one or more channels
- P(UN)SUBSCRIBE to channels matching pattern
- PUBLISH message to channel

- buffering for slow connected clients (warning!)

Redis Ruby Libraries

- Ruby client library
  https://github.com/ezmobius/redis-rb
- Evented Ruby client library
  https://github.com/madsimian/em-redis

Resque

Resque (pronounced like "rescue") is a Redis-backed library for creating background jobs, placing those jobs on multiple queues, and processing them later.

Resque is:

- a Ruby library for creating, querying, and processing jobs
- a Rake task for starting a worker which processes jobs
- a Sinatra app for monitoring queues, jobs, and workers

https://github.com/defunkt/resque

ØMQ \zeromq\

The Intelligent Transport Layer

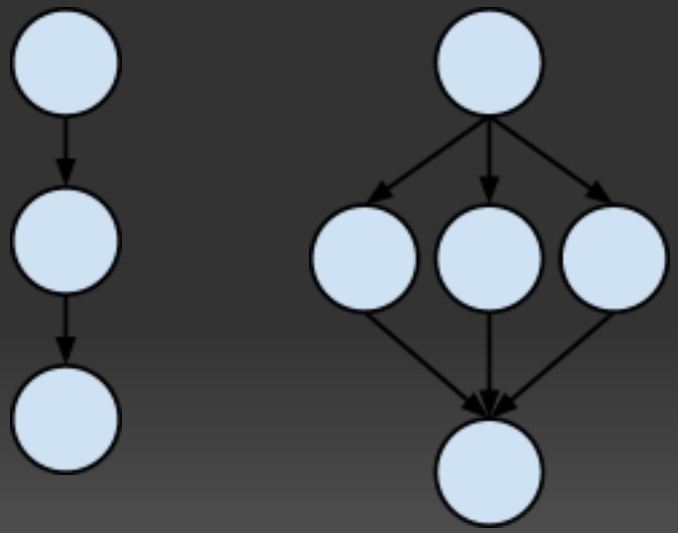
- The socket library that acts as a concurrency framework.
- Faster than TCP, for clustered products and supercomputing.
- Carries messages across inproc, IPC, TCP, and multicast.
- Connect N-to-N via fanout, pubsub, pipeline, request-reply.
- Asynch I/O for scalable multicore message-passing apps.
- Large and active open source community.
- 20+ languages including Ruby, C, C++, Java, Python.
- Most OSes including Linux, Windows, OS X.
- LGPL free software with full commercial support from iMatix.

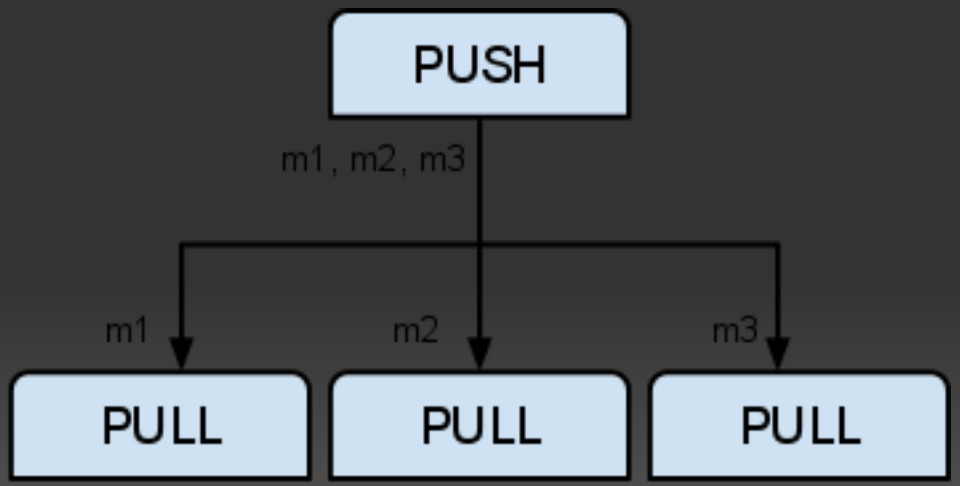
ØMQ \zeromq\

- messaging client library
- support most messaging patterns
  - request/reply, pub/sub, push/pull, pair
- serverless, no intermediate broker
- simple API, similar to sockets
- 0MQ is to sockets what Ruby is to C
- blazing fast! orders of magnitude faster than most AMQP systems
- TCP, MULTICAST, IPC, INPROC transports
- the zero in ØMQ was meant as "zero broker" and "zero latency"

ØMQ PUSH/PULL

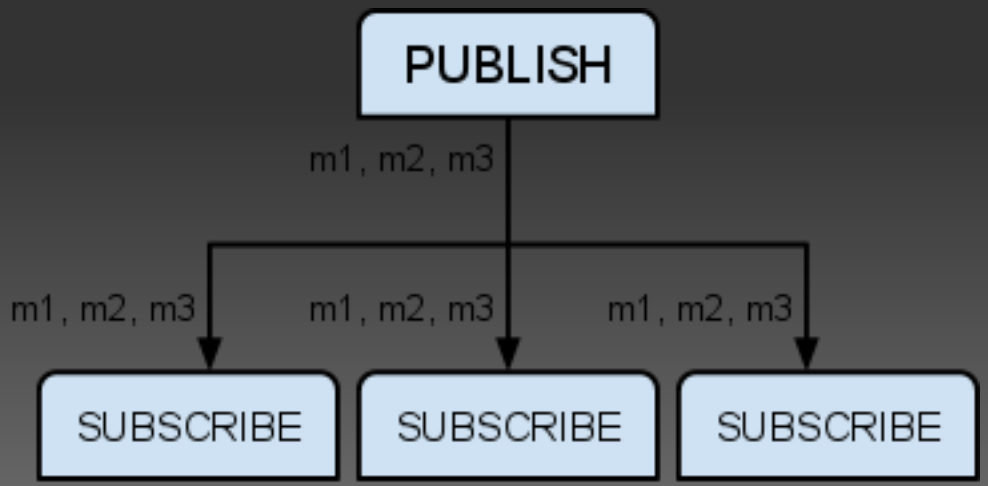
- pipelining: connect nodes in a fan-out / fan-in pattern
- load balancing/fair queuing
- parallel tasks distribution





ØMQ PUB/SUB

- connect set of publishers to set of subscribers
- loosely coupled
- *volatile* published stream
- publish on topic
- subscribe on topics / topic patterns



0MQ Ruby Libraries

- Ruby bindings
  https://github.com/zeromq/rbzmq
- FFI Ruby binding
  https://github.com/chuckremes/ffi-rzmq
- FFI Evented Ruby bindings
  https://github.com/andrewvc/em-zeromq

0MQ plugin for RabbitMQ

you can use RabbitMQ as a device in a 0MQ network, gaining rabbity goodness such as persistence and monitoring

https://github.com/rabbitmq/rmq-0mq/wiki/