

Distributed computer systems



Component

École Nationale
Supérieure
d'Électrotechnique
d'Électronique
d'Informatique
d'Hydraulique
et des
Télécommunications

In brief

- > **plugin.odf-inp:PLUGINS_ODF_COURSE_NBHOURS_TXT:** 7
- > **Code:** NEGC9A

Presentation

Objectives

Introduction to distributed programming based on a basic knowledge on local area networks and of TCP-UPD / IP protocols. Presentation of the client-server model. Introduction to causality, consensus and reliable broadcast.

Description

The course has two main parts:

- Introduction to the basic concepts of distributed programming, the client-server model, different server realization schemes (sequential, multiple inputs / polling, on-demand, multithreaded)
- Introduction to distributed algorithms, notion of logical clocks, notion of causal order, of total order, principle and solution of distributed consensus and atomic broadcast.

The practical classes enable the students to put into practice these concepts and development techniques, using BSD sockets on Linux. An messaging system (a chat) is first implemented with a client-server approach, a second solution is based on a peer-to-peer approach and implemented using a reliable broadcast protocol.

Pre-requisites

Algorithmics, C / C ++ programming, local area networks, operating system principles, Unix.

Useful info

Place

› Toulouse