

Test Coverage:

Unit Testing

1. Filter:

Test Cases –

1. Empty filters
2. Destination Expression filter
3. Port Number Filter
4. Combination filter of IP and Port
5. Protocol filter
6. Filter that matches none of the packets
7. Clicking on the clear button on UI
8. Entering the filter expression in UI and clicking Apply Filter

All the above test cases passed

Test Coverage:

- Function coverage – 100%
- Statement coverage - 100%
- Branch coverage - No branches
- Condition coverage – Conditions for null-checking only , which are covered

2. Input

Test Cases –

1. The packets captured by LiveCapture are the packets received by the interface and none of the packets are missed.
2. The LiveCapture stops reading more packets after the Stop button is clicked
3. The packets already read by LiveCapture that waiting in the buffer are all displayed in the UI even after the stop button is pressed.
4. The ReadFromFile function reads all the correct packets in the .pcap file

All the above test cases passed

Test Coverage:

- Function coverage – 100%
- Statement coverage - 100%
- Branch coverage - No branches
- Condition coverage – Conditions applied to decide to stop the Thread that retrieves packet from buffer. Both variables checked for termination were given all possible values

3. Output

Test Cases –

1. Packets can be added to the UI by using the corresponding method
2. The entire packet display UI can be cleared by calling ClearAll method
3. The packet display can be set to a list of packets using the SetPacketList method

All the above test cases passed

Test Coverage:

- Function coverage – 100%
- Statement coverage - 100%
- Branch coverage - the code has branches for IPv4, IPv6 and ARP packet types which are all checked
- Condition coverage – 100%

Integration Testing

For testing Output module with the Input module

Test Cases –

1. While the packet capture is on, the Input module capture packets and the Output module displays each packet on the UI
2. PCAP files stored in memory can be read by Input module and displayed on the UI by output module

All the above test cases passed

Test Coverage:

- Function coverage – 100%
- Statement coverage - 100%
- Branch coverage - the code has branches for IPv4, IPv6 and ARP packet types which are all checked
- Condition coverage – Conditions applied to decide to stop the Thread that retrieves packet from buffer. Both variables checked for termination were given all possible values