

Course Outline

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Course Title: T9103-IP Network Security
Course Duration: 3 Days Classroom without labs
5 Days Classroom with hands on labs
5 Days Webinar

Section 1

Welcome, Introductions, House rules, course agenda.

Section 2

Introduction to network security

- Motivations commit security breaches
- Common network vulnerabilities
- Inherent weaknesses of IP
- Vulnerabilities of connecting to the Internet

Lab 1 “Ethical Hacking” to explore some common network vulnerabilities

Section 3

Securing the network using firewalls

- Principles of fire walling
- Stateful Vs. Stateless firewalls
- Techniques of setting up a firewall
- How NATS helps with security

Lab 2 Setting up, configuring, and testing firewalls

Section 4

Detecting and dealing with attempted breaches of security

- Security alerting
- Intruder blocking
- Intruder watching
- “Parking” intruder traffic

Lab 3 Intrusion detection and blocking

Section 5

Transaction security

- Authentication
 - Principles of Authentication
 - Local machine Authentication Vs. Server based Authentication
 - Authentication Servers
 - RADIUS/LDAP
 - DIAMETER
 - Microsoft authentication server overview
- Encryption
 - Principles of encryption and decryption
 - Encryption keys
 - Key types
 - Methods of key exchange
 - Some common methods of breaking encryption
 - IPSec
 - Security in IPv6
 - Secure Socket Layer, SSL
 - Encryption for WiFi
 - WEP
 - WPA
 - WPA2
- Tunnelling methods
 - Virtual circuit and MPLS technologies
 - PPTP
 - L2TP

Lab 4a Setting up, configuring and testing authentication servers

Lab 4b Using encryption

Lab 4c Building tunnels

Section 6

Protecting the service

- Methods of attacking servers
- Nailing down the server
- Methods of protecting from Denial Of Service attacks

Section 7

Designing and deploying an IP network security policy

- Risk assessment auditing
- Security policy based routing
- Security Vs. Ease of use
- Security Vs. Quality of Service, QOS.
- Monitoring security
 - Intrusion and breach detection action policy

Section 8

Case studies

