Conclusion /
Question ?

Question

Break

Model of Networking

OSI Reference Model

What is OSI reference model ?

OSI Reference Model

TCP/IP Model
Application Layer

Transport Layer
Network Layer
Datalink Layer
Physical Layer

OSI Model
Application Layer
Presentation Layer
Session layer
Transport Layer
Network Layer
Datalink Layer
Physical Layer

Protocol

A standard set of regulations and requirements that allow two electronic items to connect to and exchange information with one another.

Mac Address

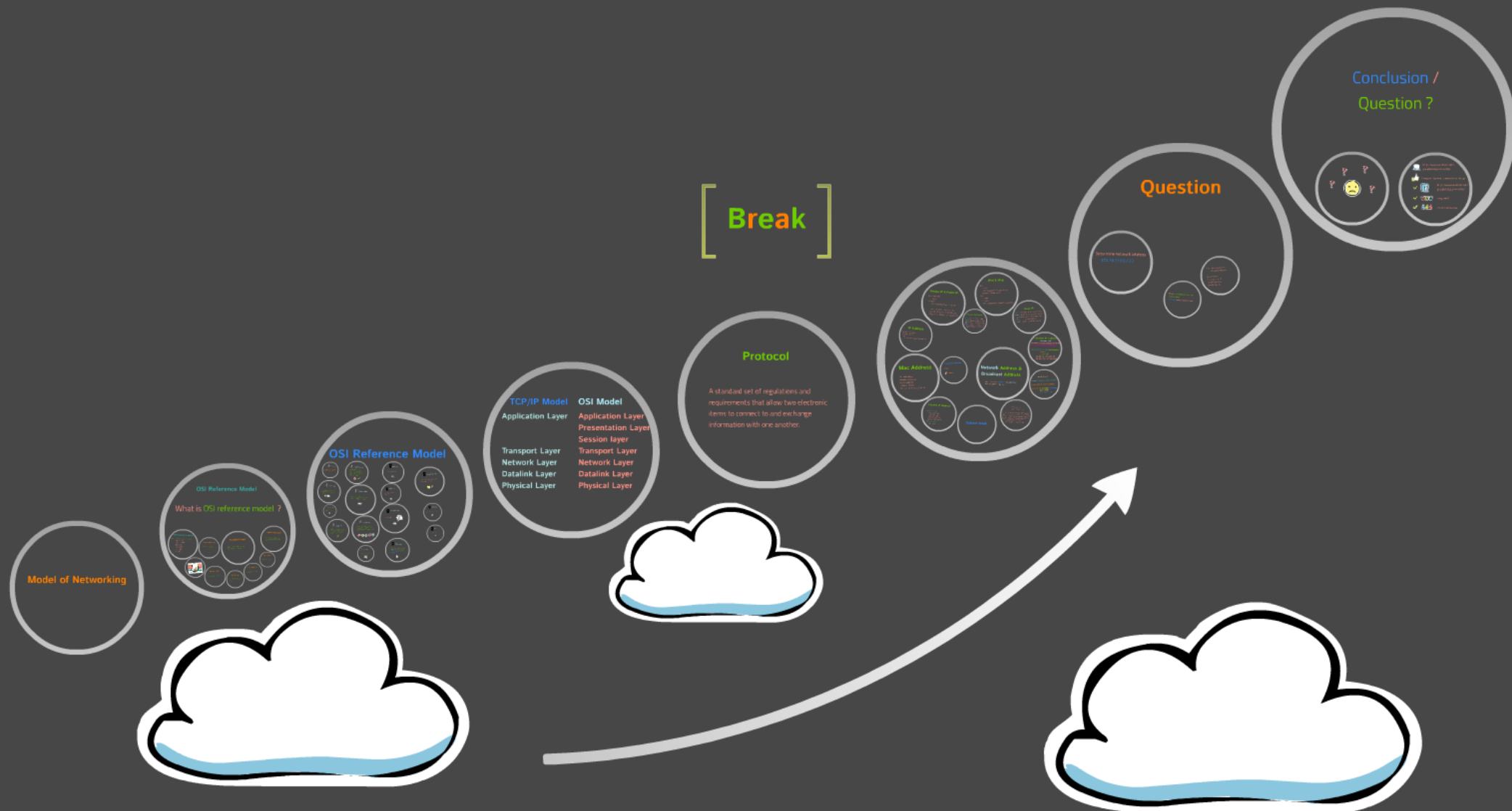Network Address & Broadcast Address

Computer System Administrator Group
Part Network By Beam

Computer System Administrator Group

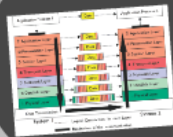Part Network By Beam

Model of Networking

OSI Reference Model

What is OSI reference model ?

