

CC Mini Project - Raft 3D

Section: 6F (CSE)

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Initially node 1 was the leader, and during demo we terminated node1 to show re-election and hence node 2 is the leader. The screenshots were taken after the demo and hence in the screenshots the leader is node 2.

Terminal 1 for node 1:

```
go run $(ls *.go) -id node1 -http :8080 -raft 127.0.0.1:9000
```

Terminal 2 for node 2:

```
go run $(ls *.go) -id node2 -http :8081 -raft 127.0.0.1:9001 -join localhost:8080
```

Terminal 3 for node 3:

```
go run $(ls *.go) -id node3 -http :8082 -raft 127.0.0.1:9002 -join localhost:8080
```

To get status of node 1:

```
curl http://localhost:8080/status
```

```
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8080/status
State: Follower
Leader: 127.0.0.1:9001
```

To get status of node 2:

```
curl http://localhost:8081/status
```

```
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8081/status
State: Leader
Leader: 127.0.0.1:9001
```

To get status of node 3:

```
curl http://localhost:8082/status
```

```
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8082/status
State: Follower
Leader: 127.0.0.1:9001
```

To add printer to the leader:

```
curl -X POST http://localhost:8081/printers \
-H "Content-Type: application/json" \
-d '{"printer_id":"printer-3","filament_weight":60.0}'
```

```
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl -X POST http://localhost:8081/printers \
-H "Content-Type: application/json" \
-d '{"printer_id":"printer-3","filament_weight":60.0}'
{"id":"printer-3","name":"","status":"idle","filament_weight":60}
```

To add print job to the leader:

```
curl -X POST http://localhost:8080/jobs \
-H "Content-Type: application/json" \
-d '{"printer_id":"printer-1","filament_weight":60.0}'
```

```
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl -X POST http://localhost:8081/jobs \
-H "Content-Type: application/json" \
-d '{"printer_id":"printer-3","filament_weight":60.0}'
{"id":"job-3","status":"queued","printer_id":"printer-3","filament_weight":60}
```

To check the replication of jobs:

curl <http://localhost:8080/jobs>

curl <http://localhost:8081/jobs>

curl <http://localhost:8082/jobs>

```
((base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8080/jobs
{"job-1":{"id":"job-1","status":"completed","printer_id":"printer-1","filament_weight":50},"job-2":{"id":"job-2","status":"queued","printer_id":"printer-1","filament_weight":50},"job-3":{"id":"job-3","status":"queued","printer_id":"printer-3","filament_weight":60}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8081/jobs
{"job-1":{"id":"job-1","status":"completed","printer_id":"printer-1","filament_weight":50},"job-2":{"id":"job-2","status":"queued","printer_id":"printer-1","filament_weight":50},"job-3":{"id":"job-3","status":"queued","printer_id":"printer-3","filament_weight":60}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8082/jobs
{"job-1":{"id":"job-1","status":"completed","printer_id":"printer-1","filament_weight":50},"job-2":{"id":"job-2","status":"queued","printer_id":"printer-1","filament_weight":50},"job-3":{"id":"job-3","status":"queued","printer_id":"printer-3","filament_weight":60}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 %
```

To check the replication of printers:

curl <http://localhost:8080/printers>

curl <http://localhost:8081/printers>

curl <http://localhost:8082/printers>

```
((base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8080/printers
{"printer-1":{"id":"printer-1","name":"My Printer","status":"printing","filament_weight":450,"current_job_id":"job-2"},"printer-2":{"id":"printer-2","name":"","status":"idle","filament_weight":0},"printer-3":{"id":"printer-3","name":"","status":"printing","filament_weight":60,"current_job_id":"job-3"}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8081/printers
{"printer-1":{"id":"printer-1","name":"My Printer","status":"printing","filament_weight":450,"current_job_id":"job-2"},"printer-2":{"id":"printer-2","name":"","status":"idle","filament_weight":0},"printer-3":{"id":"printer-3","name":"","status":"printing","filament_weight":60,"current_job_id":"job-3"}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8082/printers
{"printer-1":{"id":"printer-1","name":"My Printer","status":"printing","filament_weight":450,"current_job_id":"job-2"},"printer-2":{"id":"printer-2","name":"","status":"idle","filament_weight":0},"printer-3":{"id":"printer-3","name":"","status":"printing","filament_weight":60,"current_job_id":"job-3"}}
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 %
```

Leader Re-Election:

- 8081 is initial leader
- After terminating it 8082 is re elected as leader

```
[(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8080/status
State: Follower
Leader: 127.0.0.1:9002
[(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8082/status
State: Leader
Leader: 127.0.0.1:9002
[(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % curl http://localhost:8081/status
curl: (7) Failed to connect to localhost port 8081 after 0 ms: Couldn't connect to server
(base) lolithay@Lolithas-MacBook-Pro raft3d-1 % █
```