

## Course Description

This course provides an overview of the best practices to be followed when designing Layer 2 Ethernet Access Networks using Calix products. It is designed for network planning engineers, CO technicians and support personnel responsible for network design, equipment turn-up, service configuration, and maintenance. Following these guidelines will ensure optimum network performance and reliability is achieved and is scalable from a small deployment to the full capacity of an access network. This course will also help prepare you for the Calix E-Series Professional certification exam.

### Objectives

- Design reliable, resilient, scalable residential Layer 2 Ethernet access networks.
- Design a Quality of Service plan to effectively manage and prioritize traffic for subscriber services.
- Implement security features to protect the network from malicious traffic originating from subscribers.
- Calculate network capacity to provide optimal performance and scalability.
- Analyze existing network designs and identify ways to improve performance.
- Know where to find Calix Resources.

### Who should attend?

- Engineers and Technicians who plan, design and configure Ethernet access networks
- Candidates for the *E-Series Professional* certification exam

### Software Release

This course is based on:

- E7 Release 2.4

### Prerequisite Training and Skills

- Must complete the following exams: Pass the Ethernet Access Network (EAN) Specialist exam and Any 2: E7 GPON Specialist, E7 Active Ethernet Specialist, or E7 Copper Access Specialist.

### Training Resources in My Calix

- [Learning Solutions](#)
- [Certifications](#)

## Delivery Mode

This interactive online eLearning course consists of content delivered as video clips, simulations, demonstrations, and other self-paced formats. Learners are prompted to interact with the content as they progress through the course. Calix eLearning courses are often accompanied by voice-over audio. To get the most out of your learning experience, Calix recommends accessing your eLearning course through Chrome or Firefox.

Course Duration: 3 ½ hours

Lessons	Topics
<b>01</b> Introduction	Best Practices Overview
<b>02</b> Access Network Overview	Service Provider Network Access Network Customer Premise Equipment Access Nodes Transport Network
<b>03</b> Network Topology Design	Physical /Logical Topologies Network Design Options Topology Protocols Link Aggregation Groups Quality of Service Subscribe Edge Models VLAN Models Video Traffic Distribution
<b>04</b> Managing Layer 2 Traffic	Dynamic Host Configuration Protocol Layer 2 Access Control/Match List Address Resolution Protocol (ARP) MAC Forced Forwarding Split Horizon Dynamic DNS and DNS Host Mapping Firewall

Lessons	Topics
<b>05</b> Planning Network Resources	MAC Table Characteristics MAC ID Planning Bandwidth Planning Topology Design Impact on Bandwidth Subscriber Profiles Calculating Bandwidth
<b>06</b> Analyze Reference Networks	Calix Reference Networks Network Documentation Backup and Restore
<b>07</b> Using Calix Resources	Command Center Calix Resource Center Calix Community