

EXP NO:12.A

DATE:5.11.24

231901028

MADHAN KUMAR

Packet Sniffing Using Socket AIM:

To study packet sniffing concept and implement it using sockets. **Algorithm:**

Import Libraries: Import necessary modules from `scapy` for packet capturing and IP layers.

Define Packet Callback:

- Check if the packet contains an IP layer.
- Extract protocol number, source IP, and destination IP from the IP layer.
- Identify the protocol type (ICMP, TCP, UDP) based on the protocol number.
- Print the protocol name, source IP, and destination IP.

Main Function:

- Use `sniff` to capture packets on the default network interface.
- For each packet, call `packet_callback` to process and display packet information.

Run Program:

- Execute the `main` function to start packet sniffing when the script runs.

Program:

```
from scapy.all import sniff from scapy.layers.inet import  
IP, TCP, UDP, ICMP
```

```
def packet_callback(packet): if  
    IP in packet:  
        ip_layer = packet[IP]  
        protocol = ip_layer.proto  
        src_ip = ip_layer.src dst_ip  
        = ip_layer.dst
```

```

# Determine the protocol
protocol_name = "" if protocol
== 1:
protocol_name = "ICMP"
elif protocol == 6:
protocol_name = "TCP" elif
protocol == 17:
    protocol_name = "UDP"
else:
    protocol_name = "Unknown Protocol"

# Print packet details
print(f'Protocol: {protocol_name}')
print(f'Source IP: {src_ip}')
print(f'Destination IP: {dst_ip}')
print("-" * 50)

def main():
    # Capture packets on the default network interface sniff(prn=packet_callback,
    filter="ip", store=0)

if __name__ == "__main__": main()

```

Output:

```

Protocol: TCP
Source IP: 192.168.1.10
Destination IP: 93.184.216.34
-----
Protocol: ICMP
Source IP: 192.168.1.10
Destination IP: 8.8.8.8
-----
Protocol: UDP
Source IP: 192.168.1.10
Destination IP: 8.8.4.4
----- Protocol:
TCP
Source IP: 192.168.1.10

```

Destination IP: 172.217.14.206

-----**Result:**

Packet sniffing concept and implement it using sockets is studied and successfully executed.