



ENKI MULTIMEDIA
<http://enkim.eu>

Primer

A distributed message
queue system for Erlang
applications

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WHY

- **RCOUCH** usages in mind
- needed something simple
- that I can embed in my Erlang app
- without external overhead

<http://rcouch.org>

USES

- execution of jobs (sync or not)
- realtime pub/sub
- Chat
- IOT

FEATURES

FEATURES

- embeddable
- master-master
- versatile
- resistant to net-splits
- optional persistence

EMBEDDABLE

- can be added to my application
- do not rely on external API
- no C binding
- not related to a specific protocol

MASTER MASTER

- each nodes have the same role
- distributed & decentralised
- easy to scale

versatile

- Fast queuing: best effort to order
- But also replicated log
- one or many consumers
- at least/most once semantic
- message mapping

DESIGN

distributed

- Full mesh
- use gossip to broadcast messages
- replicated message queue
- synchronous or chained replication

plumtree

- Epidemic broadcast protocol
- extracted from riak_core
- standalone membership protocol (riak_dt + ORSWOT)
- metadata
- broadcast handlers

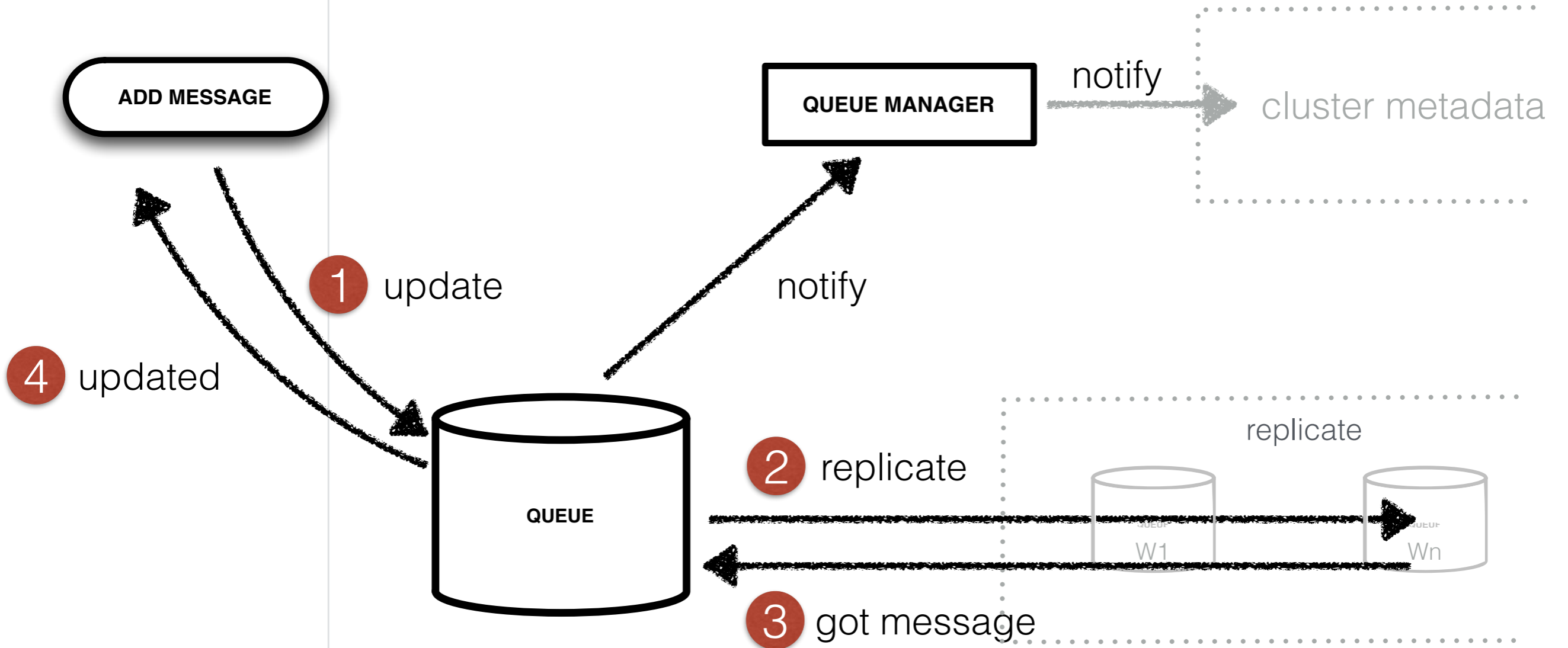
<http://github.com/helium/plumtree>

add message

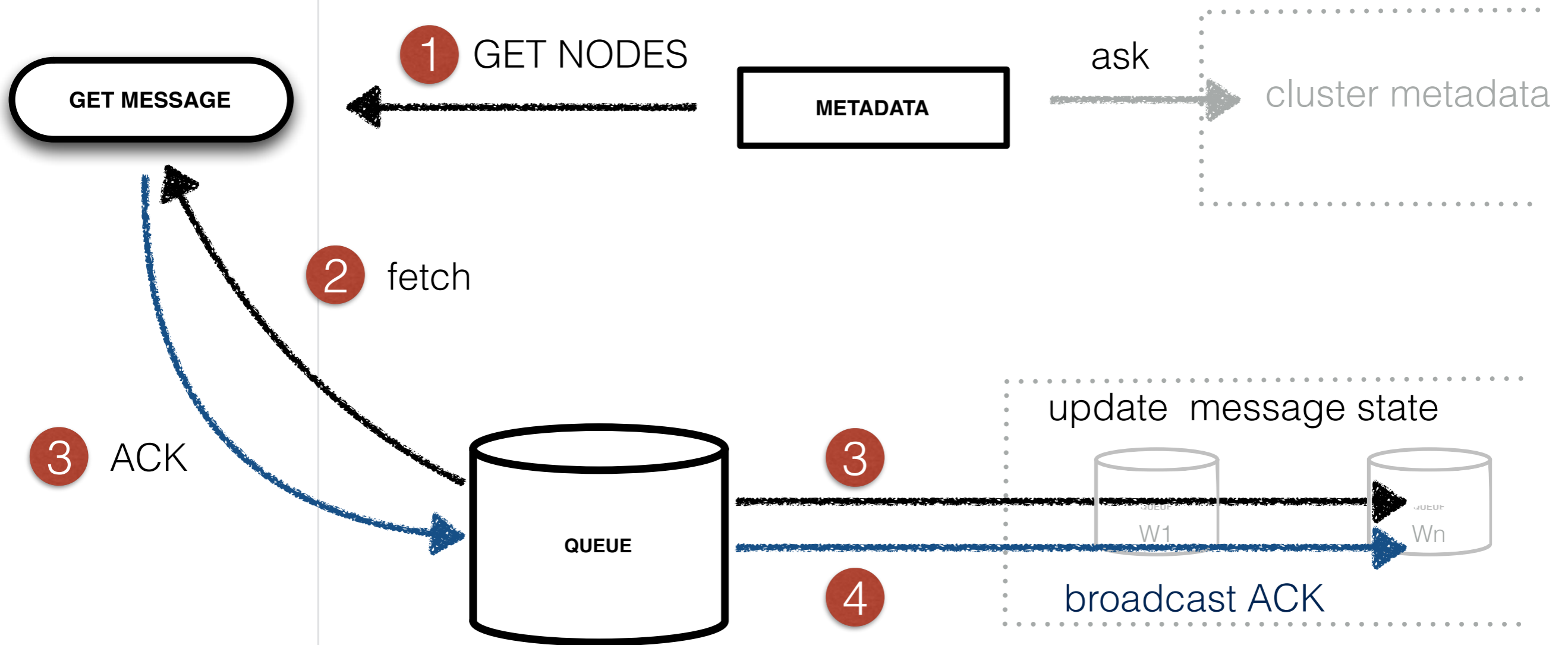
best effort to order

- get W nodes to replicate
- shuffle nodes
- replication is synchronous
- queue are created dynamically
- read queue is local
- read from any node
- group to fan-out

