Appendix B

Exam Topics Cross-Reference

This appendix lists the exam topics defined in the CCNA 200-301 exam blueprint version 1.1. Cisco lists the exam topics on its website. Even though changes to the exam topics are rare, you should always review those exam topics for any updates; check www.cisco.com/go/certifications and navigate to the correct exam.

Cisco organizes each list of exam topics by domains, which are major topic areas. Cisco states the percentage of the exam that should come from each exam, so you get some idea of the areas of importance. Traditionally, the score report you receive after taking the exam shows your percentage score in each domain.

This appendix includes two separate types of indices to exam topics:

- **CCNA 200-301 Version 1.1 Blueprint Order:** This section uses the same order as the CCNA 200-301 V1.1 exam blueprint document. This first list shows a cross-reference from each exam topic to the chapters that include at least some material about each topic.
- **Book Chapter Order:** This section lists the chapters in this book, along with the exam topics that the chapter includes. This section basically relists the kind of information found on the first page of each chapter, just in condensed form in one place.

CCNA 200-301 Exam Topic Order

The CCNA 200-301 exam includes six major topic areas (domains), each with a percentage listed. Table B-1 lists the domains and their percentages.

Table B-1 CCNA 200-301 Version 1.1 Exam Topic Domains

Domain	Percentage
Domain 1: Network Fundamentals	20%
Domain 2: Network Access	20%
Domain 3: IP Connectivity	25%
Domain 4: IP Services	10%
Domain 5: Security Fundamentals	15%
Domain 6: Automation and Programmability	10%

Tables B-2 through B-7 list the exam topics within each of the six domains. Note that the *CCNA 200-301 Official Cert Guide, Volume 1,* Second Edition, covers some of the exam topics, while this book covers the rest. These tables show the chapters in this book; look to the equivalent appendix in Volume 1 for details of exam topic coverage in that book.

Table B-2 CCNA 200-301 Version 1.1 Domain 1 (Network Fundamentals)

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
1.1 Explain the role and function of network components	2, 3, 5, 7	1, 10, 18, 21, 22
1.1.a Routers	3, 16	
1.1.b Layer 2 and Layer 3 Switches	2, 5, 7, 18	
1.1.c Next-generation firewalls and IPS		10
1.1.d Access points		1

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
1.1.e Controllers		4, 22
1.1.f Endpoints		21
1.1.g Servers		21
1.1.h PoE		18
1.2 Describe characteristics of network topology architectures	2, 3	18–21
1.2.a Two-tier		18
1.2.b Three-tier		18
1.2.c Spine-leaf		21
1.2.d WAN	3	19
1.2.e Small office/home office (SOHO)	2, 16	18
1.2.f On-premises and cloud		20
1.3 Compare physical interface and cabling types	1, 2, 7	18
1.3.a Single-mode fiber, multimode fiber, copper	1, 2	18
1.3.b Connections (Ethernet shared media and point-to-point)	1, 2, 7	18
1.4 Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)	7	
1.5 Compare TCP to UDP		5
1.6 Configure and verify IPv4 addressing and subnetting	6, 11–16, 18	

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
1.7 Describe private IPv4 addressing	11, 12, 17	14
1.8 Configure and verify IPv6 addressing and prefix	25–28	
1.9 Describe IPv6 address types	25–28	
1.9.a Unicast (global, unique local, and link local)	26–28	
1.9.b Anycast	26, 27	
1.9.c Multicast	27	
1.9.d Modified EUI 64	27, 28	
1.10 Verify IP parameters for Client OS (Windows, Mac OS, Linux)	19	
1.11 Describe wireless principles		1, 3
1.11.a Nonoverlapping Wi-Fi channels		1
1.11.b SSID		1
111.c RF		1
1.11.d Encryption		3
1.12 Explain virtualization fundamentals (server virtualization, containers, and VRFs)		20
1.13 Describe switching concepts	5, 8	
1.13.a MAC learning and aging	5, 8	
1.13.b Frame switching	5, 8	
1.13.c Frame flooding	5, 8	

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
1.13.d MAC address table	5, 8	

Table B-3 CCNA 200-301 Version 1.1 Domain 2 (Network Access)

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
2.1 Configure and verify VLANs (normal range) spanning multiple switches	8, 18	
2.1.a Access ports (data and voice)	8	
2.1.b Default VLAN	8	
2.1.c InterVLAN connectivity	8, 18	
2.2 Configure and verify interswitch connectivity	8	
2.2.a Trunk ports	8	
2.2.b 802.1Q	8	
2.2.c Native VLAN	8	
2.3 Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)		13
2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)	8–10, 17	
2.5 Interpret basic operations of Spanning Tree Protocols	5, 9, 10	
2.5.a Root port, root bridge (primary/secondary), and other port names	9, 10	
2.5.b Port states and port roles	9, 10	

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
2.5.c PortFast	9, 10	
2.5.d Root Guard, loop guard, BPDU filter, BPDU guard	9, 10	
2.6 Describe Cisco Wireless Architectures and AP modes		2
2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)		4
2.8 Describe network device management access (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS, and cloud managed)	4, 6, 20	4
2.9 Interpret the wireless LAN GUI configuration for client connectivity, such as WLAN creation, security settings, QoS profiles, and advanced settings		4

