



## Essential Virtual Private Networks (VPN) Components

Length : 3 Days

### Overview

Essential VPN Components is a three-day course designed to give IT professionals the insight and information they need to make informed decisions regarding the planning, design, and implementation of a VPN deployment. This course will focus your attention on the important criteria that will lead to choosing the right technologies and implementation approach for your particular need.

### Who should take this class?

This course is designed to provide in-depth knowledge of VPNs and will benefit anyone who is tasked with implementing a corporate-wide initiative, or anyone who is interested in learning about the technologies available.

### What you will learn

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- Public versus private networking
- The role of security - cryptography, digital certificates, PKI
- Pros and cons of different VPN Protocols
- Importance of IPSec and protocols that support digital certificates
- Architectural choices for Virtual Private Networking
- Ongoing VPN management

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### Course Outline

#### Chapter 1: Introduction

- Standard introduction
- Privately owned data networks (pros and cons)
- Public data networks (pros and cons)
- Vulnerabilities
- Secure VPNs
  - Confidentiality
  - Integrity
  - Authentication

#### Chapter 2: Intro to cryptography and PKI

- Basic cryptography concepts
- Symmetric and asymmetric key cryptography
- PKI and digital signatures

#### Chapter 3: VPN technologies

- What is a VPN?
- Application layer VPNs
- Network layer VPNs
- Data-link VPNs

#### Chapter 4: The layer 2 tunneling protocol Concept

- Point to point protocol model
- L2TP model
- Securing L2TP messages
- Why use L2TP?

#### Chapter 5: IPSec protocol

- IPSec standard and protocols
- Protocol modes
- Authentication header
- Encapsulating security payload
- Security associations
- IPSec key generation, challenges, and specifications

#### Chapter 6: Key management for IPSecs

- Manual key exchange
- Automated key exchange
- ISAKMP framework
- Internet Key Exchange
- IKE peer authentication

#### Chapter 7: IKE/IPSec VPNS and PKIs

- Why combine IKE and PKI?
- X.509 digital certificates
- Certificate acquisition and management
- The future of IKE and PKIs

#### Chapter 8: Designing VPN solutions

- The discovery process
- Identifying goals and objectives
- Understanding requirements
- Designing the right architecture
- Selecting the right technology
- Execution and implementation

#### Chapter 9: Remote access VPNs

- The big picture
- The real world
- Network architecture
- Client software
- User support

#### Chapter 10: Remote office VPN implementations

- The big picture
- The real world
- Network architecture

#### Chapter 11: Intranet VPN implementations

- The big picture
- The real world

#### Chapter 12: Extranet VPN implementations

- The big picture
- The real world
- User support

#### Chapter 13: Managing VPNs

- Gateway software management and usage auditing
- Client software
- Authentication
- Authorization

#### Chapter 14: The future of VPN

- Current and future models for security

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