

# Open System Interconnection (OSI) Specifications



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# What is OSI Reference Model?



## What is OSI Reference Model?

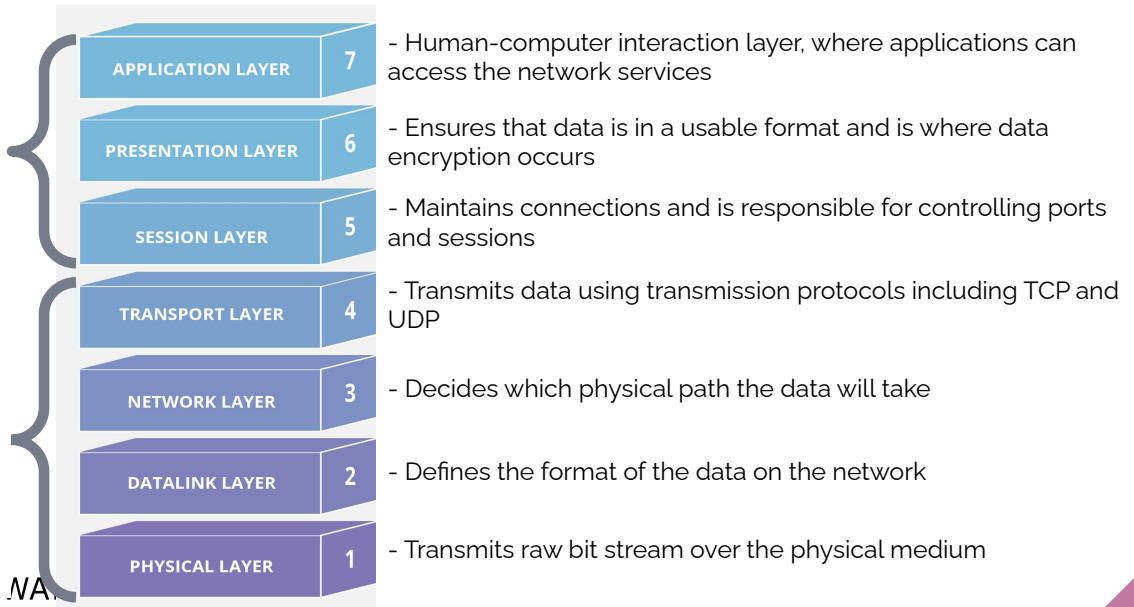
The **OSI** provides a standard for different computer systems to be able to communicate with each other

Developed by ISO in 1984



# What is OSI Reference Model?

Upper Layers  
(OS)  
Lower Layers  
(Network)



WAY TO REINVENT YOURSELF

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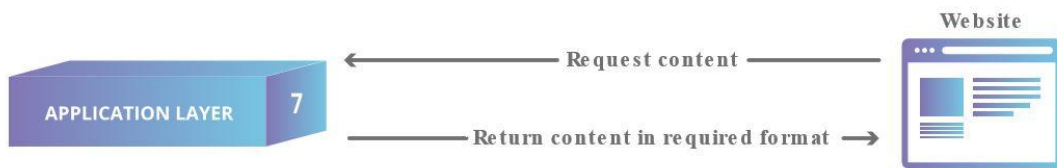
## Layers of the OSI Model

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



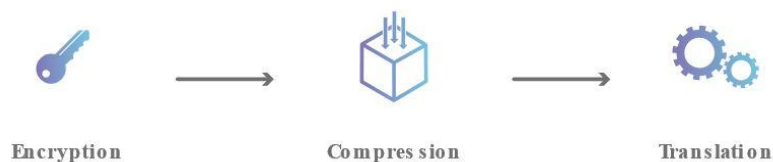
## ► Application Layer (Layer 7)

- 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)

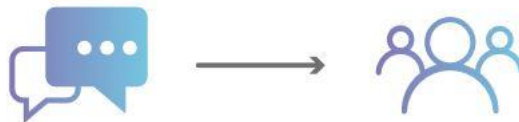
- Primarily responsible for preparing data
- Translates, encrypts, and compresses data





## 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



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## Data Encapsulation

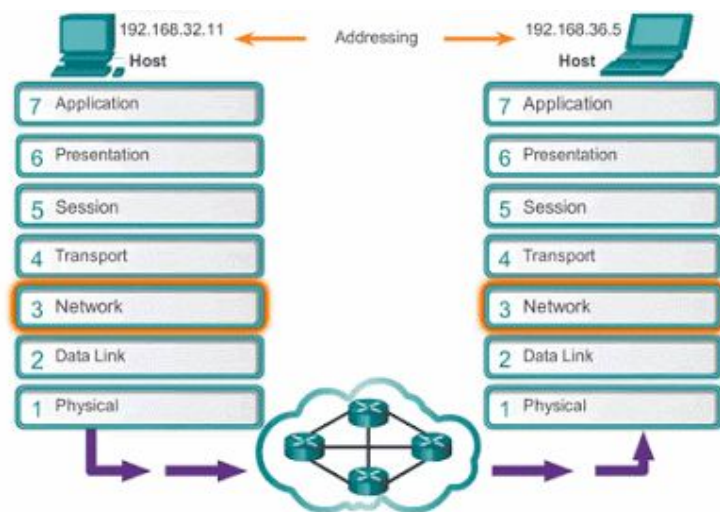


## Data Encapsulation

- 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



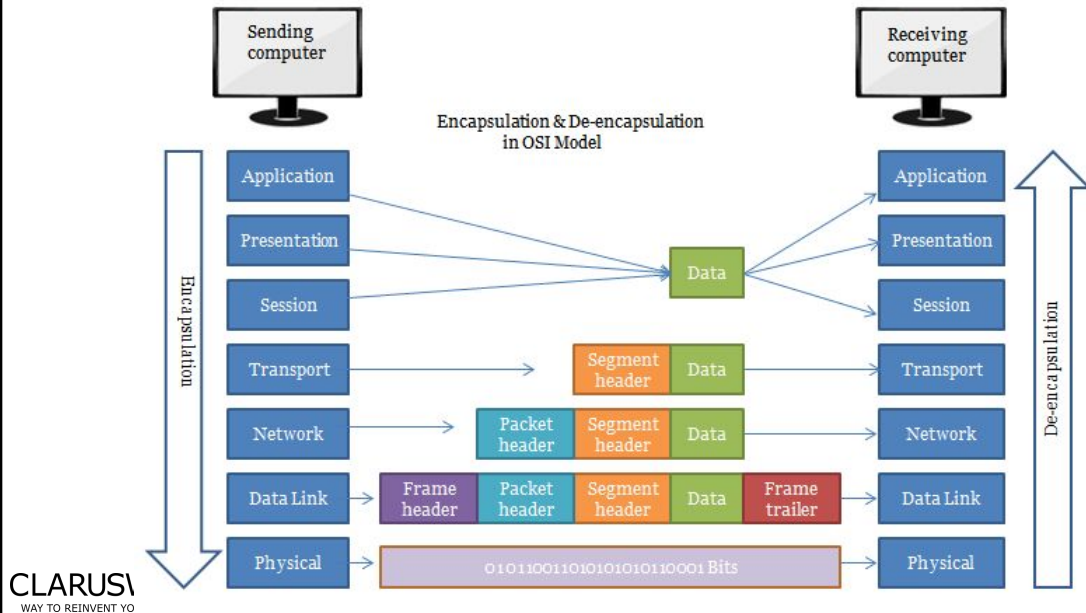
## Data Encapsulation







# Data Encapsulation



# THANKS!

## Any questions?

You can find me at:

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

