




# Coordination-based Distributed Systems

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# Coordination Models

		Time	
		Coupled	Decoupled
Reference	Coupled	Direct	Mailbox 
	Decoupled	 Publish-Subscribe	Tuple spaces 

# Discovering RabbitMQ

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- ◆ *"RabbitMQ is a messaging broker - an intermediary for messaging. It gives your applications a common platform to send and receive messages, and your messages a safe place to live until received. "*
- ◆ <https://www.rabbitmq.com>
- ◆ Features
  - ❖ Message queues
  - ❖ Publish/Subscribe with different flavors

# Install RabbitMQ

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- ◆ <https://www.rabbitmq.com/download.html>
- ◆ You need the server and the client
  - ❖ for Java

# Follow the official tutorials

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- ◆ <https://www.rabbitmq.com/getstarted.html>
- ◆ Start with "Hello World!" for Java

## 1 "Hello World!"

The simplest thing that does *something*



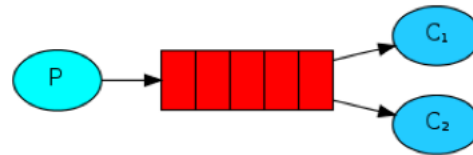
- › Python
- › Java
- › Ruby
- › PHP
- › C#
- › Javascript
- › Go
- › Elixir

# Continue with...

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## 2 Work queues

Distributing tasks among workers



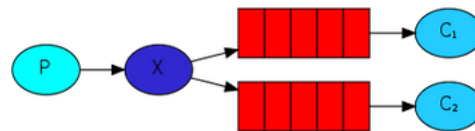
- › **Python**
- › **Java**
- › **Ruby**
- › **PHP**
- › **C#**
- › **Javascript**
- › **Go**
- › **Elixir**

# and...

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## 3 Publish/Subscribe

Sending messages to many consumers at once



- › **Python**
- › **Java**
- › **Ruby**
- › **PHP**
- › **C#**
- › **Javascript**
- › **Go**
- › **Elixir**

# MozartSpaces

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- ◆ <http://www.mozartspaces.org>
- ◆ Download the examples
  - ❖ Run and explore
    - Hello
    - Chat
    - PCO
    - ...
- ◆ Do not hesitate to read the tutorial



# If you have time

## 4 Routing

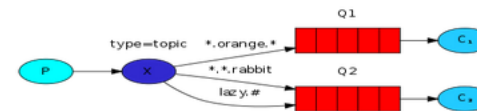
Receiving messages selectively



- › Python
- › Java
- › Ruby
- › PHP
- › C#
- › Javascript
- › Go
- › Elixir

## 5 Topics

Receiving messages based on a pattern



- › Python
- › Java
- › Ruby
- › PHP
- › C#
- › Javascript
- › Go
- › Elixir

# Additional references

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- ◆ Group communication
  - ❖ JGroups
  - ❖ [http://jgroups.org/tutorial/index.html#\\_running\\_a\\_demo\\_program](http://jgroups.org/tutorial/index.html#_running_a_demo_program)