

ENG-404 - TCP/IP Networks: Switching

Description

A 3-day hands-on Training Program to provide participants with the tools required to design and build a switched campus network. This Training Program delves into the nuts and bolts of the technologies and protocols that help erect today's corporate campus networks.

Through practical hands-on activities, the participant will lay the foundations of a basic Local Area Network (LAN) and steadily grow its complexity to eventually put together a small scale switched campus network.

Prerequisite

To fully appreciate the contents of this Training Program, the participant should have attended the following Training Program or have acquired the equivalent experience in the subject matter:

- ENG-401E Introduction to Data Networks & TCP/IP

Objectives

- Describe the challenges in designing a switched campus network
- Provide the characteristics of each layer of the hierarchical model
- Explain how the Ethernet protocol functions and the evolution to switching
- Define the characteristics of the Spanning Tree Protocol (STP)
- Identify the requirement for Virtual Local Area Networks (VLANs)
- Explain how to install Ethernet switches and configure the various features, such as spanning-tree, VLANs and port channeling
- Present how to analyze network traffic
- Explain how to design and configure a small scale switched campus network

Topics

Introduction

- Campus network overview
- Hierarchical model (access, distribution and core layers)

LAN technologies

- Ethernet: the de facto LAN standard
- Different flavors of Ethernet
- Additional Ethernet features: Power over Ethernet (PoE) and auto-negotiation
- Other LAN technologies

Segmentation

- From hubs to bridges to switches
- Types of bridging (transparent, source route and translational)
- Types of forwarding (store and forward, cut-through and adaptive cut-through)

Spanning-Tree Protocol (STP)

- Spanning-tree topology
- Spanning-tree operation
- Spanning-tree states
- Rapid Spanning-Tree Protocol (RSTP)

VLANs and trunking

- Requirement for VLANs
- Types of VLANs
- 802.1q
- Trunking
- Generic Attribute Registration Protocol (GARP)/GARP VLAN Registration Protocol (GVRP)

Advanced features and services

- Multilink trunks and port channeling
- Load balancing
- VLANs and spanning-tree
- Multicast

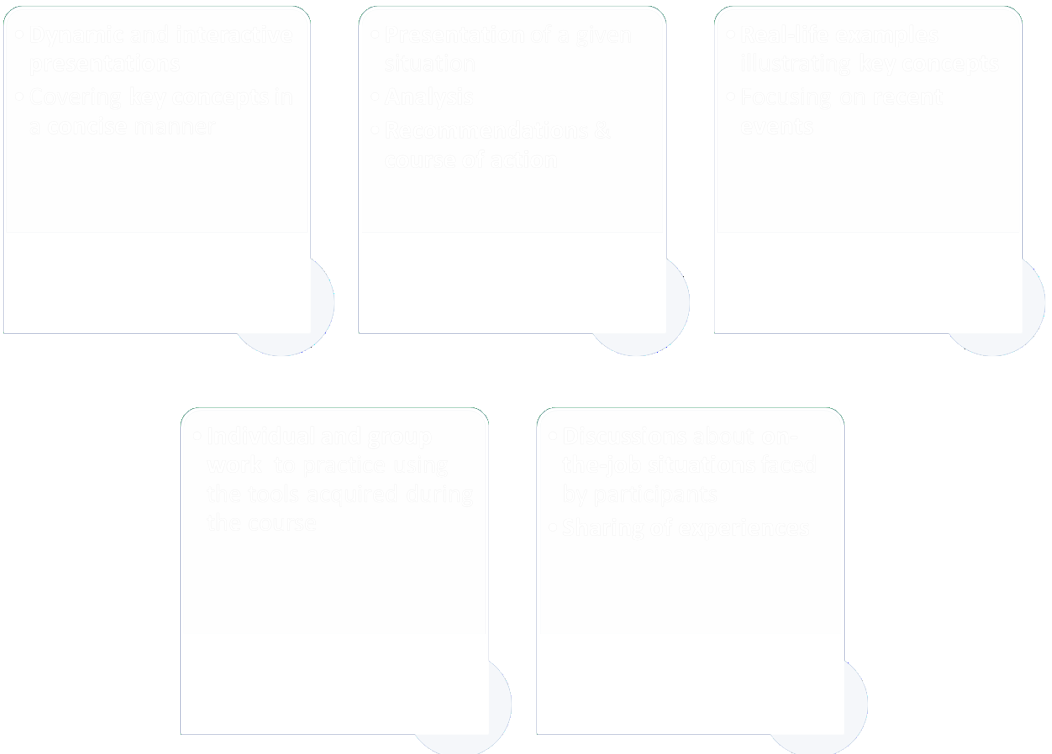
Target Audience

- Technical personnel in engineering or operations, with a basic understanding of data networks,

interested in or needing to learn how to design switched networks

Methodology

A combination of engaging activities and dynamic presentations to stimulate and maximize participants' learning.



Location

A selection of Neotelis' training courses is held in various cities around the world. Please contact us at training@neotelis.com for the complete Yearly Training Calendar.



Neotelis can also deliver in-house sessions of this course specifically for your organization. Please contact us at training@neotelis.com for more information and a Proposal.

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