

Qs on Queues

Open Source Bridge 2011

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What is a queue?

Where can you
find queues?

Everywhere!

Types of Queues

- FIFO
- LIFO (stack)
- Priority
- Circular
- Custom

Why use a queue?

Scale Out

Concurrency

Resource Specialization

Factors to Consider

Queue Deployments

- Local (in process, shared memory, etc)
- Clustered (LAN)
- Distributed (WAN, cloud)

Network Chattiness

Broker vs Brokerless

Security

Poll vs Push

Batch Processing

Availability

languages, data formats, etc

Protocols

- AMQP – Advanced Message Queue Protocol
- PuSH – PubSubHubbub
- Atom/RSS
- JMS (interface)
- XMPP
- REST
- Custom

Choosing a Queue

ZeroMQ

- Fast and lightweight
- More of a “Concurrency Framework”
- Brokerless
- Multiple languages
- Supports simple, multicast, and pub/sub

RabbitMQ

- Uses AMQP
- Written in Erlang
- Has optional persistence built in
- Great clustering solution
- Multiple languages (any AMQP library)
- Poll or push
- SSL and authentication

ActiveMQ

- AMQP, REST, JMS, XMPP, and more
- Written in Java
- Multiple persistence options
- Multiple languages (AMQP, HTTP, etc)
- Poll or push depending on protocol
- SSL and authentication

Gearman

- Fast and Lightweight
- C, Java, and Perl servers
- Multiple persistence options for C server
- Multiple languages
- Poll with instant notifications
- No security, assume trusted network
- No SPoF configurations

Beanstalkd

- C server
- Optional persistence
- Multiple languages
- Control state of messages (bury, ready, timer)
- Push or Poll
- No security, assume trusted network
- No SPoF configurations

Redis

- Fast, simple pub/sub
- C server
- Redis protocol
- Multiple languages
- Some durability (usual Redis options)
- Resque – Ruby frontend

Kestrel

- Written in Scala (runs on JVM)
- Memcached protocol
- Loose ordering for horizontal scaleout
- Persistent (memory + journal)
- Used at Twitter
- Based on Starling (Ruby version)

Honorable Mentions

- Amazon SQS and SNS – Not OSS
- Microsoft Azure Service Bus – Not OSS
- StormMQ – AMQP clients OSS, not Server
- Scribe
- Kafka
- Flume

Questions?

- Contact me at: <http://oddments.org/>