



CISCO TRAINING

Understanding Cisco Service Provider Network Foundations

Learn Cisco Service Provider network foundations. Master key concepts for building robust ISP infrastructures.

DURATION

2 hours

LEVEL

Foundation

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

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COURSE OVERVIEW

This foundational course, "Understanding Cisco Service Provider Network Foundations," is meticulously designed to introduce aspiring network professionals to the complex and dynamic world of Service Provider (SP) networks. Participants will gain a comprehensive understanding of the core architectures, underlying technologies, and operational principles that govern large-scale internet infrastructures. The curriculum delves into critical components such as robust routing protocols like OSPF, ISIS, and BGP, the fundamentals of Multiprotocol Label Switching (MPLS), Quality of Service (QoS) mechanisms, and an introduction to the burgeoning field of network programmability relevant to SP environments. By completing this 2-hour intensive course, you will develop a solid conceptual framework for modern service provider operations. You'll learn how SP networks are structured to deliver internet services, enterprise connectivity, and cloud resources efficiently and reliably. This knowledge serves as a vital stepping stone for those looking to specialize in internet infrastructure, cloud networking, or enterprise connectivity solutions, empowering you to contribute effectively to network design, implementation, and troubleshooting within an SP context. This course is ideal for setting the groundwork for further specialization and advanced Cisco certifications in the service provider track.

Duration	2 hours
Level	Foundation
Vendor	Cisco

COURSE CURRICULUM

01 Module 1: Introduction to Service Provider Networks

- Defining Service Provider Networks vs. Enterprise Networks
- Key Characteristics and Challenges of SP Networks
- Typical SP Network Architecture (Access, Aggregation, Core)
- Role of various network devices (Routers, Switches, Firewalls)
- Overview of Cisco's Service Provider Portfolio

02 Module 2: Core Routing Fundamentals for SP

- Review of IP Addressing and Subnetting in large networks
- Interior Gateway Protocols (IGP) in SP: OSPF and ISIS concepts
- Exterior Gateway Protocol (EGP): Introduction to BGP and its role in inter-domain routing
- Basic BGP attributes and path selection overview
- Route Redistribution and summarization concepts

03 Module 3: MPLS Fundamentals

- Introduction to Multiprotocol Label Switching (MPLS)
- Label Switching Concepts and Forwarding Equivalence Classes (FEC)
- Label Distribution Protocol (LDP) operation
- MPLS Applications: Traffic Engineering overview, L3VPN basic concepts
- MPLS advantages in Service Provider environments

04 Module 4: Quality of Service (QoS) and Network Management

- Introduction to QoS in SP networks
- Classification, Marking, Policing, and Shaping concepts
- Congestion Management and Avoidance (Queueing mechanisms)
- Introduction to Network Monitoring Tools (SNMP, NetFlow)
- Basic Network Troubleshooting Methodologies

05 Module 5: Introduction to Network Automation & Programmability

- The need for automation in SP networks
- Basic concepts of Network Programmability
- Introduction to Data Models (YANG) and APIs (NETCONF, RESTCONF)
- Overview of Automation Tools (Ansible, Python scripting for network tasks)
- Benefits of automation for efficiency and scalability in SP environments

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Junior Service Provider Network Engineer**
- > **Network Operations Center (NOC) Technician - ISP**
- > **Entry-Level Core Network Support Specialist**

FREQUENTLY ASKED QUESTIONS

Q: How does this "Understanding Cisco Service Provider Network Foundations" course specifically prepare me for a career in the Service Provider domain?

This course provides a robust foundational understanding of the unique architectural components, core routing protocols (like OSPF, ISIS, and BGP), and essential technologies (such as MPLS and QoS) critical for operating and maintaining large-scale service provider networks. It equips you with the conceptual knowledge necessary to interpret SP network designs, understand traffic flow, and speak the language of SP engineers, making you a more valuable candidate for entry-level roles in ISPs, telecommunications companies, and large cloud providers.

Q: What are the recommended prerequisites or prior knowledge for individuals looking to take this "Understanding Cisco Service Provider Network Foundations" course?

While this is a foundational course, participants will greatly benefit from having a basic understanding of general networking concepts, including IP addressing, subnetting, and the OSI model. Familiarity with fundamental routing and switching principles (e.g., from a CCNA-level certification or equivalent experience) is highly recommended, as it will allow you to grasp the service provider-specific concepts more rapidly and deeply.

Q: What specific practical skills or knowledge will I gain from this course that I can immediately apply in a Service Provider network environment?

Upon completion, you will be able to articulate the differences between SP and enterprise network architectures, describe the fundamental role of routing protocols like BGP in the global internet, and explain the core concepts of MPLS, including how labels are used for efficient forwarding. You will also understand basic QoS mechanisms and appreciate the emerging role of network programmability, enabling you to better understand and contribute to discussions around network design, operations, and future automation initiatives within a Cisco Service Provider context.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

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READY TO ENROL?

Take the next step in your technology career.

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