OSI Reference model

open system interconnection reference model

- Application Layer
- Presentation Layer
- Session layer
- Transprot Layer
- Network Layer
- Datalink Layer
- Physical Layer

Presentation Layer

format your data into correct format.

Transport Layer

Maintain flow control of data and provides for error checking .

Application Layer

provides the interface between the applications we use and underlying layers.

Physical Layer

physical movement of the network

Data link Layer

Containing hardware destination and source address

Session Layer

establish + maintain communication

Network Layer

Provides logical address which routers will use to determine the path to the destination

OSI Reference model

open system interconnection reference model

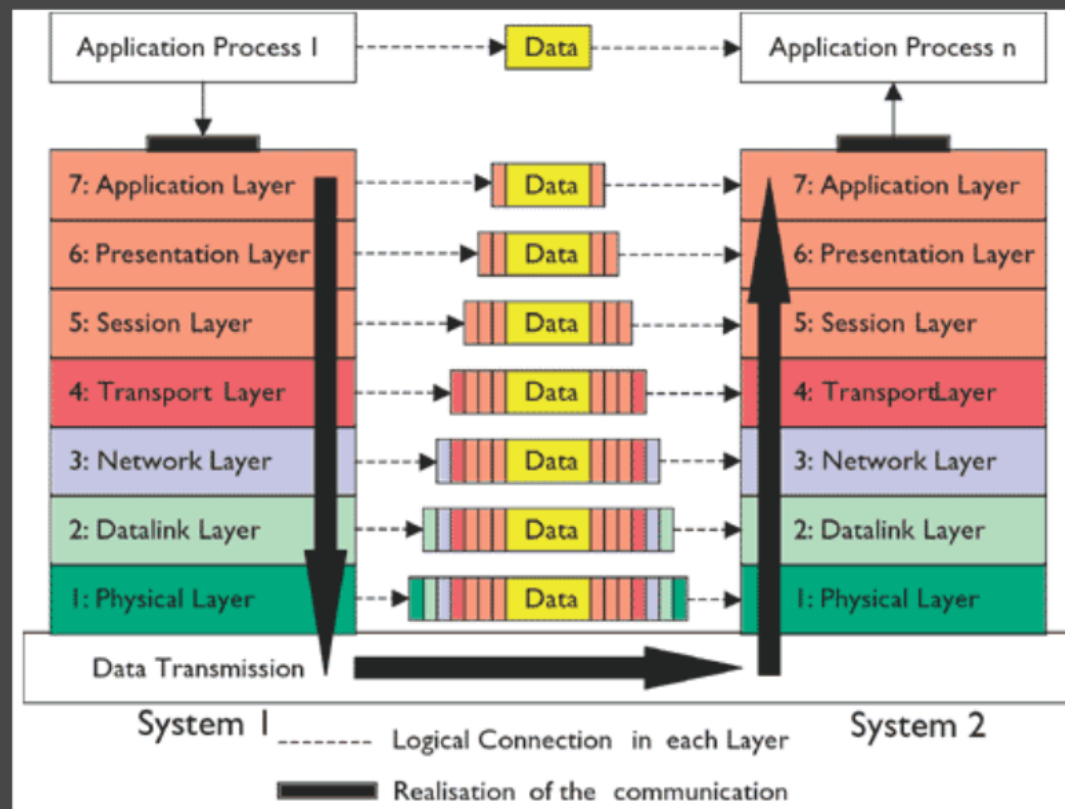Application Layer

Presentation Layer

Session layer

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fo

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format your data into correct format.

Session Layer

establish + maintain communication

Transport Layer

Maintain flow control of data and provides for error checking .

