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#!/usr/bin/env python3
# -*- coding: utf-8 -*-

import os
import socket
from struct import unpack

os.system("clear")
print ("\n-----------------------------------------------------")
print ("\n------      SNIFFING PACKET AND ANALYZING     ------")
print ("\n-----------------------------------------------------\n")

#create an INET, raw socket

s = socket.socket(socket.AF_INET, socket.SOCK_RAW, socket.IPPROTO_TCP)

# receive a packet
while True:
    print ("\n\n")
    packet = s.recvfrom(65565)
    print (packet)

# packet string from tuple
    packet = packet[0]

# take first 20 characters for the ip header

    ip_header = packet[0:20]
    print ("\n\n")
    print (ip_header)

# now unpack them
    iph = unpack('!BBHHHBBH4s4s' , ip_header)

    version_ihl = iph[0]
    version = version_ihl >> 4
    ihl = version_ihl & 0xF

    iph_length = ihl * 4

    ttl = iph[5]
    protocol = iph[6]

    s_addr = socket.inet_ntoa(iph[8]);
    d_addr = socket.inet_ntoa(iph[9]);

    print ('\nVersion : ' + str(version) + '\nIP Header Length : ' + str(ihl) + '\nTTL : ' + str(ttl) + '\nProtocol : ' + str(protocol) +

    tcp_header = packet[iph_length:iph_length+20]

    #now unpack them :)
    tcph = unpack('!HHLLBBHHH' , tcp_header)

    source_port = tcph[0]
    dest_port = tcph[1]
    sequence = tcph[2]
    acknowledgement = tcph[3]
    doff_reserved = tcph[4]
    tcph_length = doff_reserved >> 4

    print ('\nSource Port : ' + str(source_port) + '\nDest Port : ' + str(dest_port) + '\nSequence Number : ' + str(sequence) + '\nAcknow

    h_size = iph_length + tcph_length * 4
    data_size = len(packet) - h_size

#get data from the packet
    data = packet[h_size:]

    print ('\nData : ', str(data))
    print


print ("---------------------- End of Sniffer Program ----------------------")
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------      SNIFFING PACKET AND ANALYZING     ------

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(b'E\x00\x004^\xea@\x00@\x06\x83\x94\xac\x1c\x00\x01\xac\x1c\x00\x0c\xd5n\x1f\x90#V\xc8\xf3\x91S/\xee\›



b'E\x00\x004^\xea@\x00@\x06\x83\x94\xac\x1c\x00\x01\xac\x1c\x00\x0c'

Version : 4
IP Header Length : 5
TTL : 64
Protocol : 6
Source Address : 172.28.0.1
Destination Address : 172.28.0.12

Source Port : 54638
Dest Port : 8080
Sequence Number : 592890099
Acknowledgement : 2438148078
TCP header length : 8

Data :  b''



(b'E\x00\x004\x9b\xf3@\x00@\x06F\x80\xac\x1c\x00\x0c\xac\x1c\x00\x0c\xda\x16#(\t=\xa2\xdb\xff\xa3Z*\x8(



b'E\x00\x004\x9b\xf3@\x00@\x06F\x80\xac\x1c\x00\x0c\xac\x1c\x00\x0c'

Version : 4
IP Header Length : 5
TTL : 64
Protocol : 6
Source Address : 172.28.0.12
Destination Address : 172.28.0.12

Source Port : 55830
Dest Port : 9000
Sequence Number : 155034331
Acknowledgement : 4288895530
TCP header length : 8



(b'E\x00\n\xf1\xb2\xc3@\x00@\x06$\xf3\xac\x1c\x00\x0c\xac\x1c\x00\x0c#(\xda\x16\xff\xa3Z*\t=\xa2\xdb\x8
```