

一个简单的分布式键值存储

1. 基本操作

participant

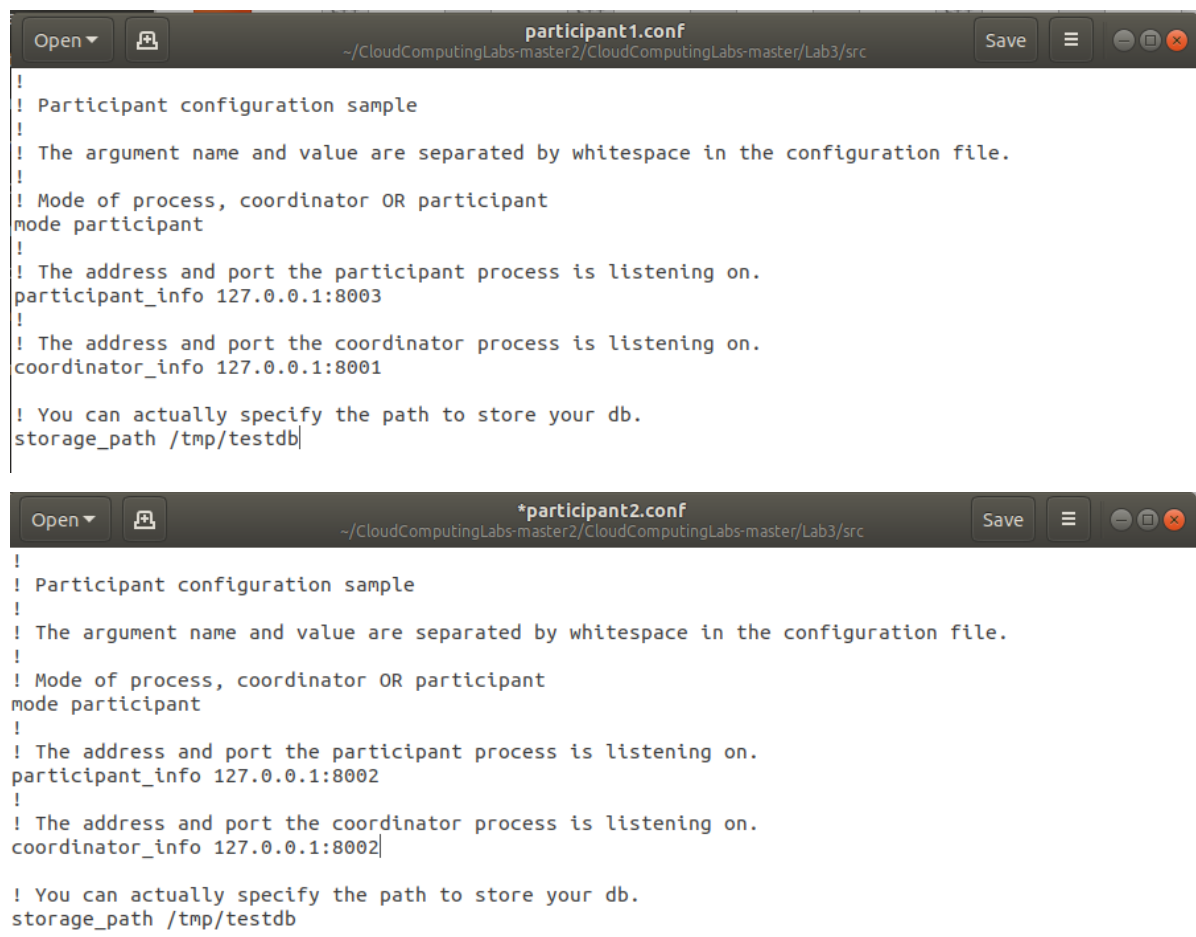
```
./kvstore2pcsystem --config_path ./src/participant1.conf  
./kvstore2pcsystem --config_path ./src/participant2.conf
```

coordinator

```
./kvstore2pcsystem --config_path ./src/coordinator.conf
```

```
./test_rpc
```

