

Assignment - 05

AIM :-

Write a program using UDP sockets to enable file transfer (script, Audio, Video, Text) between two machines. Demonstrate the packets captured trace using Wireshark Packet Analyzer Tool for peer to peer mode.

Requirements :-

Fedoria OS, GNU GCC Compiler, Wireshark Packet Analyzer.

THEORY :-

TCP guarantees the delivery of packets and preserves their order on destination. Sometimes the features are not required and since they do not come without performance costs, it would be better to use a light transport protocol. This kind of service is accomplished by the UDP protocol which conveys datagram packets.

Datagram packets are used to implement a connectionless packet delivery supported by the UDP protocol. Each message is transferred from source machine to destination based on information contained within that packet.

That means each packet needs to have dest. address and each packet might be routed differently and might arrive in any order. Packet delivery is not guaranteed. The format of datagram packet is |msg| length | Hash | seqno|port|.

Packet Types :-

802.11 traffic includes data packets, which are the packets used for normal network protocols, it includes management packets and low level control packets.

The 802.11 hardware on the network adapter filters all packets received, and delivers to the host

1. All Unicast packets that are being sent to one of the addresses for that adapter; i.e. packets sent to that host on that network.
2. All Multi Cast packets that are being sent to a multicast address for that adapter or all multicast packets regardless of the address to which they are being sent.
3. All Broadcast packets

Data Packets

Data packets are often supplied to the packet capture mechanism by default as 'fake'. Ethereal packets, synthesized from the 802.11 header, don't see the real 802.11 link layer header. The driver for the adapter will also send copies of transmitted packets to the packet capture mechanism so that they will be seen by a program as well.

Non data packets :-

You might have to capture in non data packets. If not, you should capture with 802.11 headers as no Ethernet headers can be constructed for non data.

Management packets.

They are used by peer WLAN network and as such is seldom of importance above OSI layer 2. They are discarded by most drivers and hence they do not reach the packet capture mechanism.

However if adapter/drive supports this, you may capture such packets in 'monitor-mode' as discussed.

Low-level Control Packets.

Control packets are used by peer WLAN controllers to synchronize channel access within contending hardware, as well as to synchronize packet exchange between peers. It is seldom of importance above OSI layer 2. They are discarded by most drivers, and hence they do not reach the packet capture mechanism. However if adapter/drive supports this, you may capture such packets in 'monitor-mode'.

CONCLUSION :-

Thus text, audio, video, script were successfully transferred between two machines using UDP protocol.