Networks & Clouds

There are 3 main types of cloud services:

IaaS: infrastructure as a cloud service:

a cloud provider provices you virtual machines and network like AWS EC2

PaaS: platform as a service such as Heroku, Google App Engine you have runtime for your application

SaaS: Software as a service such as gmail, Saleforces, ...

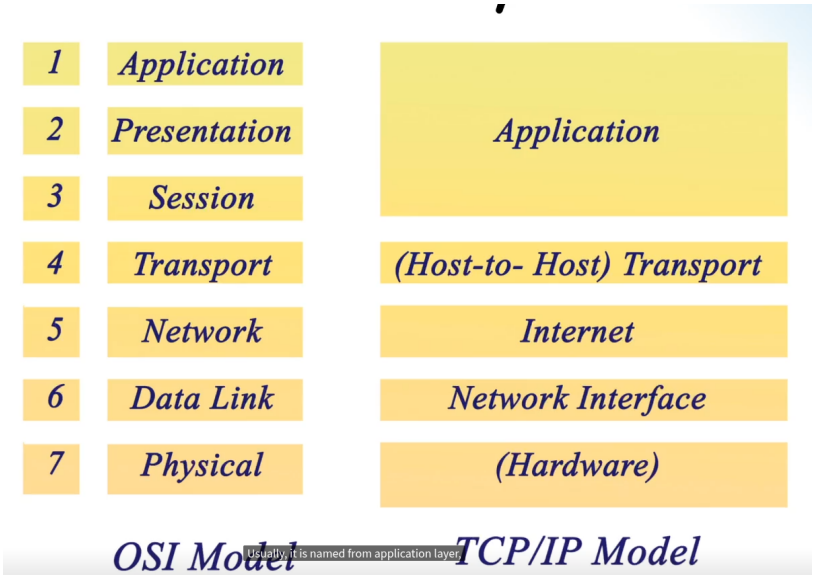
OSI Model

this is a framework for understanding networking layers

7 layers

What is DevOps ?

Collaboration between development and operations team for efficient workflow



2. Data link layer, make sure there is a reliable connection between 2 devices and this layer is used to get data organized and checked for mistakes and to control data flows

laptop have MAC address

3. Network layer: it plays a key role in sending data packets between different networks and this layer deals with break data to smaller packet and ... put them back when they arrive, subnetting is diving big network to smaller
the heart of network layer is IP, ...

4 Transport layer

TCP/UDP

5. Session layer

these sessions make sure communication keeps going smooth even if there are some hiccups along the ways

Responsible for opening and closing communication between the two devices
ensures that the session stays as long as necessary to transfer the data

RPC, SMB, PPTP, NetBIOS

Synchronizes data transfer with checkpoint

PPTP is point to point protocal using in VNP

6. Presentation Layer

SSL/TLS
ASCII
EBCDIC
MPEG

change the data to the form that the next layer can use
responsible for compressing data

Application layer

HTTP/HTTPS :

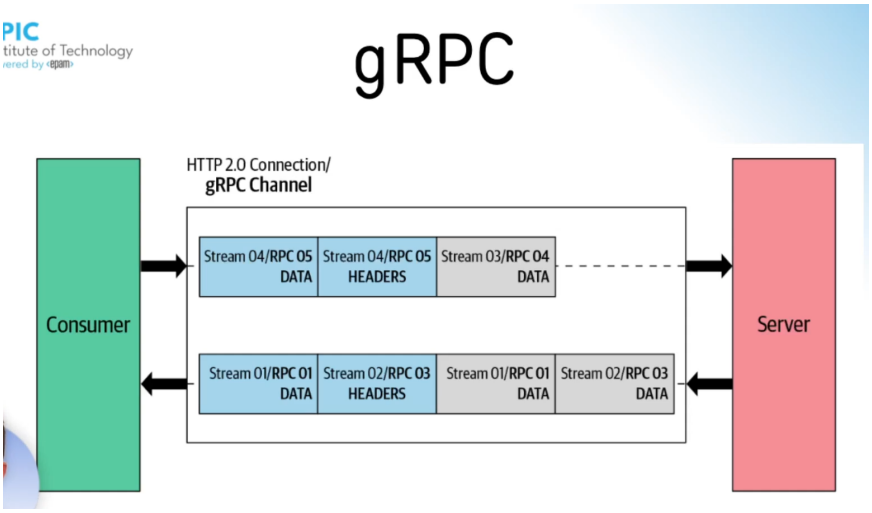
FTP :

SMTP/POP3 :

HTTP/HTTPS, FTP, SMTP, DHCP

Layer where most API protocols operate:
gRPC, REST, SOAP, GraphQL

gRPC



SOAP: Simple Object Access Protocol

REST: Representation State Transfer

GraphQL

you can request particular information that you need from the server

the server will return only what you request
make request smaller and increase the performance

support multi queries in 1 request

realtime update: get realtime update of the data when there is a chang
on the server

JWT Token

Lecture 4. SSH and basic Linux CLI commands

SSH: the secure Shell protocal is a method for securely sending commands to a computer over an unsecured network.

runs on top of the TCP/IP protocol
users port 22 (changing the default port to avoid big amount of attack)
works with "asymetric" key RSA or Ed25519

faster, more security, only 265 bit, .