RabbitMO broker cluster broker erlang node RabbitMQ node cluster broker node cluster cluster cluster Queue queue Exchange exchange Binding Vhost vhost cluster cluster node node erlang node **RAM** RAM disk node cluster cluster queue node RAM node disk node RAM node fabric queue exchange binding RabbitMQ disk node RAM node cluster disk node RabbitMQ cluster disk node RabbitMQ queue message RabbitMQ channel exchange queue queue erlang exchange binding message channel routing_key queue **AMQP** channel TCP AMQP channel ID channel channel channel message 0 channel channel channel connection 1-65535 channel channel **AMQP** channel channel socket vhost vhost broker mini-RabbitMQ server queue exchange binding vhost RabbitMQ vhost vhost

cluster node node cluster queue exchange binding node queue node Queue.Declare-ok cluster queue cluster node Queue.Declare-ok node RAM node disk node cluster node cluster queue owner node queue durable node queue 404 NOT_FOUND queue node queue queue durable node cluster node consumer cluster mirrored queue node consumer consumer node node consumer TCP queue owner node consumer " Assume Nothing" fabric node consumer Consumer Cancellation owner node consumer queue Notification queue RabbitMQ cluster cluster queue node HAProxy + cluster OTP Erlang RabbitMQ Mnesia heavy RPC disk node heavy RPC RabbitMQ **RPC** reply queue disk node RPC

exchange

publish

queue

consume

Channel.Close 404 NOT_FOUND

routing_key binding_key

255

RabbitMQ message

AMQP 64-bit

producer queue

1.message 2. republish

Publisher Confirm

" dead letter" queue

RabbitMQ server consumer consumer Basic.Reject

requeue=false " dead letter" queue

queue message reject undeliver

message queue exchange

durable message persistent

binding exchange – binding – queue

message message persistent exchange

queuedurableexchangequeuedurablecrashmessagepersistent

message message

persistent message

blackholed

blackholed exchange message

message blackholed 1. queue exchange message 2.exchange binding_key key_A queue queue_A

exchange message routing_key key_B

blackholed

fabric

Basic.Publish mandatory=true blackholed

Basic.Return message 312

NO_ROUTE

Consumer Cancellation Notification

queue master slave consumer

consume consume master

slave consumer master

master message queue message requeue consumer message Basic.Reject consumer message reject requeue=true RabbitMQ server message consume consumer RabbitMQ server consumer requeue=false queue message queue Basic.Ack message consumer message Basic.Nack Basic.Reject message message RAM message RabbitMQ 10 message cluster message persistent queue durable queue owner node queue queue message blackholed persistent message durable owner node queue queue owner node queue node queue queue message blackholed message 100,000 / RabbitMQ message delivery SSD RabbitMQ cluster mirrored queue warrens producer cluster cluster node consumer node node cluster cluster message producer cluster cluster **HAProxy** node cluster node ip **HAProxy** node HAProxy + cluster Mirrored queue cluster queue node 1.consumer Consumer Cancellation Notification 2.consumer message

Warrens cluster blackholed message republish message producer RabbitMQ server Warrens RabbitMQ server + HAProxy server active hot-standby server server RabbitMQ RabbitMQ server + keepalived server active cold-standby server

RabbitMQ

Warrens

active server queue hotserver consume active server standby server **AMQP** queue message a. fabric b. active server C. active server message

active server

cold-standby server active cold-standby

server node UID cold-standby server