Cisco | Networking Academy
Mind Wide Open™

Assessment Authoring - Table of Specification (TOS)

The Table of Specification (TOS) is a high-level design template for a given assessment. It identifies the claims, components skills, targeted number tasks needed, and the knowledge or skill level desired for each task. Scoping information is also provided, in most cases, and indicates the environment, features and details associated with the specified claims.

Assessment design specifications in the TOS allow us to make inferences about what the students can actually do. Because some outcomes are more important than others in making those judgments, each claim is weighted based on course content, required job skills and certification coverage. Using the TOS helps to ensure that assessed tasks are relevant to the environment in which the student will work.

In the example below, 25% of the Network Fundamentals Final exam should cover skills from claim 0.1.0. For a 50 question exam, approximately 13 tasks should cover skills that support claim 0.1.0. Distribution of tasks amongst the component skills is determined during the design phase. Tasks for each claim or component skill can be either declarative, simple procedural or complex procedural depending on the purpose of exam and the type of claim.

Claim
desired outcome

Component Skill
supporting skill

Desired Claim Coverage

CCNA Exploration Network Fundamentals Assessment Claims rev 1				
Final Exam				
Claim#	**Claim/Component skill**	**Scope**	**% Coverage on Exam forms**	**Targeted # of tasks on exam form**
0.1.0	**Use the OSI and TCP/IP models and their associated protocols and applications to explain how data flows in a network.**	process of encapsulation, source and destination address identification	**25%**	**13**
0.1.1	Explain how data is delivered in common applications such as email, web browsers, FTP software and Telnet.	Telnet, browser apps, email,		
0.1.2	Describe the encapsualtion/decapsulation processes			
0.1.3	Describe the purpose and basic operation of the Application Layer services and protocols.	telnet, DNS, HTTP, SMTP, POP, DHCP, HTML		
0.1.4	Determine the source and destination address and other important fields of a protocol data unit as it is processed in a network.			
0.1.5	Explain the operation and benefits of Transport Layer services and protocols.	TCP and UDP		

CCNA Exploration Routing Protocols and Concepts Claims rev 1				
Final Exam				
Claim#	**Claim/Component skill**	**Scope**	**Targeted % Coverage on Exam forms**	**Targeted # of tasks on exam form**
0.1.0	**Describe the functions and features of a router.**		**8%**	**4**
0.1.1	Describe the importance of routing in a network.			
0.1.2	Describe the primary functions of a router.			
0.1.3	Identify the purpose of the components of a router.			
0.1.4	Explain the router boot-up process.			
0.2.0	**Explain the route lookup process and determine the path packets will take in the network.**		**10%**	**5**
0.2.1	Describe how packet forwarding and switching occurs in a router.			
0.2.2	Explain the route lookup process.			
0.2.3	Compare and contrast classful and classless routing lookup processes.			
0.2.4	Identify the path a packet takes through a network.			
0.2.5	Determine which route will be used to forward a packet destined for a specific address.			
0.2.6	Interpret routing table output to determine if a packet is dropped or forwarded.			
0.3.0	**Evaluate the characteristics of routing protocols.**		**10%**	**5**
0.3.1	Describe the different types of routing protocols.			
0.3.2	Describe the role of dynamic routing protocols and place these protocols in the context of modern network design.			
0.3.3	Describe how metrics are used by routing protocols and identify the metric types used by dynamic routing protocols			
0.3.4	Explain the importance of administrative distance and routing metrics in routing.			
0.3.5	Explain how convergence is achieved in a routed network and factors that affect convergence.			
0.3.6	Compare and contrast the different routing protocols (RIPv1, RIPv2, OSPF, EIGRP).			

0.3.7	Determine which routes will be added to the routing table.			
0.4.0	**Perform, save and test an initial configuration on a Cisco IOS based router.**		**10%**	**5**
0.4.1	Select appropriate equipment and cable the devices in a small routed network.			
0.4.2	Perform basic router configuration tasks.			
0.4.3	Acces the router for configuration			
0.4.4	Configure device names, passwords, interfaces, banners on a router using CLI.			
0.4.5	Configure addressing tasks on hosts.			
0.4.6	Verify and test configurations using show commands, ping and traceroute.	show cdp neighbors		
0.5.0	**Describe, configure and verify static and default routing.**		**10%**	**5**
0.5.1	Describe the function and advantages associated with using static and default routing.			
0.5.2	Configure and propagate static and default routes in networks with or without routing protocols in operation.			
0.5.3	Modify static routes			
0.5.4	Verify and troubleshoot static and default routes			
0.6.0	**Implement an addressing scheme in a network.**		**10%**	**5**
0.6.1	Compare and contrast classful and classless IP addressing			
0.6.2	Divide a major network into subnets of different sizes using VLSM.			
0.6.3	Determine the appropriate address or mask for a given network requirement.			
0.6.4	Summarize newtork addresses and routes.			
0.6.5	Identify and correct common problems associated with IP addressing and host configurations.			
0.6.6	Describe the impact of classful and classless addressing on the operation of classful and classless routing protocols.			
0.6.7	Describe advantages of classless routing protocols, including discontiguous networks, VLSM, and CIDR.			
0.7.0	**Describe, configure, verify, analyze and troubleshoot single area RIPv2 on a Cisco router.**		**12%**	**6**
0.7.1	Describe the basic characteristics and operation of RIP.			
0.7.2	Explain how routing loops occur in network running distance-vector routing protocols and the methods used to mitigate the problems associate with routing loops.			
0.7.3	Compare and contrast RIPv1 and RIPv2.			

0.7.4	Use RIPv1 to demonstrate the concepts of a distance vector, classful routing protocol.			
0.7.5	Configure a network using RIPv2.			
0.7.6	Use show, debug, and basic testing commands to verify operations status of a RIPv2 network.			
0.7.7	Interpret router show and debug command output to identify problem associated with RIPv2in a network.			
0.7.8	Correct common RIPv2 routing protocol operation issues.			
0.8.0	**Describe, configure, verify, analyze and troubleshoot EIGRP on a Cisco router.**		**15%**	**8**
0.8.1	Describe the basic characteristics and operation of EIGRP.			
0.8.2	Configure EIGRP.			
0.8.3	Modify the default configuration of EIGRP.			
0.8.4	Verify and troubleshoot EIGRP.			
0.8.5	Use show, debug, and basic testing commands to verify operations status of a EIGRP network.			
0.8.6	Interpret router show and debug command output to identify problem associated with EIGRPin a network.			
0.8.7	Correct common EIGRP routing protocol operation and neighbor adjacency issues.			
0.9.0	**Describe, configure, verify, analyze and troubleshoot single area OSPF on a Cisco router.**		**15%**	**8**
0.9.1	Describe the basic characteristics and operation of single area OSPF.			
0.9.2	Determine the DR/BDR for a given network.			
0.9.3	Determine the routerID for a router.			
0.9.4	Configure single area OSPF.			
0.9.5	Modify the default configuration of single area OSPF.			
0.9.6	Verify and troubleshoot single area OSPF.			
0.9.7	Use show, debug and basic testing commands to verify operations status of a single area OSPF network.			
0.9.8	Interpret router show and debug command output to identify problem associated with single area OSPFin a network.			
0.9.9	Correct common single area OSPF routing table issues.			
0.9.10	Correct common single area OSPF neighbor adjacency issues.			
			100%	**50**