Lab Session

What is the Right Way to Test and Evaluate Modern Ethernet & IP Services? - ETP – Ethernet & IP Transmission Performance: RFC-6349, Y.1564 – Understand, Apply, Evaluate

Ethernet has become the technology and interface of choice for communications paths. Broadband telecommunications at speeds between 10 Mbit/s and 1 Gbit/s, with round-trip delays to match, have become the standard for metro, regional, and wide area networks.

Several hundred kilometers can now be bridged at high bandwidths, resulting in changes in the design of corporate networks. There is a move from the classic leased line to Ethernet transmission services.

Clients are using Ethernet for virtually everything, resulting in a blurring of the division between WAN and LAN. Their expectation is Ethernet should work the same way for everything.

This fundamental change has meant a radical re-think in the way transmission paths are checked, tested, and qualified. The RFC 2544 standard is the currently accepted basis for testing, but RFC 2544 does not cover every aspect. Detailed standards are still required, along with experience in how Ethernet transmission paths should be tested. That is where this seminar comes in:

A theoretical part repeats the necessary principles and relationships in Ethernet and TCP/IP, explains and deepens understanding of test concepts and standards.

The practical part shows how test equipment and software tools can be employed for testing. The second day is taken up with several hours of practical exercises, where small groups of participants solve practical problems to deepen their theoretical knowledge. Ethernet testers and load generators as well as hardware and software protocol analyzers are provided. Participants can also bring along and use their own Ethernet testers and protocol analyzers by prior arrangement.

Contents

▶ Technology "refresh & update"
Ethernet principles
Principles and details (refresh & update)
TCP and UDP principles and details
Ethernet in the carrier sector – starting points, examples

▶ RFC 2544

▶ IP, TCP and UDP throughput in WANs
Broadband networks and TCP/IP throughput in WANs

▶ Testing of Eth/IP/TCP/UDP transmission paths
Ethernet/IP (Layer 2/3) turn-up test
Testing with measuring sets
Testing with software tools
Practical exercises

▶ Y.1564 – SAM Complete

▶ RF 6349 – TrueSpeed

Equipment discussed

▶ Ethernet load generators and testers. Hardware and software protocol analyzers

Course objectives

Participants will know how to test and check Ethernet transmission paths on layers 1 through 4. They will be able to evaluate measurement results, assess them objectively and qualify Ethernet communications paths.

Target group

Test engineers and technicians, network specialists and administrators, and network planners concerned with planning, installing, operating, and maintaining Ethernet communications paths.

Prerequisites

The relevant principles of Ethernet and TCP/IP technology are repeated during the seminar. Keen participants can therefore achieve the course objectives even without any prior knowledge. However, a knowledge of and experience in digital communications, Ethernet, and TCP/IP will be very useful.

Related seminars

▶ **The following courses are recommended**
"Ethernet Technologies – Fundamentals, Concepts, and Standards"
"TCP/IP/Routing – Understanding and Applying Internet Protocols"

▶ **Workshop**
"Troubleshooting and Protocol Analysis on Ethernet Networks"
"Field Service Tester FST Workshop Module 2802 with Ethernet/FC Module"

Seminar info

▶ Duration
2 days, from 9.00 to 16.30 h

▶ Date, location and price on request or see under www.viavisolutions.com

▶ On-site or customized seminars on request

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