

Cisco Ultra M Deployment and Operations (SPMBL301) v1.0

What you'll learn in this course

The **Cisco Ultra M Deployment and Operations** (SPMB301) v1.0 course teaches you about the hardware components of the Cisco® Ultra M virtual packet core solution, including Cisco Nexus® spine and leaf switches and Cisco Unified Computing System™ (Cisco UCS®) C240 M4S (Small Form Factor) servers. You will learn about the software components of the Ultra M solution, including the OpenStack Virtual Infrastructure Manager (VIM), the Ultra M Virtualized Network Function (VNF) architecture, and the Cisco Elastic Services Controller, and how the different components operate. The course also covers the operation and administration of the Red Hat Enterprise Linux operating system in relation to the Ultra M Undercloud and Overcloud deployments.

Course duration

- Instructor-led training: 3 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 4 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 3 days of instruction with hands-on lab practice

How you'll benefit

This course will help you:

- Practice deploying the Ultra M virtualization platform
- Prepare to use Ultra M to simplify the deployment of mobile core VNFs

Who should enroll

This course is designed for technical professionals who will deploy or have deployed the Ultra M virtual packet core solution in their network, including:

- Systems engineers
- Technical support personnel
- Channel partners and resellers

How to enroll

- For instructor-led training, visit the [Cisco Learning Locator](#).
- For private group training, visit [Cisco Private Group Training](#).
- For digital library access, visit [Cisco Platinum Learning Library](#).
- For e-learning volume discounts, visit [Cisco Training on Demand](#).

Technology areas

- Enterprise networking
- Routing and switching

Course details

Objectives

After taking this course, you should be able to:

- Describe the Ultra M hardware and software
- Describe the features covered in the OpenStack component overview and deployment architecture
- Describe the Ultra M deployment architecture and operation
- Describe the Virtualized Packet Core-Distributed Instance (VPC-DI) architecture and packet flow
- Deploy and operate Ultra M

Prerequisites

We recommend but do not require the following knowledge and skills before taking this course:

- The **Cisco Service Provider Mobility Foundation LTE** (LTE100) course
- The **Cisco Service Provider Mobility Intermediate LTE** (LTE200) course
- Familiarity with the operation and administration of Red Hat Enterprise Linux
- Familiarity with TripleO (OpenStack on OpenStack)

Outline

- Cisco Ultra M Hardware and Topology Overview
 - Cisco Ultra M Hardware Components
 - Cisco Ultra M UCS Components
 - Cisco Ultra M UCS Interfaces
 - Cisco Ultra M Networking Components
 - Cisco Ultra M Physical Network Topology
- OpenStack Deployment Architecture and Components
 - OpenStack Overview
 - Nova – OpenStack Compute Service
 - Glance – OpenStack Image Service
 - Neutron – OpenStack Network Service
 - Keystone – OpenStack Identity Service
 - Cinder – OpenStack Block Storage Service
 - OpenStack Horizon Dashboard
- Ultra M Services Platform
 - Ultra Services Platform Architecture
 - Ultra M VNF Architecture
 - Ultra Automation Services (UAS)
 - Elastic Services Controller
 - OpenStack and Ultra Automation Services

- VPC-DI Overview and Operation
 - Virtual Packet Core Evolution
 - Ultra M Layer 3 Network Topology
 - VPC-DI Network Topology
 - VPC-DI Packet Flows
- Ultra M Installation and Deployment
 - Reviewing the Ultra M System Components
 - Planning the Network for Installation and Deployment
 - Deploying Hyperconverged Ultra M Models Using UAS
 - Deploying VNFs Using AutoVNF
 - Ultra Automation Services

Lab outline

- Install and Set Up Kernel-Based Virtual Machine (KVM) Hypervisor
- Create the OpenStack Platform Director (OSP-D) KVM Virtual Machine (VM)
- OSP-D Undercloud Installation
- Creating the Overcloud VM Nodes
- Preparing the Overcloud
- Overcloud Installation
- Deploying the VNF
- Exploring the Management Switch and the Leaf and Spine




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SPMBL301_1-0

C22-741683-01 02/19