

ENG-406 - IP Network Security

Description

This course is also available as a live distance learning course

This 3-day training program will provide the participants with the tools required to implement security measures to Internet Protocol (IP) networks. Through the study of the various aspects of network security, the architecture considerations and technologies required to accomplish these tasks will be revealed.

Through practical hands-on activities, the participant will learn about different ways to provide added security to an IP 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

At the end of this Training Program, the participant will be able to:

- Describe today's networking environment and its associated security challenges
- Identify the 5 technical and non-technical pillars of network security
- Structure a security policy and a network security process
- Provide an overview of cryptography
- Characterize the access control and authentication technologies
- Explain how to effectively add security to the network perimeter
- Define the strategies that must be adopted to enhance internal network security

- Present the available options to enhance the security of information travelling through the Internet

Topics

Basic Principles

- Today's networking environment
- Security challenges, goals and requirements
- Potential threats and attacks
- The 5 technical and non-technical pillars of network security
- The first step towards building a more secure network: establish a security policy
- The next step towards building a more secure network: implement a continuous network security process

Cryptography

- The need for cryptography
- Definitions
- Symmetrical/asymmetrical encryption
- Encryption modes
- Encryption algorithms
- Hashing
- Digital certificates
- Key management

Access Control and Authentication, Authorization and Accounting (AAA) Technologies

- Definitions
- Access control and authentication methods and factors
- Access control and authentication protocols: Password Authentication Protocol (PAP), Challenge-Handshake Authentication Protocol (CHAP), 802.1x, Extensible Authentication Protocol (EAP)
- Server-based authentication protocols: Terminal Access Controller Access-Control System (TACACS) (+),RADIUS, DIAMETER
- Token and upper-layer authentication: Internet Protocol Security (IPSec), Transport Layer Security (TLS)/ Secure Sockets Layer (SSL), Kerberos

Perimeter Defense

- The big picture: definition, methods and limitations/challenges
- Firewalls and packet filters
- Proxies
- Network Address Translation (NAT)
- Virtual Private Networks (VPN)

Internal Defense

- The big picture: definition, methods and limitations/challenges
- Physical security

- Internal network segmentation
- User certificates
- Intrusion detection and prevention
- Malicious code detection and removal software
- Deceptive countermeasures

Enhancing Security over the Internet

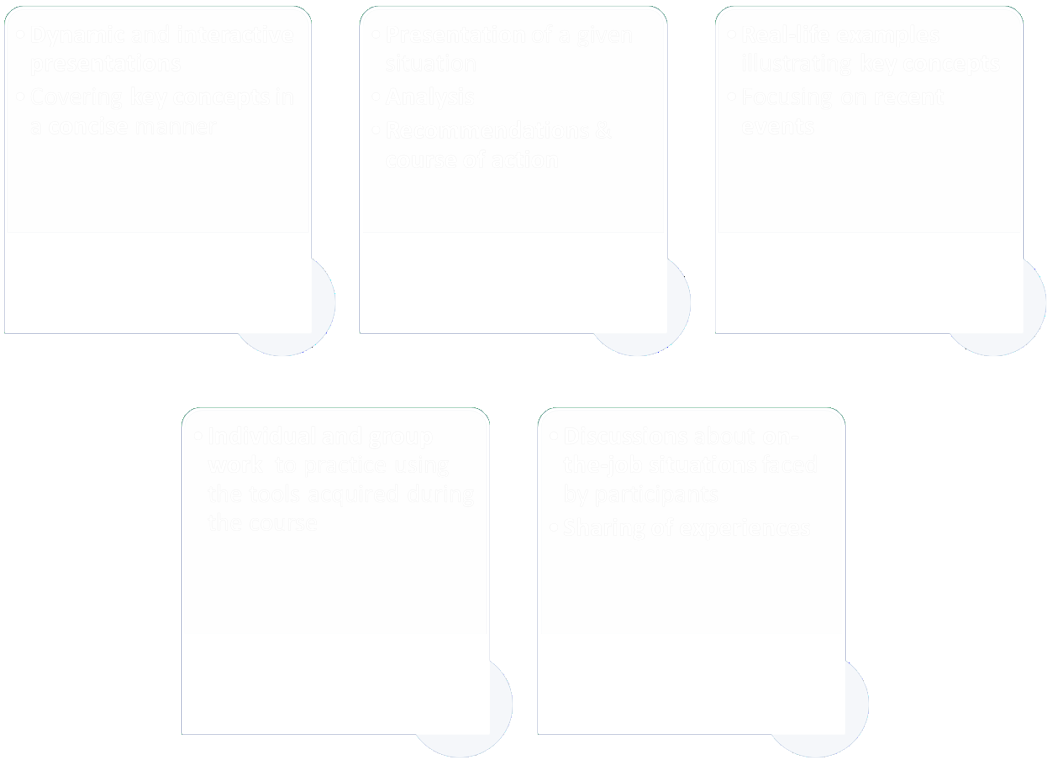
- Securing web traffic and remote connections
- Securing e-mail traffic
- Securing commercial transactions

Target Audience

- Technical personnel in engineering or operations interested in understanding how to enhance network security
- Technical managers or others looking to complement their skill-set by gaining a better understanding of network security

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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