2. 相关设置




```
sebastian@ubuntu: ~/Lab3
文件(F) 编辑(E) 查看(V) 搜索(S) 终端(T) 帮助(H)
sebastian@ubuntu:~/Lab3$ ./kvstore2pcsystem --config_path ./src/participant2.conf
participant running at [127.0.0.1:8002]
init_records with data.size() == 0
next_id_handler: 0
RECOVER
recovery success
GET_SNAPSHOT
[]

sebastian@ubuntu: ~/Lab3
文件(F) 编辑(E) 查看(V) 搜索(S) 终端(T) 帮助(H)
sebastian@ubuntu:~/Lab3$ ./kvstore2pcsystem --config_path ./src/participant.conf
participant running at [127.0.0.1:8003]
init_records with data.size() == 0
next_id_handler: 0
RECOVER
recovery success
```

4. 测试结果

4.1 总体结果

```
Test item 1: PASSED
Test item 2: PASSED
Test item 3: PASSED
Test item 4: PASSED
Test item 5: FAILED
Test item 6: PASSED
Test item 7: FAILED
Test item 8: PASSED
Test item 9: FAILED
```

4.2 成功item

4.2.1

```

----- Test item 1 -----
Test item 1. Test point: Run kvstore2pcsystem.
Language checking.....
Warning: [ UNKNOWN programing_language ]
Start system: [ UNKNOWN LANGUAGE ]
coordinator running at [192.168.66.101:8001]
init_records with data.size() == 0
random next_id
recovery next_id : 1692143039
Run coordinator successfully
participant running at [192.168.66.201:8002]
init_records with data.size() == 0
Run participant[0] successfully
participant running at [192.168.66.202:8003]
init_records with data.size() == 0
Run participant[1] successfully
participant running at [192.168.66.203:8004]
init_records with data.size() == 0
Run participant[2] successfully
Run kvstore2pcsystem successfully
===== [PASSED] : Test item 1 =====
| |

```

4.2.2

```

----- Test item 2 -----
Test item 2. Test point: Set key to hold string value.
remove participant: rpc::timeout: Timeout of 600ms while connecting to 192.168.66.201:8002
next_id_handler: 0
handle_new_client
handle_db_requests with 46 bytes
next_id_handler: 0
handle_unfinished_records with size == 0
handle_unfinished_records returned
persist record 0 1692143039 1692143040
participants_.size() 2
prepare_set 1692143039
persist command 1692143039
persist record 5 1692143039 1692143039
prepare_set ok
prepare_set 1692143039
persist command 1692143039
persist record 5 1692143039 1692143039
prepare_set ok
persist record 1 1692143039 1692143040
before commit
COMMIT 1692143039
persist record 1 1692143039 1692143039
persist record 3 1692143039 1692143040
commit result: +OK

before commit
COMMIT 1692143039
persist record 1 1692143039 1692143039
persist record 3 1692143039 1692143040
commit result: +OK

persist record 3 1692143039 1692143040
recover_participant
item set set_result: +OK
===== [PASSED] : Test item 2 =====
| |

```

4.2.3

```

----- Test item 3 -----
Test item 3. Test point: Get the value of key.
handle_unfinished_records with size == 0
handle_unfinished_records returned
heartbeat: participants_.size() == 3
handle_new_client
handle_db_requests with 46 bytes
persist record 0 1692143040 1692143041
participants_.size() 3
prepare_set 1692143040
persist command 1692143040
persist record 5 1692143040 1692143040
prepare_set ok
prepare_set 1692143040
persist command 1692143040
persist record 5 1692143040 1692143040
prepare_set ok
prepare_set 1692143040
persist command 1692143040
persist record 5 1692143040 1692143040
prepare_set ok
persist record 1 1692143040 1692143041
before commit
COMMIT 1692143040
persist record 1 1692143040 1692143040
persist record 3 1692143040 1692143041
commit result: +OK

before commit
COMMIT 1692143040
persist record 1 1692143040 1692143040
persist record 3 1692143040 1692143041
commit result: +OK

before commit
COMMIT 1692143040
persist record 1 1692143040 1692143040
persist record 3 1692143040 1692143041
commit result: +OK

```

4.2.4

```

----- Test item 4 -----
Test item 4. Test point: Return nil if the key does no exist.
heartbeat: participants_.size() == 3
handle_new_client
handle_db_requests with 28 bytes
GET item4_key
heartbeat: participants_.size() == 3
===== [PASSED] : Test item 4 =====

