PSG COLLEGE OF TECHNOLOGY, COIMBATORE - 641004

Department of Applied Mathematics and Computational Sciences

MSc Software Systems - Semester 4 - Lab Exercise

Wireshark – Lab 2

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Question 1]

Aim of this exercise is to familiarize with the concept of client-server protocols and the role of IP address and Port numbers in the communication. Also the student must realize the possible transport layer protocols that are involved in the communication.

Capture Wireshark logs of the following sessions:

1. HTTP session
2. FTP session
3. DNS session
4. Ssh session

Answer the following:

1. With your machine as source, fill in the following table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Application Layer Protocol** | **Src IP** | **Src Port** | **Destination IP** | **Destination Port** | **Transport Protocol (UDP/TCP)** |
| **FTP** | 192.168.0.178 | 51311 | 54.243.216.217 | 21 | TCP |
| **HTTP** | 192.168.0.178 | 51273 | 23.9.184.115 | 80 | TCP |
| **DNS** | 192.168.0.178 | 53688 | 192.168.0.1 | 53 | UDP |
| **SSH** | 192.168.0.178 | 51403 | 54.243.216.217 | 22 | TCP |

1. What are the basic functions of FTP, HTTP, DNS, SSH protocols.

**FTP -**

Set of rules that computers follow for the **transferring of files from one system to another over the internet**. It may be used by a business to transfer files from one computer system to another, or websites may use FTP to upload or download files from a website's server.

**HTTP** -

A protocol which allows the **fetching of resources, such as HTML documents**. It is the **foundation of any data exchange on the Web** and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser.

**DNS -**

The Domain Network System (DNS) protocol **helps Internet users and network devices discover websites using human-readable hostnames**, instead of numeric IP addresses.

**SSH –**

Refers to the protocol by which network communications can take place safely and remotely via an unsecured network. SSH enables a variety of crucial functions: **protected file transfers, automated processes, command execution, and remote access to private network systems, devices, and applications**.

1. What difference do you notice between FTP and SSH

* FTP is a file transfer protocol, while SSH is a network protocol.
* FTP is inherently unsecure,, while SSH is inherently secure.
* SSH is encrypted, allows remote shell access as well as file transfer, whereas FTP only allows file transfer.
* FTP only allows the control of files, while SSH allows a wide variety of applications.
* The default port is 22 for SSH and 21 for FTP