Szkolenie: F5

Configuring BIG-IP F5 Advanced WAF

Cel szkolenia:

In this 4 day course, students are provided with a functional understanding of how to deploy, tune, and operate F5 Advanced Web Application Firewall to protect their web applications from HTTP-based attacks.

The course includes lecture, hands-on labs, and discussion about different F5 Advanced Web Application Firewall tools for detecting and mitigating threats from multiple attack vectors such web scraping, Layer 7 Denial of Service, brute force, bots, code injection, and zero-day exploits.

Course Objectives

- Describe the role of the BIG-IP system as a full proxy device in an application delivery network
- Provision F5 Advanced Web Application Firewall resources
- Define a web application firewall
- Describe how F5 Advanced Web Application Firewall protects a web application by securing file types, URLs, and parameters
- Deploy F5 Advanced Web Application Firewall using the Rapid Deployment template (and other templates) and define the security checks included in each
- Define learn, alarm, and block settings as they pertain to configuring F5 Advanced Web Application Firewall
- Define attack signatures and explain why attack signature staging is important
- Contrast positive and negative security policy implementation and explain benefits of each
- Configure security processing at the parameter level of a web application
- Use an application template to protect a commercial web application
- Deploy F5 Advanced Web Application Firewall using the Automatic Policy Builder
- Tune a policy manually or allow automatic policy building
- Integrate third party application vulnerability scanner output into a security policy
- Configure login enforcement and session tracking
- Configure protection against brute force, web scraping, and Layer 7 denial of service attacks
- Implement iRules using specific F5 Advanced Web Application Firewall events and commands
- Use Content Profiles to protect JSON and AJAX-based applications
- Implement Bot Signatures
- Implement Proactive Bot Defense

Audience:
this course is intended for security and network administrators who will be responsible for the installation, deployment, tuning, and day-to-day maintenance of the F5 Advanced Web Application Firewall.

Plan szkolenia:

- Setting Up the BIG-IP System
    - Introducing the BIG-IP System
    - Initially Setting Up the BIG-IP System
    - Archiving the BIG-IP System Configuration
    - Leveraging F5 Support Resources and Tools
- Traffic Processing with BIG-IP
    - Identifying BIG-IP Traffic Processing Objects
    - Overview of Network Packet Flow
    - Understanding Profiles
    - Overview of Local Traffic Policies
    - Visualizing the HTTP Request Flow
- Web Application Concepts
    - Overview of Web Application Request Processing
    - Web Application Firewall: Layer 7 Protection
    - F5 Advanced WAF Layer 7 Security Checks
    - Overview of Web Communication Elements
    - Overview of the HTTP Request Structure
    - Examining HTTP Responses
    - How F5 Advanced WAF Parses File Types, URLs, and Parameters
    - Using the Fiddler HTTP Proxy
- Common Web Application Vulnerabilities
    - A Taxonomy of Attacks: The Threat Landscape
    - What Elements of Application Delivery are Targeted?
    - Common Exploits Against Web Applications
- Security Policy Deployment
    - Defining Learning
    - Comparing Positive and Negative Security Models
    - The Deployment Workflow
    - Policy Type: How Will the Policy Be Applied
    - Policy Template: Determines the Level of Protection

    - Policy Templates: Automatic or Manual Policy Building
    - Assigning Policy to Virtual Server
    - Deployment Workflow: Using Advanced Settings
    - Selecting the Enforcement Mode
    - The Importance of Application Language
    - Configure Server Technologies
    - Verify Attack Signature Staging
    - Viewing Requests
    - Security Checks Offered by Rapid Deployment
    - Defining Attack Signatures
    - Using Data Guard to Check Responses
- Policy Tuning and Violations
    - Post-Deployment Traffic Processing
    - Defining Violations
    - Defining False Positives
    - How Violations are Categorized
    - Violation Rating: A Threat Scale
    - Defining Staging and Enforcement
    - Defining Enforcement Mode
    - Defining the Enforcement Readiness Period
    - Reviewing the Definition of Learning
    - Defining Learning Suggestions
    - Choosing Automatic or Manual Learning
    - Defining the Learn, Alarm and Block Settings
    - Interpreting the Enforcement Readiness Summary
    - Configuring the Blocking Response Page
- Attack Signatures
    - Defining Attack Signatures
    - Attack Signature Basics
    - Creating User-Defined Attack Signatures
    - Defining Simple and Advanced Edit Modes
    - Defining Attack Signature Sets
    - Defining Attack Signature Pools
    - Understanding Attack Signatures and Staging
    - Updating Attack Signatures
- Positive Security Policy Building

