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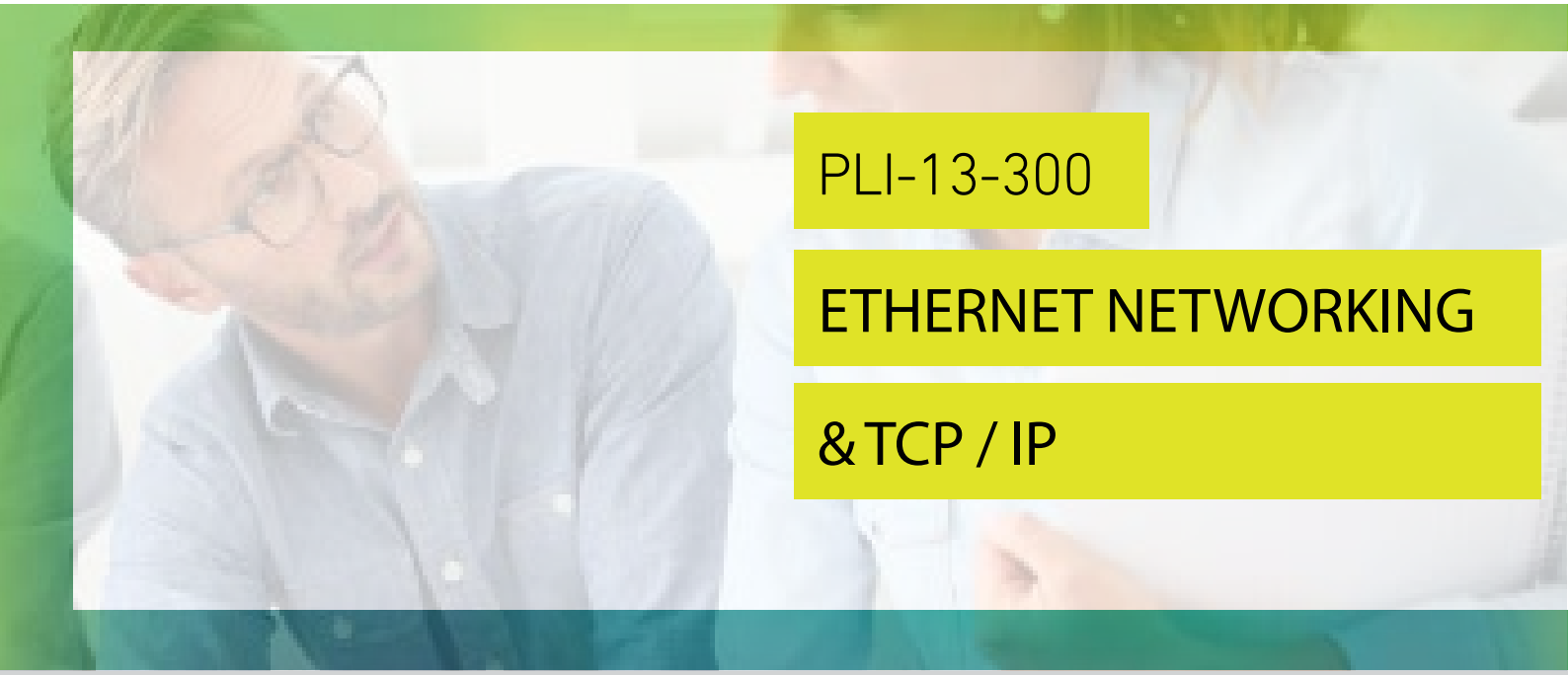

PLI-13-300

ETHERNET NETWORKING & TCP / IP

ETHERNET / IP

PERPETUAL LEARNING INSTITUTE provides a comprehensive syllabus that addresses critical practices pertaining to EtherNet application layer protocols where data is transferred and organised inside a TCP/ UDP.

PERPETUAL LEARNING INSTITUTE is a Nationally Approved Training Provider of Telstra™ & nbn™

Contact us today for full details

This course is designed to provide individuals with the knowledge of Ethernet and TCP/IP and associated communications standards and architectures. It focuses on guiding attendees on basic ethernet through the OSI layers, IP subnetting and different networking technologies that will help the individual build from a simple topology to a more complex one.

