

# TCP/IP Fundamentals

**Price:** 2495

**Duration:** 3 days

**Delivery Methods:** Virtual

## Overview

### About this Course

Over the course duration, participants will engage in a combination of lectures and hands-on lab sessions that covers foundational networking skills on modern networks, ranging from physical devices to network function virtualization. The course begins with an introduction to essential packet analysis tools like Wireshark and Termshark, followed by practical training in capturing PCAP files using TCPdump. Students will then delve into the fundamental aspects of networking architecture, including a clear understanding of the OSI model and an exploration of TCP/IP protocols. Using network function virtualization, students will build the lab infrastructure, involving the setup of network namespaces and Ethernet bridges, thereby facilitating a more profound comprehension of Ethernet switching and routing. Students will develop a clear understanding of cloud based networking since NFV (network function virtualization) is used to build the entire network.

The course also covers IPv4 addressing, routing, and ARP protocols, with students gaining hands-on experience through practical lab exercises. The curriculum further explores topics such as NAT, IPv4 subnets, and the analysis of IPv4 headers. Students will also gain insights into routing protocols like OSPF and BGP, culminating in a challenging mini-project that allows them to apply their acquired knowledge.

### Audience Profile

Students looking for entry level understanding of IP networking

### At Course Completion

- Build a complete NFV network that demonstrates Ethernet access, Ethernet switching, and IP routing
- Develop an understanding of key networking terminologies and concepts that will promote communications within a network team or environment.
- Observe and describe the principles and mechanisms of IP routing.
- Configure and manage IP routing settings in a network environment.
- Inspect IP, UDP, and TCP Headers Using Wireshark
- Analyze and interpret IP, UDP, and TCP headers in network packets.
- Understand the concept of IP namespaces for network isolation.
- Use iptables and ip2 commands to demonstrate L3 Functionality
- Master the use of iptables for firewall configuration.
- Utilize the ip2 commands to illustrate Layer 3 (L3) functionality in networking.
- Explore Domain Name System (DNS) fundamentals.
- Configure and manage local host records for DNS resolution.
- Gain a comprehensive understanding of Transport Layer Security (TLS) and Secure Sockets Layer (SSL).
- Implement TLS and SSL protocols for secure network communication.
- Develop troubleshooting skills to identify and resolve connectivity problems.
- Apply troubleshooting techniques to diagnose and address network issues effectively.
- Write a bash script to deploy a test network in seconds.

## Course Schedule

Date	Time	Price	Options
07/13/2026	09:00 AM - 05:00 PM CT	2,495.00	<a href="#">Buy Now</a> <a href="#">Enroll</a>
10/13/2026	09:00 AM - 05:00 PM CT	2,495.00	<a href="#">Buy Now</a> <a href="#">Enroll</a>

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## **FAQ**

### **What if I have to reschedule my class due to conflict?**

Ten (10) business days' notice is required to reschedule a class with no additional fees. Notify  
TOPTALENT LEARNING as soon as possible at 469-721-6100 or by written notification to  
[info@toptalentlearning.com](mailto:info@toptalentlearning.com) to avoid rescheduling penalties.

### **How do I enroll for this class?**

Please contact our team at 469-721-6100; we will gladly guide you through the online purchasing process.

### **What happens once I purchase a class?**

You will receive a receipt and an enrollment confirmation sent to the email you submitted at purchase. Your enrollment email will have instructions on how to access the class. Any additional questions our team is here to support you. Please call us at 469-721-6100.

### **What is your late policy?**

If a student is 15 minutes late, they risk losing their seat to a standby student. If a student is 30 minutes late or more, they will need to reschedule. A no-show fee will apply. Retakes are enrolled on a stand-by basis. The student must supply previously issued courseware. Additional fees may apply.

### **What happens when I finish my class?**

You will receive a 'Certificate of Completion' once you complete the class. If you purchased an exam voucher for the class, a team member from TOPTALENT LEARNING will reach out to discuss your readiness for the voucher and make arrangements to send it.