101 – APPLICATION DELIVERY FUNDAMENTALS
EXAM BLUEPRINT

ABOUT THE 101-APPLICATION DELIVERY FUNDAMENTALS EXAM.

The 101-Application Delivery Fundamentals exam is the first exam required to achieve Certified F5 BIG-IP Administrator status.

Successful completion of the Application Delivery Fundamentals exam acknowledges the skills and understanding necessary for day-to-day management of Application Delivery Networks (ADNs).

WHAT IS THE 101-APPLICATION DELIVERY FUNDAMENTALS 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 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:

None

CREDENTIAL AWARDED:

None (prerequisite to the TMOS Administration exam)

THIS EXAM IS BASED ON V11.4.

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Section 1:	OSI	Cognitive Complexity
Objective 1.01	Explain, compare, and contrast the OSI layers	U/A
Examples	Describe the function of each OSI layer Differentiate between the OSI layers Describe the purpose of the various address types at different OSI layers	
Objective 1.02	Explain protocols and technologies specific to the data link layer	U/A
Examples	Explain the purpose of a switch's forwarding database Explain the purpose and functionality of ARP Explain the purpose and functionality of MAC addresses Explain the purpose and functionality of a broadcast domain Explain the purpose and functionality of VLANs Explain the purpose and functionality of link aggregation	
Objective 1.03	Explain protocols and apply technologies specific to the network layer	U/A
Examples	Explain the purpose and functionality of IP addressing and subnetting Given an IP address and net mask, determine the network IP and the broadcast IP Given a routing table and a destination IP address, identify which routing table entry the destination IP address will match Explain the purpose and functionality of Routing protocols Explain the purpose of fragmentation Given a fragment, identify what information is needed for reassembly Explain the purpose of TTL functionality Given a packet traversing a topology, document the source/destination IP address/MAC address changes at each hop	
Objective 1.04	Explain the features and functionality of protocols and technologies specific to the transport layer	U/A
Examples	Compare/Contrast purpose and functionality of MTU and MSS Explain the purpose and functionality of TCP Explain the purpose and functionality of UDP Explain the purpose and functionality of ports in general Explain how retransmissions occur Explain the purpose and process of a reset Describe various TCP options Describe a TCP checksum error Describe how TCP addresses error correction Describe how the flow control process occurs	
Objective 1.05	Explain the features and functionality of protocols and technologies specific to the application layer	U/A

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

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Examples	Explain the purpose and functionality of HTTP Differentiate between HTTP versions Interpret HTTP status codes Determine an HTTP request method for a given use case Explain the purpose and functionality of HTTP keepalives, HTTP headers, DNS, SIP, FTP Differentiate between passive and active FTP Explain the purpose and functionality of SMTP Explain the purpose and functionality of a cookie Given a situation in which a client connects to a remote host, explain how the name resolution process occurs Explain the purpose and functionality of a URL

Section 2:	F5 Solutions and Technology	Cognitive Complexity
Objective 2.01	Articulate the role of F5 products	U/A
Examples	Explain the purpose, use, and benefits of APM, LTM, ASM, GTM	
Objective 2.02	Explain the purpose, use, and advantages of iRules	U/A
Examples	Explain the purpose of iRules Explain the advantages of iRules Given a list of situations, determine which would be appropriate for the use of iRules	
Objective 2.03	Explain the purpose, use, and advantages of iApps	U/A
Examples	Explain the purpose of iApps Explain the advantages of iApps Given a list of situations, determine which would be appropriate for the use of iApps	
Objective 2.04	Explain the purpose of and use cases for full proxy and packet forwarding/packet based architectures	U/A
Examples	Describe a full proxy architecture Describe a packet forwarding/packet based architecture Given a list of situations, determine which is appropriate for a full proxy architecture Given a list of situations, determine which is appropriate for a packet based architecture	
Objective 2.05	Explain the advantages and configurations of high availability (HA)	U/A
Examples	Explain active/active Explain active/standby Explain the benefits of deploying BIG-IP devices in a redundant configuration	

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Section 3:	Load Balancing Essentials	Cognitive Complexity
Objective 3.01	Discuss the purpose of, use cases for, and key considerations related to load balancing	U/A
Examples	Explain the purpose of distribution of load across multiple servers Given an environment, determine the appropriate load balancing algorithm that achieves a desired result Explain the concept of persistence	
Objective 3.02	Differentiate between a client and server	U/A
Examples	Given a scenario, identify the client/server Explain the role of a client Explain the role of a server	

Section 4:	Security	Cognitive Complexity
Objective 4.01	Compare and contrast positive and negative security models	U/A
Examples	Describe the concept of a positive security model Describe the concept of a negative security model Given a list of scenarios, identify which is a positive security model Given a list of scenarios, identify which is a negative security model Describe the benefits of a positive security model Describe the benefits of a negative security model	
Objective 4.02	Explain the purpose of cryptographic services	U/A
Examples	Describe the purpose of signing Describe the purpose of encryption Describe the purpose of certificates and the certificate chains Distinguish between private/public keys Compare and contrast symmetric/asymmetric encryption	
Objective 4.03	Describe the purpose and advantages of authentication	U/A

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Examples	Explain the purpose of authentication Explain the advantages of single sign on Explain the concepts of multifactor authentication Describe the role authentication plays in AAA	
Objective 4.04	Describe the purpose, advantages, and use cases of IPsec and SSL VPN	U/A
Examples	Explain the purpose, advantages, and challenges associated with IPsec Explain the purpose, advantages, and challenges associated with SSL VPN Given a list of environments/situations, determine which is appropriate for an IPsec solution Given a list of environments/situations, determine which is appropriate for an SSL VPN solution	

Section 5:	**Application Delivery Platforms**	Cognitive Complexity
Objective 5.01	Describe the purpose, advantages, use cases, and challenges associated with hardware based application delivery platforms and virtual machines	U/A
Examples	Explain when a hardware based application deliver platform solution is appropriate Explain when a virtual machine solution is appropriate Explain the purpose, advantages, and challenges associated with hardware based application deliver platform solutions Explain the purpose, advantages, and challenges associated with virtual machines Given a list of environments/situations, determine which is appropriate for a hardware based application deliver platform solution Given a list of environments/situations, determine which is appropriate for a virtual machine solution Explain the advantages of dedicated hardware (SSL card, compression card)	
Objective 5.02	Describe the purpose of the various types of advanced acceleration techniques	U/A
Examples	Describe the purpose of TCP optimization Describe the purpose of HTTP keepalives, caching, compression, and pipelining	

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EXAM DETAILS

How much do Certified exams cost?
$135 USD (not including local taxes and fees).

How long is the 101 exam and what is the passing score?
The 101 exam is 90 minutes long and the passing score is 69%.

How many questions are there?
The 101 exam has 80 questions. Some of the questions contain exhibits that you will have to view to answer the question.

What format is the 101 exam?
The 101 exam is multiple choice.

What is the retake policy?
1st failure: Exam hold for 15 days.

2nd failure: Exam hold for 30 days.

3rd failure: Retake permission form and a 45-day exam hold.

4th failure: Exam hold for two (2) years.

Exam day tips:
- Make sure the name on your Pearson VUE account matches the name on your ID. To change your name and other personal information, see (insert URL).
- If you need to reschedule your exam, you must contact Pearson VUE 24 hours before your exam time

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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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