YACHAY TECH

SCHOOL OF MATHEMATICAL AND COMPUTATIONAL SCIENCES

Distributed Systems
Workshop 2: Communication (Messaging and Message Queuing)

Semester I 2026
Feb 11, 2026
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Groups: This workshop will be done in groups of two/three students.

Workshop Activities

Part 1: **RMI**

1. Review the example codes, RMI for server and client . Test programs:
   1.1. Same machine
   1.2. On different hosts (Client and server running on different hosts)
2. Create an application to implement a Distributed "Complex Number Manager". Client read (o generate) complex number and operations (add, sub, prod, div); and server compute and return result as complex number.
   2.1. Write a Python version
   2.2. Test the program locally and using two different machines

Part 2: **Publisher-Subscriber**

3. Review the example codes publisher and subscriber. Test programs:
   3.1. Same machine
   3.2. On different hosts
   3.3. with more than one subscriber
4. Create a version (python) with multiples publishers and multiple subscribers. Each publishers offers different services, and subscribers can be subscribe to more than one publishers.

Part 3: **Pipeline comunicacion**

5. Review the example codes pipeline (Source -Worker). Test programs:
   5.1. Same machine
   5.2. On different hosts
6. Create a version (python) with Source → broker → Worker pipeline with a single input and output (in broker). Run with multiplles sources and multiples workers

Report

You should submit a report with code and results (screenshots). Only parts 2, 4 and 6