Release Notes
CCNA Exploration: Routing Protocols and Concepts – Release 4.0(2)

Purpose

Release 4.0(2) of Routing Protocols and Concepts is the second maintenance release of the second course in the CCNA Exploration curriculum. These notes provide detailed information about this release, including curriculum content, known issues, updates and fixes, and support information.

Release Content

Component	Description
E-Learning Content	11 chapters
Labs	30 hands-on labs involving networking equipment
Packet Tracer v4.11	Version 4.11 is recommended and enables students to complete the 81 embedded Packet Tracer activities in simulated networks. Version 4.11 is compatible with all CCNA Exploration courses.
Summary and Review	11 summary and review sections, which include Check Your Understanding review assessments, Packet Tracer Skills Integration Challenge activities, and To Learn More questions, links, and suggested activities
Chapter Quizzes	11 chapter quizzes
Chapter Exams	11 chapter exams
Final Exam	1 final exam covering chapters 1-9
Skills-Based Assessments	2 skills-based assessments to verify comprehension of course concepts

Known Issues and Caveats

Item	Description
Graphic Resolution	This curriculum was designed for viewing with a screen resolution of 1024 X 768 or less. If viewed in a higher resolution, items may not display properly in the media area.
Adobe Flash Player	This curriculum was designed for viewing using Adobe Flash Player 8. Certain versions of Flash Player 8 may produce undesirable side effects. If you experience issues using Flash Player 8, we recommend upgrading to Flash Player 9.
Glossary	This course includes a glossary with hyperlinked terms. Enhancements are planned to be made to this glossary in a future release. Some glossary definitions may contain only a "See Also" link by design.
Lab and PT Activity Titles	The titles in the lab and Packet Tracer activity PDF documents and the titles used in lab references in the e-learning content may not be an exact match.
Course Index	The course index titles are truncated due to the lack of word wrapping. However, the full titles appear in the appropriate title bars in the course.
Content Delivery	This course may be delivered through different channels. The primary delivery channels for the course are Academy Connection or a local Web

	server. **The recommended method is to deliver the course through a local Web server**. Secondary channels for delivery include installing the content directly to a workstation or PC.
	
	When contemplating the various delivery options, administrators and instructors should consider the diversity of platforms on which the course and its content must operate, and note the following guidelines:
	• Select the download package (Windows or Linux zip file) that corresponds to your server/workstation operating system
	• When possible, configure the content to be delivered through a local Web server when presenting to a class or over an academy LAN
	• When installing the course on a standalone workstation or PC, please be aware of the following:
	   o Disable all popup blocker software, toolbars, and applications
	   o Accept any ActiveX warning messages when viewing course content
	   o Navigate within the course window to avoid ActiveX pop-ups that can be generated by certain combinations of operating systems and browsers

Linux Operating System Support	This course uses the latest features in Flash technology. An installer was used to aid in the local deployment of this product to Windows users. However, for Linux users, the Flash Player security settings must be set manually to run the course through a browser on a local workstation/PC. Installing a standalone curriculum on a Linux operating system requires additional steps after unzipping the course to the file system. After the course is unzipped, visit the Macromedia's security settings page at: www.macromedia.com/support/documentation/en/flashplayer/help/settings_manager04.html After the page loads, some security options will be displayed. Verify that **Always ask** is selected. In the drop-down menu, select **Add location**, and then browse for the course folder. After the directory has been marked as secure, close all browser windows. Navigate to the course folder and click the index.html file to launch the course.

Course Navigation for Local Installation on a Workstation/PC	Under certain conditions, "Allow blocked content" ActiveX popup messages may appear in a yellow bar at the top of the screen. If you receive these messages, select "allow blocked content" to continue. On the launch page for the course, select the launch course button to view the course content. Some users may receive a second "Allow blocked content" ActiveX popup message. Click the yellow bar at the top of the screen and choose "allow blocked content" to begin using the course.
	
	Note: To avoid excessive ActiveX popup messages, do not use the launch page chapter drop down menu to move between course chapters. Instead, use features such as the course index, back and next buttons, and location box at the bottom of the course content to navigate within the course browser window. For more information on these navigation features, we recommend reviewing the Course Tour, which can be accessed from the course launch page.
	
