# Tests

| **Test #** | **Test procedure / description** | **Expected Outcome** | **Actual Outcome & Remarks** | **Pass / Fail** |
| --- | --- | --- | --- | --- |
| 1 | Smoke test the firewall:   1. apply the firewall:    * sudo ./firewall.sh 2. run the test script:    * sudo ./test.sh [peer ip address] 3. run the test script from the peer computer:    * sudo ./test.sh [firewall ip address] 4. list firewall rules:    * sudo iptables -L -v -n | * During step 1, nothing is printed. * During step 2, all tests except for those under the "### testing firewall rules of $address ###" heading should pass. * During step 3, all tests under the "### testing firewall rules of $address ###" heading should pass * During step 4, all firewall rules are listed. most rules have a non-zero packet count. all user chains have a non-zero packet count. | As expected | Pass |
| 2 | Test DNS, HTTP and HTTPS:   1. apply the firewall:    * sudo ./ firewall.sh 2. open a web browser and go to a website that uses the HTTP protocol, then go to another site that uses a HTTPS protocol. 3. list firewall rules: | When listing firewall rules:   * all DNS rules associated with UDP protocols should have non-zero packet counts. * WWW\_CLIENT rules associated with the WAN interface should have non-zero packet counts. * the WWW\_CLNT and DNS chains should have non-zero packet counts. | As expected | Pass |
| 3 | Compiles the process version of the application and runs it.   1. make clean 2. make Processes-Main 3. valgrind ./Processes-Main.out 100000 ./file | * The program is run and valgrind shows that there are no memory leaks. * It also creates a file in the current directory named “file” that contains what was printed to the screen within. * Output on stdout shows all the factors of 100000 starting at 1, ending at 100000. | As expected | Pass |
| 4 | Compiles the threaded version of the application and runs it.   1. make clean 2. make Threads-Main 3. valgrind ./Threads-Main.out 100000 ./file | Same as test 3 | As expected | Pass |

## Screenshots

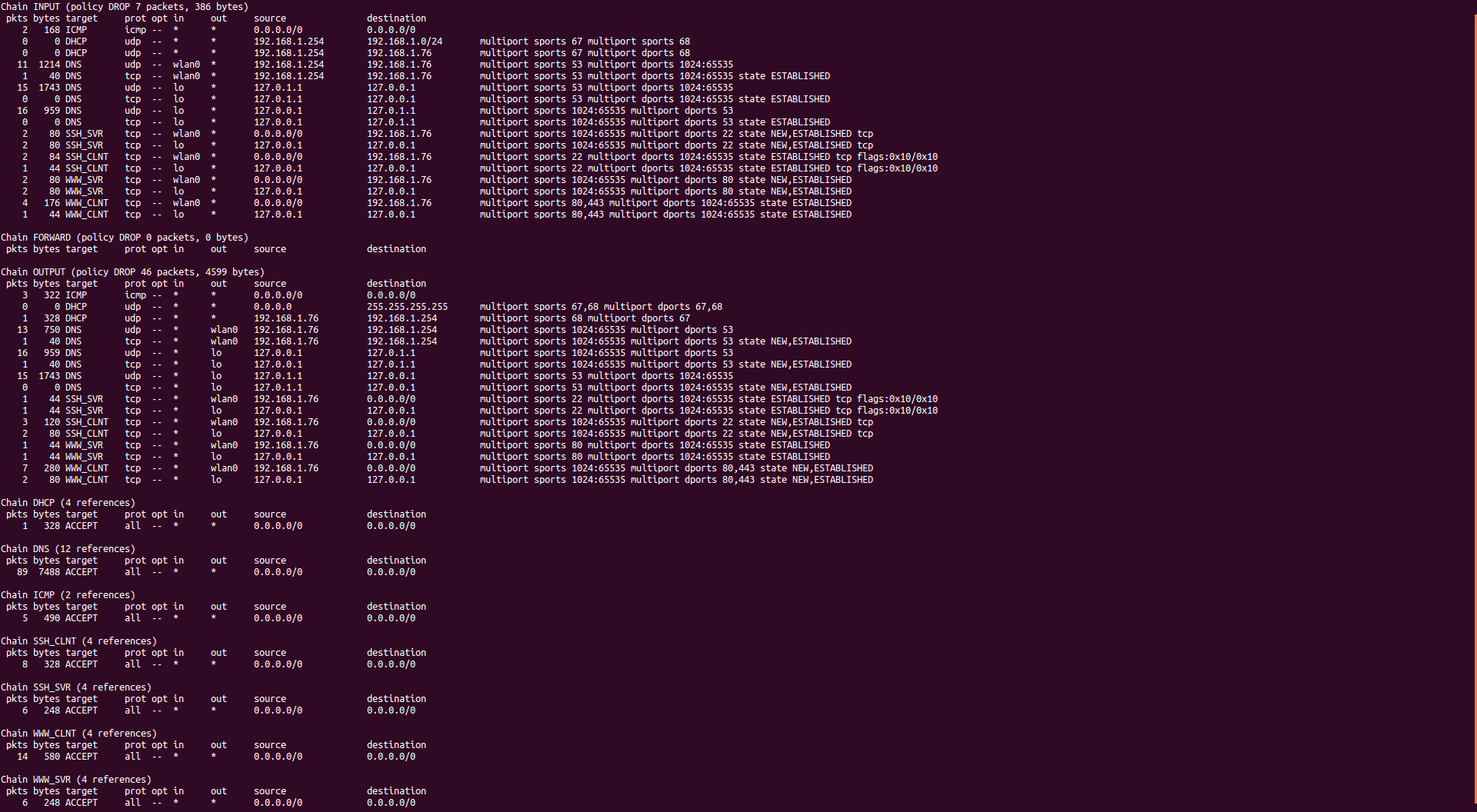


Figure test 1, all user chains have non-zero values, and most firewall rules also have non-zero values