



Orbitage Professional Certification Track

Certified IP Professional (CIPP): Implementing Metro Ethernet

How to implement & operate Metro Ethernet



Overview

Our voice networks are evolving to what is referred to as 'next generation' where a much wider portfolio of services will be on offer to the consumer. These will be made available through multiple last-mile technologies, and there is increased demand for delivering more bandwidth more cost effectively. This need for multiple service support, increased bandwidth and greater control is extended to the backbone of our networks where new technologies are being deployed to meet them. Metro Ethernet is now one of the most important technologies to support this traffic due to its familiarity & relative simplicity.

This course explores the development of Metro Ethernet, providing a detailed explanation of its operation & the services that it supports.

You will be able to

- Explain the rationale for Metro Ethernet
- Identify key Metro Ethernet specifications
- Outline the system architecture
- Describe the key Metro Ethernet services
- Explain how to implement & deliver Metro Ethernet services
- Describe how Metro Ethernet can support Operations & Maintenance
- Configure Metro Ethernet for VLAN Services
- Configure Metro Ethernet for virtual private networking

Who can benefit

Engineers wishing to build on their existing knowledge of IP in a practical environment and implement a Metro Ethernet solution

Pre requisite knowledge

It is essential that the participants have a good knowledge of the fundamentals of IP. It is recommended that the participant should have successfully completed the Certified IP Associate (CIPA) practical and theory assessment.

Outline

Introduction to Metro Ethernet

- Current LAN Ethernet Technology
- What is Metro Ethernet
- Switching compared to Routing
- Benefits of Metro Ethernet
- Carrier Class Ethernet Requirements

- Customer Premise Equipment (CPE)
- Issues and Alternative solutions

Metro Ethernet Specifications

- Controlling bodies and current developments
- The 5 Key Attributes
- Specifications and Agreements
- Service Definitions
- Ethernet Service Layer
- Examples of Service Usage

Metro Ethernet System Architecture

- Metro Ethernet Interfaces & Demarcation
- Ethernet over MPLS
- Provider Backbone Bridges
- Ethernet over SDH
- Layer 2 Control
- Virtual Forwarding Tables
- Managing SDH Traffic Streams

Metro Ethernet Services

- Access Technologies
- E-Line, E-LAN, EP-Tree
- Virtual LANs, VPNs
- Circuit Emulation Services
- Mobile backhaul
- Clock Synchronisation

Service Quality

- Bandwidth Profiles
- Ensuring CIR/EIR
- Service Attributes
- Bandwidth management with Link Capacity Adjustment Scheme (LCAS)
- MPLS Traffic Engineering



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- PBB Traffic Engineering
- Service Protection and Reliability
- Scalability

Operations and Maintenance

- Legacy Ethernet O&M
- Link layer O&M
- Connectivity Fault Management
- Service Layer O&M
- Security

**Exercises, review questions &
section summaries throughout**

DURATION 4 days

MAXIMUM CLASS SIZE 12