	To stop the information bar from blocking file and software downloads for Internet Explorer, we recommend the following steps:
	• Open Internet Explorer.
	• Select **Tools** > **Internet Options**
	• Click the **Security** tab, and select **Custom Level**
	• Do one or both of the following:
	   o To turn off the Information bar for file downloads, scroll to the Downloads section and enable automatic prompting for file downloads.
	   o To turn off the Information bar for ActiveX controls, scroll to the ActiveX controls and plug-ins section, and enable automatic prompting for ActiveX controls.

	• Click **OK**, click **Yes** to confirm that you want to make the change, and then click **OK** again.
	
	To stop the information bar from blocking file and software downloads for Mozilla Firefox, we recommend the following steps:
	• To access the Popup Blocker Options, select **Tools** > **Options** > **Content**. From there, you can do the following things:
	   ○ **Block pop-up windows**: Deselect this option to disable the popup blocker altogether.
	   ○ **Exceptions:** Use this option to specify which sites can display popups. You can allow or remove sites from the list.

Packet Tracer Evaluation Feedback	Due to the evaluative nature of Packet Tracer activity files, all course activities have a "Check Results" button that submits the student's work for evaluation, and provides feedback. This includes observational activities that do not involve any configuration tasks. Packet Tracer files are evaluated by comparing the network submitted by a student to an "answer network." Activities that require students to perform configurations have a default feedback message that states: "This activity is incomplete, please try again." This message will appear until all configuration tasks are properly completed. For activities that require observation only, the state of the network will not change. If the "Check Results" button is selected, the feedback will say: "Congratulations on completing this activity," even though the activity may not be completed. If this occurs, the student should finish all of the instructions in the observation activity to complete it.

Updates and Fixes

This maintenance release includes the following fixes that address issues reported to the Global Support Desk:

Section	Reported Issue/Error	Solution
1.1.2.2	When you hover over the "CPU" box a popup comes up showing the definition for Ram. It needs to have the correct definition for CPU.	Correct popup to show definition for CPU. "Central processing unit is the brain of the computer. The CPU is where most calculations take place by interpreting computer program instructions and processing data."
1.3.5.1	In the animation it shows PC1 and PC2, but the chapter text mentions PC3 twice. It should be PC2, change both errors.	6th paragraph Change: After making its routing decision, router R1 forwards the packet destined for PC3 to router R2. To: After making its routing decision, router R1 forwards the packet destined for PC2 to router R2. 8th paragraph Change: Router R2 was able to forward the packet toward PC3's destination network. To: Router R2 was able to forward the packet toward PC2's destination network.
1.5.1.1	Incomplete sentence in Task 6, Step 6, last sentence. (page 8 of lab 1.5.1)	Change: When both the enable password and enable secret passwords are configured, the To: When both the enable password and enable secret passwords are configured, the router expects the password as defined in the enable secret command. In this case, the router ignores the password defined in