Table B-4 CCNA 200-301 Version 1.1 Domain 3 (IP Connectivity)

Exam Topic	Vol 1 Chapter(s)	Vol 2 Chapter(s)
3.1 Interpret the components of routing table	17, 29	
3.1.a Routing protocol code	17, 29	
3.1.b Prefix	17, 29	
3.1.c Network mask	17, 29	
3.1.d Next hop	17, 29	

3.1.e Administrative distance	17, 24, 29	
3.1.f Metric	17	
3.1.g Gateway of last resort	17	
3.2 Determine how a router makes a forwarding decision by default	17, 21–24	
3.2.a Longest prefix match	17, 24	
3.2.b Administrative distance	17, 21–24	
3.2.c Routing protocol metric	21–24	
3.3 Configure and verify IPv4 and IPv6 static routing	17, 20, 29	
3.3.a Default route	17, 20, 29	
3.3.b Network route	17, 20, 29	
3.3.c Host route	17, 20, 29	
3.3.d Floating static	17, 20, 29	
3.4 Configure and verify single area OSPFv2	21–24	
3.4.a Neighbor adjacencies	21–24	
3.4.b Point-to-point	21–24	
3.4.c Broadcast (DR/BDR selection)	21–24	
3.4.d Router ID	21–24	
3.5 Describe the purpose, functions, and concepts of first hop redundancy protocols		16

Table B-5 CCNA 200-301 Version 1.1 Domain 4 (IP Services)

Exam Topics	Vol 1 Chapter(s)	Vol 2 Chapter(s)
4.1 Configure and verify inside source NAT using static and pools		14
4.2 Configure and verify NTP operating in a client and server mode		13
4.3 Explain the role of DHCP and DNS within the network	19	5
4.4 Explain the function of SNMP in network operations		17
4.5 Describe the use of syslog features including facilities and severity levels		13
4.6 Configure and verify DHCP client and relay	6, 19	
4.7 Explain the forwarding per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, and shaping		15
4.8 Configure network devices for remote access using SSH	6	10
4.9 Describe the capabilities and functions of TFTP/FTP in the network		17

Table B-6 CCNA 200-301 Domain 5 Exam Topics (Security Fundamentals)

Exam Topics	Vol 1 Chapter(s)	Vol 2 Chapter(s)

5.1 Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)		9
5.2 Describe security program elements (user awareness, training, and physical access control)		9
5.3 Configure and verify device access control using local passwords	6	10
5.4 Describe security password policies elements, such as management, complexity, and password alternatives (multifactor authentication, certificates, and biometrics)		9
5.5 Describe IPsec remote access and site-to-site VPNs		19
5.6 Configure and verify access control lists		6, 7, 8
5.7 Configure and verify Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)		11, 12
5.8 Compare authentication, authorization, and accounting concepts		9
5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)		3
5.10 Configure and verify WLAN within the GUI using WPA2 PSK		4

Table B-7 CCNA 200-301 Version 1.1 Domain 6 (Programmability and Automation)

Exam Topics	Vol 1 Chapter(s)	Vol 2 Chapter(s)

6.1 Explain how automation impacts network management		21, 22
6.2 Compare traditional networks with controller-based networking		21, 22
6.3 Describe controller-based, software-defined architecture (overlay, underlay, and fabric)		21, 22
6.3.a Separation of control plane and data plane		21, 22
6.3.b Northbound and Southbound APIs		21, 22
6.4 Explain AI (generative and predictive) and machine learning in network operations		22
6.5 Describe characteristics of REST-based APIs (authentication types, CRUD, HTTP verbs, and data encoding)		23
6.6 Recognize the capabilities of configuration management mechanisms such as Ansible and Terraform		24
6.7 Recognize components of JSON-encoded data		23

Book Chapters, with Exam Topics Covered in Each

Cisco organizes its exam topics based on the outcome of your learning experience, which is typically not a reasonable order for building the content of a book or course. This section lists this book's chapters in sequence, with the exam topics covered in each chapter.

Table B-8 CCNA 200-301 Volume 2 V1.1: Chapter-to-Exam Topic Mapping

Book Chapter	Exam Topics Covered
Part I: Wireless LANs	
Chapter 1: Fundamentals of Wireless Networks	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components *1.1.d Access points* 1.11 Describe wireless principles *1.11.a Non-overlapping Wi-Fi channels* *1.11.b SSID* *1.11.c RF*
Chapter 2: Analyzing Cisco Wireless Architectures	**2.0 Network Access** 2.6 Describe Cisco Wireless Architectures and AP modes
Chapter 3: Securing Wireless Networks	**1.0 Network Fundamentals** 1.11 Describe wireless principles *1.11.d Encryption* **5.0 Security Fundamentals** 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
Chapter 4: Building a Wireless LAN	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components *1.1.e Controllers (Cisco DNA Center and WLC)* **2.0 Network Access** 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk

