LFD

**Interfaces with Replica and GFD**

Replica response threshold = 120 seconds (longer than this implies replica is down)

GFD heartbeat period = 120 seconds (how often we send a heartbeat to GFD)

REPLICA PEOPLE:

Have the timestamp in the file be the datetime.datetime.now() value

Have the file only have the most recent timestamp (override previous value)

File name for port: REPLICA\_PORT.csv

File name for heartbeat status: REPLICA\_HEARTBEAT.csv

JSON packet sent to GFD for initialization:

(example IP and port values used, actual values will be generated by code)

{

"type": "INIT",

"replica\_ip": "127.0.0.1",

"replica\_port": 5001,

}

JSON packet sent to GFD for heartbeat:

(example IP and port values used, actual values will be generated by code)

{

"type": "HEARTBEAT",

"replica\_status": True,

}

**Replication Manager -Alina and Madhura ON 11/19/2019**

1. GFD writes to gfd\_ports.csv

IPS [“abc”, “def”]

PORTS[123, 456]

0 in IPS and PORTS indicates corresponding LFD is down.

0 in PORTS only indicates corresponding Replica is down.

Our internal lists read from above file.

1. Alive replica information is updated by the Replication Manager to CSV file: Replication\_Manager\_membership.csv

ALIVE\_REPLICAS\_IPS[“abc”, “def”]

ALIVE\_REPLICAS\_PORTS [123, 456]

1. TCP connection to Replicas

-at Startup

-everytime there is a change in membership

Format : [Number of replicas alive] [ALIVE\_REPLICA IP1] [ALIVE\_REPLICA IP2] ...

**GFD GROUP (kevin + john)**

Update 11/09/19:

* LFD connections print to console
* GFD prints if heartbeat received or timeout on heartbeat
* Able to parse JSON heartbeat and init messages from LFDs
* Able to write status of LFDs/Replicas to csv file

Questions:

* If we implement file i/o we need mutxes/semiphores
* We should use same tcp protocol library?
* why do we need to file\_write ports in GFD?
* why do we have cnt <3 in run for gfd
* lfd should be sending heartbeat and data? not just data?
* flesh out how files should look like? one file? three files?
* what is delay(2min) for?
* Are replication manager and GFD on same system (seems like it according to file\_write in start 1). Should they be though?

**Client Application - Jiahao and Pinak**

* Step 1: req membership from the replica manager

{

“type”: “REQ\_MEM”

}

Expected message coming back from the replica manager:

{

“type”: “MEM\_RESPONSE”,

“replicas”: [

{

“IP”: “1.1.1.1”,

“port”: 749,

“status”:

}, … , {}]

}

* Step 2: send the read/write requests to the replicas

{

“type”: “READ/WRITE”,

“value”: 123 // ignored when the type is READ

}

If the command type is read wait for the replicas to give the response of value

Now, the client will hang if it does not see the value

**REPLICA DREAM TEAM**

Setup & Heart beating

* Writes socket port into the REPLICA\_PORT.csv
* Writes current time into the REPLICA\_HEARTBEAT.csv every 1s

Receiving messages

* Receives messages from client as a dictionary in string form
* Converts string dictionary into an actual dictionary
* If **type** of message is **‘WRITE’**, writes a new row into the csv file stack.csv containing the **value** specified from client
* If **type** of message is **‘READ’**, reads the last row from stack.csv and sends the value back to client
* **$$$$$$$$$$$$$$$$$$$$$$$$ profit $$$$$$$$$$$$$$$$$$$$$$$$**
* **10/10 best team**