CCNA R&S: Introduction to Networks Release Notes

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Purpose

Cisco CCNA® Routing and Switching is the fifth major release of the Cisco Networking Academy® CCNA curriculum. Introduction to Networks 5.0 is one of two options for the first course in the CCNA Routing and Switching curriculum. These notes provide detailed information about this release, including course content, known issues, certification exam alignment, and support information.

Release Content

Table 1.   Content Included in the Introduction to Networks Course Release

Component	Description
E-Learning Content	11 chapters
Labs	33 hands-on labs use a combination of 1941 routers (ISR G2s) and 2960 switches with the Cisco IOS® 15 software 16 networking research and exercise labs 3 video demos
Skills Assessments	1 skills assessment using equipment to verify the development of course skills
Cisco® Packet Tracer Activities	35 Packet Tracer activities embedded in the curriculum (PT version 6.0.1 or higher is required.)
Packet Tracer Skills Integration Challenges	5 skills integration challenge activities
Packet Tracer Multiuser Games	1 PTMU tutorial and 1 PTMU game
Pre-Test	1 pre-test that covers both prerequisite and pre-existing knowledge This can be used to understand what students know before starting the course to direct planning and customization of the curriculum.
Section Quizzes	2 section quizzes that target specific topics within a section or across sections
Chapter Quizzes	11 modifiable chapter quizzes
Chapter Exams	11 chapter exams containing simulation-based, multiple choice, and fill-in-the-blank questions
Practice Packet Tracer Skills Assessment	2 variable PTSAs to support skills acquisition; one at Chapter 6 and one at the end of the course
Practice Final Exam	1 practice final exam
Final Exam	1 final exam with field test pool items
Accessibility	11 chapters containing accessible text and media text Videos provide closed captioning (CC).

Known Issues and Caveats

Table 2.   Known Issues and Caveats for the Introduction to Networks Course

Item	Description
Text Area Sizing	After resizing the text area of a page, subsequent pages retain the same text area size. The text area size will return to default when the browser session ends.
Form-Fillable PDFs	Open these documents in Adobe Reader to help ensure the form-fillable fields load properly. Opening these documents in a web browser is not recommended.
Syntax Checker	This is a new tool made available to practice entering Cisco IOS commands. It is intended to familiarize students with the command syntax when implementing particular technologies. It is limited in functionality to the specific instructions provided in a Syntax Checker activity.
Packet Tracer Activity 8.3.2.8	The IPv6 addressing in the table reference needs to be corrected and the PC client references in the help desk ticket examples need to be corrected.

Certification Exam Alignment

Table 3 identifies topics that have been removed from the Cisco ICND1 (640-822) certification exam and topics that have been added to the new ICND1 (100-101) certification exam.

Table 3.   Differences Between ICND1 640-822 and ICND1 100-101

Topics Removed from ICND1 640-822 Exam	Topics Added to ICND1 100-101 Exam
Securing the Network	Implementing VLSM
Understanding the Challenges of Shared LANs	Scaling the Network with NAT and PAT
Solving Network Challenges with Switched LAN Technologies	Managing Traffic Using ACLs
Wireless LANs	Implementing VLANs and Trunks
Using Cisco SDM	Routing Between VLANs
Configuring Serial Encapsulation	Implementing Single Area OSPF
Enabling RIP	Introducing Basic IPv6
	Understanding IPv6
	Configuring IPv6 Routing

Table 4 identifies topics that have been added to the new ICND1 (100-101) certification exam and where they are covered in the CCNA Routing and Switching: Introduction to Networks course.

Note: Some ICND1 certification exam topics are not included in this course and are covered in subsequent CCNA Routing and Switching courses. These are identified as "covered in a later course" in the table below.

