



**CMT-06-045**

## **ADVANCED ETHERNET & TCP/IP TRAINING COURSE**

2 DAYS DURATION - DESIGNED FOR ALL SKILL LEVELS.  
COURSE CONTENT CAN BE CUSTOMISED AS REQUIRED.

**WWW.CELEMETRIX.COM.AU**  
**CALL 1800 256 838**

**Telstra** *Certified*

# ADVANCED ETHERNET & TCP/IP TRAINING COURSE

## COURSE OUTLINE

### CMT-06-045-A

#### Evolution of Ethernet

1. Network Topologies and Architecture
2. Why does Ethernet dominate global communications
3. LAN – Evolution to Telco Core Technology
4. Metro and Core Ethernet deployment strategies.

### CMT-06-045-B

#### Bits & Bytes - Layer 1

1. Standard Communications structures within the OSI model
2. LAN, MAN, and WAN Networks
3. Cabling Standards
4. Hubs, Switches, Routers
5. Half and Full Duplex Communications.

### CMT-06-045-C

#### Switching Methodologies - Layer 2

1. Frame Structure & Size (Fields, Runt and Jumbos)
2. Hardware Addressing (MAC)
3. Unicast, Multicast & Broadcast
4. Layer 2 Switching principles
5. Spanning Tree protocol
6. RFC2544 Circuit testing & Quality Assurance techniques.

### CMT-06-045-D

#### Internet Protocol (IP) - Layer 3

1. IP Addressing & Classes
2. Allocating IP addressing using DHCP
3. Introduction to Variable Length Subnet Mask (VLSM) and Classless Inter-Domain Routing (CIDR)
4. IP address Discovery - Address Resolution Protocol (ARP)
5. ICMP – PING & Trace Route Commands
6. Introduction to Layer 3 Switching & Routing, Gateways and NAT
7. Domain Name System (DNS)
8. Fragmentation
9. IP Quality of Service – Precedence, Type of Service and Diffserv.

### CMT-06-045-E

#### Introduction to Routing Protocols

1. Basic Routing Principles.

### CMT-06-045-F

#### TCP/UDP & Network Applications - Layer 4

1. Connection Orientated or Connection-less Links
2. Port numbering - TCP/UDP
3. Application Performance – HTTP, FTP, Email.

### CMT-06-045-G

#### Introduction to the Application Layer and Network Security

1. Network Security – VPN's and Firewalls
2. HTTP (WEB)
3. Telnet
4. DNS
5. FTP/TFTP.

### CMT-06-045-H

#### What are VLAN's and why are they used

1. 802.1q&p Trunking principals
2. Class of Service (CoS)
3. VTP Domains
4. VLAN Routing & Prioritization, VLAN Stacking (Q in Q).

### CMT-06-045-I

#### Practical Exercises

1. RFC2544 Circuit testing & Quality Assurance
2. Protocol Analysis – 7 layer decoding
3. Statistical analysis of an TCP/IP Circuit
4. Fault Finding principals and techniques.

### CMT-06-045-J

#### The Future Direction of Ethernet and IP Technologies

1. Ethernet within the Core
2. Ethernet and Ethernet tunnelling in the last mile
3. Ethernet and SDH convergence
4. IPV6
5. VoIP & Multimedia over IP
6. Triple Play Application and testing (Voice, Video, Data).

# ADVANCED ETHERNET & TCP/IP TRAINING COURSE

## COURSE INFORMATION

### Course Locations:

Melbourne, Adelaide, Sydney, Hobart, Canberra, Cairns, Brisbane, Darwin & Perth.

**Course Times:** 8.30am to 4.30pm.

**Duration:** Two days.

Training is available Australia-wide.

Please contact Celemetrix for details.

**Included:** Instructor, data projector, Ethernet & IP lab, Ethernet test equipment (10/100/1000 Mb/s Optical & Electrical), Training manual per attendee, 1 week phone support.

## INDUSTRY PROBLEM

- The telecommunication industry has seen a decline of the transfer of skills from experienced technical personnel to new personnel.
- Knowledge transfer to complete projects to the required quality/time standards has become increasingly scarce.

## CELEMETRIX SOLUTION

- Training programs are designed to protect against poor quality network builds, which result in costly rework and service interruptions.
- Emphasis on the importance of maintaining standardised installation and commissioning practices.
- Skill in the transference of knowledge is what we believe to be the "art of training."
- Unlike other training organisations which focus primarily on technology - Celemetrix Training Services are structured toward Field Operations staff. Technology theory is combined with practical elements to reinforce the learning process.
- Specifically designed training manuals, enhanced practical exercises and technical phone support ensure your investment delivers increased levels of productivity and confidence.
- All our training courses can be customised to meet your individual requirements.

All our trainers are qualified with Cert IV Assessment and Workplace Training from Corporate Training Australia.

## COURSE OVERVIEW

Designed to provide users of all levels an introduction to the operation and fundamentals of Ethernet and TCP/IP network operation and the process of validating network performance.

**10 -15 people per course.**

**Training is available throughout Australia.**

## FURTHER INFORMATION

Call or email Celemetrix today, our courses result in the highest knowledge transfer and are Telstra Certified.

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