Message queue server

- Introduction to **Message queue servers**

Also known as:

- Messaging server
- JMS server (Java messaging service)
- Message broker

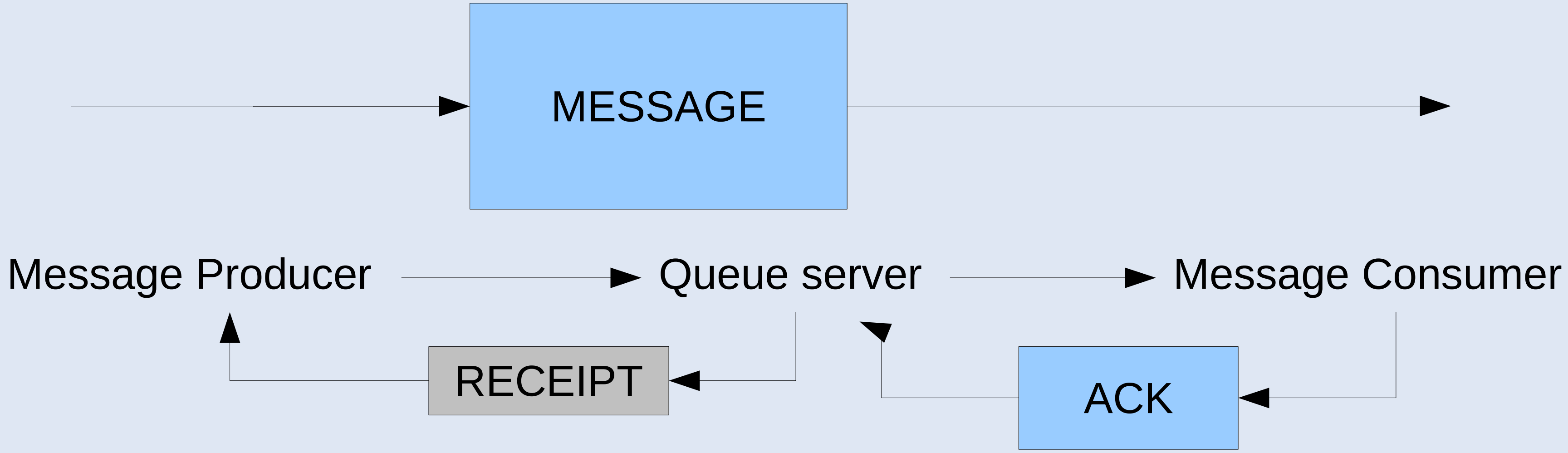
Messaging

”Infrastructure focused on sending and receiving messages that increases the interoperability and portability of an application by allowing the application to be distributed over heterogeneous platforms. It insulates the application developer from the details of the various operating system and network interfaces” (wikipedia)

