

302 BIG-IP DNS SPECIALIST EXAM BLUEPRINT

ABOUT THE 302 BIG-IP DNS SPECIALIST EXAM.

The BIG-IP DNS Specialist (formerly the 302 GTM Specialist) exam identifies individuals who can deliver scalable intelligent DNS/Global Server Load Balancing (GSLB) infrastructure across multiple data centers. They will likely be a BIG-IP DNS administrator with at least one year of experience. The BIG-IP DNS Specialist understands basic to advanced operations of DNS protocol, deploys and test configurations, troubleshoots, and remediates common misconfigurations. The exam is based on **TMOS v12.1**.

WHAT IS THE 302 BIG-IP DNS SPECIALIST EXAM BLUEPRINT?

F5 Certified! Exam Blueprints list all the objectives an exam has to measure, much like a syllabus for the exam itself. The blueprint provides the detailed breakdown of the candidate skills and knowledge a candidate should have to pass the exam. Blueprints can be used to identify areas for additional study, and are best used in conjunction with the Exam Study Guides.

PREREQUISITE:

Certified BIG-IP Administrator (F5-CA)

CREDENTIAL AWARDED:

F5 Certified Technology Specialist, BIG-IP DNS.

THIS EXAM IS BASED ON V12.1.



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EXAM BLUEPRINT



Section 1: Design and Architect		Cognitive Complexity
Objective 1.01	Identify customer requirements, constraints, and challenges related to DNS	U/A
Examples	Recognize the functionality and limitations of the DNS protocol (e.g., hierarchy, roles) Determine relevant information to gather regarding a customer's need for high availability, security, and management	
Objective 1.02	Evaluate existing DNS environment for BIG-IP DNS solutions	A/E
Examples	Ascertain specific scope and scale of DNS requirements Recognize limitations imposed by the existing DNS service provider Identify change control procedure related the integration of BIG-IP DNS into an existing environment	
Objective 1.03	Determine appropriate deployment and integration strategy for a BIG-IP DNS solution	A/E
Examples	Given a customer environment, requirements, and constraints, select an appropriate deployment model Given a customer environment, requirements, and constraints, recognize the use case for DNS Express, Zone Runner, DNS 64, DNSSEC, DNS Cache, various load balancing algorithms, persistence, and/or health monitor	
Objective 1.04	Determine performance requirements for a BIG-IP DNS solution	A/E
Examples	Relate the performance characteristics of virtual edition and physical hardware to a specific use case Employ topology load balancing to optimize user experience Predict the performance implications pertaining to key DNS features (e.g., DNSSEC, topology LB)	
Section 2: Implement		Cognitive Complexity
Objective 2.01	Identify configuration options for TMOS and sync groups	U/A
Examples	Create the proper self-IP configuration, routes, and settings for iQuery communications Ensure proper NTP operation of all sync group members Create logging profiles for DNS request and/or response	
Objective 2.02	Identify configure options for GSLB	U/A
Examples	Differentiate between, and determine when to use, the two tiers of GSLB pool selection and the three tiers of virtual server selection Recognize the functionality of various load balancing methods (e.g., static, dynamic, and fallback) Recognize topology load balancing configuration parameters	
Objective 2.03	Identify configuration options for non-GSLB DNS components	U/A
Examples	Determine the listener IP and protocol Configure DNS Express and DNS Cache	

Cognitive Complexity Key:
 R=Remember
 A/E=Analyze/Evaluate
 U/A=Understand/Apply

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Objective 2.04	Identify the necessary network environment for GSLB operations	U/A
Examples	Recognize the significance of source and destination ports for communication between BIG-IP DNS devices Identify missing/non-functional network configurations when enabling GSLB operation (e.g., iQuery, generic host probing)	
Section 3:	Test and Troubleshoot	Cognitive Complexity
Objective 3.01	Determine when and how to employ the appropriate network and DNS troubleshooting tools	U/A
Examples	Use openssl to review trusted cert information Use tcpdump to capture and analyze DNS and iQuery traffic on appropriate VLAN and IP Use dig/nslookup to verify DNS configuration and operation	
Objective 3.02	Diagnose BIG-IP DNS issues	A/E
Examples	Investigate root cause for virtual server flapping issue Analyze DNS request/response pattern to confirm BIG-IP DNS configuration, health monitor an iQuery operation	
Objective 3.03	Analyze system log data and statistics for problem analysis	A/E
Examples	Verify the status of pools based on relevant log entries Analyze statistical data to pinpoint any issues regarding query response times Analyze appropriate log for proper zone transfer operation	
Objective 3.04	Address DNS-related issues based on troubleshooting and log analysis	U/A
Examples	Apply config change (e.g., monitor or prober) to remedy flapping of server objects Address proper IP address choice(s) for iQuery communication between devices	
Section 4:	Operations and Support	Cognitive Complexity
Objective 4.01	Identify process to perform BIG-IP DNS configuration backup	R
Examples	Perform the steps in the GUI to create system archive files Issue TMSH commands to create system archive files. Verify file creation and move to remote storage	
Objective 4.02	Identify the prerequisites and procedure for BIG-IP DNS configuration restoration	U/A
Examples	Recognize the special requirements for restoring configuration data to a BIG-IP DNS RMA unit Compare configuration objects between a new BIG-IP DNS and existing sync group member Determine when and how to restore the master encryption keys for TSIG and DNSSEC	

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Objective 4.03	Identify various BIG-IP DNS monitoring strategies	U/A
Examples	Configure SNMP polling Describe and use DNS statistics and DNS analytics	
Objective 4.04	Recognize appropriate procedures for performing BIG-IP DNS software upgrades	U/A
Examples	Recognize the significance of the requirement for license reactivation prior to upgrade Given a GSLB configuration, predict the potential end-user impact when upgrading a DNS sync group member while it is offline Validate BIG-IP DNS operation status, post-upgrade	

Cognitive Complexity Descriptions

Lower Order Thinking Skills



Higher Order Thinking Skills

Remember	Understand/Apply	Analyze/Evaluate	Create
Information retrieval	Knowledge transfer	Critical thinking and reasoning	Innovation or Creative thinking
Rote memorization	Comprehension or Ability to apply knowledge to a standard process	Determine how parts relate to whole or Knowledge integration and application to new situation(s)	Forming an original work product
Retrieve relevant knowledge from long-term memory	Construct meaning from information	Make judgments based on criteria	Combine or reorganize parts to form a new pattern or structure
e.g., recall, retrieve, recognize	e.g., interpret, classify, compare, explain, implement	e.g., troubleshoot, attribute, diagnose, critique	e.g., generate, plan, produce

Alpine Testing Solutions' suggested cognitive complexity levels and associated verb references consider multiple approaches to defining cognitive processing (e.g., Anderson et al., Webb, Bloom, Frisbie). Above material created with assistance from Alpine and distributed with Alpine's permission as an attachment to certification test blueprints.



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