



Open System Interconnection (OSI) Specifications



Table of Contents



- ▶ What is OSI Reference Model?
- ▶ Layers of OSI Model
- ▶ Data Encapsulation



1

What is OSI Reference Model?



What is OSI Reference Model?

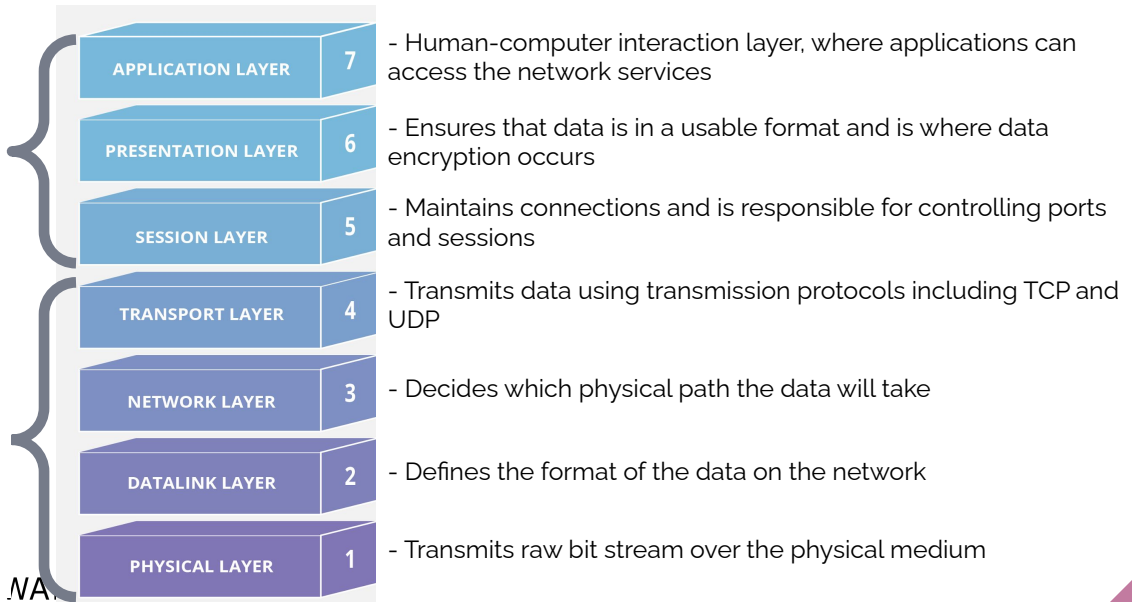
The **OSI** provides a standard for different computer systems to be able to communicate with each other

Developed by ISO in 1984



What is OSI Reference Model?

Upper Layers
(OS)
Lower Layers
(Network)



WAY TO REINVENT YOURSELF

5



2

Layers of the OSI Model

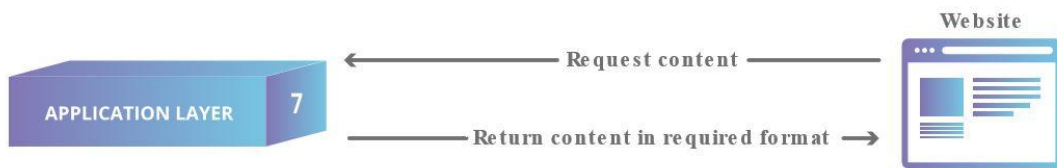
Physical Layer
Data Link Layer
Network Layer
Transport Layer
Session Layer
Presentation Layer
Application Layer

CLARUSWAY®
WAY TO REINVENT YOURSELF



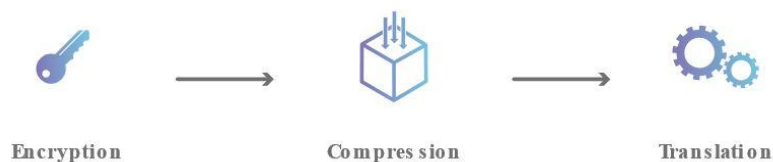
► Application Layer (Layer 7)

- Directly interacts with data from the user
- Software applications (web browsers, email clients, etc.) rely on the application layer to initiate communications



► Presentation Layer (Layer 6)

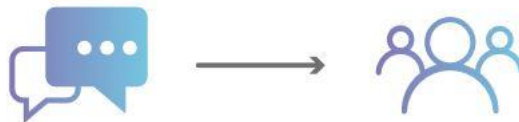
- Primarily responsible for preparing data
- Translates, encrypts, and compresses data





Session Layer (Layer 5)

