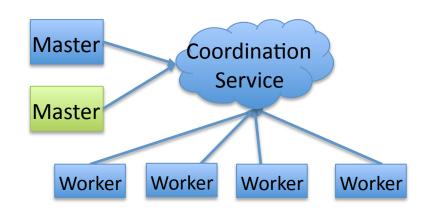


ZooKeeper Tutorial

Part 3
How it really works

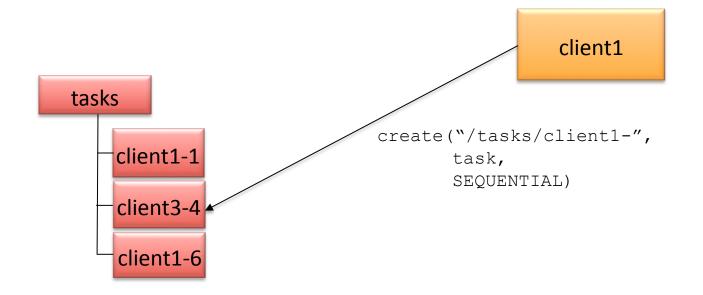
Master/Worker System

- Clients
 - Queue tasks to be executed
 - Monitor the tasks
- Masters
 - Assign tasks to workers
- Workers
 - Get tasks from the master
 - Execute tasks



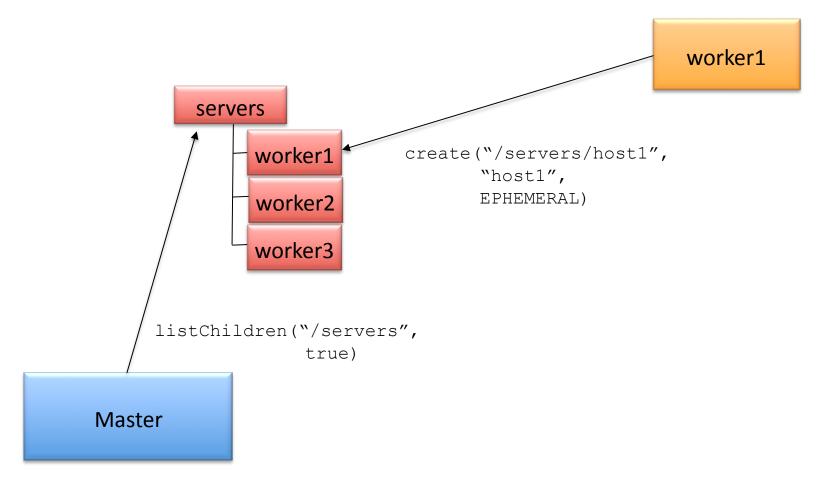


Task Queue



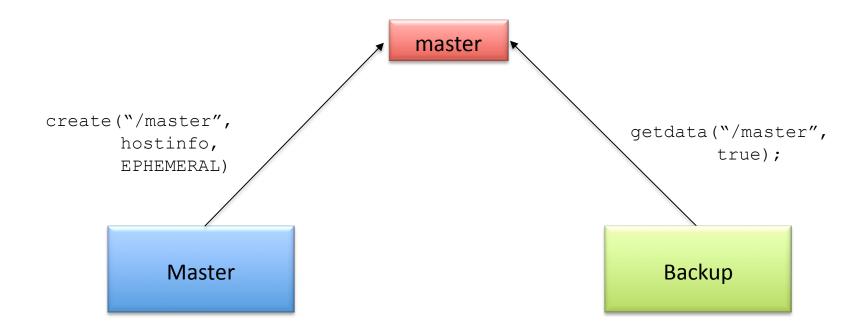


Group Membership



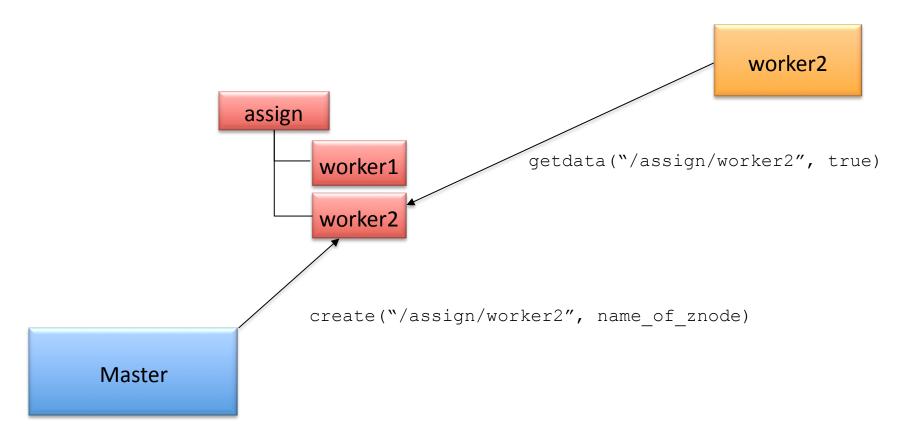


Leader Election





Configuration





Connecting to ZooKeeper

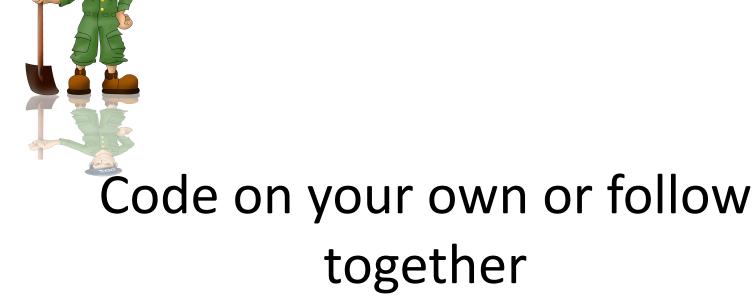
- Everyone has their own ZooKeeper address and auth info.
- Try connecting to ZooKeeper with the CLI.
 java -jar zookeeper-3.3.2-fatjar.jar client zkaddr
- Use addAuth command to authenticate
- Try out some commands
 - Create znodes for /servers, /tasks, /assign



Worker Processing

- Create a session
- Create the "worker" ephemeral znode
- Watch for the assign znode
- Deal with the watches
 - Processing the assignment
 - Update status in the task
 - Delete assignment znode when finished
 - What do to with SessionExpired





Client Processing

- Create a session
- Create a task as a child of the /tasks znode
- Watch the status child of the /tasks znode



Code on your own or follow together

Eurosys 2011 - Tutorial

Master Processing

- Create a session
- Do leader election using master znode
- Watch the worker list
- Watch the task queue
- Watch the assignment queue
- Deal with the watches
 - Deal with workers coming and going
 - Assign new tasks
 - Watch for completions



Code on your own or follow together

Eurosys 2011 - Tutorial

Give it a try...

- Start up the master
- Start up a worker
- Try submitting a command
- Queue up a bunch of sleep 100
- Add more workers
- Try killing a worker
- Try killing the master. Did take over work?

