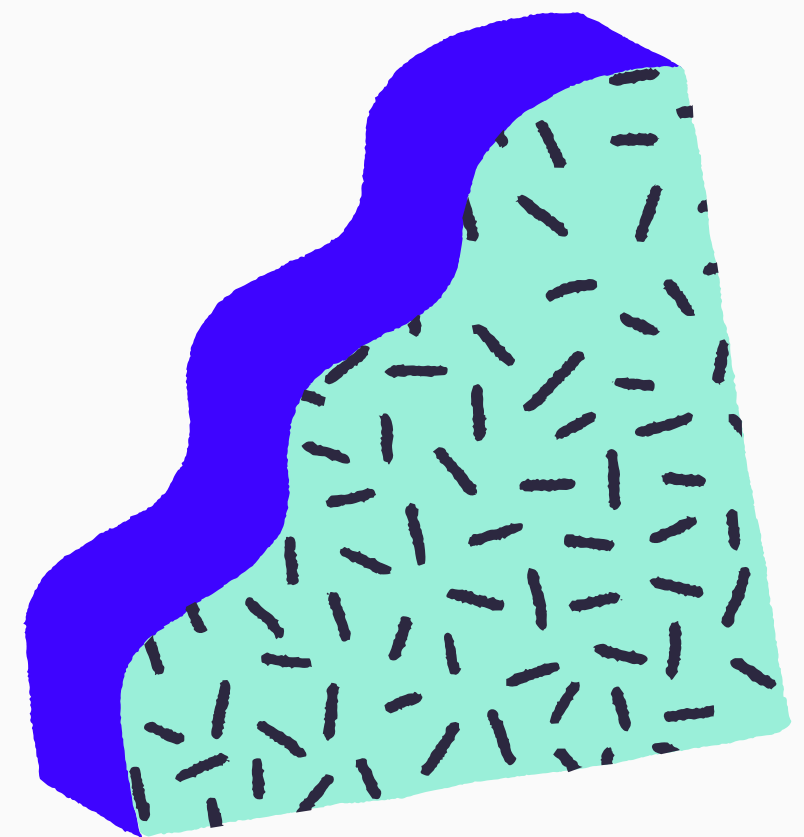


Position of SSL Layer in Computer Layer Architecture



What is SSL?

SSL, or Secure Sockets Layer, is an encryption-based Internet security protocol.

It was first developed by Netscape in 1995 for the purpose of ensuring privacy, authentication, and data integrity in Internet communications.

SSL is the predecessor to the modern TLS encryption used today.



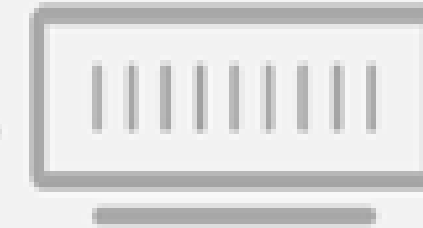
HTTP vs HTTPS



User



Insecure Connection



Normal HTTP



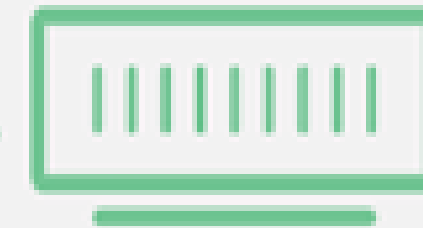
User



Encrypted Connection



SSL Certificate



Secure HTTPS



SSL PROTOCOL

The SSL protocol is implemented as a transparent wrapper around the HTTP protocol. In terms of the OSI model, it's a bit of a grey area. It is usually implemented in the application layer, but strictly speaking is in the session layer.

Think of it like this:

Physical layer (network cable / wifi)

Data link layer (ethernet)

Network layer (IPv4)

