

UCMCS9K (UNDERSTANDING AND CONFIGURING MEF CERTIFIED SERVICES ON THE CISCO ASR 9000) 1.0

Objetivo

The Cisco® Understanding and Configuring MEF Certified Services on the Cisco ASR 9000 Version 1 instructor-led course offered by High-Touch Delivery Learning Services provides you with the information to successfully design, configure, and deploy the industry-standard Metro Ethernet Forum (MEF) technologies in a Cisco IOS® XR Software environment. This course covers over 200 MEF Carrier Ethernet Certification Professional (CECP) knowledge objectives, combined with exclusive access to deploy and implement MEF solutions such as Ethernet-Line (E-Line) and Ethernet-LAN (E-LAN) on the Cisco ASR 9000 Series Aggregation Services Routers platform for Cisco IOS XR Software. Through a combination of lecture and hands-on labs, you gain an understanding of all major aspects of the platform; Layer 2 MEF services; Layer 2 MEF operations, administration, and management (OAM); and quality of service (QoS) features. No other course combines the MEF CECP knowledge with hands-on labs to reinforce your learning. Upon completion of this course, you should be able to:

- Define the five value propositions of Carrier Ethernet
- Outline the standards support for Carrier Ethernet
- Configure the Cisco ASR 9000 for various Carrier Ethernet services
- Define six Ethernet services (E-Line, E-LAN, Ethernet-Tree (E-Tree) and give usage examples to meet various subscriber needs; explain User Network Interface (UNI) attributes common to all services
- Define UNI service attributes (for example, frame format, ingress/egress bandwidth profiles, Carrier Ethernet VLAN ID/EVC (Ethernet Virtual Channel) map); define EVC per UNI service attributes (for example, physical interfaces, frame format, ingress/egress bandwidth profiles)
- Define the technologies and standards associated with UNI 1.0 and UNI 2.0 Describe the scalability and limitations of Ethernet over plesiochronous digital hierarchy (PDH), Ethernet over bonded copper, Ethernet over Hybrid Fiber-Coax (HFC), wireless Ethernet, Ethernet over fiber, and Ethernet over Passive Optical Network (PON)
- Describe Carrier Ethernet architecture and positioning for backbone and access technologies; describe how Carrier Ethernet services are transported over these technologies; describe the purpose and need and identify the critical components of Circuit Emulation Services over Ethernet (CESoETH) service; describe EVC service attributes required for emulated circuits, including delivering synchronized clocks over emulated circuits (for example, adaptive, 1588v2, synchronous Ethernet, Network Time Protocol (NTP), Precision Time Protocol (PTP)
- Describe scenarios for common business service applications and the benefits for each, including mobile backhaul (MBH) for cellular services
- Describe the MEF partitioning of responsibilities for service operations, administration, and maintenance (SOAM)
- Configure Multiprotocol Label Switching (MPLS) - Pseudowire
- Configure L2VPN E-Line - Ethernet Private Line (EPL)
- Configure L2VPN E-Line - Ethernet Virtual Private Line (EVPL)
- Configure Ethernet over MPLS L2VPN E-Line
- Configure local E-LAN L2VPN - E-LAN
- Configure local E-LAN L2VPN - EVP-LAN
- Configure link-based Ethernet operations, administration, and maintenance (EOAM)
- Configure service-based connectivity fault management (CFM)
- Discuss the new and enhanced services that Carrier Ethernet 2.0 certification offers; describe the Carrier Ethernet 2.0 service highlights, including multi-class of service (CoS), managed, and interconnected services

Público Alvo

This course is designed for technical professionals who need to know how to deploy Metro Ethernet solutions in their network environment and students interested in MEF CECP and desiring a hands-on reinforced learning environment. The primary audience for this course includes:

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

Pré-Requisitos

Following are the prerequisites for this course:

- Knowledge of Cisco IOS XR Software operation and configuration
- Basic knowledge of router installation and some experience with installation tools
- Routing protocol configuration experience
- Knowledge of Layer 2 IEEE switching and related protocols
- Knowledge of MPLS configuration
- Experience troubleshooting Cisco routers in a large network environment

Carga Horária

40 horas (5 dias).

Conteúdo Programático

- Module 1: MEF Carrier Ethernet Introduction
 - Module 2: MEF Carrier Ethernet Service Definitions
 - Module 3: MEF Carrier Ethernet Attributes
 - Module 4: Cisco ASR 9000 Layer 2 Architecture
 - Module 5: MEF Carrier Ethernet Access Technologies
 - Module 6: Cisco IOS XR Configuration Basics
 - Module 7: Cisco IOS XR MPLS
 - Module 8: Cisco ASR 9000 Point-to-Point Layer 2 Services – E-Line (EPL, EVPL)
 - Module 9: MEF Carrier Ethernet Transport Technologies
 - Module 10: Cisco ASR 9000 Multipoint Layer 2 Services – E-LAN (EP-LAN, EVP-LAN)
 - Module 11: MEF Circuit Emulation Services over Ethernet (CESoETH)
 - Module 12: MEF Carrier Ethernet – Target Applications
 - Module 13: MEF Service Operations, Administration, and Management (SOAM)
 - Module 14: Cisco ASR 9000 Operations, Administration, and Maintenance
 - Module 15: MEF Carrier Ethernet 2.0 Services Enhancements
 - Appendix: MEF Carrier Ethernet Guidelines
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- Lab 1: Familiarization with Lab Environment and Cisco IOS XR Configuration (Instructor demonstration and student interaction)
 - Lab 2: Configure E-Line – Ethernet Private Line (EPL)
 - Lab 3: Configure E-Line – Ethernet Virtual Private Line (EVPL)
 - Lab 4: Configure Multiprotocol Label Switching (MPLS)
 - Lab 5: Configure EoMPLS – EPL Pseudowire
 - Lab 6: Configure E-LAN – Ethernet Private LAN (EP-LAN)
 - Lab 7: Configure E-LAN – Ethernet Virtual Private-LAN (EVP-LAN)
 - Lab 8: Configure and Use Operations, Administration, and Management (OAM)