# 301a - LTM TECHNOLOGY SPECIALIST
## EXAM BLUEPRINT

## ABOUT THE 301A-LTM SPECIALIST: ARCHITECT, SET-UP & DEPLOY EXAM.

The 301a-LTM Specialist: Architect, Set-up & Deploy exam is one of two exams required to achieve Certified! F5 Technology Specialist, LTM status. Individuals who pass this exam possess an of underlying principles – from SSL-based VPN implementation to symmetric and asymmetric acceleration – and can draw on that insight to integrate BIG-IP Local Traffic Manager (LTM) into existing networks as well as new implementations. This is exam 1 of 2 and is based on TMOS v11.5.

## WHAT IS THE 301a LTM 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:

F5 Certified BIG-IP Administrator (F5-CA)

## CREDENTIAL AWARDED:

None (prerequisite to 301b – LTM Specialist: Maintain & Troubleshoot)

## THIS EXAM IS BASED ON V11.5.

# 301a - LTM TECHNOLOGY SPECIALIST
## EXAM BLUEPRINT

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| Section 1: | Architect and Deploy Applications | Cognitive Complexity |
|---|---|---|
| **Objective 1.01** | Given an expected traffic volume, determine the appropriate SNAT configuration | U/A |
| Examples | Explain when SNAT is required<br>Describe the benefit of using SNAT pools<br>Describe the difference of SNAT object types | |
| **Objective 1.02** | Given a scenario, determine the minimum profiles for an application | U/A |
| Examples | Explain security options available for the application<br>Explain how to use LTM as a service proxy<br>Describe how a given service is deployed on an LTM | |
| **Objective 1.03** | Given an application configuration, determine which functions can be offloaded to the LTM device | U/A |
| Examples | Explain how to offload HTTP servers for SSL compression and caching<br>Explain how to configure LTM to handle SSL offload | |
| **Objective 1.04** | Given an iRule functionality, determine the profiles and configuration options necessary to implement the iRule. | U/A |
| Examples | Explain how to create an HTTP configuration to handle an HTTP server error | |
| **Objective 1.05** | Given application requirements, determine the appropriate profile and persistence settings. | A/E |
| Examples | Explain how to create an HTTP configuration for mobile clients<br>Explain how to create an HTTP configuration to optimize WAN connectivity<br>Determine when connection mirroring is required | |
| **Objective 1.06** | Explain the steps necessary to configure AVR | U/A |
| Examples | Explain the steps necessary to configure the AVR<br>Explain how to create an AVR profile and options | |
| **Objective 1.07** | Given a set of reporting requirements, determine the AVR metrics and entities to collect | U/A |
| Examples | Explain the sizing implications of AVR on the LTM device<br>Explain the logging and notifications options of AVR<br>Explain the uses of the collected metrics and entities | |
| **Objective 1.08** | Given a scenario, determine the appropriate monitor type and parameters to use | U/A |

Cognitive Complexity Key:
R=Remember
A/E=Analyze/Evaluate
C=Create

| | | |
|---|---|---|
| Examples | Explain how to create an application specific monitor<br>Given a desired outcome, determine where to apply health monitors<br>Determine under which circumstances an external monitor is required | |
| **Objective 1.09** | Given a set of parameters, predict an outcome of a monitor status on other LTM device objects | A/E |
| Examples | Determine the effect of a monitor on the virtual server status<br>Determine the effect of active versus inline monitors on the application status or on the LTM device | |
| **Objective 1.10** | Given a health monitor configuration and pool member response predict the resulting status of the pool member | A/E |
| Examples | Given a set of parameters, predict an outcome of a monitor status on other LTM objects<br>Determine the effect of a monitor on the status of a node, pool member, pool and/or virtual server | |
| **Objective 1.11** | Given a set of application SSL requirements, determine the appropriate profiles and profile options | U/A |
| Examples | Describe the difference between client and server SSL profiles and functionality<br>Explain how to configure the different SSL profile settings<br>Describe the process to update expired SSL certificates | |
| **Objective 1.12** | Given a scenario determine the steps required to maintain SSL certificates | U/A |
| Examples | Describe the process to update expired SSL certificates<br>Explain how to implement SSL chain certificate | |
| **Objective 1.13** | Given a set of application requirements, determine the appropriate virtual server type to use | U/A |
| Examples | Describe the relationship between profiles and virtual servers<br>Describe which steps are necessary to complete prior to creating the virtual server<br>Describe the security features when creating a virtual server<br>Explain the effect of changing different virtual server types | |
| **Objective 1.14** | Given a set of application requirements, determine the appropriate virtual server configuration settings | U/A |
| Examples | Explain the effect of changing different virtual server options: types, configuration settings, and/or resource settings<br>Differentiate between client side and server side settings | |
| **Objective 1.15** | Explain the matching order of multiple virtual servers | U/A |
| Examples | Explain how to configure source addresses from which virtual servers can accept traffic | |