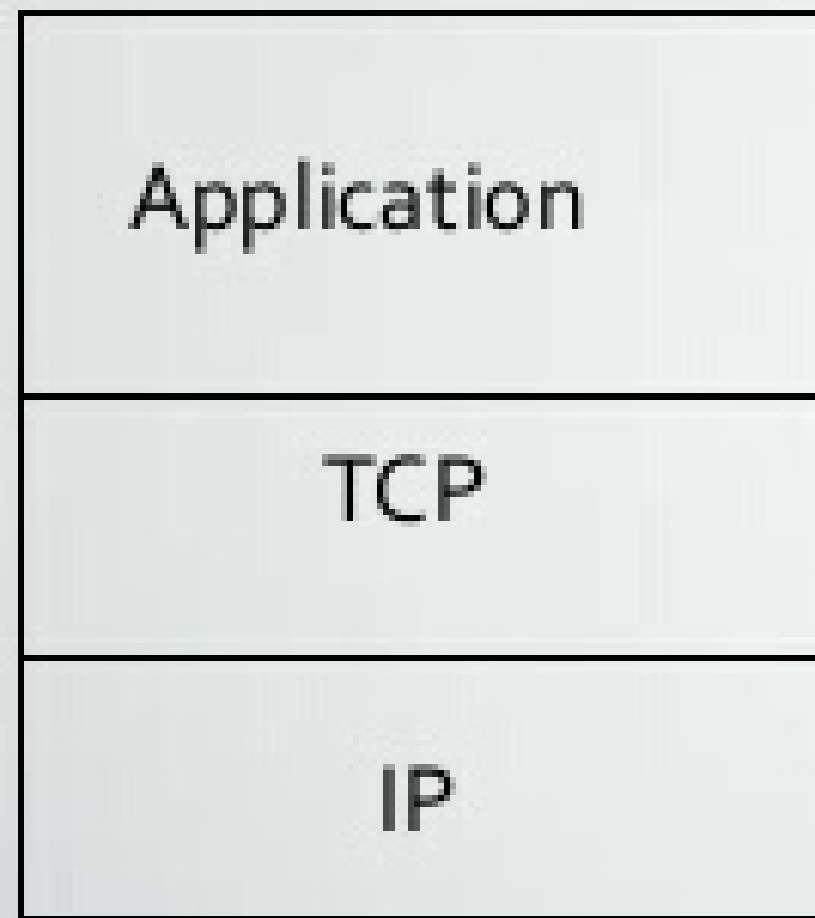
Transport layer (TCP)

Session layer (SSL)

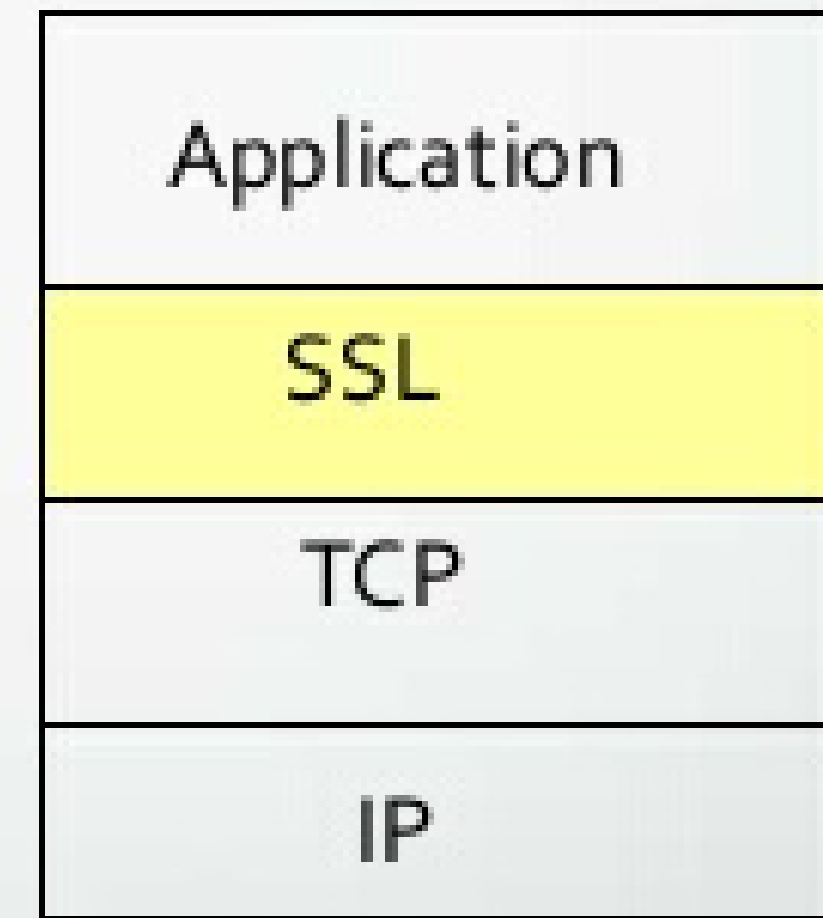
Presentation layer (none in this case)

Application layer (HTTP)

Normal Application



Application with SSL



- SSL provides application programming interface (API) to applications
- C and Java SSL libraries/classes readily available

The Position of SSL in TCP/IP Protocol Suit

The SSL layer is located between the application layer and the transport layer. It is consider as an additional layer in TCP/IP Suit.

As such, the communication between the various TCP/IP protocol layers is now as shown below