

Configuring F5 Advanced WAF

Duration: 4 Days **Course Code: WGAC-F5N-BIG-AWF-CFG**

Overview:

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.

Target Audience:

This course is intended for SecOps personnel responsible for the deployment, tuning, and day-to-day maintenance of F5 Adv. WAF. Participants will obtain a functional level of expertise with F5 Advanced WAF, including comprehensive security policy and profile configuration, client assessment, and appropriate mitigation types. Experience with LTM is not required. Prior WAF knowledge is not required. This course is on the list of approved study resources for the F5 ASM 303 certification exam.

Objectives:

- Describe the role of the BIG-IP system as a full proxy device in an application delivery network
- Provision the F5 Advanced Web Application Firewall
- 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
- Deploy Threat Campaigns to secure against CVE threats
- Contrast positive and negative security policy implementation and explain benefits of each
- Configure security processing at the parameter level of a 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 for flow control
- Mitigate credential stuffing
- Configure protection against brute force attacks
- Deploy Advanced Bot Defense against web scrapers, all known bots, and other automated agents
- Deploy DataSafe to secure client-side data

Prerequisites:

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

Content:

Chapter 1: 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

Chapter 2: Traffic Processing with BIG-IP

- Identifying BIG-IP Traffic Processing Objects
- Understanding Profiles
- Overview of Local Traffic Policies
- Visualizing the HTTP Request Flow

Chapter 3: Web Application Concepts

- Overview of Web Application Request Processing
- Web Application Firewall: Layer 7 Protection
- 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

Chapter 4: Web Application Vulnerabilities

- A Taxonomy of Attacks: The Threat Landscape
- Common Exploits Against Web Applications

Chapter 5: Security Policy Deployment

- Defining Learning
- Comparing Positive and Negative Security Models
- The Deployment Workflow
- Assigning Policy to Virtual Server
- Deployment Workflow: Using Advanced Settings
- Configure Server Technologies
- Defining Attack Signatures
- Viewing Requests
- Security Checks Offered by Rapid Deployment
- Defining Attack Signatures

Chapter 6: Policy Tuning and Violations

- Post-Deployment Traffic Processing
- 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

Chapter 8: 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
- Defining the Learning Score
- Defining Trusted and Untrusted IP Addresses
- How to Learn: Compact

Chapter 9: Securing Cookies and Other Headers

- The Purpose of F5 Advanced WAF Cookies
- Defining Allowed and Enforced Cookies
- Securing HTTP headers

Chapter 10: Visual Reporting and Logging

- Viewing Application Security Summary Data
- Reporting: Build Your Own View
- Reporting: Chart based on filters
- Brute Force and Web Scraping Statistics
- Viewing Resource Reports
- PCI Compliance: PCI-DSS 3.0
- Analyzing Requests
- Local Logging Facilities and Destinations
- Viewing Logs in the Configuration Utility
- Defining the Logging Profile
- Configuring Response Logging

Chapter 11: Lab Project 1

Chapter 12: Advanced Parameter Handling

- Defining Parameter Types
- Defining Static Parameters
- Defining Dynamic Parameters
- Defining Parameter Levels
- Other Parameter Considerations

Chapter 13: 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

Chapter 15: Deploying Layered Policies

- Defining a Parent Policy
- Defining Inheritance
- Parent Policy Deployment Use Cases

Chapter 16: Login Enforcement and Brute Force Mitigation

- Defining Login Pages for Flow Control
- Configuring Automatic Detection of Login Pages
- Defining Brute Force Attacks
- Brute Force Protection Configuration
- Source-Based Brute Force Mitigations
- Defining Credential Stuffing
- Mitigating Credential Stuffing

Chapter 17: Reconnaissance with Session Tracking

- Defining Session Tracking
- Configuring Actions Upon Violation Detection

Chapter 18: Layer 7 DoS Mitigation

- Defining Denial of Service Attacks
- Defining the DoS Protection Profile
- Overview of TPS-based DoS Protection
- Creating a DoS Logging Profile
- Applying TPS Mitigations
- Defining Behavioral and Stress-Based Detection

Chapter 19: Advanced Bot Defense

- Classifying Clients with the Bot Defense Profile
- Defining Bot Signatures
- Defining F5 Fingerprinting
- Defining Bot Defense Profile Templates
- Defining Microservices protection

Chapter 20: Form Encryption using DataSafe

- Targeting Elements of Application Delivery
- Exploiting the Document Object Model
- Protecting Applications Using DataSafe
- The Order of Operations for URL Classification

Chapter 21: Review and Final Labs

- Final Lab Project (Option 1) – Production Scenario
- Final Lab Project (Option 2) – Managing Traffic with Layer 7 Local Traffic Policies

Settings

- Interpreting the Enforcement Readiness Summary
- Configuring the Blocking Response Page

Chapter 7: Attack Signatures and Threat Campaigns

- 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
- Defining Threat Campaigns
- Deploying Threat Campaigns

Chapter 14: Web Application Vulnerability Scanner Integration

- Integrating Scanner Output
- Importing Vulnerabilities
- Resolving Vulnerabilities
- Using the Generic XML Scanner XSD file

Further Information:

For More information, or to book your course, please call us on 00 971 4 446 4987

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