

Open Systems Interconnection (OSI) Model

This model defines the different layers of how communication happens across a network between devices. The model defines a series of layers that each represent a level of functionality that work

7	Application Layer	Human-computer interaction layer, where applications can access the network services
6	Presentation Layer	Ensures that data is in a usable format and is where data encryption occurs
5	Session Layer	Maintains connections and is responsible for controlling ports and sessions
4	Transport Layer	Transmits data using transmission protocols including TCP and UDP
3	Network Layer	Decides which physical path the data will take
2	Data Link Layer	Defines the format of data on the network
1	Physical Layer	Transmits raw bit stream over the physical medium

together to transmit data across a network such as a local network or the internet.

- **Application Layer** - Where the user interacts with the software application. This is where services are provided to the end user via browser or applications and establishes communications between systems.
 - Http and API requests sit at this layer
- **Presentation Layer** - Formats or translates the data from the application layer to something the application accepts. Encryption and JSON conversion happen here.
- **Session** - Handles the conversation between 2 systems/devices. Manages the connection, authentication and reconnections if needed to keep the 2 communicating.
- The **Transport Layer** deals with the coordination of the data transfer between end systems and hosts. How much data to send, at what rate, where it goes, etc.
- **Network Layer** is where routing takes place, this is where the path from one end of the connection to the other is managed to ensure data gets where it needs to go.
- At the **Data Link** layer, directly connected nodes are used to perform node-to-node data transfer where data is packaged into frames. The data link layer also corrects errors that may have occurred at the physical layer and controls the protocols used to transfer the data.
- **Physical Layer** represents the electrical and physical representation of the system. This can include everything from the cable type, radio frequency link (as in a Wi-Fi network), as well as the layout of pins, voltages, and other physical requirements.

We tend to work in the Application Layer when building APIs and programs, where the Networking and infrastructure guys work more in the Physical, Data link and network layers.

For us dealing with APIs, most of the other layers are handles for us automatically by the operating system, network adapters, network protocols and networking infrastructure such as routers, switches etc.