

203  
00:06:40,860 --> 00:06:43,211  
out of this no one will ask you

204  
00:06:43,236 --> 00:06:44,151  
this is enough.

205  
00:06:44,176 --> 00:06:45,095  
Thank You. extract this and explain

Got it! You shared a full transcript of a video explaining the **TCP/IP protocol suite** and its comparison with the **OSI model**.

If you want, I can help with any of the following:

- Summarize the key points from this transcript.
- Convert this transcript into a study-friendly note format.
- Create quiz questions based on this content.
- Extract and explain specific sections.
- Help format this into subtitles or a script for a presentation.

What would you like me to do with this?



explain

Sure! Here's a clear explanation of the video transcript you shared about **TCP/IP protocol suite and its comparison with the OSI model**:

## What is TCP/IP Protocol Suite?

- **TCP/IP** stands for **Transmission Control Protocol/Internet Protocol**.
- It's the fundamental communication protocol suite used in the internet.
- Sometimes called the **Internet Protocol Suite**.
- It describes how data should be packetized, addressed, transmitted, routed, and received at the destination.

## TCP/IP vs OSI Model

- **OSI Model** (Open Systems Interconnection) has **7 layers**:
  1. Physical
  2. Data Link

3. Network
4. Transport
5. Session
6. Presentation
7. Application

- **TCP/IP Model** can have either **4 layers** or **5 layers**, depending on the reference:

- **4-layer model:**

- Network Access Layer (combines physical + data link)
- Internet Layer (network)
- Transport Layer
- Application Layer (combines session, presentation, application)

- **5-layer model:**

- Physical Layer
- Data Link Layer
- Internet Layer
- Transport Layer
- Application Layer

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## Why the difference?

- OSI is a **theoretical model** meant for teaching and understanding networking.
- TCP/IP is a **practical, implementable model**, created for the ARPANET (early internet) and funded by DARPA (US Defense agency).
- TCP/IP layers are designed based on actual network protocol implementations.
- OSI has more layers because it separates concerns more finely (like session and presentation layers), while TCP/IP combines some of these for practical reasons.

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## Main functions of TCP/IP layers

### 1. Network Access Layer (Physical + Data Link in 4-layer model)

- Deals with hardware addressing and media access control (how bits are transmitted over the physical medium).
- Handles data transfer between nodes in the same network.

### 2. Internet Layer

- Handles logical addressing and routing.
- Protocols like **IP (IPv4, IPv6)**, **ICMP**, **IGMP** work here.
- Responsible for sending packets from source to destination across multiple networks.

### 3. Transport Layer

- Responsible for host-to-host communication.
- Provides either connection-oriented (TCP) or connectionless (UDP) communication.
- Ensures reliable delivery, error checking, flow control.

#### 4. Application Layer

- Contains protocols for end-user services like email (SMTP), file transfer (FTP), remote login (Telnet).
- Combines the functionality of OSI's application, presentation, and session layers.
- Handles process-to-process communication.

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### How data moves?

- Data flows from the user through the Application layer → Transport layer → Internet layer → Network access layer → physical transmission.
- At each step, headers are added (encapsulation).
- At the destination, headers are removed (decapsulation) in reverse order.

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### Other points

- Routers handle mainly the Internet and Network Access layers.
- TCP/IP supports **both client-server** (centralized server and multiple clients) and **peer-to-peer** (distributed connection) architectures.
- The model is widely used for practical networking and internet communication.

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### Summary

- **OSI** = Theory and detailed conceptual model.
- **TCP/IP** = Real-world practical protocol suite used for internet communication.
- TCP/IP layers may be shown as 4 or 5 layers depending on sources, but 4-layer TCP/IP model is most important.
- Understanding TCP/IP is key for exams, interviews, and real network implementation.

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If you want, I can help you summarize further or explain any specific part in more detail! Would you like me to do that?