Book Chapter	Exam Topics Covered
	ports, and LAG) 2.8 Describe network device management access (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS, and cloud managed) 2.9 Interpret the wireless LAN GUI configuration for client connectivity, such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings **5.0 Security Fundamentals** 5.10 Configure and verify WLAN within the GUI using WPA2 PSK
Part II: IP Access Control Lists	
Chapter 5: Introduction to TCP/IP Transport and Applications	**1.0 Network Fundamentals** 1.5 Compare TCP to UDP **4.0 IP Services** 4.3 Explain the role of DHCP and DNS in the network
Chapter 6: Basic IPv4 Access Control Lists	**5.0 Security Fundamentals** 5.6 Configure and verify access control lists
Chapter 7: Named and Extended IP ACLs	**5.0 Security Fundamentals** 5.6 Configure and verify access control lists
Chapter 8: Applied IP ACLs	**5.0 Security Fundamentals** 5.6 Configure and verify access control lists
Part III: Security Services	
Chapter 9: Security Architectures	**5.0 Security Fundamentals** 5.1 Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)

Book Chapter	Exam Topics Covered
	5.2 Describe security program elements (user awareness, training, and physical access control) 5.4 Describe security password policies elements, such as management, complexity, and password alternatives (multifactor authentication, certificates, and biometrics) 5.8 Compare authentication, authorization, and accounting concepts
Chapter 10: Securing Network Devices	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components *1.1.c Next-generation firewalls and IPS* **4.0 IP Services** 4.8 Configure network devices for remote access using SSH **5.0 Security Fundamentals** 5.3 Configure and verify device access control using local passwords
Chapter 11: Implementing Switch Port Security	**5.0 Security Fundamentals** 5.7 Configure and verify Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)
Chapter 12: DHCP Snooping and ARP Inspection	**5.0 Security Fundamentals** 5.7 Configure and verify Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)
Part IV: IP Services	
Chapter 13: Device Management Protocols	**2.0 Network Access**

Book Chapter	Exam Topics Covered
	2.3 Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP) **4.0 IP Services** 4.2 Configure and verify NTP operating in a client and server mode 4.5 Describe the use of syslog features including facilities and severity levels
Chapter 14: Network Address Translation	**1.0 Network Fundamentals** 1.7 Describe the need for private IPv4 addressing **4.0 IP Services** 4.1 Configure and verify inside source NAT using static and pools
Chapter 15: Quality of Service (QoS)	**4.0 IP Services** 4.7 Explain the forwarding per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, shaping
Chapter 16: First Hop Redundancy Protocols	**3.0 IP Connectivity** 3.5 Describe the purpose, functions, and concepts of first hop redundancy protocols
Chapter 17: SNMP, FTP, and TFTP	**4.0 Infrastructure Services** 4.4 Explain the function of SNMP in network operations 4.9 Describe the capabilities and functions of TFTP/FTP in the network
Part V: Network Architecture	
Chapter 18: LAN Architecture	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components

Book Chapter	Exam Topics Covered
	1.1.h PoE 1.2 Describe characteristics of network topology architectures *1.2.a Two-tier* *1.2.b Three-tier* *1.2.e Small office/home office (SOHO)* 1.3 Compare physical interface and cabling types *1.3.a Single-mode fiber, multimode fiber, copper*
Chapter 19: WAN Architecture	**1.0 Network Fundamentals** 1.2 Describe the characteristics of network topology architectures *1.2.d WAN* **5.0 Security Fundamentals** 5.5 Describe IPsec remote access and site-to-site VPNs
Chapter 20: Cloud Architecture	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components *1.1.g Servers* 1.2 Describe the characteristics of network topology architectures *1.2.f On-premises and cloud* 1.12 Explain virtualization fundamentals (server virtualization, containers, and VRFs)
Part VI: Network Automation	
Chapter 21: Introduction to	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components

Book Chapter	Exam Topics Covered
Controller-Based Networking	*1.1.f Endpoints* *1.1.g Servers* 1.2 Describe characteristics of network topology architectures *1.2.c Spine-leaf* **6.0 Automation and Programmability** 6.1 Explain how automation impacts network management 6.2 Compare traditional networks with controller-based networking 6.3 Describe controller-based, software-defined architecture (overlay, underlay, and fabric) *6.3.a Separation of control plane and data plane* *6.3.b Northbound and Southbound APIs*
Chapter 22: Cisco Software-Defined Access (Cisco SD-Access)	**1.0 Network Fundamentals** 1.1 Explain the role and function of network components *1.1.e Controllers* **6.0 Automation and Programmability** 6.1 Explain how automation impacts network management 6.2 Compare traditional networks with controller-based networking 6.3 Describe controller-based, software-defined architecture (overlay, underlay, and fabric) 6.4 Explain AI (generative and predictive) and machine learning in network operations
Chapter 23: Understanding REST	**6.0 Automation and Programmability**

Book Chapter	Exam Topics Covered
and JSON	6.5 Describe characteristics of REST-based APIs (authentication types, CRUD, HTTP verbs, and data encoding) 6.7 Recognize components of JSON-encoded data
Chapter 24: Understanding Ansible and Terraform	**6.0 Automation and Programmability** 6.6 Recognize the capabilities of configuration mechanisms such as Ansible and Terraform