

Multingenium

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Multithreaded Network-Distributed Computing

What is distributed computing?

Per Wikipedia:

“A distributed system is a software system in which components located on networked computers communicate and coordinate their actions by passing messages. The components interact with each other in order to achieve a common goal.”

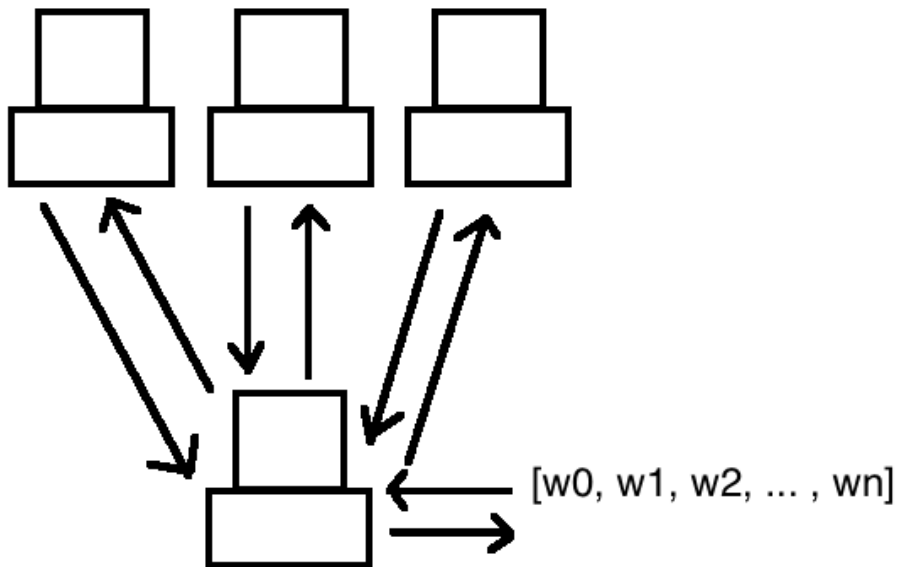
- Cloud computing on the rise
- Ex: AWS, MS Azure

Computing While Charging

“Every night, a large number of idle smartphones are plugged into a power source for recharging the battery. Given the increasing computing capabilities of smartphones, these idle phones constitute a sizeable computing infrastructure.”

- Arslan, et al.

How does this microcosm work?



- Ongoing communication between nodes
- Constant updating of work set
- Server organizes nodes
- Final computation done by server

Process

- 1.) Client sends command and work set to server
- 2.) Server parses the work set into subsets and sends them to all clients with accompanying command
- 3.) Clients perform work, sending result back to server
- 4.) Server recompiles work set
- 5.) Process continues until final work step is completed by server
- 6.) Final result is sent back to client

Demo!