

# What Is the Application Layer?

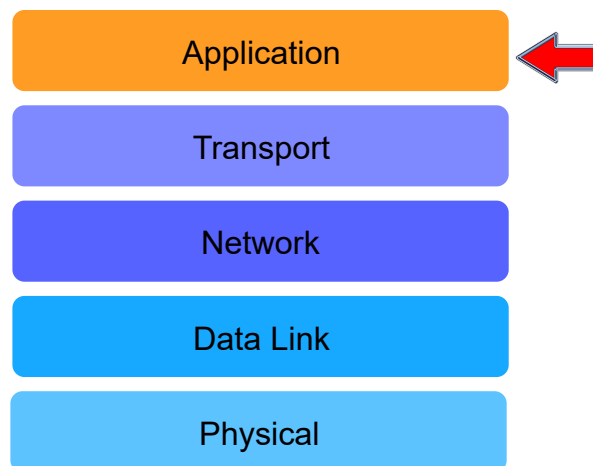
Here's an introduction to the application layer!

## We'll cover the following ^

- You Are Here!
- Key Responsibilities of the Application Layer
  - The Post Analogy
- Where It Exists
- Application Layer Protocols

## You Are Here! #

We're starting our study of the TCP/IP layers with the application layer.



you  
are  
here

## Key Responsibilities of the Application Layer #

The main job of the application layer is to enable end-users to access the Internet via a number of applications. This involves:

- **Writing data off to the network** in a format that is compliant with the protocol in use.
- **Reading data** from the end-user.
- **Providing useful applications** to end users.

- Some applications also ensure that the data from the end-user is in the correct format.
- Error handling and recovery is also done by some applications.

## The Post Analogy #

- Imagine you post a package across the world.
- Presumably, the post system would hand it off to an airplane or ship to transport it across the world.
- However, you would take it to the post office first to be shipped off.

**Carrying the package to the post office** is what the application layer does in networks, except that **it carries messages to the transport layer!**

## Where It Exists #

The application layer resides entirely on end-systems. These end-systems can be any Internet-enabled device, be it a refrigerator or a tower PC.

## Application Layer Protocols #

Most would argue that **user applications are the true purpose of the Internet. If useful applications did not exist**, the Internet would not be what it is today.

- The development of the Internet in the last century started with text-based network apps such as **e-mail**.
- Then came **the app**: the **World Wide Web** which revolutionized everything.
- **Instant messaging** came at the end of the millennium, which has changed the way we communicate.
- Since then, we have come up with **voice over IP**, (WhatsApp calls), **video chat** (Skype), and **video streaming** (YouTube).
- **Social media** has also taken the world by storm resulting in complex human social networks and businesses building on top of these websites.

All of these applications **run on application layer protocols**. Due to the

presence of these standard protocols, client applications developed by various vendors can talk to server applications developed by others!

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Let's uncover some of the underlying application layer protocols, in the next few lessons.