Network Layer

Provides logical address which routers will use to determine the path to the destination.

Data link Layer

Containing hardware destination and source address

Physical Layer

physical characteristics of the network.

OSI Reference Model

Beam in Thailand

This Document must be sent to Neno office in France immediately !

Presentation Layer

Our partner is French so I have to translate it into French and style it in email format.

Session Layer

I will call them first to make sure they are available I also monitor during the transmission and terminate when finished.

Transportation Layer

I can control the speed when transmitting via flow control I also break our mail into some parts and require our partner to acknowledge after receiving each part.

Network Layer

Let me add our office address & partner address on each part.
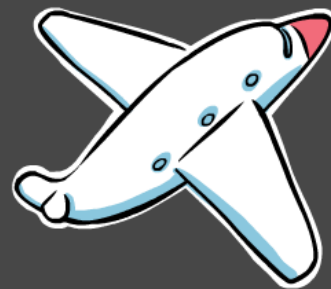
Data link Layer

Let me add our ID (unigue on the world) & the local post office ID in each part. It helps mailman deliver it easily.

Physical Layer

This mail is urgent so i will send it via plane.

Physical layer

Hey, I received something !

Data link Layer

Yes, it is for us! I will check for errors and fix its.
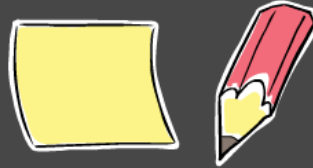
Transport Layer

I will re-order each part in the correct position so that it can be understood. I also tell them it has been received successfully.

Presentation Layer

Let me format it in the way our boss can understand it easily.

Neno

Well done !

TCP/IP Model	OSI Model
Application Layer	Application Layer
	Presentation Layer
	Session layer
Transport Layer	Transport Layer
Network Layer	Network Layer
Datalink Layer	Datalink Layer
Physical Layer	Physical Layer

Protocol

A standard set of regulations and requirements that allow two electronic items to connect to and exchange information with one another.

IPv4 & IPv6

IPv4
- 32bit
- IP Address 4,294,967,296 number
Example : 161.246.12.34
IPv6
- 128bit
Example :
2001:0db8:85a3:0042:1000:8a2e:0370:7334

Private IP & Public IP

Public IP (Real IP)
-Unique
Private IP
- NAT (Network Address Translation)

CLass A 10.0.0.0 - 10.255.255.255
Class B 172.16.0.0 - 172.31.255.255
Class C 192.168.0.0 - 192.168.255.255

Class IP

Class A Network ID 8 bits / Host ID 24 bits
Class B Network ID 16 bits/ Host ID 16 bits
Class C Network ID 24 bits/ Host ID 8 bits
Class D   Multicast Address
Class E   Used for experimental testing

Network ID, Host ID

Class A 1.0.0.0-126.255.255.255
Class B 128.0.0.0-191.255.255.255
Class C 192.0.0.0-223.255.255.255
Class D 224.0.0.0-239.255.255.255
Class E 240.0.0.0-255.255.255.255

IP Address

Dotted decimal notation
Example : 192.168.1.1
Binary :
11000000.10101000.00000000.00000000

Classless IP Address

192.168.1.1/25
11000000.10101000.00000001.00000001
11111111.11111111.11111111.10000000

11111111.11111111.11111111.SHHHHHHH
Subnet = 2
Host = 128
192.168.1.0 - 192.168.1.127
192.168.1.128 - 192.168.1.255

Mac Address

Physical Address
Hexadecimal number
6 bytes (48 bits)
Unique (in Theory)
Example : 00-1A-2A-3C-44-55

Loop back Address

127.0.0.1

Localhost

Network Address & Broadcast Address

Network Address = IP Address AND Subnet Mask
Broadcast Address : Host ID => 1

161.246.12.34/23
10100001.11110110.00001100.00100010

11111111.11111111.11111110.00000000

11111111.11111111.SSSSSSSH.HHHHHHHH
Subnet = 128
Host = 512-2 = 510

Classful IP Address

Classful IP Address
-Class A 255.0.0.0
-Class B 255.255.0.0
-Class C 255.255.255.0
Example : 192.168.1.1/24
Classless IP Address
to be continue...

