

# Test Packs

This document explains the (hidden) test cases for Part 2 of Assignment 4.

**Note:** you will be tested on all three test packs.

## Test Pack 1

### ***Test case 1: testThreeIndependentContiguousProposals***

A node is asked to propose three independent<sup>1</sup> (key, value) pairs sequentially. The proposals are **NOT** simultaneous, i.e. a new proposal is made after the current one has committed.

### ***Test case 2: testFiveIndependentSimultaneousProposals***

A node is asked to propose five independent (key, value) pairs. These proposals **ARE SIMULTANEOUS**, i.e. proposals are made without waiting for the preceding proposals to finish / commit.

## Test Pack 2

### ***Test case 1: testTwoProposersIndependentProposalsOneRound***

Two nodes simultaneously propose one (key, value) pair each. These proposals are independent.

### ***Test case 2: testMultipleProposersIndependentProposalsMultipleRounds***

Multiple nodes simultaneously propose one (key, value) pair each. These proposals are independent.

### ***Test case 3: testTwoDuelingProposers***

Two nodes simultaneously propose one (key, value) pair each. These proposals are **NOT** independent.

### ***Test case 4: testThreeDuelingProposers***

Three nodes simultaneously propose one (key, value) pair each. These proposals are **NOT** independent.

## Test Pack 3

### ***Test case 1: testOneNodeReplaced***

After a few sequential proposals, a node is crashed. Then, to take its place, a replacement node is started.

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<sup>1</sup> "Independent" here means that the keys of all proposed (key, value) pairs were distinct.

## Using the test packs

Choose a test pack and then follow the following instructions to use it:

1. Place `proxy.go` in the folder `$GOPATH/src/paxosapp/tests/proxy`.
2. Place `paxostest` executable in `$GOPATH/bin`.
3. Place `paxostest_cp.sh` in `$GOPATH/src/paxosapp`.
4. Run the tests by executing `./paxostest_cp.sh` from `$GOPATH/src/paxosapp`.

For each test pack, you can configure a subset of the flags:

- timeout (test packs 1-3): the time (in seconds) for a test case to timeout and fail. (default: 40)
- initwait (test packs 1-3): the time (in seconds) to wait the Paxos nodes to connect with one another. (default: 2)
- testRegex (test packs 1-2): a regular expression to specify name of the test case to run. (default: "", i.e. run all test cases).
- repWait (test pack 3): the time (in seconds) to wait for the replacement node to be brought up to speed before testing it. (default 20)
- repRetries (test pack 3): the number of retries the replace node should make to connect to all the other nodes. (default 5)

You can add or edit these flags on the line `${PAXOS_TEST} -port=${TESTER_PORT} ...` in `paxostest_cp.sh`. Also, executing `paxostest -h` will give a list of all the flags with their descriptions.