

Course ID	Course Title
<b>2-3L3D</b>	<b>L2 and L3 Networking Protocols</b>
Course Duration	
<b>3 days</b>	
<b>Aimed At</b>	Corporate and government personal whose job requires an understanding of <i>L2 and L3 Networking Protocols</i> .
<b>Prerequisites</b>	<i>L2 and L3 Networking Protocols</i> course requires an understanding of telecommunications and networking basics.
<b>Course in a Nutshell</b>	<i>L2 and L3 Networking Protocols</i> , a comprehensive 3-day course covers the L2 Protocol Basics, L3 IPv4 Addressing and VPN, and L3 Network Control Plane Operations. This is a hands-on workshop; bring your laptops to the class. The workshop can be conducted WebLive™ (instructor-led online), onsite, or as a combination of the two. It's available worldwide.
<b>Customize It!</b>	We can tailor the included topics, tech level, and duration of <i>L2 and L3 Networking Protocols</i> to your team's technical requirements.
<b>Outline</b>	<b><i>L2 and L3 Networking Protocols: Laying the Groundwork</i></b> <ul style="list-style-type: none"><li>• Overview and Introductions</li><li>• Introduction to the Internet</li><li>• Access and Applications of IP</li><li>• The Layered Model of Networking</li><li>• LAB – Layered Model Exercise</li></ul> <b><i>L2 and L3 Networking Protocols: L2 Protocol Basics</i></b> <ul style="list-style-type: none"><li>• Basics of Ethernet Part 1 - Definition of Ethernet Technology, History, Ethernet Versions</li><li>• Basics of Ethernet Part 2 - Defining a LAN, Topology Options, Cabling Options</li><li>• LAB – Ethernet Topology and Cabling Exercise</li><li>• Basics of Ethernet Part 3 - Ethernet MAC Addresses, Learning</li><li>• LAB – Ethernet MAC Address Exercise</li><li>• Address Resolution Protocol (ARP)</li><li>• LAB – ARP Experiment</li><li>• Basics of Ethernet Part 4 – Understanding VLANs, 802.1Q Encapsulation, VTP Protocol</li><li>• LAB – VLAN Experiment</li><li>• Basics of Ethernet Part 5 – Spanning Tree Protocol, Gigabit Ethernet</li><li>• LAB: Spanning Tree Experiment</li></ul>

- Cisco Discovery Protocol (CDP)
- LAB - CDP Lab
- Layer 2 Tunneling with L2TP
- Lab - L2TP

### ***L2 and L3 Networking Protocols: L3 IPv4 Addressing and VPN***

- Layer 3 IPv4 and Addressing
- IPv4 Multicast and NAT Operations
- LAB – IPv4 Addressing Exercise
- IPv4 Subnet Addressing
- LAB – IPv4 Subnetting exercise
- L3 Virtual Private Networking (VPN)
- LAB - VPN Examination with Wireshark
- Secure Delivery of IP Traffic with IPsec
- IPv6 Overview
- LAB - Demonstration and Examination of IPv6 with Wireshark

### ***L2 and L3 Networking Protocols: L3 Network Control Plane Operations***

- IP DHCP and DNS
- Basics of IP Routing
- Interior routing with EIGRP
- LAB – EIGRP Routing
- Exterior routing with BGP
- LAB – BGP Routing
- Troubleshooting IP Networks
- LAB – Troubleshooting IP networks

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