- Inter-process inter-server communication
- Asynchronous

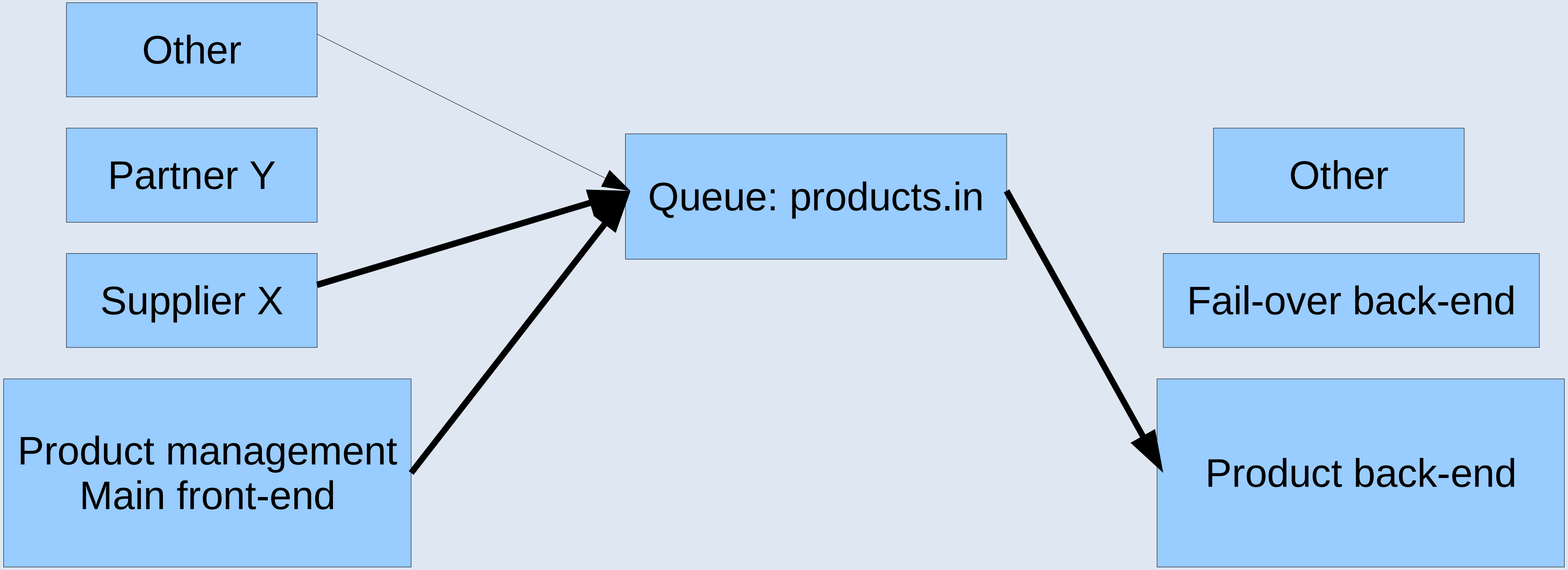
Message

- Fundamental part of the system
- Can be persistent or not persistent
- Message acknowledgement
- Allows loosely-coupling of components



