

User Guide for Project 2

Nov 6, 2016

I. Installation & Environments

Thrift 0.9.0

Python 2.7.12

pickledb 0.6

II. Deploy clients and servers

Step 0. Make sure EVERY client and server machine has the *ProjectOne.thrift* file. Then generate stubs with the following command:

```
thrift --gen py ProjectOne.thrift
```

Step 1. Under the **same** directory of your *ProjectOne.thrift* file, deploy the python script. You may need to change the IP addresses in the script, since cluster IPs are hard coded in the file. Of course, you can add a few lines of python and read the IPs from a file.

The figure below shows the `SERVER_IP` array of 172.22.71.42. For a given server, the array records IPs of all other servers in the cluster.

```
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.40','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.39','172.22.71.40','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.39','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.40','172.22.71.39']
SERVER_IP=['172.22.71.41','172.22.71.38','172.22.71.40','172.22.71.39']
```

III. Examples

There are five servers in the cluster. You need to start all of them before running the client. To start a server, run the something like the following command. Make sure you use the **same** port number across the cluster.

```
python thrift_server_42.py 172.22.71.42:31000
```

Before you start the client, get your commands file ready under the same directory of the client script. The command file should be in csv format. Run the command below to execute.

```
python thrift_client_37.py ./tst1.csv 31000
```

After the all the commands are executed, the shell will look something like the picture below.

```
2016-11-06 11:34:16.961941 {"2HmK": "ooG3Un6oopphooshi9Qu\n"}
2016-11-06 11:34:16.985283 ServerINFO: KeyDu9ruKiek put successfully.
Number of valid Operation:
150
Average Time per ops
0.0112074232101
STD of average time per ops
0.0083332350209
Average TP
89.2265761049
[jiachl5@n11 ~]$
```

```
2016-11-06 11:34:16.854408 INFO: Key wi4Miebe put successfully.
2016-11-06 11:34:16.878324 WARNING: Key akae7iPh has been overwritten.
2016-11-06 11:34:16.919947 INFO: Key eeW8oPecPut Synchronization successfully.
2016-11-06 11:34:16.922832 INFO: Key eeW8oPec put successfully.
2016-11-06 11:34:16.935961 INFO: Key Da3ei get successfully.
2016-11-06 11:34:16.943688 INFO: Key Jee1phoo put successfully.
2016-11-06 11:34:16.984571 INFO: Key Du9ruKiekPut Synchronization successfully.

2016-11-06 11:34:16.987650 INFO: Key Du9ruKiek put successfully.
^
```

For every PUT and DELETE, there will be two messages printed on the server side. One shows the result of 2PC , the other shows the result of executing locally.