Table 4. Mapping of ICND1 (100-101) Topics to CCNA Routing and Switching: Introduction to Networks

ICND1 (100-101)	Introduction to Networks
Operation of IP Data Network	

Recognize the purpose and functions of various network devices such as routers, switches, bridges, and hubs	Chapter 1: Exploring the Network
	   Section 1.2: LANs, WANs, and the Internet
	   Section 1.3: The Network as a Platform
	 Chapter 2: Configuring a Network Operating System
	   Section 2.2: Getting Basic
	 Chapter 4: Network Access
	   Section 4.1: Physical Layer Protocols
	 Chapter 5: Ethernet
	   Section 5.3: LAN Switches
	 Chapter 6: Network Layer
	   Section 6.2: Routing
	   Section 6.3: Routers
	 Chapter 9: Subnetting IP Networks
	   Section 9.1: Subnetting an IPv4 Network
	 Chapter 10: Application Layer
	   Section 10.3: The Message Heard Around The World
	 Chapter 11: It's a Network
	   Section 11.0: Introduction

Select the components required to meet a given network specification	Chapter 4: Network Access
	   Section 4.1: Physical Layer Protocols
	 Chapter 5: Ethernet
	   Section 5.3: LAN Switches
	 Chapter 8: IP Addressing
	   Section 8.3: Connectivity Verification
	 Chapter 11: It's a Network
	   Section 11.0: Introduction
	   Section 11.1: Create and Grow
	   Section 11.5: Integrated Routing Services

Identify common applications and their impact on the network	Chapter 1: Exploring the Network
	   Section 1.1: Globally Connected
	   Section 1.2: LANs, WANs, and the Internet
	   Section 1.3: The Network as a Platform
	   Section 1.4: The Changing Network Environment
	 Chapter 10: Application Layer
	   Section 10.1: Application Layer Protocols
	   Section 10.2: Well-Known Application Layer Protocols and Services
	   Section 10.4: Summary
	 Chapter 11: It's a Network
	   Section 11.1: Create and Grow
	   Section 11.2: Keeping the Network Safe

Describe the purpose and basic operation of the protocols in the OSI and TCP/IP models	Chapter 3: Network Protocols and Communications
	   Section 3.2: Network Protocols and Standards
	   Section 3.3: Moving Data in the Network

	Chapter 4: Network Access
	Section 4.0: Introduction
	Section 4.1: Physical Layer Protocols
	Section 4.3: Data Link Layer Protocols
	Chapter 5: Ethernet
	Section 5.1: Ethernet Protocol
	Chapter 6: Network Layer
	Section 6.1: Network Layer Protocols
	Chapter 7: Transport Layer
	Section 7.1: Transport Layer Protocols
	Section 7.2: TCP and UDP
	Section 7.3: Summary
	Chapter 10: Application Layer
	Section 10.1: Application Layer Protocols
	Section 10.3: The Message Heard Around The World
Predict the data flow between two hosts across a network	Chapter 3: Network Protocols and Communications
	Section 3.3: Moving Data in the Network
	Chapter 5: Ethernet
	Section 5.1: Ethernet Protocol
	Chapter 6: Network Layer
	Section 6.1: Network Layer Protocols
	Section 6.2: Routing
	Chapter 8: IP Addressing
	Section 8.3: Connectivity Verification
	Chapter 10: Application Layer
	Section 10.3: The Message Heard Around The World
Identify the appropriate media, cables, ports, and connectors to connect Cisco network devices to other network devices and hosts in a LAN	Chapter 2: Configuring a Network Operating System
	Section 2.1: IOS Bootcamp
	Section 2.3: Addressing Schemes
	Chapter 4: Network Access
	Section 4.1: Physical Layer Protocols
	Section 4.2: Network Media
	Section 4.5: Summary
	Chapter 5: Ethernet
	Section 5.3: LAN Switches
	Chapter 6: Network Layer
	Section 6.3: Routers
	Section 6.4: Configuring a Cisco Router
	Chapter 9: Subnetting IP Networks
	Section 9.2: Addressing Schemes
	Chapter 11: It's a Network
	Section 11.2: Keeping the Network Safe
Implement a Small Switched Network	
Determine the technology and media access control method for Ethernet networks	Chapter 4: Network Access
	Section 4.4: Media Access Control
	Chapter 5: Ethernet

