

COURSE OUTLINE

Cisco Service Provider 5G Technologies Foundations (SPMBL100) v1.0

Duration: 4 Days

Prerequisites:

Before enrolling in this training, you should have knowledge in the following areas:

- Knowledge of general networking concepts
- Experience working with command-line interface (CLI)-based network devices
- Basic understanding of Multiprotocol Label Switching (MPLS)
- Familiarity with service provider architectures

The following Cisco training may help you meet these prerequisites:

- Implementing and Administering Cisco Solutions (CCNA®)
- Understanding Cisco Service Provider Foundations (SPFNDU)

Course Description:

The Cisco Service Provider 5G Technologies Foundations (SPMBL100) v1.0 training introduces mobile network components, basic 5G concepts, and features of 5G technology including faster data speeds, higher device capacity, and improved user experience. You will examine the mobile packet core solutions, 5G transport architecture, and Cisco® automation and orchestration tools used in 5G networks. You will also learn about the Cisco 5G Non-standalone (NSA) and the Cisco Ultra Cloud Core 5G standalone (SA) platform solutions, the Cisco 5G converged Software-Defined Networking (SDN) transport architecture, and Cisco edge computing solutions. You will study the Cisco Network Function Virtualization (NFVI) architecture, Cisco Network Services Orchestrator (NSO), and Cisco Elastic Services Controller (ESC). You will learn how 5G is distributed with Telco Data Center (DC) with Cisco Application Centric Infrastructure (Cisco ACI®). And finally, Zero-Touch Provisioning (ZTP), Cisco Crosswork™, and the Cisco 5G security architecture will also be presented.

Course Objectives:

After taking this training, you should be able to:

- Describe mobile network architecture basics
- List enabling technologies for 5G and describe 5G key use cases
- Perform basic operations on a Cisco 5G NSA mobile packet core
- Describe the Cisco 5G Converged SDN Transport Architecture
- Describe Cisco NFVI and perform basic operations using Cisco ESC and Cisco Virtualized Infrastructure Manager (VIM)
- Describe Cisco service provider automation and orchestration solutions to deploy and manage 5G network functions
- Describe the Cisco Ultra Cloud Core architecture and deploy the Cisco SMI
- Explain the 5G ready distributed Telco DC with Cisco ACI solution
- Describe the Cisco 5G security architecture

Intended Audience:

- Customer support engineers
- Field engineers
- Network engineers
- Network consulting engineers

Course Outline:

Mobile Network Fundamentals

- 5G Key Use Cases
- Examining Mobile Network Components

Enabling Technologies for 5G

- Introduction to 5G NR Characteristics
- Cloud Radio Access network (RAN)

Cisco 5G NSA Solution

- 5G NSA Basics
- 5G NSA StarOS Configurations

Cisco 5G Converged SDN Transport Architecture

- Cisco 5G Transport Ready Devices
- Application Awareness and Network Slicing with Segment Routing

Cisco NFV Infrastructure, Cisco Virtualized Network Functions (VNFs), Cisco VIM, and Cisco ESC

- NFVI and SDN Architecture Overview
- Cisco VIM Pod Configurations

Cisco Service Provider Automation and Orchestration

- Telemetry Basics
- ZTP Fundamentals

Cisco Ultra Cloud Core

- Cisco Ultra Cloud Core Basics
- Kubernetes and Docker Fundamentals

5G Ready Distributed DC with Cisco ACI

- Cisco ACI in Telco Data Centers
- 5GC Deployment

Mitigating Threats in 5G

- Introduction to 5G Cybersecurity Risks
- Mitigating 5G Cybersecurity Risks

Lab outline

- Investigating the EPC and xHaul Device Operations
- Deploying Cisco Ultra Gateway Platform with CUPS
- Configuring the EPC for 5G NSA
- Network Slicing with Segment Routing
- Deploying a VNF using Cisco ESC
- Using ZTP and Telemetry
- Using Cisco Crosswork Optimization with NSO
- Deploying the Cisco SMI and Cisco Ultra Cloud Core

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