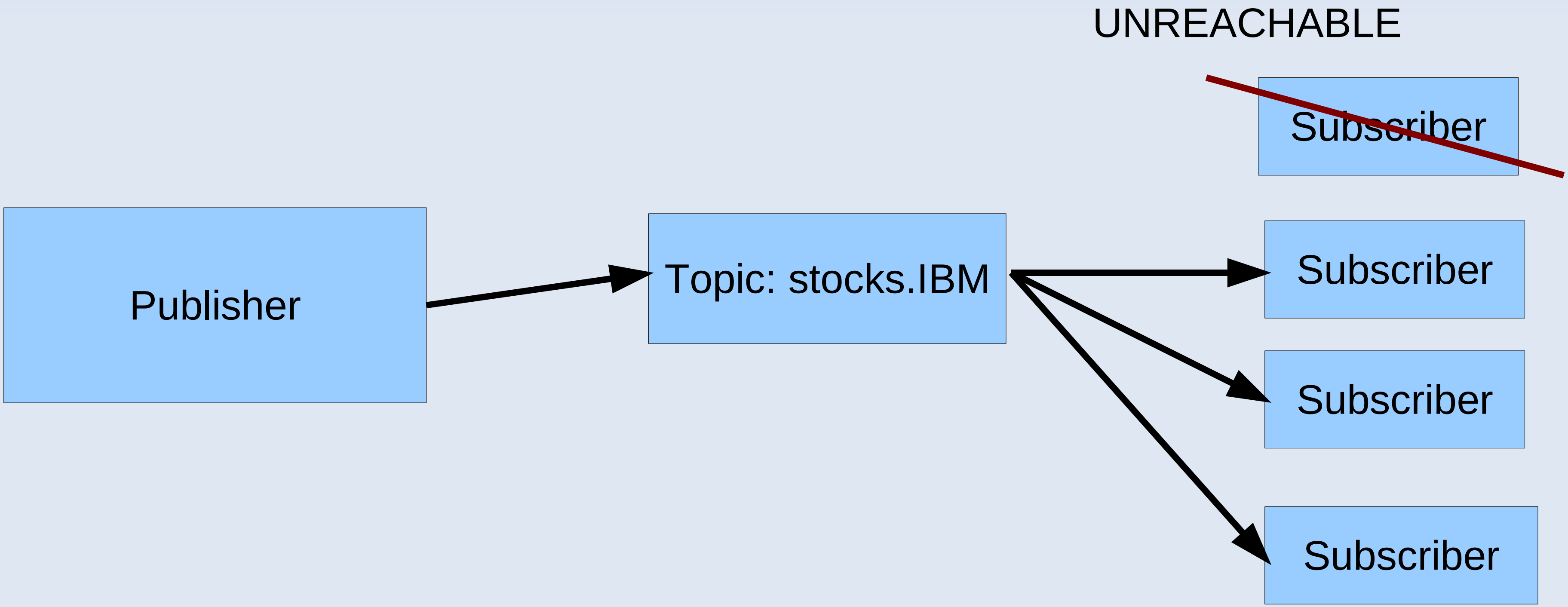
Destinations: Queue

- Delivery guaranteed, in order.
- **1:1**/1:N/N:1/N:N producers-consumers
- Competing consumers



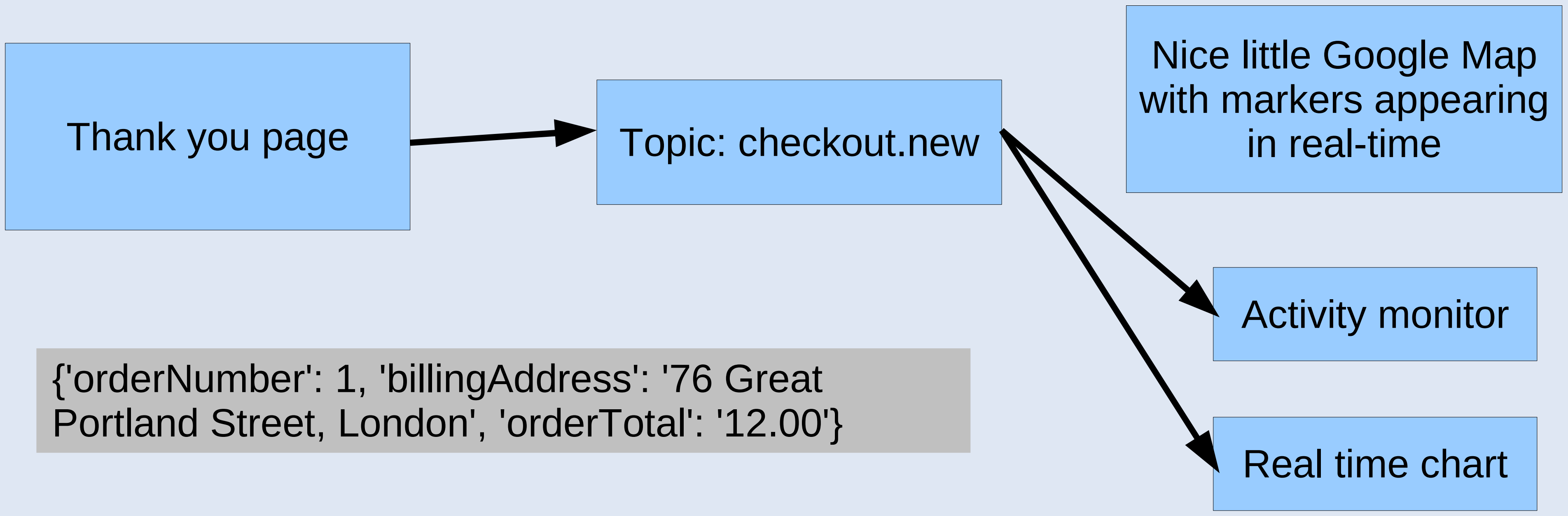
Destinations: Topic

- Delivery NOT guaranteed
- 1:1/**1:N**/N:1/N:N publishers-subscribers



USE CASE 1: Taoshop checkout

- Notification of new order
- Best effort to notify all subscribers (topic)