- Responsible for opening and closing communication between the two devices
- The time between when the communication is opened and closed is known as the session
- Synchronizes data transfer



Session of communication



Transport Layer (Layer 4)

- Responsible for end-to-end communication between the two devices
- Takes data (from upper layer) and breaks into segments
- Responsible for flow control and error control





► Network Layer (Layer 3)

- Facilitates data transfer between two different networks
- Takes data segments (from upper layer) and breaks into packets



► Data Link Layer (Layer 2)

- Facilitates data transfer between two devices on the same network
- Takes data packets (from upper layer) and breaks into frames
- Responsible for flow control and error control





Physical Layer (Layer 1)

- Includes physical equipment

cables

repeaters

modems

transceivers

media converters

hubs

etc.

- Data is converted into bit streams



3

Data Encapsulation

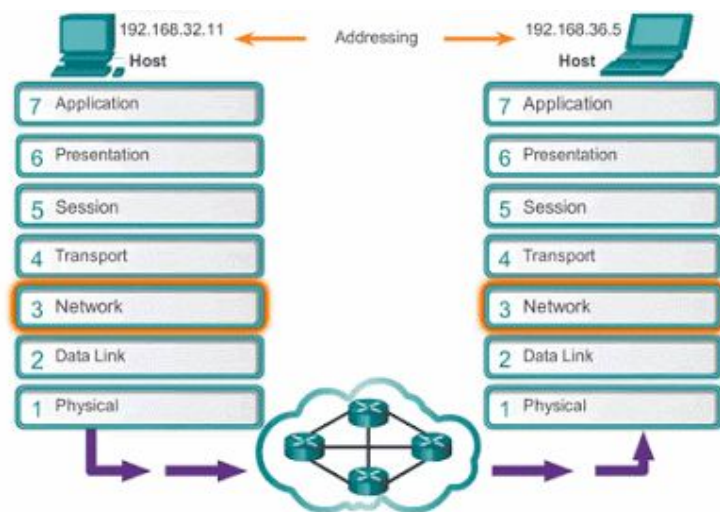


Data Encapsulation

- For two nodes communicate they must use the same protocol
- Each layer (*OSI or DoD*) communicates with its equivalent layer on the other node via the lower layers of the model
- Each layer provides services for the layer above and uses the services of the layer below

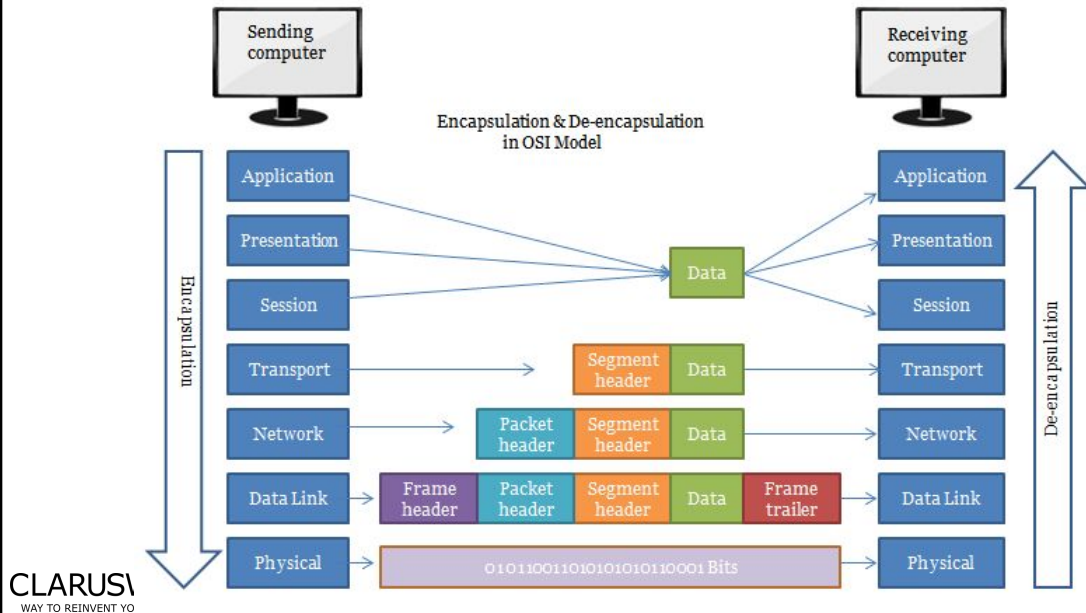


Data Encapsulation





Data Encapsulation



THANKS!

Any questions?

You can find me at:

- ▶ @David - Instructor
- ▶ david@clarusway.com

