



300-101

Implementing Cisco IP Routing

NWExam.com

SUCCESS GUIDE TO CISCO CERTIFICATION

Exam Summary – Syllabus – Questions

Table of Contents

Introduction to 300-101 Exam on Implementing Cisco IP Routing	2
Cisco 300-101 Certification Details:	2
Cisco 300-101 Exam Syllabus:.....	3
300-101 Sample Questions:	7
Answers to 300-101Exam Questions:	9

Introduction to 300-101 Exam on Implementing Cisco IP Routing

A great way to start the Cisco Certified Network Professional Routing and Switching (ROUTE) preparation is to begin by properly appreciating the role that syllabus and study guide play in the Cisco 300-101 certification exam. This study guide is an instrument to get you on the same page with Cisco and understand the nature of the Cisco CCNP Routing and Switching exam.

Our team of experts has composed this Cisco 300-101 exam preparation guide to provide the overview about Cisco Implementing Cisco IP Routing exam, study material, sample questions, practice exam and ways to interpret the exam objectives to help you assess your readiness for the Cisco ROUTE exam by identifying prerequisite areas of knowledge. We recommend you to refer the simulation questions and practice test listed in this guide to determine what type of questions will be asked and the level of difficulty that could be tested in the Cisco CCNP Routing and Switching certification exam.

Cisco 300-101 Certification Details:

Exam Name	Implementing Cisco IP Routing
Exam Number	300-101 ROUTE
Exam Price	\$300 USD
Duration	120 minutes
Number of Questions	45-55
Passing Score	Variable (750-850 / 1000 Approx.)
Recommended Training	Implementing Cisco IP Routing v2.0 (ROUTE) Cisco E-Learning for CCNP ROUTE v2.0 Cisco Learning Labs for CCNP ROUTE v2.0 CCNA and CCNP Premium Training Package
Exam Registration	<u>PEARSON VUE</u>
Sample Questions	Cisco 300-101 Sample Questions
Practice Exam	Cisco Certified Network Professional Routing and Switching Practice Test

Cisco 300-101 Exam Syllabus:

Section	Weight	Objectives
Network Principles	10%	<p>1 Identify Cisco Express Forwarding concepts</p> <p>a) FIB</p> <p>b) Adjacency table</p> <p>2 Explain general network challenges</p> <p>a) Unicast</p> <p>b) Out-of-order packets</p> <p>c) Asymmetric routing</p> <p>3 Describe IP operations</p> <p>a) ICMP Unreachable and Redirects</p> <p>b) IPv4 and IPv6 fragmentation</p> <p>c) TTL</p> <p>4 Explain TCP operations</p> <p>a) IPv4 and IPv6 (P)MTU</p> <p>b) MSS</p> <p>c) Latency</p> <p>d) Windowing</p> <p>e) Bandwidth-delay product</p> <p>f) Global synchronization</p> <p>5 Describe UDP operations</p> <p>a) Starvation</p> <p>b) Latency</p> <p>6 Recognize proposed changes to the network</p> <p>a) Changes to routing protocol parameters</p> <p>b) Migrate parts of the network to IPv6</p> <p>c) Routing protocol migration</p>
Layer 2 Technologies	10%	<p>1 Configure and verify PPP</p> <p>a) Authentication (PAP, CHAP)</p> <p>b) PPPoE (client side only)</p> <p>2 Explain Frame Relay</p> <p>a) Operations</p> <p>b) Point-to-point</p> <p>c) Multipoint</p>