Thank you page

Topic: checkout.new

Nice little Google Map with markers appearing in real-time

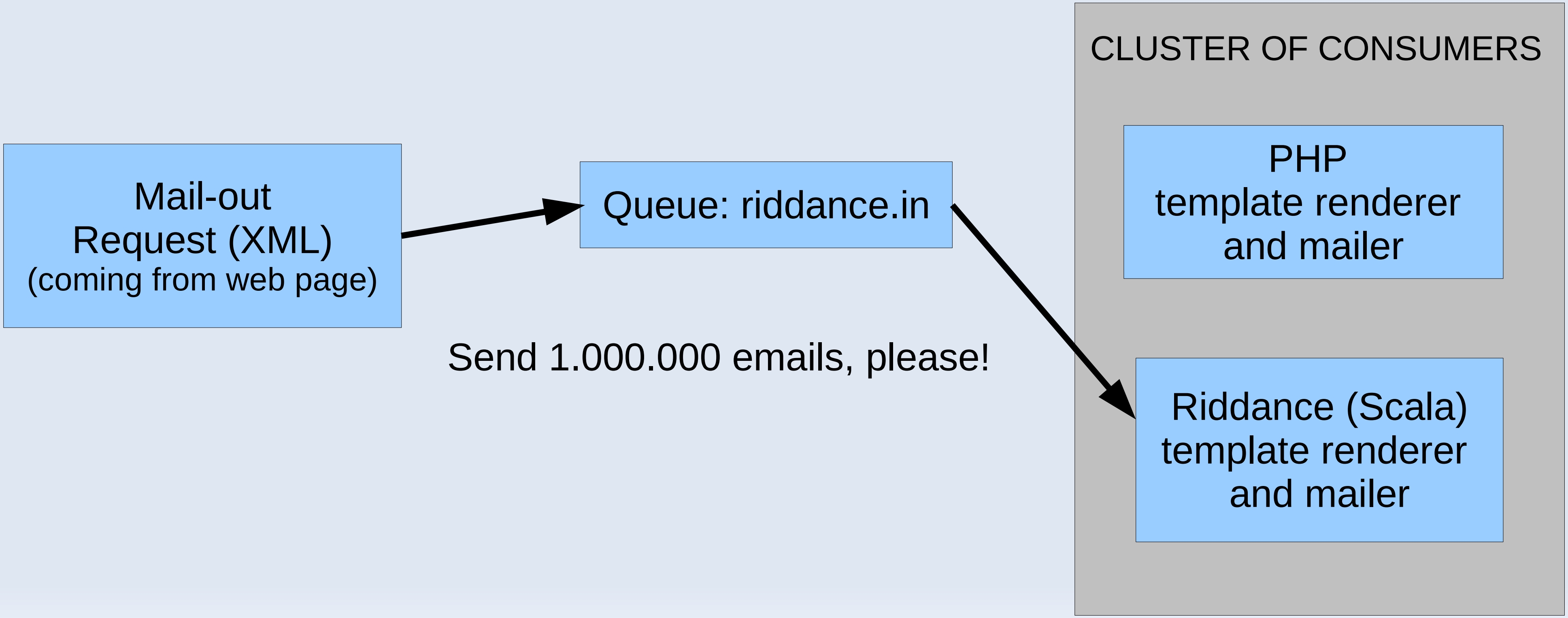
Activity monitor

Real time chart

```
{'orderNumber': 1, 'billingAddress': '76 Great
Portland Street, London', 'orderTotal': '12.00'}
```

USE CASE 2: Long-running tasks

- Apache/PHP can terminate scripts anytime!
- Also activate them anytime..
- Needs a queue and process separation



Mail-out Request (XML) (coming from web page)

Queue: riddance.in

Send 1.000.000 emails, please!