		the enable password command.
1.5.1.1	Lab 1.5.1: Page 2, Task 1, Step 1, 1st sentence. Incorrect name used for switch.	Change: Use a straight-through Ethernet cable to connect the FastEthernet 0/0 interface of the R1 router to the FastEthernet 0/1 interface on the R1 switch. To: Use a straight-through Ethernet cable to connect the FastEthernet 0/0 interface of the R1 router to the FastEthernet 0/1 interface on the S1 switch.
1.5.3.1	Instructors Lab 1.5.3.1, Task 7 Reflection, both .pdf and .doc files have this error: There are repeated sentences in the answers key.	Change: R1 cannot ping the FastEthernet interface on R2. R1 cannot ping the FastEthernet interface on R2. PC1 cannot ping PC2. PC2 cannot ping PC1. To: R1 cannot ping the FastEthernet interface on R2. PC1 cannot ping PC2. PC2 cannot ping PC1.
11.4.1.5	The text that pops up next to R1 and R2 is appearing in the wrong place. Text next to R2 should appear next to R1 and visa versa. Also, please enclose text in a balloon and attach to router as shown in screenshot-1 and screenshot-2. Do not add the blue arrows shown in screenshot-2. This is from a static version of the animation which shows direction.	Correct text positions as noted.
2.2.2.1	Missing the word "not" in sentence. 3rd last paragraph, last sentence.	Change: If you do correctly set the clock rate, then line protocol (the Data Link layer) will not change to up. To: If you do not correctly set the clock rate, then line protocol (the Data Link layer) will not change to up.
2.3.2.2	in both "Pings are discarded" and "Pings are sent to R3" animations, the first row highlighted is "172.16.0.0/24". However, the IP address shown below is "172.16.1.0"	The animation should start with the next line: "C 172.16.1.0 is directly connected, FastEthernet0/0"
2.8.1.1	Lab 2.8.1: Page 9, Task 5, step 1.	Change: Step 1: Configure the host PC2. To: Step 1: Configure the host PC1.
2.8.1.1	2.8.1.1 Lab activity, Task 5, Step 1. The incorrect PC is referenced, it should not ask to have PC2 configured.	Change: Configure the host PC2. To: Configure the host PC1.
2.8.1.1	This error is in both instructors and students lab file. Also in the .doc version of the lab. Lab 2.8.1, page 19, Task 14, item 1. The word "reply" in the sentence is incorrect.	Change: The ICMP process on PC3 formulates a ping request to PC2 and sends the reply to the IP process. To: The ICMP process on PC3 formulates a ping request to PC2 and sends the request to the IP process.
2.8.1.1	Lab 2.8.1: Page 13, Task 8, step 3, 3rd sentence.	Change: The pings will arrive at PC2 if you have configured and verified all devices through Task 6, "Gather Information." To: The pings will arrive at PC2 if you have configured and verified all devices through Task 7, "Gather Information."
2.8.1.2	3 instruction errors listed from the NCL ticket for the PT activity.	1. Task 3, step 3, question 1 Change: An interface will not come up unless it detects a link beat a carrier detect signal at the physical layer from another device.

		To: An interface will not come up unless it detects a link beat (a carrier detect signal) at the physical layer from another device. 2. Task 7, Step 4 Change: Since the frame is HDLSHDLC, R2 strips off the header and looks up the destination IP address of _____ in its routing table. To: Since the frame is HDLC, R2 strips off the header and looks up the destination IP address of _____ in its routing table. 3. Task 7, Step 6, question 8 Change: What is the "next hop" address R2 would send a packet destined for the 192.168.2.0/24 network is 192.168.1.1? To: What is the "next hop" address R2 would send a packet destined for the 192.168.2.0/24 network?
2.8.2.1	Incorrect IP address in instructor answer key	The topology diagram at the start of the lab, it has an incorrect IP address in the instructor answer key. Between routers HQ and Branch Change: 192.168.1.128/26 To: 192.168.2.128/26
3.5.2.1	Interface Fa0/1 should be Fa0/0 in both student and instructor lab.	Page 3, Task 2, Step 2, item 2: Change: Assign second subnet to LAN connected to the Fa0/1 interface of BRANCH2. To: Assign second subnet to LAN connected to the Fa0/0 interface of BRANCH2. NOTE: This problem is also in PT 3.5.2.2 instructions.
3.5.3.1	Task 1 Step 1: The questions ask both the number of subnets and the maximum number of IP addresses that are needed for a single subnet. The table lists 16 rows, so some student are mistakenly trying to maximize the number of hosts. The problem is not clear the students should be basing the subnetting on the maximum number of hosts.	Change: Subnet the 172.16.0.0 network into the appropriate number of subnets. To: Subnet the 172.16.0.0 network based on the maximum number of host required by the largest subnet.
3.5.3.1	The lab activity Addressing Table is missing the ISP s0/0/0 address	Add Row to Addressing Table for ISP with S0/0/0, IP address = 209.165.200.227, subnet mask = 255.255.255.224, default gateway = N/A
3.5.3.1	The lab activity Addressing Table has incorrect HQ serial interface number.	Change: HQ S0/0/2 To: HQ S0/1/0
3.5.3.1	The lab activity Addressing Table has incorrect East serial interface number.	Change: East S0/0/2 To: East S0/1/0
3.5.3.1	The lab activity Addressing Table has incorrect West serial interface number.	Change: West S0/0/2 To: West S0/1/0
3.5.3.2	Task 1 Step 1: The questions ask both the number of subnets and the maximum number of IP addresses that are needed for a single subnet. The	Change: Subnet the 172.16.0.0 network into the appropriate number of subnets. To: Subnet the 172.16.0.0 network based on