	Section 5.1: Ethernet Protocol
Identify basic switching concepts and the operation of Cisco switches	Chapter 5: Ethernet Section 5.3: LAN Switches

Configure and verify initial switch configuration including remote access management	Chapter 2: Configuring a Network Operating System
	    Section 2.1: IOS Bootcamp
	    Section 2.2: Getting Basic
	    Section 2.3: Addressing Schemes
	    Section 2.4: Summary
	Chapter 5: Ethernet
	    Section 5.3: LAN Switches
	Chapter 6: Network Layer
	    Section 6.4: Configuring a Cisco Router
	    Section 6.5: Summary
	Chapter 7: Transport Layer
	    Section 7.2: TCP and UDP
	Chapter 8: IP Addressing
	    Section 8.2: IPv6 Network Addresses
	    Section 8.3: Connectivity Verification
	    Section 8.4: Summary
	Chapter 9: IP Addressing
	    Section 9.2: Addressing Schemes
	Chapter 10: Application Layer
	    Section 10.3: The Message Heard Around The World
	Chapter 11: It's a Network
	    Section 11.2: Keeping the Network Safe
	    Section 11.3: Basic Network Performance

Verify network status and switch operation using basic utilities such as ping, telnet and ssh	Chapter 2: Configuring a Network Operating System
	    Section 2.3: Addressing Schemes
	    Section 2.4: Summary
	Chapter 8: IP Addressing
	    Section 8.3: Connectivity Verification
	    Section 8.4: Summary
	Chapter 9: Subnetting IP Networks
	    Section 9.2: Addressing Schemes
	Chapter 11: It's a Network
	    Section 11.2: Keeping the Network Safe
	    Section 11.3: Basic Network Performance

Describe how VLANs create logically separate networks and the need for routing between them	Covered in a later course
Configure and verify VLANs	Covered in a later course
Configure and verify trunking on Cisco switches	Covered in a later course
IP addressing (IPv4 / IPv6)	
Describe the operation and necessity of using private and public IP addresses for IPv4 addressing	Chapter 8: IP Addressing Section 8.1: IPv4 Network Addresses
Identify the appropriate IPv6 addressing scheme to satisfy addressing requirements in a LAN/WAN environment	Chapter 9: Subnetting IP Networks Section 9.3: Design Considerations for IPv6

	Section 9.4: Summary
Identify the appropriate IPv4 addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment	Chapter 9: Subnetting IP Networks
	Section 9.1: Subnetting an IPv4 Network
	Section 9.2: Addressing Schemes
	Section 9.4: Summary
	Chapter 11: It's a Network
	Section 11.1: Create and Grow
Describe the technological requirements for running IPv6 in conjunction with IPv4	Chapter 8: IP Addressing
	Section 8.2: IPv6 Network Addresses
Describe IPv6 addresses	Chapter 6: Network Layer
	Section 6.1: Network Layer Protocols
	Chapter 8: IP Addressing
	Section 8.2: IPv6 Network Addresses
	Section 8.3: Connectivity Verification
IP Routing Technologies	
Describe basic routing concepts	Chapter 5: Ethernet
	Section 5.3: LAN Switches
	Chapter 6: Network Layer
	Section 6.2: Routing
Configure and verify utilizing the CLI to set basic router configuration	Chapter 5: Ethernet
	Section 5.3: LAN Switches
	Chapter 6: Network Layer
	Section 6.3: Routers
	Section 6.4: Configuring a Cisco Router
	Section 6.5: Summary
	Chapter 8: IP Addressing
	Section 8.2: IPv6 Network Addresses
	Section 8.3: Connectivity Verification
	Section 8.4: Summary
	Chapter 9: Subnetting IP Networks
	Section 9.1: Subnetting an IPv4 Network
	Section 9.2: Addressing Schemes
	Section 9.3: Design Considerations for IPv6
	Chapter 11: It's a Network
	Section 11.2: Keeping the Network Safe
Configure and verify operation status of an Ethernet interface	Chapter 6: Network Layer
	Section 6.4: Configuring a Cisco Router
Verify router configuration and network connectivity	Chapter 6: Network Layer
	Section 6.4: Configuring a Cisco Router
	Section 6.5: Summary
	Chapter 8: IP Addressing
	Section 8.2: IPv6 Network Addresses
	Section 8.3: Connectivity Verification
	Section 8.4: Summary
	Chapter 9: Subnetting IP Networks
	Section 9.2: Addressing Schemes
	Chapter 11: It's a Network