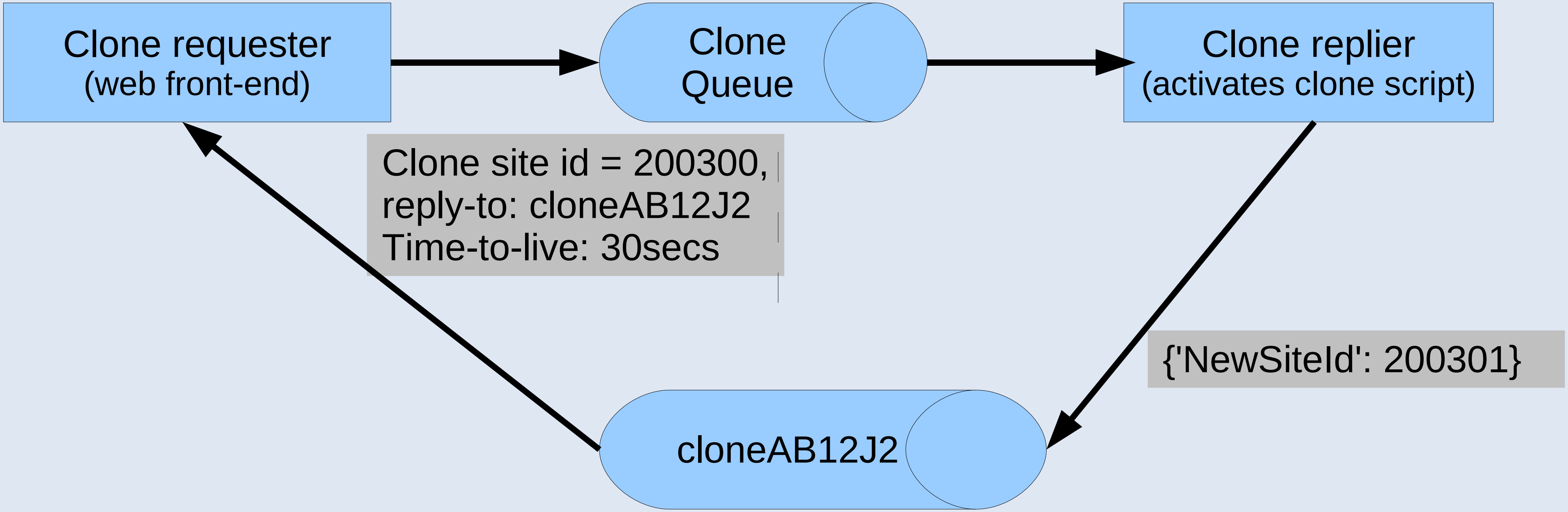
CLUSTER OF CONSUMERS

PHP template renderer and mailer

Riddance (Scala) template renderer and mailer

USE CASE 3: Firebrand cloning

- REQUEST-REPLY pattern
- Long-running task, cannot be interrupted.
- Output need to be returned to web interface



Clone requester
(web front-end)

Clone
Queue

Clone replier
(activates clone script)

Clone site id = 200300,
reply-to: cloneAB12J2
Time-to-live: 30secs

{'NewSiteId': 200301}

cloneAB12J2

Taobase Messaging API

- Encapsulates PHP Stomp client
- Implements content-type recognition
- Abstracts from Stomp specific settings
- Namespace per project/environment
- Two EIP integration patterns: FireAndForget and Request-Reply
- Uses by default: **messaging.tangentlabs.co.uk**