DISTRIBUTED SYSTEMS

Jms and Jmx

Master M1 MOSIG, Grenoble Universities

GRÄBNER Laurent
TCHOUGOURIAN Tigran

10/04/2011

Supervisor :
BOUCHENAK Sara

The assignment is about building an asynchronous-communication application with JMS.

Table of contents

1. Architecture of the application

The architecture of the application is quite simple. The OverlayCreator generate the structure of the servers and run one virtual node by server. Each virtual node used to transfer information to the top layer, has a unique topic where its children publish. Every 15 seconds, a node access, thanks to JMX, some information about the server. Once the local data are recovered, the node collects data from its children, aggregates them and sends them to the upper layer thanks to JMS. Because the system is asynchronous, two threads are running every time. The collecting thread is a simple listener which receives JMS messages and updates data. In the other hand the publishing thread sends information about the server every 15 seconds

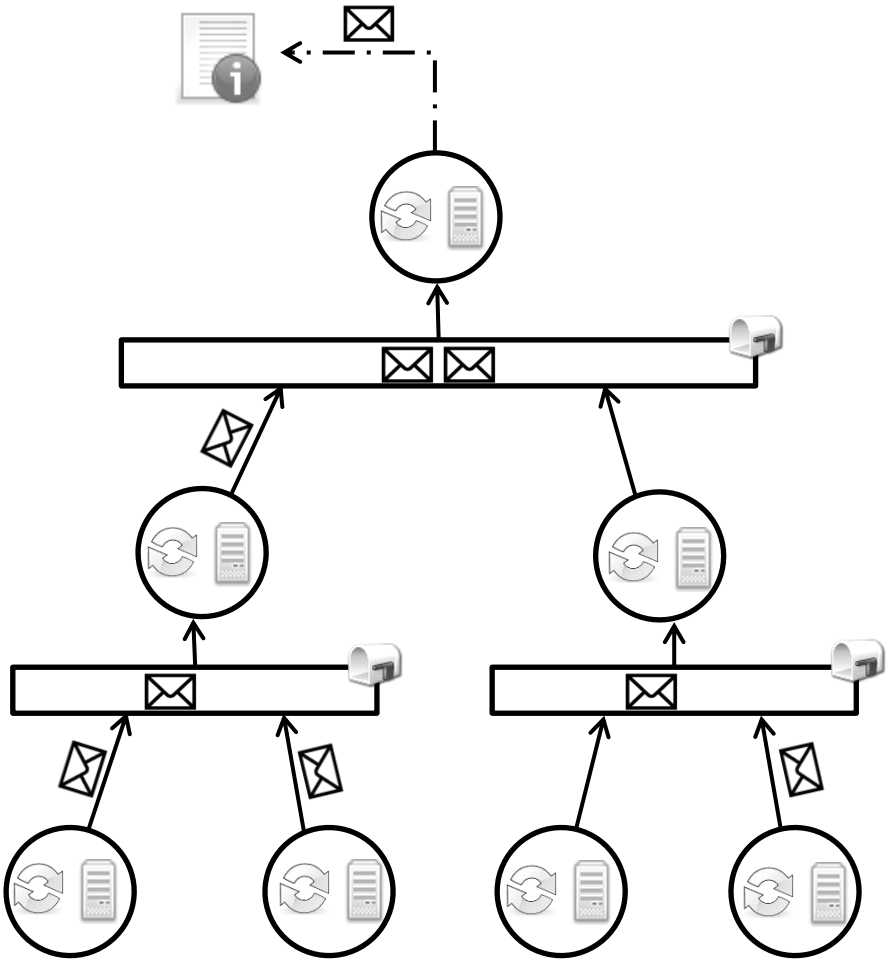

Figure 1-1: Global architecture

The Figure 1-1 shows an instance of the overlay. Each node runs on a server and collect information every 15seconds. Send a message to the upper lever. The messages are always up to date in the mail box. Only the higher node (master node) saves the finale message in a log file.

Legend	
	A node running on a server

	JMX collects information about the server state.
	A message waiting to be collected in the topic of the upper node.
	Shows the topic where a node publishes.
	A message sends to a topic.

2. Overlay creator

3. Node

3.1. JMS

3.2. JMX

4. Handbook

Step1: Execute openjms server, startup.bat (windows) or startup.sh (linux).

Step2: Launch overlaycreator.jar

```
>java –jar Overlaycreator
```