This course introduces attendees to the most common network elements, how they operate and are used in a data communications network. Knowledge is further developed to include security, VLAN, ACL, QoS and common routing. protocols. Attendees are also exposed to network testing and fault finding principles used for modern priority based networks. Also includes basic practical labs.

BOOK ONLINE

Information is subject to change
For the most current information and training schedule, please visit : www.perpetual.edu.au/book

ACCREDITATIONS

Perpetual Learning Institute Pty. Ltd. is a nationally Registered Training Organisation (RTO code: 40809)
Perpetual Learning Institute Pty. Ltd is also a Nationally Approved Training Provider (ATP) of nbn™ & Telstra™

APPROVED

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ETHERNET NETWORKING & TCP / IP

COURSE OUTLINE

PLI-13-300-A

Data Network Architecture

- Network topologies and architecture
- Why does ethernet dominate global communications
- Components of a communications network
- LAN, MAN and WAN
- Typical network devices

PLI-13-300-B

The OSI Model

- Protocol in data network
- OSI overview
- Seven layers of the OSI model
- TCP/IP
- Protocol data units
- OSI data encapsulation and decapsulation

PLI-13-300-C

Data Link Layer

- Carrier sense multiple access / collision detection
- Ethernet communications: Unicast, Multicast and Broadcast
- Ethernet frames and frame sizes
- MAC addresses and MAC address table
- Collision domain and broadcast domain

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Network Addressing

- IP addressing and classes
- IPv4 overview
- Anatomy of an IPv4 address
- Types of network addresses
- Classful network addresses
- Subnet masks – defining the network group
- Static and dynamic addressing for end devices
- Introduction to Variable Length Subnet Mask (VLSM) and Classless Inter-Domain Routing (CIDR)

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Transport Layer Protocols

- TCP overview
- TCP 3-way handshake
- TCP windowing
- UDP overview
- Transport layer port identifiers

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What are VLAN's and Why are they used?

- 802.1Q&P trunking principals
- Class of Service (CoS)

PLI-13-300-G

Network Layer

- Network layer overview
- Types of network layer protocols
- Importance of network grouping
- Hierarchical addressing
- Default gateways and next-hop address
- Routes, routing table and routing protocols
- Dynamic routing protocol
- Understanding and implementing RIP
- Understanding and implementing OSPF

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Network Redundancy

- Importance of network resiliency
- Spanning-tree protocol overview
- Implementing STP in ethernet networks
- Virtual Redundancy Routing Protocol (VRRP) overview

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Network traffic filtering

- Access Control Lists (ACL) overview
- Best practices in implementing ACL in the network
- Implementing ACL rules in ethernet network

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Introduction to Quality of Service (QoS)

- Factors affecting converged traffic
- Ways to resolve congested networks
- Classification and marking used in 802.1Q and IP header
- Implementing CoS and IP precedence

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IP version 6

- IPv6 overview
- Introduction to neighbour discovery
- IPv6 stateless auto-configuration and DHCP
- Implementing stateless auto-configuration

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ETHERNET NETWORKING & TCP / IP

INDUSTRY PROBLEM

- With the deployment of the nbn™, Australia now needs additional skilled workers to construct the different network architectures.
- New network architectures and technologies require the development of new skills and knowledge to ensure success.

PERPETUAL LEARNING SOLUTION

- Working as an nbn™ Approved Training Provider, PERPETUAL LEARNING INSTITUTE has enhanced our traditional courses to align directly to the skills needed for the nbn™ rollout.
- The development of carefully constructed skill based programs is where we excel – the art of training.
- Unlike other training organisations which focus primarily on technology, PERPETUAL LEARNING INSTITUTE is structured toward Field Operations staff. Technology theory is combined with large quantities of practical exercises to reinforce the learning process.
- PERPETUAL LEARNING INSTITUTE is the market leader with regards to hands on practical training that is supported by our real world learning simulators – "We bring the field environment to you".

COURSE INFORMATION

Course Locations:

Melbourne, Adelaide, Sydney, Hobart, Canberra, Cairns, Brisbane, Darwin and Perth

Location and timing will be advised at enrolment

Class Size:	10 - 12 students
Duration:	4 days

Included:

All materials used for practical exercises, technical manuals for each attendee, test equipment, emulation environment.

1 week phone support.

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