P4Auth in Hula Algorithm

Commands to Run the experiments

FOR Only hula no p4 auth (without adversary) / CRC32 Model without adversary:

1. Open a terminal
    a. Run *make clean*
    b. Run *make (*mininet will be opened here *)*
2. Open another terminal
    a. Run *python3 new_controller.py*
3. Run *xterm h1 h2* (from mininet) and do the following from h1 and h2
    a. Run *cd test-scipts* to enter the test-scripts directory (testing files are here)
    b. Run *python3 probe.py* from both h1 and h2 and keep them running so that the best path will keep on updating.
4. Run *xterm h1 h2* (from mininet) and do the following from h1 and h2
    a. Run *cd test-scipts* to enter the test-scripts directory (testing files are here)
    b. From any of them (say from h1), run *python3 receiver.py*
    c. From the other one (here h2) run *python3 send.py <destination IP> "YOUR_MESSAGE"* here destination IP=10.0.1.1

FOR Only hula no p4 auth (with an adversary) / CRC32 model with adversary:

1. Open a terminal
    a. Run *make clean*
    b. Run *make (*mininet will be opened here *)*
2. Open another terminal
    a. Run *python3 new_controller.py*
    b. Run *simple_switch_CLI --thrift-port 9096* (this will open *RuntimeCMD* where we can add table entries from
    c. Run *table_add MyIngress.forward_packet packet_farward 2 => 1*
    d. Run *table_add MyIngress.forward_packet packet_farward 1 => 2*
    After the above commands, the adversary will be running and will modify the packet flow. Use Wireshark to monitor the packet flow
3. Run *xterm h1 h2* (from mininet) and do the following from h1 and h2
    a. Run *cd test-scipts* to enter the test-scripts directory (testing files are here)
    b. Run *python3 probe.py* from both h1 and h2 and keep them running so that the best path will keep on updating.
4. Run *xterm h1 h2* (from mininet) and do the following from h1 and h2
    a. Run *cd test-scipts* to enter the test-scripts directory (testing files are here)
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NOTE:

- We have highlighted the part of commands in 2nd part, which is different from the 1st part.
- To check the Hula adaptability of link failure and change in topology: Run *link s1 s3 down* (here modify s1 s3 as needed) in mininet CLI.
- Please use Wireshark with a filter to filter out the actual packets which are used to send messages from the Hula Probe packets