(FTC) Online Voting - Part III. Primary-Backup e-Voting Server

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 complete 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 appear on the backup server as well.
   b. The votes on the backup should be identical to the votes on the primary.
   c. No spooky elections or votes
3. There should be a procedure to restore the primary server. Once the primary server is back online, all subsequent client requests will be directed to the primary server.

Please prepare the following for submission.

1. A zip file of your code
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.