

Carrier Ethernet and Backhaul Technology Overview

Australian backhaul infrastructure is undergoing a major rebuild, particularly for mobile services and the NBN. This one day course outlines the underlying Carrier Ethernet, MPLS and GPON technologies.

Who would benefit from this course?

Those in backhaul rollout and NBN related technical roles, both within and outside the telecoms sector. Course participants may include network operators, vendors, Access Seekers, service providers, project managers and engineers.

Outline

Over the last decade Carrier Ethernet and has become integral transmission network component. This one day course provides a technical overview of Carrier Ethernet within fixed and mobile network networks, with a key focus on the NBN.

The course begins with an Ethernet review, outlining addressing, VLAN and Class of service mechanisms, 40G and 100G evolution and how MPLS supports Ethernet based services. The Metro Ethernet Forum role is then outlined, along with the key MEF services, and how they interwork with MPLS. Carrier Ethernet for mobile backhaul is then examined, focusing on synchronization and QOS requirements. The course concludes with a GPON overview, focusing on NBN service provision, including multicast.

Course Objectives

Participants completing this course should be able to:

- Describe Ethernet frame structure, addressing, V-LAN mechanisms and 40G/100G operation
- Outline key MPLS features and how they support Ethernet services
- List the key Metro Ethernet Forum (MEF) activities and standards
- Describe EPL, EVPL, EP-LAN, EVP-LAN, EP-Tree, EVP-Tree services
- Outline bandwidth profile, Class of Service mechanisms and other MEF service attributes
- Describe MEF backhaul requirements and architectures, and MEF 22 proposals to support them
- Describe mobile backhaul synchronization mechanisms
- Describe the mechanisms for voice service provision within the NBN
- List the key GPON features and outline how they support Broadband Access, as outlined in TR-156
- Describe how GPON supports the key NBN Fibre Access Service attributes, particularly multicast