Section	Weight	Objectives
Layer 3 Technologies	40%	<p>1 Identify, configure, and verify IPv4 addressing and subnetting</p> <ul style="list-style-type: none"> a) Address types (Unicast, broadcast, multicast, and VLSM) b) ARP c) DHCP relay and server d) DHCP protocol operations <p>2 Identify IPv6 addressing and subnetting</p> <ul style="list-style-type: none"> a) Unicast b) EUI-64 c) ND, RS/RA d) Autoconfig (SLAAC) e) DHCP relay and server f) DHCP protocol operations <p>3 Configure and verify static routing</p> <p>4 Configure and verify default routing</p> <p>5 Evaluate routing protocol types</p> <ul style="list-style-type: none"> a) Distance vector b) Link state c) Path vector <p>6 Describe administrative distance</p> <p>7 Troubleshoot passive interfaces</p> <p>8 Configure and verify VRF lite</p> <p>9 Configure and verify filtering with any protocol</p> <p>10 Configure and verify redistribution between any routing protocols or routing sources</p> <p>11 Configure and verify manual and autosummarization with any routing protocol</p> <p>12 Configure and verify policy-based routing</p> <p>13 Identify suboptimal routing</p> <p>14 Explain ROUTE maps</p> <p>15 Configure and verify loop prevention mechanisms</p> <ul style="list-style-type: none"> a) Route tagging and filtering b) Split-horizon

Section	Weight	Objectives
		<p>c) Route poisoning</p> <p>16 Configure and verify RIPv2</p> <p>17 Describe RIPng</p> <p>18 Describe EIGRP packet types</p> <p>19 Configure and verify EIGRP neighbor relationship and authentication</p> <p>20 Configure and verify EIGRP stubs</p> <p>21 Configure and verify EIGRP load balancing</p> <p>a) Equal cost</p> <p>b) Unequal cost</p> <p>22 Describe and optimize EIGRP metrics</p> <p>23 Configure and verify EIGRP for IPv6</p> <p>24 Describe OSPF packet types</p> <p>25 Configure and verify OSPF neighbor relationship and authentication</p> <p>26 Configure and verify network types, area types, and router types</p> <p>a) Point-to-point, multipoint, broadcast, nonbroadcast</p> <p>b) LSA types, area type: backbone, normal, transit, stub, NSSA, totally stub</p> <p>c) Internal router, backbone router, ABR, ASBR</p> <p>d) Virtual link</p> <p>27 Configure and verify OSPF path preference</p> <p>28 Configure and verify OSPF operations</p> <p>29 Configure and verify OSPF for IPv6</p> <p>30 Describe, configure, and verify BGP peer relationships and authentication</p> <p>a) Peer group</p> <p>b) Active, passive</p> <p>c) States and timers</p> <p>31 Configure and verify eBGP (IPv4 and IPv6 address families)</p>

Section	Weight	Objectives
		a) eBGP b) 4-byte AS number c) Private AS 32 Explain BGP attributes and best-path selection
VPN Technologies	10%	1 Configure and verify GRE 2 Describe DMVPN (single hub) 3 Describe Easy Virtual Networking (EVN)
Infrastructure Security	10%	1 Describe IOS AAA using local database 2 Describe device security using IOS AAA with TACACS+ and RADIUS a AAA with TACACS+ and RADIUS b Local privilege authorization fallback 3 Configure and verify device access control a Lines (VTY, AUX, console) b Management plane protection c Password encryption 4 Configure and verify router security features a IPv4 access control lists (standard, extended, time-based) b IPv6 traffic filter c Unicast reverse path forwarding

Section	Weight	Objectives
Infrastructure Services	20%	<p>1 Configure and verify device management</p> <ul style="list-style-type: none"> a) Console and VTY b) Telnet, HTTP, HTTPS, SSH, SCP c) (T)FTP <p>2 Configure and verify SNMP</p> <ul style="list-style-type: none"> a) v2 b) v3 <p>3 Configure and verify logging</p> <ul style="list-style-type: none"> a) Local logging, syslog, debugs, conditional debugs b) Timestamps <p>4 Configure and verify Network Time Protocol (NTP)</p> <ul style="list-style-type: none"> a) NTP master, client, version 3, version 4 b) NTP authentication <p>5 Configure and verify IPv4 and IPv6 DHCP</p> <ul style="list-style-type: none"> a) DHCP client, IOS DHCP server, DHCP relay b) DHCP options (describe) <p>6 Configure and verify IPv4 Network Address Translation (NAT)</p> <ul style="list-style-type: none"> a) Static NAT, dynamic NAT, PAT <p>7 Describe IPv6 NAT</p> <ul style="list-style-type: none"> a) NAT64 b) NPTv6 <p>8 Describe SLA architecture</p> <p>9 Configure and verify IP SLA</p> <ul style="list-style-type: none"> a) ICMP <p>10 Configure and verify tracking objects</p> <ul style="list-style-type: none"> a) Tracking objects b) Tracking different entities (for example, interfaces, IPSLA results) <p>11 Configure and verify Cisco NetFlow</p> <ul style="list-style-type: none"> a) NetFlow v5, v9 b) Local retrieval c) Export (configuration only)

