

## Course 756

# Using a Firewall to Protect a Network

### (3 days)

#### **Course Description...**

This course will examine the use of Firewalls in an Enterprise network. Through real-world attacks against the classroom network, students will deploy and configure several firewall components. Each attack/response workshop is designed to increase the complexity and understanding of how firewalls work. As the course progresses, attendees will work in teams of two to four people to design and deploy various firewall components. A final Case Study will require the students to build and defend an Enterprise network, using the tools and techniques learned in the course. The Team Workshops and Case Study specifics can be customized to meet the specific needs of the Enterprise.

#### **Who Should Attend...**

Attendees should include Managers, Network Security Officers, Network, System and Security Administrators, and Information Technology Personnel with a need to know how Firewalls and Firewall components can be utilized in an enterprise environment. Firewalls require knowledge of TCPIP, Networking, and System Administration – thus it is recommended that students have experience or training in these topics before attending this course.

#### **Learning Objectives...**

After completing this course, attendees will have an understanding of the capabilities and limitations of Firewalls, and how to effectively use firewall components to defend the network. Using this information, attendees will have the skills to make intelligent decisions on not only building and buying firewalls, but how to provide the appropriate in-depth defense.

### **Course Outline...**

#### **Overview – Firewalls**

- What is a Firewall?
- What are Firewall Components?
- Operating System (Unix, Linux and Windows) based options
- Software Firewalls
- Hardware Firewalls
- Basic Networking Requirements
- Typical Firewall Design Topologies

#### **Protecting a Network - Simple Network Firewalls**

- Workshop: How to Attack a Network
- Port and Address Filtering on a Router
- Workshop: Stopping a Simple Network Attack using a Router
- Using a Rules-based Firewall



- Workshop: Stopping a Simple Network Attack using Firewall rules

## **Protecting a Network - Proxy and Application Level Firewalls**

- Workshop: How to Attack a Network with a Simple Firewalls
- Defending against Network Probes and Multi-point attacks
- Configuring Custom Rules on a Firewall
- Workshop: Configure Advanced Capabilities of a firewall
- Using Application Proxies to enhance security
- Workshop: Install and configure an Application Proxy

## **Protecting a Network - Enhancing Security with Design**

- Workshop: How to Attack a Network with a Proxy Server
- Examining the flow and types of communication
- How users can expose the Network
- Utilizing Network Address Translation (NAT)
- Workshop: Controlling Network Access and Reducing Network Exposure

## **Attacking a Network - Defense in Depth**

- Workshop: Attacking Exposing Applications
- Protecting Exposed Mail, Database and Web Applications
- Building Defense In Depth
- Workshop: Integrate Several Firewall Components to defend the network
- Locating Network Components such as Modems, Wireless Access Points, Voice over IP (VoIP) and VPN Services
- Workshop: Permitting Remote Users and Applications

## **Configuring and Reviewing Firewall Logs**

- Understanding Logging Requirements and Capabilities of Firewall components
- Configuration and Review of Firewall Logs
- Supplementing Firewall Logs with Application-Specific Logs

## **Supplementing/Enhancing Firewalls**

- Assessing Network Security with an Auditing Tool
- Obtaining Updates for a Firewall Component
- Returning to a previous configuration after an Update failure
- Network Equipment and Application Evaluation
- Programming Practices
- Intrusions Detection Systems

## **Final Case Study: Prepare an multi-component for a new network**

- ◆ **Teams of two to four attendees will build and deploy a Firewall solution for a multi-segment network provided by the instructor.**

*Please contact your ROI representative to discuss course tailoring!!!*