

Advanced Services' Deploying and Maintaining Carrier Ethernet Services v1



The Cisco® Deploying and Maintaining Carrier Ethernet Services course gives students the knowledge and skills required to configure, administer, and deploy Layer 2 Ethernet services as defined by the Metro Ethernet Forum (MEF) on a service provider or large enterprise Multiprotocol Label Switching (MPLS)–enabled network. Students learn how to configure customer premises equipment (CPE) to connect to the MPLS network and configure the access, aggregation, distribution, and core portions of the service provider or large enterprise network to provide the Layer 2 Ethernet services. Students also learn how to secure the network to protect it from attack. Labs are designed to reinforce what is discussed in the lecture. This course is an updated version of Advanced Services' Metro Ethernet Switching Deployment Bootcamp course.

Duration

Five days.

Target Audience

This course is for network administrators, network operators, and system administrators who need to know how to configure and deploy Carrier Ethernet services in their network environment. The following are the primary audience for this course:

- Network administrators and operators
- System administrators

Course Objectives

Upon completion of this course, you should be able to:

- Identify the different Ethernet service type architectures as defined by the MEF
- Identify the various devices used in a Carrier Ethernet system
- Describe the functions of each device in a Carrier Ethernet system
- Configure CPE network functions to connect to a point of presence (POP)
- Configure access network functions to allow customer data into the network
- Aggregate customer traffic in a service provider network
- Configure a core network to transport customer traffic through a service provider network
- Increase availability of Layer 2 services in a service provider network by configuring pseudowire redundancy
- Configure Virtual Private LAN Service (VPLS) and Hierarchical VPLS (H-VPLS) to extend customer networks to multiple sites
- Scale the deployment of Ethernet multipoint (E-LAN) services by configuring VPLS autodiscovery and pseudowire switching
- Help ensure integrity and security of customer data and a service provider network
- Identify the quality of service (QoS) used to meet service-level agreements (SLAs) for different traffic types
- Monitor and manage end-to-end Layer 2 Ethernet services using Ethernet operations, administration, and management (OAM)

Course Prerequisites

Following are the prerequisites for this course:

- Ability to efficiently use Cisco IOS® Software command line interface to perform configurations
- Ability to design hierarchical Layer 2 and Layer 3 networks
- Ability to configure, optimize, and scale dynamic routing protocols, in particular Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), and MPLS
- Ability to configure, optimize, and scale Layer 2 protocols
- Familiarity with QoS and SLA principles and methodologies

To locate Cisco courses that cover the listed prerequisites, go to the Cisco Training and Events Webpage at www.cisco.com/web/learning/index.html.

Course Outline

The course outline is:

- Lesson 1: Introduction
- Lesson 2: Overview of Carrier Ethernet Services and the Cisco Carrier Ethernet System
- Lesson 3: Building a Network Core
- Lesson 4: Building an Access Network
- Lesson 5: Point-to-Point Ethernet virtual connection (EVC): E-Line Service
- Lesson 6: Multipoint-to-Multipoint EVC: E-LAN Service

- Lesson 7: Scaling and Extending Ethernet Services
- Lesson 8: Increasing the Availability of Ethernet Services
- Lesson 9: Securing a Carrier Ethernet Network
- Lesson 10: Deploying QoS in a Carrier Ethernet Network
- Lesson 11: Managing Services in a Carrier Ethernet Network

Lab Outline

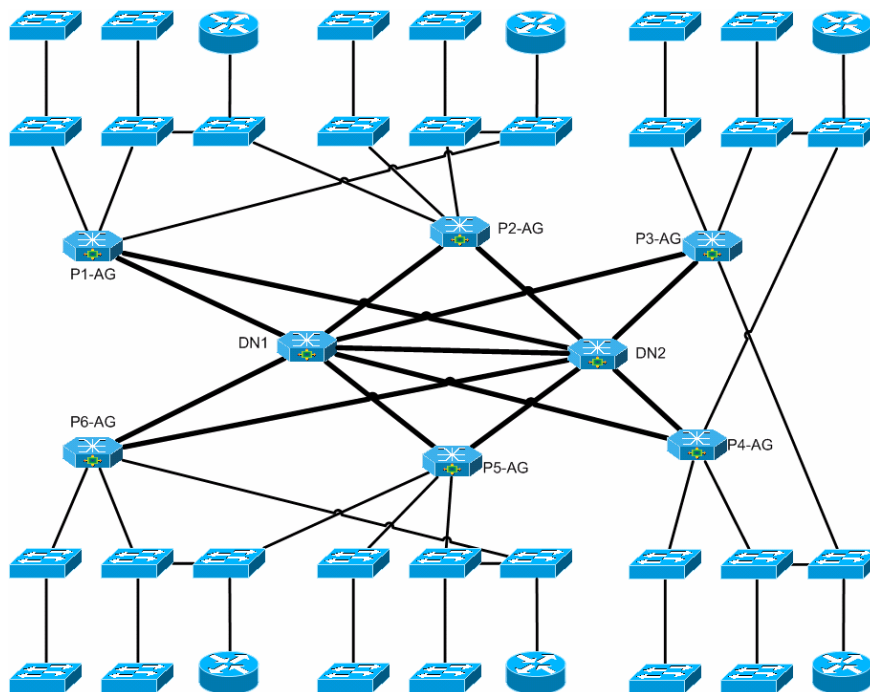
The lab outline is:

- Lab 1: Familiarization with lab components and lab topology
- Lab 2: Build an MPLS core
- Lab 3: Build an access network: building a hub-and-spoke access network, building an Ethernet-to-the-X (ETTX) access ring
- Lab 4: Configure e-line services: complete an ETTX access ring, configure Ethernet Private Line (EPL) service using flexible “Q” tags (QinQ), configure Ethernet Virtual Private Line (EVPL) service using flexible QinQ, configure EVPL service untagged to double tagged
- Lab 5 :Configure E-LAN services: configure TLS using VPLS, configure EVCS using VPLS, configure EVCS using H-VPLS
- Lab 6: Scale and extend Carrier Ethernet services: configure VPLS autodiscovery using BGP, configure H-VPLS with VPLS autodiscovery, configure intra-autonomous system pseudowire switching
- Lab 7: Increase Carrier Ethernet service availability: configure pseudowire redundancy to redundant CPEs, configure a routed pseudowire
- Lab 8: Implement security
- Lab 9: Implement QoS
- Lab 10: Implement Ethernet OAM

Lab Topology

Following is the lab topology that is used in this course.

Figure 1. Lab Topology of Deploying and Maintaining Carrier Ethernet Services



Registration Information

For more information about schedules and registration for this course, contact aeskt_registration@cisco.com.

For More Information

For more information about Advanced Services Education course offerings, including custom training options, as well as Advanced Services Curriculum Planning Services and the Advanced Services Technical Knowledge Library (TKL), refer to the Advanced Services Education Website at www.cisco.com/go/ase.



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