

Lab 1: Constructing a bulletin board system using Ensemble

Purposes

Through working on this project, students would be familiar with the fundamental ideas and protocols that are discussed in the course. The task is to create a bulletin board system on the top of an existing distributed system infrastructure called Ensemble. The requirement is specified below.

System requirements

The task is to create one program that can act as both a bulletin board server and a client, namely each process is a peer in the peer-to-peer board system. Just one bulletin board is required to be implemented. The system concerns item identifiers, sender names, dates and subjects. Students do not need to implement the text part for each item. The system keeps up to 100 most recent bulletin board items in memory as long as there is a peer in the system. The service is be able to stand the loss of any peer. If the state in which only one peer holds the data is reached, this state is reported. Peers show the last 10 messages and support scrolling to previous messages stored in the system. All newly arriving messages are immediately displayed. If a reply is posted, its subject is “RE:...”. A message that is the reply of another message always appears after its referent.

Reports

Deadline: May 2, 2006

When finishing, students send an email with “DSII06” in the subject to the course assistant (phuong@chalmers.se). The email must contain the followings:

1. A working program that satisfies the aforementioned requirements, with source code. The source code must be clear and well structured.
2. A report that shows:
 - how to build and run the program, and
 - how the program keeps data consistent among peers.

Examples

Students are recommended to look at the *mtalk* application written in C, which is called *ce_mtalk*, as an example. Its C code, Makefile and necessary material are in */users/mdstud/phuong/DSII/demo/ensemble*