add a message
best effort to order



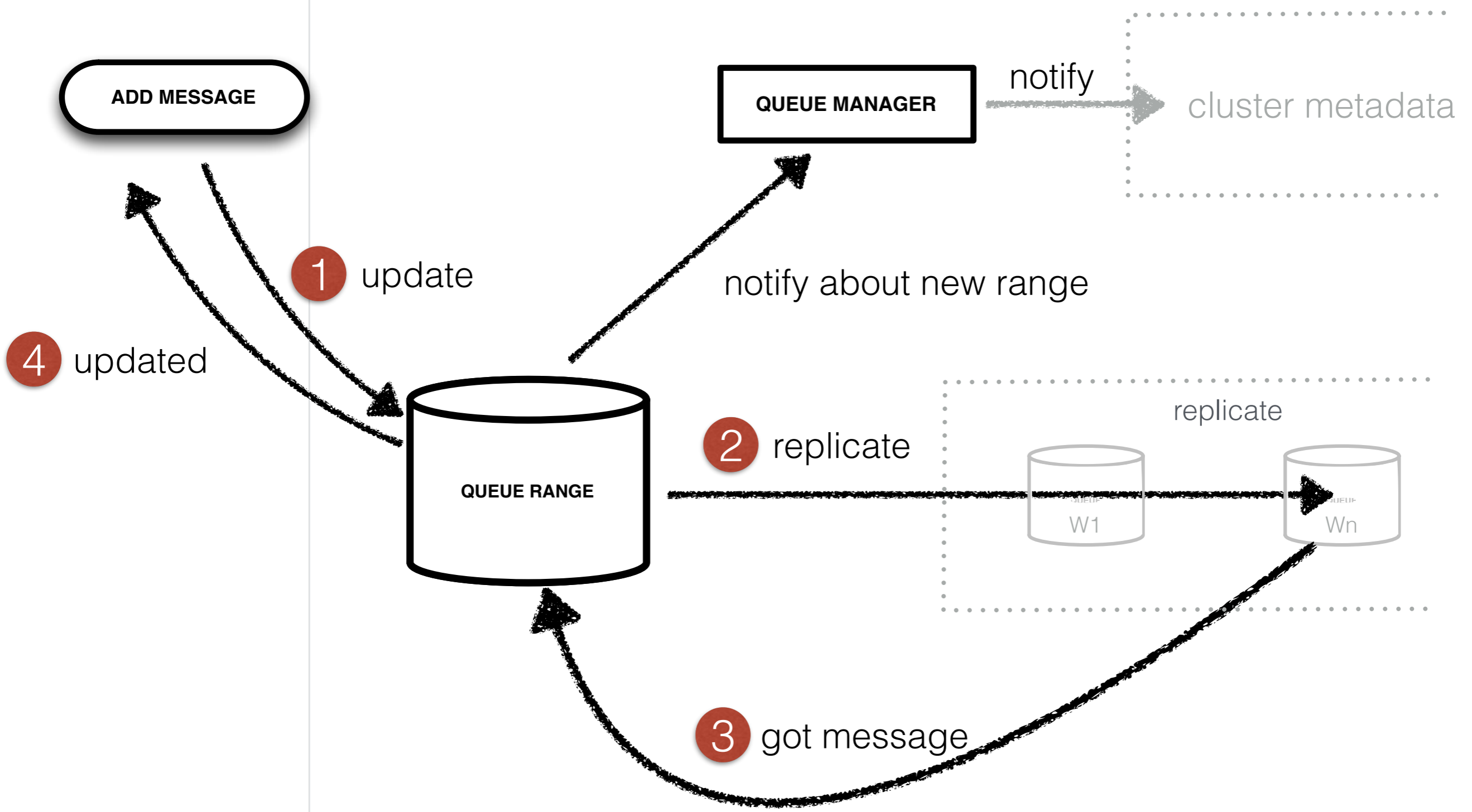
read a message
best effort to order



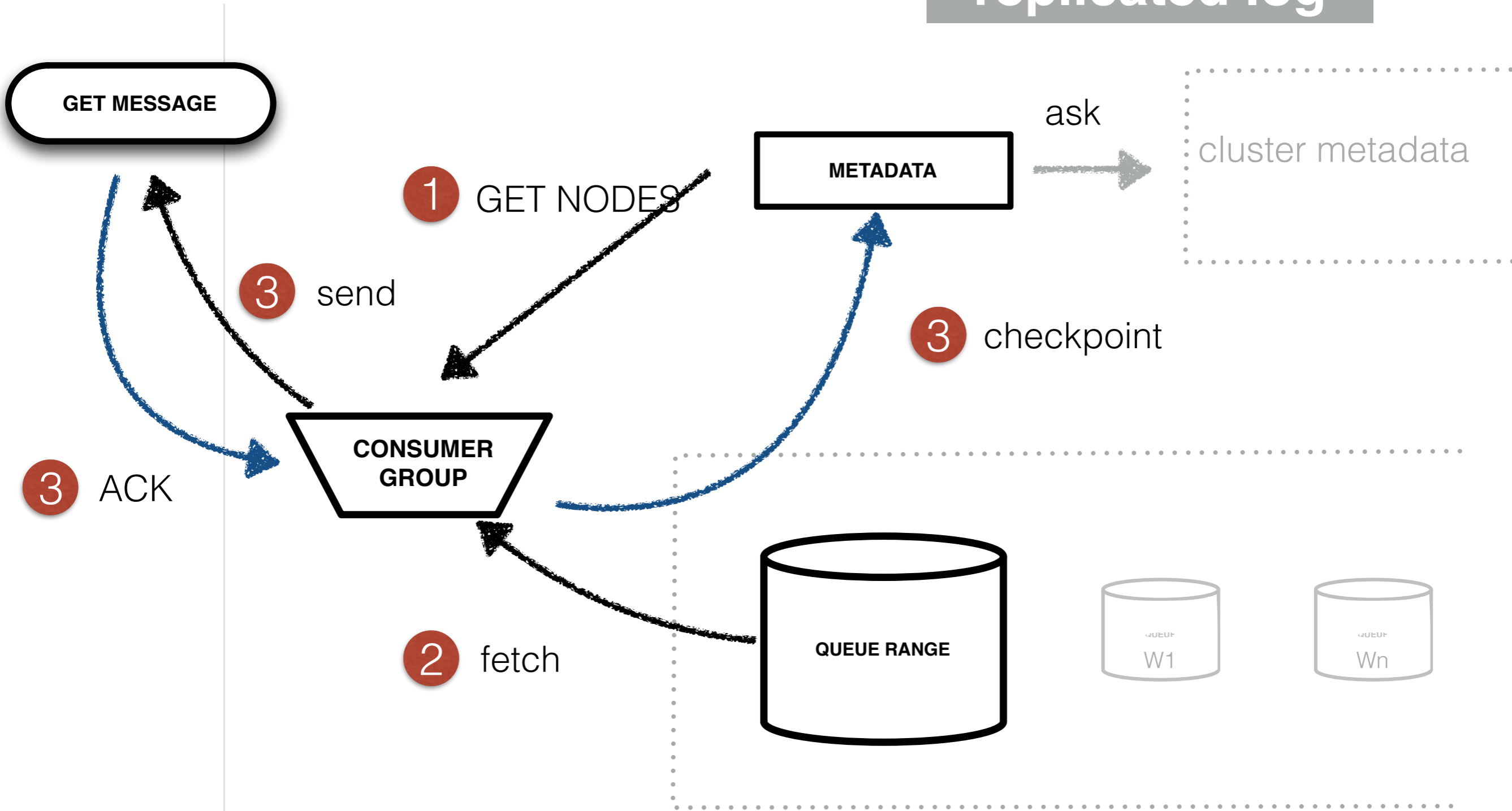
add message
replicated log

- log queues should be created first
- Period of retention
- dynamic creation of ranges
- a chain of replicated nodes
- group of consumers for concurrency

add a message replicated log



read a message
replicated log



persistence

- by default is off
- Append-Only file
- high watermark support
- possible to dump data

mapping

- like a consumer group
- to handle custom routing
- based on a dsl
- dsl can be extended
- possibility to re-enqueue a message in another queue

mapping

```
[  
  {map_id, Pattern, ok},  
  {map, fun(Msg) -> ok end}  
]
```

Miscellaneous

Other features

- metrics
- dashboard to watch the activity
- a queue can be browsed

todo

- support of multiple zones
- support of multiple networks

when?

- opensourced in June 2015
- <http://primer.mq>



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