		table lists 16 rows, so some student are mistakenly trying to maximize the number of hosts. The problem is not clear the students should be basing the subnetting on the maximum number of hosts.	the maximum number of host required by the largest subnet.
4.2.1.1		Heading R3: Serial 0/0/0 is not the correct interface for 10.3.0.0	Change: 10.3.0.0 available through interface Serial 0/0/0 To: 10.3.0.0 available through interface Serial 0/0/1
4.2.2.1		The Interface for R3 is S0/0/1 in the topology, but the chart indicates S0/0/0.	Change the Interface for R3 Network 10.3.0.0 from S0/0/0 to S0/0/1 to match the topology, text, and other TIs in this section
4.2.2.1		Heading R3: Serial 0/0/0 is not the correct interface for 10.3.0.0	Change: Sends an update about network 10.4.0.0 out the Serial 0/0/0 interface To: Sends an update about network 10.4.0.0 out the Serial 0/0/1 interface
4.2.3.1		Heading R3: Serial 0/0/0 is not the correct interface for 10.3.0.0	Change: Sends an update about network 10.4.0.0 out the Serial 0/0/0 interface To: Sends an update about network 10.4.0.0 out the Serial 0/0/1 interface
4.2.4.1		The label for the branch in Region 4 is incorrect in the graph/flash animation.	Change: R2-R4 To:B2-R4
4.3.3.1		Last paragraph. The text calls the router "router C" but the graphic and flash animation call it "router 3".	Change: When network 10.4.0.0 becomes unavailable and router C becomes aware of that, it sends out the information to its neighbors. To: When network 10.4.0.0 becomes unavailable and router 3 becomes aware of that, it sends out the information to its neighbors.
4.4.2.1		In the beginning of the animation, left most table, last row, hop count was 2. "2" got changed to "1" when middle table last row# changed from "1" to "3"	The hop count should not change from 2 to 1 in the left most table, last row.
4.4.7.1		R1 routing table, last entry, the IP is incorrect	The IP address should be 10.4.0.0
4.7.1.2		In question#4, under the question it says "from 1.2"	This should be "from 1.4"
5.4.5.3		On page 5.4.5.3 the routing tables for R1 and R3 have an extra RIP route to 172.30.0.0. -- R1: show ip route R 172.30.0.0 [120/2] via 209.165.200.230, 00:00:26, Serial0/0/0 R3 show ip route R 172.30.0.0 [120/2] via 209.165.200.233, 00:00:22, Serial0/0/1	These routes should not be there since we are showing the routing tables with RIPv1.
5.5.1.1		Incorrect subnet addresses for interfaces: R1 - Fa0/0, S0/0/0; R2 - Fa0/0, S0/0/0.	Change: 172.168.1.0/24, 172.130.2.0/24 and 172.168.3.0/24 To: 172.30.1.0/24, 172.30.2.0/24 and 172.30.3.0/24
6.1.3.2		Link is not correct	Change: http://www.ietf.org/rfc/rfc1519 To: http://www.ietf.org/rfc/rfc1519.txt
6.3.1.1		Last 3 sentences on the page:	Change: Let us assume that router X has a

