

## Open Systems Interconnection (OSI) model

Earlier there was no reference model for devices. At that time a company can only use a specific vendor's device only. There will not be interoperability between different vendors' products. To solve this issue, Open Systems Interconnection (OSI) model was developed by the International Organization for Standardization (ISO).

| Layer                  | Description   | Examples                                    |
|------------------------|---|---|
| <b>7. Application</b>  | Provides interface for users to communicate with applications. Responsible for initiating or services the request.  | SMTP, DNS, HTTP, and Telnet etc             |
| <b>6. Presentation</b> | The Presentation layer controls the formatting and syntax of user data for the application layer. This ensures that data from the sending application can be understood by the receiving application. | JPEG, MP3, MPEG etc                         |
| <b>5. Session</b>      | Responsible for establishing, managing, and terminating the session. If a session is broken, this layer can attempt to recover the session.   | NetBIOS                                     |
| <b>4. Transport</b>    | Breaks information into segments and is responsible for connection and connectionless communication.  | TCP and UDP                                 |
| <b>3. Network</b>      | Responsible for logical addressing and routing. Packets are formed in network layer   | IP, ICMP, ARP, RIP, IGRP, and routers       |
| <b>2. Data Link</b>    | Responsible for physical addressing, error correction, and preparing the information for the media. Frames present here. Consist of two sublayers LLC and MAC   | MAC address, CSMA/CD, switches, and bridges |
| <b>1. Physical</b>     | Deals with the electrical signal.   | Cables, connectors, hubs, and repeaters     |

## OSI Model Interview Questions

- List the layers of OSI ?
- What are the responsibilities of Data Link Layer?
- What are the responsibilities of Network Layer?
- What are the responsibilities of Transport Layer?
- Routers work at which OSI layers?
- Switches work at which OSI layer ?
- In which layer term "Frames" is used ?
- In which layer term "Packets" is used ?
- In which layer term "Segments" is used ?
- Give some example for protocols work in Application layer ?
- What is CRC? Which layer CRC works ?
- What is the purpose of the Data Link?
- What is a Window in networking terms?

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- What is the role of the LLC sublayer in datalink layer?
- What is the function of the Application Layer in networking?
- What are the difference between TCP and UDP?
- What is the port no of DNS and Telnet?
- Which service use both TCP and UDP ?
- What is the port no of SMTP and POP3?
- Which one is reliable – TCP or UDP ?

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