	Section 11.2: Keeping the Network Safe
	Section 11.3: Basic Network Performance
Configure and verify routing configuration for a static or default route given specific routing requirements	Covered in a later course
Differentiate methods of routing and routing protocols	Chapter 6: Network Layer
	Section 6.2: Routing
	Note: Only next hop and IP routing tables are covered here. Other related topics are covered in a later course.
Configure and verify OSPF (single area)	Covered in a later course
Configure and verify interVLAN routing (router on a stick)	Covered in a later course
Configure SVI interfaces	Chapter 2: Configuring a Network Operating System
	Section 2.3: Addressing Schemes
IP Services	
Configure and verify DHCP	Chapter 2: Configuring a Network Operating System
	Section 2.3: Addressing Schemes
	Chapter 8: IP Addressing
	Section 8.1: IPv4 Network Addresses
	Chapter 9: Subnetting IP Networks
	Section 9.1: Subnetting an IPv4 Network
	Section 9.2: Addressing Schemes
	Chapter 10: Application Layer
	Section 10.1: Application Layer Protocols
	Section 10.2: Well-Known Application Layer Protocols and Services
	Section 10.4: Summary
Describe the types, features, and applications of ACLs	Covered in a later course
Configure and verify ACLs in a network environment	Covered in a later course
Identify the basic operation of NAT	Covered in a later course
Configure and verify NAT for given network requirements	Covered in a later course
Configure and verify NTP as a client	Covered in a later course
Network Device Security	
Configure and verify network device security features	Chapter 2: Configuring a Network Operating System
	Section 2.2: Getting Basic
	Section 2.3: Addressing Schemes
	Section 2.4: Summary
	Chapter 6: Network Layer
	Section 6.4: Configuring a Cisco Router
	Section 6.5: Summary
	Chapter 8: IP Addressing
	Section 8.2: IPv6 Network Addresses
	Chapter 11: It's a Network
	Section 11.2: Keeping the Network Safe
Configure and verify Switch Port Security features	Covered in a later course
Configure and verify ACLs to filter network traffic	Covered in a later course
Configure and verify ACLs to limit telnet and ssh access to the router	Covered in a later course

Troubleshooting	

Troubleshoot and correct common problems associated with IP addressing and host configurations	Chapter 2: Configuring a Network Operating System
	       Section 2.3: Addressing Schemes
	Chapter 6: Network Layer
	       Section 6.4: Configuring a Cisco Router
	       Section 6.5: Summary
	Chapter 8: IP Addressing
	       Section 8.3: Connectivity Verification

Troubleshoot and resolve VLAN problems	Covered in a later course
Troubleshoot and resolve trunking problems on Cisco switches	Covered in a later course
Troubleshoot and resolve ACL issues	Covered in a later course
Troubleshoot and resolve Layer 1 problems	Chapter 4: Network Access Section 4.4: Media Access Control

Support

For general assistance with curriculum, classroom, or program issues, please contact the Networking Academy™ Support Desk by signing into the Cisco NetSpace™ learning environment and clicking **Help** > **Contact Support** at the top of the page.