300-101 Sample Questions:

01. Which three benefits are a result of route summarization?

(Choose three.)

- a) smaller routing table
- b) lower use of IP addresses
- c) more accurate path selection
- d) fewer routing updates
- e) improved convergence

02. IPv4 supports which three address types?

(Choose three.)

- a) unicast
- b) multicast
- c) anycast
- d) broadcast

03. Which three of these options can not be Cisco Express Forwarding-switched and must be processed in software?

(Choose three.)

- a) packets with IP header options
- b) packets received with a larger MTU than that of an output interface, and therefore must be fragmented
- c) packets that need NAT
- d) packets that are forwarded to a tunnel interface
- e) packets with a source address that is not in the FIB table

04. On what does BGP base the selection of the best path?

- a) speed
- b) AS routing policy
- c) number of routers to reach a destination network
- d) bandwidth and delay

05. Which two methods does OSPF employ to conserve the computing resources?

(Choose two.)

- a) area-based segregation
- b) LSDB
- c) passive interfaces
- d) redistribution
- e) network types

06. Which statement best describes GRE protocol?

- a) GRE adds the new IP header, encapsulates the original IP packet, and adds the GRE header at the end of the IP packet.
- b) GRE adds the new IP header, inserts the GRE header, and encapsulates the original IP packet.
- c) GRE uses the original IP header and adds the GRE header at the end of the packet.
- d) GRE uses the original IP header and inserts the GRE header between the IP header and payload.

07. Two routers, R1 and R2, are configured as part of VRRP group 1. They were incorrectly configured with different virtual addresses. The R1 virtual

address is configured to 10.0.1.1. The R2 virtual address is configured to 10.0.1.2. What are the MAC addresses the routers are sending in gratuitous ARP messages?

- a) R1 %00:00:00:00:00:01, R2 %00:00:00:00:00:02
- b) R1 %00:00:00:00:00:01, R2 %00:00:00:00:00:01
- c) each router sends its own MAC address
- d) R1 sends its own MAC address, R2 %00:00:00:00:00:01

08. Which matching method cannot be used with a prefix list filter?

- a) mask filtering
- b) using ge
- c) using le
- d) using le and ge
- e) packet length

09. Which prefix list matches all host routes?

- a) ip prefix-list A permit 0.0.0.0/0 ge 32
- b) ip prefix-list B permit 128.0.0.0/2 ge 17
- c) ip prefix-list C permit 0.0.0.0/0 le 32
- d) ip prefix-list D permit 0.0.0.0/0

10. Which two of the following technologies are suitable for monitoring device interface status?

(Choose two.)

- a) syslog
- b) (R)SPAN and Traffic sniffer
- c) SNMP
- d) Netflow

Answers to 300-101 Exam Questions:

Question: 01	Question: 02	Question: 03	Question: 04	Question: 05
Answer: a, d, e	Answer: a, b, d	Answer: a, b, d	Answer: b	Answer: a, c
Question: 06	Question: 07	Question: 08	Question: 09	Question: 10
Answer: b	Answer: b	Answer: e	Answer: a	Answer: a, c

Note: If you find any typo or data entry error in these sample questions, we request you to update us by commenting on this page or write an email on feedback@nwexam.com