

CS425 Distributed System MP3 Report

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Voting Set

Assuming N 's square root is integer x , the N nodes can be placed in a square with same number of nodes in each column and row. The voting set for node A is all the nodes located on the same column and row with node A .

mechanism to avoid deadlock

I use timeout to avoid deadlock. If a node stays "REQUEST_WAIT"(after it multicasts request messages) state for more than $(cs_int * \text{voting set size})ms$, it will multicast a "GIVEUP" message to its voting set. On receiving "GIVEUP" message, a node will delete the request message in its queue if presented, or it changes its vote to the next requester.

In order to avoid livelock, after multicast a GIVEUP message, the node will sleep for a random length of time(with upper bound fixed).

instructions to compile and run code

To compile code, use

```
sh compile.sh
```

All generated file exists in "bin" directory.

To run the code, use command

```
cd ./bin
```

```
java Initializer <cs_int> <next_req> <tot_exec_time> <option>
```