```

4.2.5

```

----- Test item 5 -----
Test item 5. Test point: If the DEL command executed, return the number of keys that were removed.
heartbeat: participants_.size() == 3
handle_new_client
handle_db_requests with 51 bytes
persist record 0 1692143041 1692143042
participants_.size() 3
prepare_set 1692143041
persist command 1692143041
persist record 5 1692143041 1692143041
prepare_set ok
prepare_set 1692143041
persist command 1692143041
persist record 5 1692143041 1692143041
prepare_set ok
prepare_set 1692143041
persist command 1692143041
persist record 5 1692143041 1692143041
prepare_set ok
persist record 1 1692143041 1692143042
before commit
COMMIT 1692143041
persist record 1 1692143041 1692143041
persist record 3 1692143041 1692143042
commit result: +OK

before commit
COMMIT 1692143041
persist record 1 1692143041 1692143041
persist record 3 1692143041 1692143042
commit result: +OK

before commit
COMMIT 1692143041
persist record 1 1692143041 1692143041
persist record 3 1692143041 1692143042
commit result: +OK

```

4.2.6

```

----- Test item 7 -----
Test item 7. Test point: Correctness testing of DEL command.
heartbeat: participants_.size() == 3
handle_new_client
handle_db_requests with 46 bytes
persist record 0 1692143046 1692143047
participants_.size() 3
prepare_set 1692143046
persist command 1692143046
persist record 5 1692143046 1692143046
prepare_set ok
prepare_set 1692143046
persist command 1692143046
persist record 5 1692143046 1692143046
prepare_set ok
prepare_set 1692143046
persist command 1692143046
persist record 5 1692143046 1692143046
prepare_set ok
persist record 1 1692143046 1692143047
before commit
COMMIT 1692143046
persist record 1 1692143046 1692143046
persist record 3 1692143046 1692143047
commit result: +OK

before commit
COMMIT 1692143046
persist record 1 1692143046 1692143046
persist record 3 1692143046 1692143047
commit result: +OK

before commit
COMMIT 1692143046
persist record 1 1692143046 1692143046
persist record 3 1692143046 1692143047
commit result: +OK

persist record 3 1692143046 1692143047
heartbeat: participants_.size() == 3

```

4.2.7

```

----- Test item 8 -----
Test item 8. Test point: Kill one of the participants.
heartbeat: participants_.size() == 3
handle_new_client
handle_db_requests with 52 bytes
persist record 0 1692143048 1692143049
participants_.size() 3
prepare_set 1692143048
persist command 1692143048
persist record 5 1692143048 1692143048
prepare_set ok
prepare_set 1692143048
persist command 1692143048
persist record 5 1692143048 1692143048
prepare_set ok
prepare_set 1692143048
persist command 1692143048
persist record 5 1692143048 1692143048
prepare_set ok
persist record 1 1692143048 1692143049
before commit
COMMIT 1692143048
persist record 1 1692143048 1692143048
persist record 3 1692143048 1692143049
commit result: +OK

before commit
COMMIT 1692143048
persist record 1 1692143048 1692143048
persist record 3 1692143048 1692143049
commit result: +OK

```

4.2.8

```

----- Test item 9 -----
Test item 9. Test point: Kill all of the participants.
heartbeat: participants_.size() == 2
handle_new_client
handle_db_requests with 52 bytes
persist record 0 1692143051 1692143052
participants_.size() 2
prepare_set 1692143051
persist command 1692143051
persist record 5 1692143051 1692143051
prepare_set ok
prepare_set 1692143051
persist command 1692143051
persist record 5 1692143051 1692143051
prepare_set ok
persist record 1 1692143051 1692143052
before commit
COMMIT 1692143051
persist record 1 1692143051 1692143051
persist record 3 1692143051 1692143052
commit result: +OK

before commit
COMMIT 1692143051
persist record 1 1692143051 1692143051
persist record 3 1692143051 1692143052
commit result: +OK

persist record 3 1692143051 1692143052
handle_new_client
handle_db_requests with 52 bytes
persist record 0 1692143052 1692143053
participants_.size() 2
prepare_set 1692143052
persist command 1692143052
persist record 5 1692143052 1692143052
heartbeat failed
prepare_set ok
prepare_set 1692143052
persist command 1692143052
persist record 5 1692143052 1692143052

```

