

Troubleshooting TCP/IP Fundamentals (TTCP)

ID TTCP Price 1,390.— €(excl. tax) Duration 2 days

Who should attend

- Network operators, administrators, network planners, and technical support staff
- CCNA Candidates

Prerequisites

[Networking & TCP/IP Fundamentals \(NWF\)](#)

Course Objectives

In this course participants learn to identify, correct, and avoid problems in a TCP/IP network. Hands-on labs offer participants the opportunity to observe network behavior with a protocol analyzer.

Course Content

- Introduction to Troubleshooting
- Basic PC Configuration
- Troubleshooting Tools
- Displaying Information on Cisco & Juniper Devices
- TCP/IP Overview
- Troubleshooting Methods 1
- Troubleshooting Methods 2

Detailed Course Outline

Introduction to Troubleshooting

- Network Management
- Network Management Tools and Software
- Key Management Areas
- ISO Functional Areas
- OSI Model
- Overview of Layer Functions
- OSI and TCP/IP Models Compared
- Example Protocols at each Layer

Basic PC Configuration

- Twisted Pair Problems

- Ethernet Full & Half Duplex
- Ethernet Auto Sense or Auto Negotiate?
- Auto Sense
- Auto Negotiate
- Symptoms of Duplex Mismatch
- Duplex Settings on a Standard NIC (MS Windows)
- Switch Functionality
- Switch Monitor or Mirror Port
- Spanning Tree
- Address & Name Resolution
- IP Configuration MS-Windows
- Advanced DNS Settings MS-Windows
- MS-Windows Local Name Resolution
- View IP Configuration: ipconfig/all
- Additional IP ipconfig Functions
- Dynamic Host Configuration Protocol
- Automatic Private IP Addressing (APIPA)
- ARP Cache: arp -a

Troubleshooting Tools

- Troubleshooting Tools
- ICMP
- Type 3: destination unreachable
- Ping
- ICMP Redirect Message
- Traceroute
- Graphical Traceroute Examples
- NSLOOKUP
- NETSTAT
- Cable Tester/LAN Meter
- Protocol Analyzer
- SNMP
- Private MIB Object Example
- SNMP/MIB Implementation Example
- Your Brain

Displaying Information on Cisco & Juniper Devices

- Cisco Wake-up Screens (router)
- Cisco show Commands (router)
- Cisco show Commands (switch)
- Cisco show cdp neighbor (s or r)
- Cisco show cdp neighbors detail
- Cisco show ip interface brief (r)
- Cisco show ip protocols (router)
- Cisco show ip route (router)

- Cisco show ip arp (router)
- Cisco show controllers serial x
- Cisco show interface x (switch)
- Cisco show running-config (r)
- Cisco show running-config (s)
- POST failure
- JUNOS OS: Logging In
- CLI Modes
- Entering Configuration Mode
- Committing a Configuration
- Initial Configuration
- Viewing the Results
- Interface Naming
- Interface Configuration Example
- Tracking Interface State
- Extensive Output Example
- Network Utilities: Part 1
- Network Utilities: Part 2
- Network Utilities: Part 3
- Displaying the Junos OS Release
- Display Routing Information
- Control the process
- Change one variable at a time

TCP/IP Overview

- Overview
- TCP/IP is almost never a fault
- 50% of network problems are hardware-related
- 49% of network problems are configuration errors
- If ping works ...
- MS-Windows network cannot find neighbors
- MS-Windows sees no other PCs
- Using ping effectively

Troubleshooting Methods 1

- Before the trouble starts...
- OSI Model Overview
- Know your protocols and OSI layers
- Baselineing
- Know your devices
- Know your applications
- Know your troubleshooting tools
- Graphical Device Management Tools
- Documentation & Archiving

Troubleshooting Methods 2

- So, the trouble has started...
- Before you change anything ...
- Pay attention
- Ask questions
- What to look for with a protocol analyzer
- Sherlock Holmes' Principle
- Before changing anything ...

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