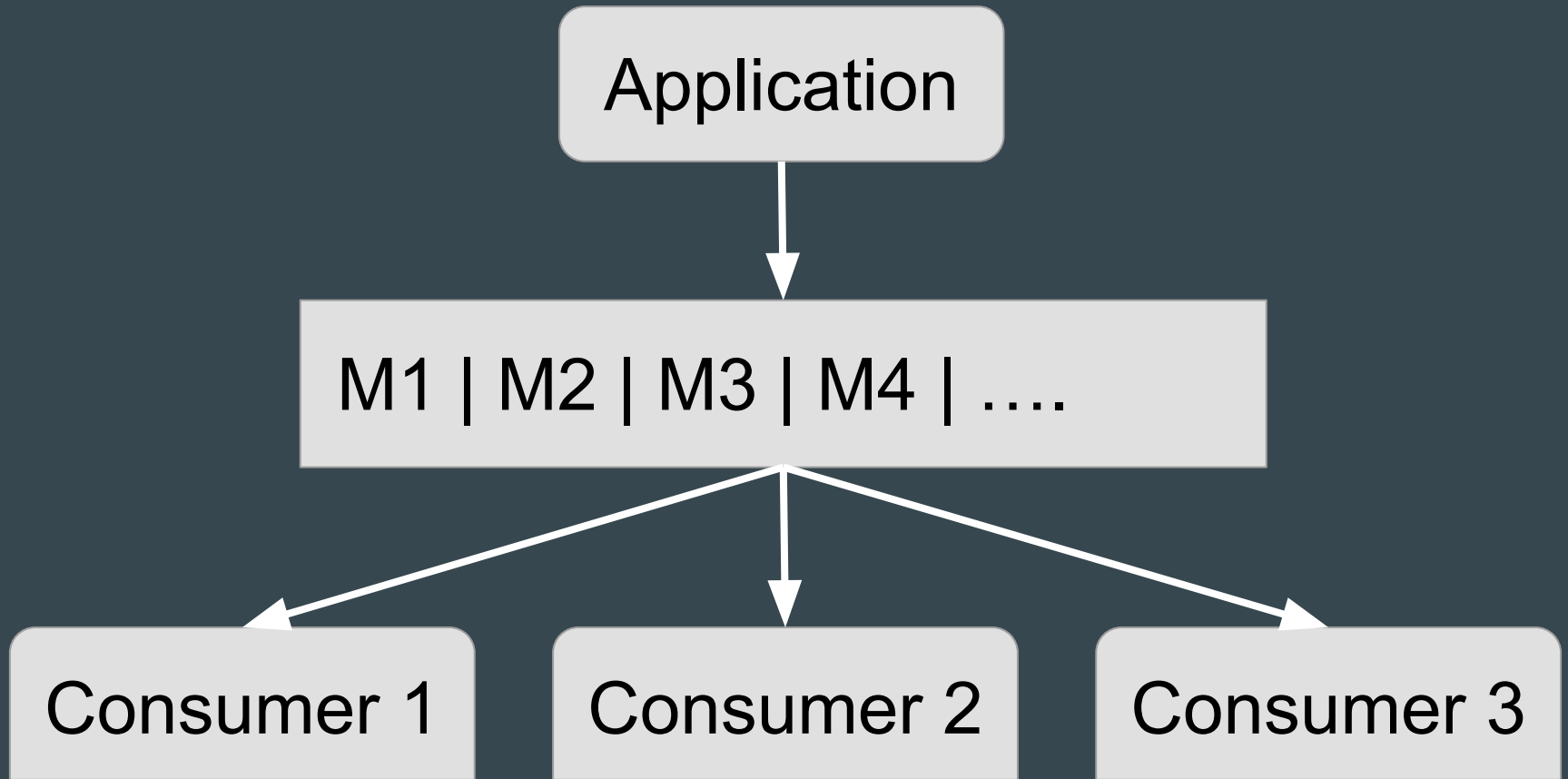# Message Queue

General information

- Queue with messages
- Asynchronous processing
- Message consumers
- DBAL
- RabbitMQ (EE only)
- MessageQueue [Component](#)
- [OroMessageQueueBundle](#)

Demonstration >>>

Message flow

Application

M1 | M2 | M3 | M4 | ….

Consumer 1

Consumer 2

Consumer 3

How to send a message

- Create topic
- Build body
- Send message using Message Producer
  - oro_message_queue.message_producer

https://github.com/oroinc/platform/blob/3.1/src/Oro/Bundle/SearchBundle/Async/Indexer.php#L90

How to process a message

- Create message processor MessageProcessorInterface
- TopicSubscriberInterface (optional)
- Get body
- Process data
- Return status: ACK, REJECT, REQUEUE

https://github.com/oroinc/platform/blob/3.1/src/Oro/Bundle/SearchBundle/Async/IndexEntitiesByIdMessageProcessor.php

Unique jobs

- Only one instance must be running
- Run unique job

https://github.com/oroinc/platform/blob/3.1/src/Oro/Bundle/IntegrationBundle/Async/SyncIntegrationProcessor.php#L129

Delayed/child jobs

- Functionality has to be run in the future
- Create a delayed job (child job)
- Run a delayed child job

https://github.com/oroinc/orocommerce/blob/3.1/src/Oro/Bundle/SEOBundle/Async/GenerateSitemapProcessor.php#L183

https://github.com/oroinc/orocommerce/blob/3.1/src/Oro/Bundle/SEOBundle/Async/GenerateSitemapByWebsiteAndTypeProcessor.php#L65

Message consumer

- oro:message-queue:consume
- Verbocity
- Limitations
  - --message-limit=5
  - --time-limit=now+5seconds
  - --memory-limit=1024
- Production setup

Supervisor

- Multiple processes
- supervisord
- DBAL - 1 consumer
- RabbitMQ - 2 minimum, 4 recommended

https://github.com/oroinc/platform/tree/3.1/src/Oro/Bundle/MessageQueueBundle#supervisord

Consumer Heartbeat

- Checks that consumers are running
  - Via cron
  - When a user logs in
- Socket message: oro/message_queue_state

https://github.com/oroinc/platform/blob/3.1/src/Oro/Bundle/MessageQueueBundle/Resources/doc/logging.md#consumer-heartbeat

Debugging message queue

- Message sending
- Message processing

Demonstration >>>

Ways to extend

- oro_message_queue.consumption.extension
  Oro\Component\MessageQueue\Consumption\ExtensionInterface

- oro_message_queue.consumption.clearer
  Oro\Bundle\MessageQueueBundle\Consumption\Extension\ClearerInterface

- oro_message_queue.job.extension
  Oro\Component\MessageQueue\Job\ExtensionInterface

Performance recommendations

- Use Message Queue to calculate data which is not required immediately
- Message Queue processors might be slower, but you still have to take care about their performance
- Remember about possible issues related to parallel work with relational DB (locks, race conditions)