All To Largest resource Allocator For Distributed Systems

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Introduction:

System Overview:

The client-side simulator is tasked with obtaining jobs which are read by the server from an XML document and scheduling the tasks based on prior-made requirements. In Stage 1, the client-side simulator is created to read jobs from the server and schedule them to the largest server. The largest server in the case of Stage 1, is the server that has the most CPU cores.

The interaction between the server and the client begins with the client connecting to an open port in the server (port 50000). The client then sends “HELO” to the server which then responds with “OK”. The client then responds with an authentication message with the name of a user (the current username for the account being used on the computer running the client) “AUTH name”. The server then responds with “OK” to acknowledge the authentication.

The client then tells the server that it is ready to take a job by sending “REDY”. The server then sends a job to the client and the client asks to see all the servers that can be scheduled to. The client then looks at each server’s CPU cores and chooses the one with the most cores (the largest server) and schedules the job to it. This process repeats until “NONE” is sent instead of a job by the server, at which point the client sends “QUIT” and quits the program and then the server sends “QUIT” and also quits the program.

Design:

Implementation: