(FTC) Primary-Backup e-Voting Server

A. Connect to the e-Voting servers operated by the other

A.1. Prepare your server

Set up your server to accept incoming RPC requests from the voting clients.

Fill in your server's IP address and port number in the following Google Form.

https://forms.gle/577h6pNXgtLLJfgb9

For the ‘Name’ field, just use the “組別” of your team as given in the following.

組別	組員一	組員二	組員三	組員四
TeamA	凃少麒	張均聖		
TeamB	徐曼妮	王麒銘		
TeamC	葉宜萍	翁甫廉		
TeamD	朱彥瑜	蕭少柏	林柏均	張秉洋
TeamE	李雍皓	陳品晴	林奕鑫	王宗聖

A.2. Public keys of the voting clients

Generate a public / private key pair for your voting client.

Submit the public key of your client in base64 encoding to the following Google Form.

https://forms.gle/vWC1Y9f1RTA3FpuWA

For the ‘Name’ field, use the “組別” of your team

B. Primary-Backup Fault Tolerance

Assume that the e-Voting server may suffer crash failures. Once it gets crashed, it will require a manual restart by the system administrator to get back online.

Please design a primary-backup fault tolerance mechanism that meets the following requirements

1. When a voting client’s RPC call to the primary server fails, the client can connect to a backup server and complect the RPC call.
2. The election states of the backup server at the time of take-over should be identical to the election states of the primary server right before the primary server’s crash
    a. Elections that have been created on the primary server should exist on the backup server as well.
    b. Cast votes on the primary server should appear on the backup server
    c. No spooky elections or votes
3. There should be a procedure to restore the primary server. Once the primary server is back online again, all subsequent client requests will be directed to the primary server.

Please prepare the following for submission

1. Put your code on GitHub
2. Prepare a README describing how to build and run your code
3. Write a report that covers
    a. The design and implementation of your primary-backup e-Voting server
    b. The evaluation of your e-Voting server and client. You need to show that the server meets the fault tolerance requirements.