

DL TC74

Local Area Network (LAN) and Intranet



Objectives:

Training of an engineer for the installation and maintenance of Local Networks, capable of:

- knowing the principles, the standards and the devices that are normally used in LANs
- installing LANs and Intranet in compliance with the current cabling standards
- installing the protocols and presetting the configurations on the network computers
- performing maintenance, troubleshooting and tests on LANs

ICT

Educational Path:

The Educational Path of the Training Package covers the following subjects:

- **Introduction to local networks**
What is a local network, Components of a local network, The transmission media, The structured wiring, Network topologies, Network protocols: OSI Model, Technologies and standards for the local networks, Network devices, Network operating systems.
- **Signal coding and transmission media**
Coding techniques, The transmission media, The coaxial cable, The telephone wire, The optical fibres.
- **The OSI model and the protocols LAN IEEE**
The OSI reference model, OSI Model: Physical Level and Line Level, The project IEEE 802: Sublevel LLC, Sublevel MAC and Physical Level.
- **Networks: Ethernet, Fast Ethernet and Gigabit Ethernet**
Standard Ethernet and IEEE 802.3, The sublevel MAC, CSMA-CD access method, the physical level, Ethernet: 10 Mbps (10 Base-T), Fast Ethernet: 100 Mbps, Gigabit Ethernet: 1000 Mbps
- **Network devices**
The typical devices of an Ethernet networks, Transceivers, Repeaters, Media converters, Hubs, Switches.
- **Structured wiring according to standard EIA/TIA 568A - ISO/IEC11801**
What is the structured wiring, The wiring standards, Content and purpose of the standards, Topology of a structured wiring, Main elements and nomenclature, Horizontal wiring, Dorsal networks.
- **Protocols: NetBIOS, NetBEUI, TCP/IP, IPX/SPX**
The protocols of level 3, 4, 5, 6, 7, The interface NetBIOS, The protocol NetBEUI Network protocols: IPX/SPX, IPX protocol, SPX protocol, Internet protocols: TCP/IP, IP protocol, TCP protocol.
- **Intranet and diagnostics on the networks**
What is an Intranet, Terminal emulation, Files transfer, Electronic Mail, World Wide Web, TCP/IP tools.
- **Architecture of a Peer-to-Peer network Operating System**
General architecture, Redirector and File System, Support of multiple networks, NDIS architecture, TCP/IP architecture, Client and Server Peer architecture, Programming interfaces, Architecture and serial communications.
- **Architecture of a network Server Operating System**
General architecture, NDIS specifications, Network protocols, Transport Driver Interface, Network services: Server, Network services: Workstation, Service DHCP, DNS and WINS.

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Composed of:

TC74-MC: LAN structured cabling

This module shows the structure of the cabling of the LAN according to the standard EIA/TIA 568A and ISO/IEC 11801.

It includes:

Diagram of the structured cabling.

Sockets RJ45 and for optical fibre.

Patch panel

Users' sockets

TC74-DS: Switching HUB (Quantity 3)

IEEE 802.3, 802.3u compatible.

Transmission speed: 10/100 Mb/s.

4 RJ45 ports.

External power supply.

TC74-DM: Media Converter (Quantity two)

Conversion from RJ45 (10Base-T) to optical fibre (10Base-FL).

Connections: 1 x RJ45, 1 x ST (RX/TX).

Compatibility with: cat. 3, 4, 5, optical fibre cable 62,5/125 ST.

IEEE 802.3 compatible.