

F5 Administering BIG-IP Course

This course gives network administrators, network operators, and network engineers a functional understanding of the BIG-IP system as it is commonly deployed in an application delivery network. The course introduces students to the BIG-IP system, its configuration objects, how it processes traffic, and how typical administrative and operational activities are performed. The course includes lecture, hands-on labs, interactive demonstrations, and discussions.

Course Objectives

- Describe the role of the BIG-IP system as a full proxy device in an application delivery network
- Set up, start/restart/stop, license, and provision the BIG-IP system out-of-the-box
- Create a basic network configuration on the BIG-IP system including VLANs and self IPs
- Use the Configuration utility and TMSH to manage BIG-IP resources such as virtual servers, pools, pool members, nodes, profiles, and monitors
- Create, restore from, and manage BIG-IP archives
- View resource status, availability, and statistical information and use this information to determine how the BIG-IP system is currently processing traffic
- Use profiles to manipulate the way the BIG-IP system processes traffic through a virtual server
- Perform basic troubleshooting and problem determination activities including using the iHealth diagnostic tool
- Support, and view traffic flow using TCPDUMP
- Understand and manage user roles and partitions
- Configure and manage a sync-failover device group with more than two members
- Configure stateful failover using connection mirroring and persistence mirroring

Course Topics

- Getting started with the BIG-IP system
- Traffic processing with BIG-IP Local Traffic Manager (LTM)
- Using TMSH (TMOS Shell) command line interface
- Using NATs and SNATs
- Monitoring application health and managing object status
- Modifying traffic behavior with profiles, including SSL offload and re-encryption
- Modifying traffic behavior with persistence, including source address affinity and cookie persistence
- Troubleshooting the BIG-IP system, including logging (local, high-speed, and legacy remote logging), and using TCPDUMP
- User roles and administrative partitions

- vCMP concepts
- Configuring high availability (including active/standby and connection and persistence mirroring)

Audience

This course is intended for network administrators, operators, and engineers responsible for managing the normal day-to-day operation and administration of a BIG-IP application delivery network. This course presents the prerequisite knowledge for many other of F5's BIG-IP instructor-led training courses.

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 BIG-IP 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

Chapter 1: Setting Up the BIG-IP System

- Introducing the BIG-IP System
- Initially Setting Up the BIG-IP System
- Configuring the Management Interface
- Activating the Software License
- Provisioning Modules and Resources
- Importing a Device Certificate
- Specifying BIG-IP Platform Properties
- Configuring the Network
- Configuring Network Time Protocol (NTP) Servers
- Configuring Domain Name System (DNS) Settings
- Configuring High Availability Options
- Archiving the BIG-IP Configuration
- Leveraging F5 Support Resources and Tools

Chapter 2: Traffic Processing Building Blocks

- Identifying BIG-IP Traffic Processing Objects
- Configuring Virtual Servers and Pools
- Load Balancing Traffic
- Viewing Module Statistics and Logs
- Using the Traffic Management Shell (TMSH)
- Understanding the TMSH Hierarchical Structure
- Navigating the TMSH Hierarchy
- Managing BIG-IP Configuration State and Files
- BIG-IP System Configuration State
- Loading and Saving the System Configuration
- Shutting Down and Restarting the BIG-IP System
- Saving and Replicating Configuration Data (UCS and SCF)

Chapter 3: Using NATs and SNATs

- Address Translation on the BIG-IP System
- Mapping IP Addresses with NATs

- Solving Routing Issues with SNATs
- Configuring SNAT Auto Map on a Virtual Server
- Monitoring for and Mitigating Port Exhaustion

Chapter 4: Monitoring Application Health

- Introducing Monitors
- Types of Monitors
- Monitor Interval and Timeout Settings
- Configuring Monitors
- Assigning Monitors to Resources
- Managing Pool, Pool Member, and Node Status
- Using the Network Map

Chapter 5: Modifying Traffic Behavior with Profiles

- Introducing Profiles
- Understanding Profile Types and Dependencies
- Configuring and Assigning Profiles
- Introducing SSL Offload and SSL Re-Encryption
- Managing Object State

Chapter 6: Modifying Traffic Behavior with Persistence

- Understanding the Need for Persistence
- Introducing Source Address Affinity Persistence
- Managing Object State

Chapter 7: Administering the BIG-IP System

- Configuring Logging
- Legacy Remote Logging
- Introducing High Speed Logging (HSL)
- High-Speed Logging Filters
- HSL Configuration Objects
- Configuring High Speed Logging
- Using TCPDUMP on the BIG-IP System
- Leveraging the BIG-IP iHealth System
- Viewing BIG-IP System Statistics
- Defining User Roles and Administrative Partitions
- Leveraging vCMP

Chapter 8: Configuring High Availability

- Introducing Device Service Clustering (DSC)
- Preparing to Deploy a DSC Configuration
- Configuring DSC Communication Settings

- Establishing Device Trust
- Establishing a Sync-Failover Device Group
- Synchronizing Configuration Data
- Exploring Traffic Group Behavior
- Understanding Failover Managers and Triggers
- Achieving Stateful Failover with Mirroring