	172.16.0.0/14 should be 172.16.0.0/13 as the /14 does not include the 172.22.n.n network.	specific route for 172.22.0.0/16 using Serial 0/0/1 and a summary route of 172.16.0.0/14 using Serial0/0/0. Packets with the IP address of 172.22.n.n match both route entries. These packets destined for 172.22.0.0 would be sent out the Serial0/0/1 interface because there is a more specific match of 16 bits, then with the 14 bits of the 172.16.0.0/14 summary route. To: Let us assume that router X has a specific route for 172.22.0.0/16 using Serial 0/0/1 and a summary route of 172.16.0.0/13 using Serial0/0/0. Packets with the IP address of 172.22.n.n match both route entries. These packets destined for 172.22.0.0 would be sent out the Serial0/0/1 interface because there is a more specific match of 16 bits, then with the 13 bits of the 172.16.0.0/13 summary route.
6.4.2.1	In the Scenario, under the West Network Section the number of hosts are wrong (correct in the diagrams however), and the LAN 1 & 2 descriptions are reversed from normal order.	Change: • The NW-BR1 (Northwest Branch1) LAN2 will require 200 host IP addresses. • The NW-BR1 (Northwest Branch1) LAN1 will require 200 host IP addresses. To: • The NW-BR1 (Northwest Branch1) LAN1 will require 2000 host IP addresses. • The NW-BR1 (Northwest Branch1) LAN2 will require 2000 host IP addresses.
6.4.2.2	PT file 6.4.2 in CCNA Exp: Routing: mistype in answer network.	Correct the answer file with the correct IP address Change: Answer network for North-East router's s0/0/0 requires 172.6.47.10 To: Answer network for North-East router's s0/0/0 requires 172.16.47.10
6.4.2.2	In the Scenario, under the West Network Section the number of hosts are wrong (correct in the diagrams however), and the LAN 1 & 2 descriptions are reversed from normal order.	Change: • The NW-BR1 (Northwest Branch1) LAN2 will require 200 host IP addresses. • The NW-BR1 (Northwest Branch1) LAN1 will require 200 host IP addresses. To: • The NW-BR1 (Northwest Branch1) LAN1 will require 2000 host IP addresses. • The NW-BR1 (Northwest Branch1) LAN2 will require 2000 host IP addresses.
6.5.1.2	Question 8, under the question, on the left, it says "from 2.5", is this correct?	Because this is chapter 6, the reference should be from chapter 6.
6.5.1.2	Question 8, in the answer, the last # in IP is in binary octet, but there are only 7 bits. Shouldn't there be 8 bits?	Add extra bit.
7.1.3.3	After clicking "R1 Routes" button, the text at the bottom of the graphic reads "R3 has routes to local 172.30.0.0 subnets only." This is incorrect.	Change: R3 has routes to local 172.30.0.0 subnets only. To: R1 has routes to local 172.30.0.0 subnets only.
7.1.3.3	The graphic page on 7.1.3.3 show/assume every other packet getting lost due to Rip v1 not dealing with discontiguous networks. However, the output only works that way if the hardware doesn't support IP CEF. By default the 1841 routers have ip cef on,	A note should be put in the 7.1.3.3 curriculum page. "For some routers you will need to disable ip cef to see the results as shown."

	and the packets for a ping all succeed or all fail, since ip cef caches the route and doesn't load balance between the entries per packet.	
7.5.1.1	The lab page on 7.5.1.1, Task 3, Step 2, show/assume every other packet getting lost due to Rip v1 not dealing with discontiguous networks. However, the output only works that way if the hardware doesn't support IP CEF. By default the 1841 routers have ip cef on, and the packets for a ping all succeed or all fail, since ip cef caches the route and doesn't load balance between the entries per packet.	A note should be put in the 7.5.1.1 lab. "For the 1841 router you will need to disable ip cef to see the results as shown." Add the following note before the question "From the R2 router, how many ICMP messages are successful when pinging PC1? ": "Note: For the 1841 router, you will need to disable IP CEF to obtain the correct output from the ping command. Although a discussion of IP CEF is beyond the scope of this course, you may disable IP CEF by using the following command in global configuration mode: R2(config)#no ip cef"
7.5.1.2	The PC icons are incorrectly labeled. The names need to be swapped.	Rename PC1 to PC2 and PC2 to PC1. Also adjust the grading of the activity for these changes, ie default gateway.
7.6.1.2	Question 10 from chapter summary, page 7.6.1.2, has an incorrect IP address in the answer.	Change: Yes. When R2 receives both routing updates, it will include both the summary router 172.16.0.0/16 forwarding packets to R3 and the specific subnets 172.30.1.0/24 and 172.30.2.0/24 forwarding those packets to R1. To: Yes. When R2 receives both routing updates, it will include both the summary router 172.30.0.0/16 forwarding packets to R3 and the specific subnets 172.30.1.0/24 and 172.30.2.0/24 forwarding those packets to R1.
8.1.4.4	For all 3 diagrams showing R2 router output, the number of child router is not 1, it is 2.	For all 3 R2 router output diagrams. Change: 172.16.0.0/24 is subnetted, 1 subnets To: 172.16.0.0/24 is subnetted, 2 subnets
8.1.4.5	Missing text in graphic for Child Route Subnet 172.16.3.0.	Add to diagram: Ultimate Route
8.1.4.5	The diagram shows the number of child router as 1, it is 2.	Change: 172.16.0.0/24 is subnetted, 1 subnets To: 172.16.0.0/24 is subnetted, 2 subnets
8.2.2.2	The topology diagram in the Flash activity shows both R1 s0/0/0 and R2 s0/0/0 with an ip address of 172.16.2.1/24. Similarly for R2 and R3 on s0/0/1 (192.168.1.2). The .1 and .2 referring to R2's Serial interfaces should be interchanged. The text in the routing table output is correct and refers to R2 as 172.16.2.2 not 172.16.2.1.	For R2 interfaces: On S0/0/0 change .1 to .2 On S0/0/1 DCE change .2 to .1
8.2.4.4	The table in middle of the graphic describes 192.168.1.0/24 as a level 1 Parent Route. However, level 1 parent routes do not have exit interfaces (or next-hop addresses), which this does have, as shown at the top of the	Change: Level 1 Parent Route To: Level 1 Route

