**IAS Lab Program -3**

Write a python program using Scapy library to capture the real-time network traffic coming to the Network Interface Card of the host system (on which system student is working). Use the given filter option to set into the sniff( ) function before capturing the real-time network traffic. Display the entire captured packet in raw format onto the terminal of the host system and also display all the header fields of the captured packet (Ethernet, IP and ICMP/TCP/UDP) in human-understandable form onto the terminal of the host system. Demonstrate the Packet Filtering Firewall operations by using appropriate extracted header fields of the captured packet as well as the given ACL file.

**Test cases**

**Test Case 1**

• Use the given ACL file.

• Use 20.20.20.20, 100.100.100.100 as source IP address and destination IP address, respectively. Use source port as 11, destination port as 80.

Use these details with sr1() function to craft the packet and send the crafted packet in real-time.

• Use Destination IP as 100.100.100.100 to set the filter option in sniff() function.

**Test Case 2**

• Use the given ACL file.

• Use 200.200.200.200, 100.100.110.100 as source IP address and destination IP address, respectively. Use source port as 81, destination port as 400.

Use these details with srloop() function to craft the packet and send the crafted packet in real-time.

• Use Destination IP as 100.100.110.100 to set the filter option in sniff() function.

**Test Case 3**

• Use the given ACL file.

• Use 20.20.20.20, 200.200.200.200 as source IP address and destination IP address, respectively. Use source port as 81, destination port as 80. Use these details with sr() function to craft the packet and send the crafted packet in real-time.

• Use Destination IP as 200.200.200.200 to set the filter option in sniff() function.

**Test Case 4**

• Use the give ACL file.

• Use 200.20.202.20, 100.102.100.102 as source IP address and destination IP address, respectively. Use source port as 81, destination port as 80. Use these details with srloop() function to craft the packet and send the crafted packet in real-time.

• Use Destination IP as 100.102.100.102 to set the filter option in sniff() function.

**Submit program file and all screenshots to the assigned evaluator's Email ID and CC to** [**iascourselab@gmail.com**](mailto:iascourselab@gmail.com) **before the next Lab.**