F5 Configuring BIG-IP DNS: Domain Name System

Duration: 2 Days   Course Code: WGAC-F5N-BIG-DNS

Overview:

This 2-day F5 course gives networking professionals a functional understanding of the BIG-IP DNS system as it is commonly used. The course covers configuration and ongoing management of the BIG-IP DNS system, and includes a combination of lecture, discussion, and hands-on labs.

Target Audience:

This course is intended for system and network administrators responsible for installation, setup, configuration, and administration of BIG-IP DNS systems.   Network Administrator   Operator

Objectives:

- Provision the BIG-IP system for operation

- Back up the BIG-IP system configuration for safekeeping

- Describe how the Domain Name System (DNS) resolves host names into IP addresses

- Describe how the BIG-IP DNS system can participate in the DNS resolution process

- Use DNS Express on the BIG-IP DNS system to accelerate DNS resolution

- Cache DNS query responses on BIG-IP DNS to accelerate DNS resolution

- Load balance DNS queries to a pool of DNS servers and monitor pool health

- Configure the key features of the BIG-IP DNS system to perform intelligent DNS resolution

- Describe the LDNS probes used by BIG-IP DNS to support path-based load balancing

- Configure a wide IP pool to use a path load balancing method

- View and confirm DNS resolution behavior using path load balancing methods

- Use static and dynamic load balancing methods to intelligently resolve DNS queries

- Use persistence to effectively return one or more clients to the same virtual server on each query

- Use manual resume to control certain load balancing behavior in the event of an outage

- Configure and use load balancing decision logs to fine-tune and troubleshoot DNS resolution

- Configure monitors on the BIG-IP DNS system in support of DNS resolution

- Configure BIG-IP DNS to participate in the DNSSEC chain of trust

- Configure limit settings on virtual servers, servers, and wide IP pools to temporarily direct client traffic away from resources that may not be performing at certain thresholds of efficiency

- Configure iRules on a wide IP to customize intelligent DNS resolution

- Describe the other wide IP types provided with BIG-IP DNS

- Configure a BIG-IP DNS sync group

- Apply all the principles learned throughout the course to configure a BIG-IP DNS system based on hypothetical specifications

Prerequisites:

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

- Administering BIG-IP instructor-led course

Testing and Certification

EXAM 302 BIG-IP DNS Specialist

Candidates that pass Exam 302 will receive the F5 Certified! Technology Specialist, BIG-IP DNS certification.

People with this certification have the fundamental knowledge

-or-

- **F5 Certified BIG-IP Administrator**

The following free web-based 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 DNS** 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

The following *course-specific* knowledge and experience is suggested before attending this course:

- DNS resolution process
- Experience configuring DNS content and resolution servers
- DNSSEC

necessary to application delivery architects and application delivery engineers working with BIG-IP DNS, including the ability to understand the basic operation of the DNS protocol, deploy and test configurations, and troubleshoot and remedy common misconfigurations. These individuals also are able to explain the capabilities of DNS services to deploy applications globally. Receiving the F5-CTS, BIG-IP DNS certification is a prerequisite for the Cloud Solutions Expert certification tracks

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Follow-on-Courses:

- BIG-INT-IL, F5 Configuring BIG-IP LTM: Local Traffic Manager
- WES_BIG-IP-APM, F5 Configuring BIG-IP APM: Access Policy Manager
- WES_BIG-IP-ASM, F5 Configuring BIG-IP ASM: Application Security Manager

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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 Configuration
- Leveraging F5 Support Resources and Tools
- Provision the BIG-IP System and Confirm Network Configuration

Chapter 2: Introducing the Domain Name System (DNS) and BIG-IP DNS

- Understanding the Domain Name System (DNS)
- Reviewing the Name Resolution Process
- Implementing BIG-IP DNS
- Using DNS Resolution Diagnostic Tools

Chapter 3: Accelerating DNS Resolution

- Introducing DNS Resolution with BIG-IP DNS
- BIG-IP DNS Resolution Decision Flow
- Configuring BIG-IP DNS Listeners
- Resolving DNS Queries in the Labs (Lab Zone Records)
- Load Balancing Queries to a DNS Server Pool
- Accelerating DNS Resolution with DNS Cache
- Accelerating DNS Resolution with DNS Express
- Introducing Wide IPs
- Using Other Resolution Methods with BIG-IP DNS
- Integrating BIG-IP DNS into Existing DNS Environments

Chapter 4: Implementing Intelligent DNS Resolutions

- Introducing Intelligent DNS Resolution
- Identifying Physical Network Components
- Identifying Logical Network Components
- Collecting Metrics for Intelligent Resolution
- Configuring Data Centers
- Configuring a BIG-IP DNS System as a Server
- Configuring a BIG-IP LTM System as a Server
- Establishing iQuery Communication between BIG-IP Systems
- Configuring a Non-F5 Server
- Defining Links and Routers
- Configuring Wide IP Pools
- Configuring Wide IPs
- Managing Object Status
- Using the Traffic Management Shell (TMSH)

Chapter 5: Using LDNS Probes and Metrics

- Introducing LDNS Probes and Metrics
- Types of LDNS Probes
- Excluding an LDNS from Probing
- Configuring Probe Metrics Collection

Chapter 6: Load Balancing Intelligent DNS Resolution

- Introducing Load Balancing on BIG-IP DNS
- Using Static Load Balancing Methods
- Round Robin
- Ratio
- Global Availability
- Static Persist
- Other Static Load Balancing Methods
- Using Dynamic Load Balancing Methods
- Round Trip Time
- Completion Rate
- CPU
- Hops
- Least Connections
- Packet Rate
- Kilobytes per Second
- Other Dynamic Load Balancing Methods
- Virtual Server Capacity
- Virtual Server Score
- Using Quality of Service Load Balancing
- Persisting DNS Query Responses
- Configuring GSLB Load Balancing Decision Logs
- Using Manual Resume
- Using Topology Load Balancing

Chapter 7: Monitoring Intelligent DNS Resources

- Exploring Monitors
- Configuring Monitors
- Assigning Monitors to Resources
- Monitoring Best Practices

Chapter 8: Advanced BIG-IP DNS Topics

- Implementing DNSSEC
- Setting Limits for Resource Availability
- Using iRules with Wide IPs
- Introducing Other Wide IP Types
- Implementing BIG-IP DNS Sync Groups

Chapter 9: Final Configuration Projects

Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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