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| **Objective 1.16** | Given a scenario, determine the appropriate load balancing method(s) | U/A |
|---|---|---|
| Examples | Differentiate different load balancing methods<br>Explain how to perform outbound load balancing<br>Explain how persistence and pool member status effects load balancing decisions | |

| **Objective 1.17** | Given a scenario, describe how to configure or modify pool settings | U/A |
|---|---|---|
| Examples | Describe priority group activation within a pool<br>Describe the effects of Slow Ramp Time<br>Describe how an iRule can effect the persistence behavior<br>Explain how load balancing decisions are impacted by the statistics of nodes or pool members<br>Explain the effects of action on service-now | |

| **Objective 1.18** | Explain the effect of configuration options and resource health on load balancing decisions | A/E |
|---|---|---|
| Examples | Determine the effect that virtual server traffic and/or resource status will have on load balancing decisions<br>Given a scenario, determine the appropriate load balancing methods | |

| **Objective 1.19** | Describe how to deploy and modify applications using existing and/or updated iApp application templates | R |
|---|---|---|
| Examples | Identify use cases for deploying application templates<br>Describe how to locate, retrieve, and import new updated application templates<br>Describe how to update an existing application that was created from an iApp | |

| **Section 2:** | **Set-up, administer, and secure LTM devices** | Cognitive Complexity |
|---|---|---|
| **Objective 2.01** | Distinguish between the management interface configuration and application traffic interface configuration | U/A |
| Examples | Explain the requirements for management of the LTM devices<br>Explain the differences between the flow of management and application traffic<br>Explain how to configure management connectivity options: AOM, serial console, USB & Management Ethernet Port | |
| **Objective 2.02** | Given a network diagram, determine the appropriate network and system settings (i.e., VLANs, self-IPs, trunks, routes, NTP servers, DNS servers, SNMP receivers and syslog servers) | U/A |
| Examples | Explain the requirements for self-IPs (including port lockdown)<br>Explain routing requirements for management and application traffic (including route domains and IPv6)<br>Explain the effect of system time on LTM devices | |

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| Objective 2.03 | Explain how to configure remote authentication and multiple administration roles on the LTM device | U/A |
|---|---|---|
| Examples | Explain the mapping between remote users and remote role groups<br>Explain the options for partition access and terminal access | |
| Objective 2.04 | Explain the uses of administrative partitions | U/A |
| Examples | Explain the relationship between route domains, user roles and administrative partitions<br>Explain the options for partition access and terminal access | |
| Objective 2.05 | Given a scenario, determine an appropriate high availability configuration (i.e., failsafe, failover and timers) | U/A |
| Examples | Explain how the score is calculated for HA groups<br>Explain the required objects on an HA pair<br>Explain how to configure device trust | |
| Objective 2.06 | Given a scenario, describe the steps necessary to set up a device group, traffic group and HA group | U/A |
| Examples | Explain how to set up sync-only and sync-failover device service cluster<br>Explain how to configure HA groups<br>Explain how to assign virtual servers to traffic groups | |
| Objective 2.07 | Predict the behavior of an LTM device group or traffic groups in a given failure scenario | A/E |
| Examples | Compare and contrast network and serial failovers<br>Compare and contrast failover unicast and multicast | |
| Objective 2.08 | Determine the effect of LTM features and/or modules on LTM device performance and/or memory | R |
| Examples | Determine the effect of iRules on performance<br>Determine the effect of RAM cache on performance and memory<br>Determine the effect of compression on performance<br>Determine the effect of modules on performance and memory | |
| Objective 2.09 | Determine the effect of traffic levels on LTM device performance | U/A |
| Examples | Explain how to use traffic groups to maximize capacity | |
| Objective 2.10 | Determine the effect of virtual server settings on LTM device performance. | U/A |
| Examples | Determine the effect of connection mirroring on performance | |

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| **Objective 2.11** | Describe how to deploy or upgrade vCMP guests and how the resources are distributed. | R |
|---|---|---|
| Examples | Identify the performance impact of vCMP guests on other guests<br>Understand that the vCMP guest license is inherited from the host<br>Describe how to deploy and/or upgrade vCMP guests and related dependency on host version | |
| **Objective 2.12** | Determine the appropriate LTM device security configuration to protect against a security threat | U/A |
| Examples | Explain the implications of SNAT versus NAT on unintended access<br>Explain the implications of forwarding virtual servers on the environment security<br>Explain how to set up and enable SNMP device traps on the LTM device<br>Describe the implications of port lockdown settings | |

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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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Testing Solutions

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