Lecture -3

Network Terminologies 2

Ports
DNS
VPN
OSI model
Proxy Server
Web technology basics
TCP/IP model

Ports:-

Ports are like the doors of your device through which the data comes and goes out There are 65,535 ports udp ports and tcp 65,535 ports.

Types of Ports

1. Physical

2. Virtual

Port	Name
21	File Transfer Protocol
22	Secured Shell (SSH) used for secure remote connection
23	Telnet
25	SMTP
80	Hyper Text Transfer Protocol

443-> HTTPS -> (S) is for SSL It is secure socket layer It creates an end to end encryption

Physical port -> Ports which are tangible in nature for example the ports which you can see, touch, feel

EG:- HDMI,USB,VGA port etc

Virtual Port -> Ports which are virtual in nature example

->open ports

->filtered ports

->reserved ports

DNS-> Domain Name System

SO:-

For Anything on internet would have an Ip address even if it is a website as websites are hosted on servers It is actually impossible to remember all the ip addresses on the internet so Domain name System comes into play

When you type www.google.com you are actually typing www.google.com.

the last forth dot is called as the root of the internet name space

so when you search www.google.com

your browser makes a request to Domain Name Server which has the corresponding Ip
address for www.google.com

Domain Name

->www.google.com

->www.microsoft.com

->www.bing.com

The fourth dot checks with the cache memory in case you already had Ip address of the site from previous visit

There are basically 4 types of server involved in the whole process Lets suppose you enter www.website.com that would translate to www.website.com.

Your OS asks resolving name server for www.website.com. and it would check whether there is any information or address in cache if not then it would go to root name server and from there it would point to tld or other servers

A root name server is a name server for the root zone of the Domain Name System (DNS) of the Internet. It directly answers requests for records in the root

zone and answers other requests by returning a list of the authoritative name servers for the appropriate top-level domain (TLD).

for reference->

https://www.google.co.in/search?q=what+are+root+name+servers&rlz=1C5CHFA_enIN731IN731&source=lnms&tbm=isch&sa=X&ved=0ahUKEwj0xYS9ubfcAhXFvI8KHW3cD9MQ_A UICigB&biw=1278&bih=616#imgrc=hp66_mtI3wuJIM:

https://www.youtube.com/watch?v=72snZctFFtA

1 resolving name server

2 root name sever->

3 tld name server ->

4 authoritative name server->

Domains

top level .com

.edu

.org

.gov

Etc

Country Based

.in

.pk

.au

.ae

.ru

You can purchase a domain from sites like www.godaddy.com,bigrock.com,domain.com Servers are needed to host a website

Server Hosting
Windows: Windows Server 2003,Windows 2005, Windows 2008 Server,IIS Linux: Fedora, Red Hat, Cent OS

ICANN-> *The Internet Corporation for Assigned Names and Numbers (ICANN/ˈaɪkæn/EYEkan) is a nonprofit organization responsible for coordinating the maintenance and procedures of several databases related to the namespaces and numerical space of the Internet, ensuring the network's stable and secure operation*

https://www.icann.org/resources/pages/what-2012-02-25-en

Hosting Types:-

->share hosting

->dedicated hosting

How to check shared and Dedicated Hosting : www.yougetsignal.com

DNS Details
Godaddy.com --> Login
name server 1 :
ns2.122.27.23.2 Name server 2 : ns2.122.27.23.3

Proxy Server:-

Proxy sever acts as an intermediate between client application browser and the webserver it can be used surf internet anonymously .

Eg :- Instead of directly accessing google from India I can make request to a server in Germany and access google

application-> accessing sites that are blocked

in india www.kproxy.com

www.ninjaproxy.com

VPN OR VIRTUAL PRIVATE NETWORK:-

It is like proxy server but it uses an encrypted tunnel system and it encapsulates packets

VPN may also be used corporates for their own use and communication over internet

Tunnel Bear

Hotspot Shield

OSI MODEL----- Communication Model

OPEN SYSTEMS INTERCONNECTION MODEL

The main Idea for computer networks is communication between different Systems

And Computers on internet need to follow some protocols

OSI model was devised by ISO

SO all communication over the internet on computers followed according to OSI model

1 Application Layer

2 Presentation Layer

3 Session Layer

4 Transport Layer

5 Network Layer

6 Data Link Layer

7 Physical Layer

how to remember -> APSTNDP

https://www.youtube.com/watch?v=Kb4hVvlCx40

7 Application Layer

6 Presentation Layer

5 Session Layer

4 Transport Layer

3 Network Layer

2 Data Link Layer 1 Physical Layer *this model was not implemented instead the model which was implemented is TCP/IP*

Web Technology Basics:-

Website: Collection of pages is known as website.

Types of Website

Static :- *Mainly coded and designed in HTML , hence have no database attached and very few user interaction features. These websites are mostly designed with property of read only content.*

Dynamic :- *These are attached to certain databases like MS-SQL, MY-SQL Oracle etc. The work of these type of website is to give rich interaction features and areas to users to input data into it which is going to be accepted from front end and saved in backend.*

eg mean stack based , mern stack based, Facebook, Twitter, Gmail

Web Servers(webservers serves file)

Linux/UNIX: Apache and Tom Cat (Fedora, Red Hat, Cent OS, Nginx, Mac) Windows : IIS (Internet Information Services- 2003 - 2016).

Web Hosting
hosting means renting a storage space for a website where data would live in a server and content would be hosted

domain -> name -> xyz.com/xyz.in/.net .group

Database:- *where data is stored in a server in an*

organised form.

Client Server Architechture :-

Client Server Architechture is a where server manages ,hosts, delivers data and resources to client on demand or on request.

Webtechnologies-> HTMl,CSS,programming
languages(PHP,Javascript,Ruby,Swift),CMS(Content management system like

Wordpress (based on php)),python ,frameworks(like Angular JS ,Node based on js ,Django based on python)

WebApp-> *Front End(HTML,CSS,JS) +Back End(Nodejs + Database like mongo Db)* ***TCP/IP suite***

It is a 4 layer model

1 Application Layer

2 Transport (TCP) Layer

3 Internet (IP) Layer

4 Network Interface

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1 send info to 2,

2 to breaks down info into smaller Segements called packets

2 sends smaller packets to 3

3 ships it over internet on destination IP address via 4 i.e network interface

Created by:- Vikram Solanki (Certified Ethical Hacker)