



# TCP and Transport Layer Protocols

IPC\_117d | On-Demand | Transport | ⚙️

Course Duration: 1 hour

As the communications industry transitions to wireless and wireline converged networks to support voice, video, data and mobile services over IP, a solid understanding of IP and its role in networking is essential. IP is to data transfer as what a dial tone is to a wireline telephone. A fundamental knowledge of IPv4 and IPv6 networking along with use of IP based transport protocols is a must for all telecom professionals. Understanding of TCP and other IP based transport layer protocols is an important part of building this foundation. Starting with a basic definition, the course provides a focused basic level introduction to the fundamentals of IP based transport layer protocols like TCP, UDP and SCTP.

## Intended Audience

This course is intended for those seeking a basic level introduction to the IP-based transport layer protocols - TCP, UDP and SCTP.

## Objectives

After completing this course, the student will be able to:

- Explain the key transport layer functions and the concept of ports
- Describe User Datagram Protocol (UDP) and Transmission Control Protocol (TCP)
- Explain how TCP provides reliable communication over IP and achieves optimal transmission
- Define the special requirements for carrying telecom signaling over IP networks
- List the key functions of Stream Control Transmission Protocol (SCTP)

## Course Prerequisites

No Prerequisites

## Outline

1. Overview of the Transport Layer
    - 1.1 Functions of the Transport Layer
  2. User Datagram Protocol (UDP)
    - 2.1 Defining the UDP
    - 2.2 UDP header details
  3. Transmission Control Protocol (TCP)
    - 3.1 TCP functionality
    - 3.2 TCP connection setup
  4. Stream Control Transport Protocol (SCTP)
    - 4.1 Role of SCTP
    - 4.2 Capabilities of SCTP
    - 4.3 Unique features of SCTP
  5. Summary
- Putting It All together