		graphic.	
8.3.5.1	The word "Classful" in the graphic title for when you click on buttons" Router Output", "Topology" and "R2 Routing Table" is incorrect as the page and graphic information is about classless routing.	For these titles, Change: Example: R2 Operating with Classful Routing Behavior To: Example: R2 Operating with Classless Routing Behavior
9.1.4.2	Click on button "Query & Reply. The text headings are mixed in with the text.	Change: Query packet - Used by DUAL when searching for networks or other tasks. Reply packet - Automatically sent in response to Query packet Acknowledgement (ACK) packet - Automatically sent back when reliable RTP is used To: Query packet - Used by DUAL when searching for networks or other tasks Reply packet - Automatically sent in response to Query packet Acknowledgement (ACK) packet - Automatically sent back when reliable RTP is used
9.3.1.1	In the command just above the last paragraph tos should be italic and not bold. tos is a parameter.	Change: Router(config-router)#metric weights **tos** k1 k2 k3 k4 k5 To: Router(config-router)#metric weights *tos* k1 k2 k3 k4 k5
9.3.1.2	The title of the graphic says "R3 Routing Table", but instead the Show IP Protocols for R1 is shown. The text is discussing K values.	Graphic title. Change: R3 Routing Table To: R1 K Values
9.3.4.2	2nd paragraph, first sentence: EIGRP takes the bandwidth value in kbps and divides it by a reference bandwidth value of 10,000,000." But it's the reference bandwidth which is divided by the bandwidth.	Change: EIGRP takes the bandwidth value in kbps and divides it by a reference bandwidth value of 10,000,000. To: EIGRP takes the reference bandwidth of 10,000,000 and divides it by the bandwidth value in kbps.
9.4.4.2	On the playback of flash media, text conflict with the chapter text. 3014400 should be the Feasible Distance to the destination network.	Change: Feasible Distance to Successor To: Feasible Distance to the Destination Network
9.4.4.2	On the playback of flash media, text conflict with the chapter text. 41026560 should be the Feasible Distance to the destination network.	Change: Feasible Distance to Feasible Successor (pointing to 41026560, latter part of animation) To: Feasible Distance to Destination Network.
9.4.6.1	If there is no "Feasible Successor", and the query returns "One or More New Routes", it doesn't show it installing the successor in the routing table. (That only happens in the flow chart if there is a Feasible Successor.) But it also happens when a new route is found.	Change "One or More New Routes?" so it points to "Install Successor in Routing Table"
9.6.1.1	Page 7 of this lab. The instructions for Task 8, Step 1 and Step 3 state: Use the show ip interface command to view... BUT the command at R1 is, R1#show interface serial0/0/0	Change: Use the show ip interface command to view... To: Use the show interface serial0/0/0 command to view...

