



# IP Basics

IPC\_114d | 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 VLANs is a must for all telecom professionals. A solid foundation in IP has become a basic job requirement in the carrier world. Starting with a brief history, the course provides a focused basic level introduction to the fundamentals of IP technology. It is a modular introductory course only on IP basics as part of the overall eLearning IP fundamentals curriculum.

## Intended Audience

This course is intended for those seeking a basic level introduction to the Internet Protocol (IP).

## Objectives

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

- Describe the purpose and structure of an IP address
- Describe network prefix
- Explain the purpose of CIDR Prefix
- Explain the purpose of Subnet Mask
- Describe IP Subnets
- Explain the IP header and its key fields
- Describe broadcasting in IP networks
- Describe multicasting in IP networks

## Course Prerequisites

No Prerequisites

## Outline

1. IP Address
    - 1.1 IP address Structure
    - 1.2 CIDR based IP address
    - 1.3 IP address examples
  
  2. IP Subnets
    - 2.1 IP subnet definition
    - 2.2 Subnet creation principle
    - 2.3 Subnet creation Example
  
  3. IP Header
    - 3.1 IP Header fields description
    - 3.2 Importance of TTL field in IP header
  
  4. Multicast and Broadcast
    - 4.1 Broadcast Operations
    - 4.2 Multicast Operations
- Putting It All Together