

F5 Networks Troubleshooting BIG-IP LTM

COURSE OVERVIEW:

This course gives networking professionals hands-on knowledge of how to troubleshoot a BIG-IP system using a number of troubleshooting techniques as well as troubleshooting and system tools. This course includes lectures, labs, and discussions.

WHO WILL BENEFIT FROM THIS COURSE?

This course assumes that you have successfully completed the Administering BIG-IP course, or equivalent, and have hands-on experience working in a production BIG-IP environment for several months. You should have a solid understanding of the environment in which the BIG-IP is deployed. This course is meant for BIG-IP administrators, network engineers, applications engineers, etc., who will be responsible for troubleshooting problems associated with their BIG-IP system.

PREREQUISITES:

Administering BIG-IP, OSI model, TCP/IP addressing and routing, WAN, LAN environments, and server redundancy concepts; or having achieved TMOS Administration Certification

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;
- Create a basic network configuration on the BIG-IP system including VLANs and self IPs;
- Use the Configuration utility and TMOS Shell (tmsh) to manage BIG-IP resources and use as a resource when troubleshooting;
- Create, restore from, and manage BIG-IP archives;
- Understand and implement troubleshooting methodology to find and resolve issues;
- View resource status, availability, and statistical information and use this information to determine how the BIG-IP system is currently processing traffic;
- Use iApps to update BIG-IP configuration;
- Perform troubleshooting and problem determination activities including using the iHealth diagnostic tool, researching known issues and solutions on AskF5, submitting a problem ticket to F5 Technical Support, and view traffic flow using tcpdump;
- Understand the tools (ping, netstat, tcpdump, ssldump, WireShark, diff, Kdiff3, Fiddler, BIG-IP logs, etc.) available to use to identify BIG-IP and network issues from bottom to top;
- List log files available, understand log levels, and use the appropriate files, log levels, and filters for troubleshooting;
- Use High Speed Logging (HSL) and SNMP trap implementations to perform troubleshooting and problem determination activities;
- Describe the role of iRules in affecting traffic behavior and how to use them to aid with troubleshooting and problem determination.

COURSE OUTLINE:

Lesson 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

Lesson 2: Reviewing Local Traffic Configuration

- Reviewing Nodes, Pools, and Virtual Servers
- Reviewing Address Translation
- Reviewing Routing Assumptions
- Reviewing Application Health Monitoring
- Reviewing Traffic Behavior Modification with Profiles
- Reviewing the TMOS Shell (TMSH)
- Reviewing Managing BIG-IP Configuration Data
- Reviewing High Availability (HA)

Lesson 3: Troubleshooting Methodology

- Step-By-Step Process
- Step 1: State the Problem
- Step 2: Specify the Problem
- Step 3: Map the System
- Step 4: Develop Possible Causes
- Step 5: Test Theories
- Step 6: Iterate Until Root Cause Identified
- Documenting a Problem
- Putting Troubleshooting Steps to Use

Lesson 4: Working with F5 Support

- Leveraging F5 Support Resources
- AskF5.com
- DevCentral
- iHealth
- Leveraging F5 Labs
- Working with F5 Technical Support
- Running End User Diagnostics (EUD) – Hardware Only
- New Platform Diagnostic Tools
- Always-On Management (AOM) Subsystem
- Requesting Return Materials Authorization
- F5's Software Version Policy
- Managing the BIG-IP License for Upgrades
- Managing BIG-IP Disk Space
- Upgrading BIG-IP Software

Lesson 5: Troubleshooting – Bottom to Top

- Introducing Differences between BIG-IP and LINUX Tools
- Troubleshooting with Layer 1/Layer 2 Tools
- Troubleshooting with Layer 2/Layer 3 Tools
- Troubleshooting with Layer 3 Tools
- Troubleshooting with LINUX Tools
- Troubleshooting Memory and CPU
- Troubleshooting with watch
- Troubleshooting with Additional tmsh commands

Lesson 6: Troubleshooting Tools

- tcpdump
- Wireshark
- ssldump
- Fiddler
- diff
- KDiff3
- cURL

Lesson 7: Using System Logs

- Configuring Logging
- Log Files
- Understanding BIG-IP Daemons Functions
- Triggering an iRule
- Deploying and Testing iRules
- Application Visibility and Reporting

Lesson 8: Troubleshooting Lab Projects

- Network Configurations for Project

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