

Prioritized Mutual Exclusion support for RT - CORBA

Goals

Supporting prioritized mutual exclusion on a distributed system by way of implementing the extensions to known protocol for prioritized mutual exclusion for distributed systems. The extensions are meant for intent locking support coupled with read and write lock modes.

Work Done (During Last Month)

- The implementation of the unprioritized version was carried out and it was made to generate informative and ordered traces of messages being sent and received for the purposes of debugging it on the network.
- The implementation for unprioritized version is on the verge of completion. It runs correctly for known test cases. There were a couple of flaws in the protocol which were amended.
- The protocol now requires queue merging due to the fact that requests are queued locally.
- Study of the traces of the execution of the protocol reveals some interesting properties of the protocol (to be discussed in meeting).
- The prioritized version of the protocol was kept aside for the sake of simplicity and better concentration on the basic protocol to expedite implementation.

Future Work (Up to foreseeable future)

- The unprioritized implementation should be tested thoroughly with higher degree of concurrent requests and running on separate network nodes.
- The timing calculation for merging queues should be implemented.
- The draft for prioritized version of the protocol should be rectified for the known flaws (and probably some new flaws).
- The implementation for prioritized version of the protocol should be carried out after the step-1 and 2 are complete.
- The deadlines for RTSS and IEEE DS-RT should be met (trying for prioritized version, otherwise the strictly ordered/unprioritized version).

Nirmit Desai
nvdesai@unity.ncsu.edu
Date: 04-03-2002