Subnet mask

IP :192.168.1.1 / 24
Subnet : 255.255.255.0

IP : 11000000.10101000.00000001.00000001
Subnet : 11111111.11111111.11111111.00000000
Network :11000000.10101000.00000001.00000000
Broadcast:11000000.10101000.00000001.11111111
Network Address = 192.168.1.0
Broadcast Address = 192.168.1.255

Mac Address

Physical Address

Hexadecimal number

6 bytes (48 bits)

Unique (in Theory)

Example : 00-1A-2A-3C-44-55

Loc

127.0.0

IP Address

Dotted decimal notation

Example : 192.168.1.1

Binary :

11000000.10101000.00000000.00000000

IPv4 & IPv6

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   - 32bit

   - IP Address 4,294,967,296 number

   Example : 161.246.12.34

IPv6

   -128bit

   Example :

   2001:0db8:85a3:0042:1000:8a2e:0370:7334

Network ID, Host ID

Class A Network

Class B Network

CI

Private IP & Public IP

Public IP (Real IP)

    -Unique

Private IP

    - NAT (Network Address Translation)

    CLass A 10.0.0.0 - 10.255.255.255

    Class B 172.16.0.0 - 172.31.255.255

    Class C 192.168.0.0 - 192.168.255.255

Networ

Class A 1.0.0.

Class B 128.0

Class C 192.0

Class D 224.0

Class E 240.0

Network ID, Host ID

Class A 1.0.0.0–126.255.255.255

Class B 128.0.0.0–191.255.255.255

Class C 192.0.0.0–223.255.255.255

Class D 224.0.0.0–239.255.255.255

Class E 240.0.0.0–255.255.255.255

Loop back Address

127.0.0.1

Localhost

Class IP

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Class D   Multicast Address

Class E   Used for experimental testing

Classful IP Address

Classful IP Address

    -Class A 255.0.0.0

    -Class B 255.255.0.0

    -Class C 255.255.255.0

    Example : 192.168.1.1/24

Classless IP Address

    to be continue...

Subnet mask

Sub
Net
Bro

Network Address & Broadcast Address

Network Address = IP Address   AND Subnet Mask

Broadcast Address : Host ID => 1

IP :192.168.1.1 / 24
Subnet : 255.255.255.0

IP :   11000000.10101000.00000001.00000001
Subnet :   11111111.11111111.11111111.00000000
Network :11000000.10101000.00000001.00000000
Broadcast:11000000.10101000.00000001.11111111
Network Address = 192.168.1.0
Broadcast Address = 192.168.1.255

PREZI

Classless IP Address

192.168.1.1/25

11000000.10101000.00000001.00000001

11111111.11111111.11111111.10000000

11111111.11111111.11111111.SHHHHHHH

Subnet = 2

Host = 128

192.168.1.0 - 192.168.1.127

192.168.1.128 - 192.168.1.255

161.246.12.34/23

10100001.11110110.00001100.00100010

11111111.111111111.11111110.00000000

11111111.11111111.SSSSSSSH.HHHHHHHH

Subnet = 128

Host = 512-2 = 510

Question

Determine network address
172.16.210.0 / 22

Find 1.Network Address
        2.Broadcast Address

64.45.1.56/12
161.246.65.45/18
161.246.100.1/24
192.168.24.5/26

If i want 500 subnets and 100
hosts/subnet
IP class B what is Subnet Mask

IP

s / Host ID 24 bits
ts/ Host ID 16 bits
its/ Host ID 8 bits
Address
erimental testing

Classless IP Address
192.168.1.1/25
11000000.10101000.00000001.00000000
11111111.11111111.11111111.10000000

11111111.11111111.11111111.SHHHHHHH
Subnet = 2
Host = 128
192.168.1.0 - 192.168.1.127
.1.128 - 192.168.1.255

PREZI

Determine network address
172.16.210.0 / 22

Find 1.Network Address
2.Broadcast Address

64.45.1.56/12
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192.168.24.5/26

If i want 500 subnets and 100 hosts/subnet

IP class B what is Subnet Mask

Conclusion /

Question ?

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