    - Defining and Learning Security Policy Components
    - Defining the Wildcard
    - Defining the Entity Lifecycle
    - Choosing the Learning Scheme
    - How to Learn: Never (Wildcard Only)
    - How to Learn: Always
    - How to Learn: Selective
    - Reviewing the Enforcement Readiness Period: Entities
    - Viewing Learning Suggestions and Staging Status
    - Violations Without Learning Suggestions
    - Defining the Learning Score
    - Defining Trusted and Untrusted IP Addresses
    - How to Learn: Compact
- Cookies and Other Headers
    - F5 Advanced WAF Cookies: What to Enforce
    - Defining Allowed and Enforced Cookies
    - Configuring Security Processing on HTTP headers
- Reporting and Logging
    - Overview: Big Picture Data
    - Reporting: Build Your Own View
    - Reporting: Chart based on filters
    - Brute Force and Web Scraping Statistics
    - Viewing F5 Advanced WAF Resource Reports
    - PCI Compliance: PCI-DSS 3.0
    - The Attack Expert System
    - Viewing Traffic Learning Graphs
    - Local Logging Facilities and Destinations
    - How to Enable Local Logging of Security Events
    - Viewing Logs in the Configuration Utility
    - Exporting Requests
    - Logging Profiles: Build What You Need
    - Configuring Response Logging
- Lab Project 1
- Advanced Parameter Handling
    - Defining Parameter Types
    - Defining Static Parameters

    - Defining Dynamic Parameters
    - Defining Dynamic Parameter Extraction Properties
    - Defining Parameter Levels
    - Other Parameter Considerations
- Policy Diff and Administration
    - Comparing Security Policies with Policy Diff
    - Merging Security Policies
    - Restoring with Policy History
    - Examples of F5 Advanced WAF Deployment Types
    - ConfigSync and F5 Advanced WAF Security Data
    - ASMQKVIEW: Provide to F5 Support for Troubleshooting
- Automatic Policy Building
    - Overview of Automatic Policy Building
    - Defining Templates Which Automate Learning
    - Defining Policy Loosening
    - Defining Policy Tightening
    - Defining Learning Speed: Traffic Sampling
    - Defining Track Site Changes
- Web Application Vulnerability Scanner Integration
    - Integrating Scanner Output into F5 Advanced WAF
    - Will Scan be Used for a New or Existing Policy?
    - Importing Vulnerabilities
    - Resolving Vulnerabilities
    - Using the Generic XML Scanner XSD file
- Layered Policies
    - Defining a Parent Policy
    - Defining Inheritance
    - Parent Policy Deployment Use Cases
- Login Enforcement, Brute Force Mitigation, and Session Tracking
    - Defining Login Pages
    - Configuring Automatic Detection of Login Pages
    - Defining Session Tracking
    - What Are Brute Force Attacks?
    - Brute Force Protection Configuration
    - Defining Source-Based Protection
    - Source-Based Brute Force Mitigations

  - Defining Session Tracking
  - Configuring Actions Upon Violation Detection
  - Session Hijacking Mitigation Using Device ID
- Web Scraping Mitigation and Geolocation Enforcement
  - Defining Web Scraping
  - Mitigating Web Scraping
  - Defining Geolocation Enforcement
  - Configuring IP Address Exceptions
- Layer 7 DoS Mitigation and Advanced Bot Protection
  - Defining Denial of Service Attacks
  - The General Flow of DoS Protection
  - Defining the DoS Profile
  - Overview of TPS-based DoS Protection
  - Applying TPS mitigations
  - Create a DoS Logging Profile
  - Defining DoS Profile General Settings
  - Defining Bot Signatures
  - Defining Proactive Bot Defense
  - Defining Behavioral and Stress-Based Detection
  - Defining Behavioral DoS Mitigation
- F5 Advanced WAF and iRules
  - Common Uses for iRules
  - Identifying iRule Components
  - Triggering iRules with Events
  - Defining F5 Advanced WAF iRule Events
  - Defining F5 Advanced WAF iRule Commands
  - Using F5 Advanced WAF iRule Event Modes
- Using Content Profiles
  - Defining Asynchronous JavaScript and XML
  - Defining JavaScript Object Notation (JSON)
  - Defining Content Profiles
  - The Order of Operations for URL Classification
- Review and Final Labs
  - Final Lab Project (Option 1) – Production Scenario
  - Final Lab Project (Option 2) – JSON Parsing with the Default JSON Profile
  - Final Lab Project (Option 3) – Managing Traffic with L7 Local Traffic Policies

Wymagania:

There are no F5-technology-specific prerequisites for this course. However, completing the following before attending would be very helpful for students with limited BIG-IP administration and configuration experience:

- Administering BIG-IP instructor-led course

-or-

- F5 Certified BIG-IP Administrator

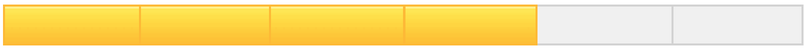
The following free web-based training courses, although optional, will be very helpful for any student with limited BIG-IP administration and configuration experience. These courses are available at **F5 University**:

- Getting Started with BIG-IP web-based training
- Getting Started with BIG-IP Application Security Manager (ASM) web-based training

The following general network technology knowledge and experience are recommended before attending any F5 Global Training Services instructor-led course:

- OSI model encapsulation
- Routing and switching
- Ethernet and ARP
- TCP/IP concepts
- IP addressing and subnetting
- NAT and private IP addressing
- Default gateway
- Network firewalls
- LAN vs. WAN

Poziom trudności



Certyfikaty:

The participants will obtain certificates signed by F5 Networks (course completion).

Prowadzący:

Certified F5 Networks Trainer.