

Configuring Advanced WAF (previously licensed as ASM)

- **SKU:** F5-TRG-BIG-AWF-CFG
- **Price:** \$3,995 (USD) | 80 F5 Training Units
- **Duration:** 4 days
- **Intended for:** Network Administrator, Architect

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 Topics

- Resource provisioning for F5 Advanced Web Application Firewall
- Traffic processing with BIG-IP Local Traffic Manager (LTM)
- Web application concepts
- Mitigating the OWASP Top 10 and other vulnerabilities
- Security policy deployment
- Security policy tuning
- Deploying Attack Signatures and Threat Campaigns
- Positive security building
- Securing cookies and other headers
- Reporting and logging
- Advanced parameter handling
- Using Automatic Policy Builder
- Integrating with web vulnerability scanners
- Login enforcement for flow control
- Brute force and credential stuffing mitigation
- Session tracking for client reconnaissance
- Using Parent and Child policies
- Layer 7 DoS protection
 - Transaction Per Second-based DoS protection
 - Layer 7 Behavioral DoS Protection
- Configuring Advanced Bot Defense

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- Web Scraping and other Microservice Protection
- Working with Bot Signatures
- Using DataSafe to Secure the client side of the Document Object Model

Course 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

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

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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

Prerequisites

The following free web-based training courses, although optional, will be very helpful for any student with limited BIG-IP administration and configuration experience.

- [Getting Started with BIG-IP](#) web-based training
- [Getting Started with Local Traffic Manager \(LTM\)](#) 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

Course Outline

- [Course Outline](#)

Course Outline Configuring Advanced WAF

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

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- 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

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- 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

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 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

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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 14: Web Application Vulnerability Scanner Integration

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

Chapter 15: Deploying Layered Policies

- Defining a Parent Policy

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- 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

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