9.7.1.3	On 9.7.1 PT file, there is an error in the answer network. The result of the /28 is you cannot ping the serial interfaces on the B2-B3 WAN link.	For the ISP, in the answer file. Change: 172.20.0.0/28 To: 172.20.0.0/27
11.1.1.1	The document that is linked at the bottom of this page is not properly formatted in the browser window.	add ".txt" to the end of the link so that the link references the file directly and opens properly formatted
11.1.4.1	When you roll over the "Hello Interval", the way the dialog box displays looks like it is pointing to "Option"	The dialog box should display from "Hello Interval"
11.3.1.2	Graphic shows 64kbps link with cost of 64. Previous section shows that the cost for this should be 1562. The next section explains that the physical and actual bandwidth can be different however. But at this stage of the graphic, the student does not know this and can be confused. Rather, explain the possible difference WITH the graph.	There is information at the top of page 11.3.1.1 but I can see how a student could not understand this at this point in the course. It is not well explained with examples. Either change the "64 kbps" in the graphic to "T1" so it matches the chart from page 11.3.1.1 or explain why there is this difference compared to the chart on page 11.3.1.1. Decided to change to "1.544 Mbps" to conform to the other data rates
11.4.1.1	Switches in LANs, as in the graphic, do not broadcast all frames automatically.	3rd sentence: Change: They are broadcast networks because all devices on the network see all frames. To: They are broadcast networks because all devices on the network see all broadcast frames.
11.4.2.1	In the Multiaccess graphic, the Loopback 0 for router A is shown with a subnet mask of /3, but the correct number should be /32, just like the other two routers.	Change: Lo0 192.168.31.11/3 To: Lo0 192.168.31.11/32
11.4.2.3	Change the text of the fifth paragraph after the 'Click New Router in the figure' instruction to the following: RouterD joins the network. If a new router enters the network after the DR and BDR have been elected, it will not become the DR or the BDR even if it has a higher OSPF interface priority or router ID than the current DR or BDR. The new router can be elected the BDR if the current DR or BDR fails. If the current DR fails, the BDR will become the DR, and the new router can be elected the new BDR. After the new router becomes the BDR, if the DR fails, then the new router will become the DR. The current DR and BDR must both fail before the new router can be elected DR or BDR. In paragraph 8 after the 'Click New DR Fails in the figure' instruction, delete the first sentence: Only after both the DR and the BDR fail will the DR and BDR routers change.	

11.5.2.1	In the graphic; "R1 After" output, there are two incorrect cost values and one incorrect IP address used.	Change: 192.168.10.8 [100/104597] via 192.168.10.6, 00:01:33, Serial0/0/1 To: 192.168.10.8 [100/117187] via 192.168.10.6, 00:01:33, Serial0/0/1 Change: 10.10.10.0/24 [100/65635] via 192.168.10.2, 00:01:33, Serial0/0/1 To: 192.168.10.8 [100/117287] via 192.168.10.6, 00:01:33, Serial0/0/1
11.5.2.1	The last paragraph: The cost to the route to 10.10.10./24 via 192.168.10.6 is incorrectly calculated.	Change: After configuring a new reference bandwidth, the cost for the same route is now 65635. To: After configuring a new reference bandwidth, the cost for the same route is now 117287.
11.6.1.1	The word "no" is missing from an instruction. Page 8, Task 6, step 7:	Change: R1(config-router)#router-id 10.4.4.4 To: R1(config-router)#no router-id 10.4.4.4
Glossary	Incorrect definition for dynamic routing protocols.	Change: Routing that adjusts automatically to network topology or traffic changes. Also called adaptive routing. To: Allow network devices to learn routes dynamically. RIP and EIGRP are examples of dynamic routing protocols.
Glossary	Incorrect acronym used in sentence and wording needs to be corrected.	Change: ABR located between an OSPF autonomous system and a non-OSPF network. To: An ASBR is located between an OSPF autonomous system and a non-OSPF network.
OSPF SBA	Both the Instructor and Student versions of the .doc and .pdf files for the OSPF SBA have a disagreement on the router names between the instructions and the graphic. Router names in the graphic should be change to match router names used in the instruction.	Change: RouterA To: Remote_1 Change: RouterB To: Remote_2
EIGRP SBA	Change: You must also make sure that the Remote_1 router never takes part in the DR/BDR election. To: You must also make sure that the Remote_2 router never takes part in the DR/BDR election.	Change: You must also make sure that the Remote_1 router never takes part in the DR/BDR election. To: You must also make sure that the Remote_2 router never takes part in the DR/BDR election.
EIGRP SBA	In the EIGRP lab, for Remote2 in Task 2, Step 3 has incorrect instructions.	For both student SBA lab and instructor SBA lab: Change: Step 3: Configure EIGRP on the Remote2 router but only advertise the serial interface. To: Step 3: Configure EIGRP on the Remote2 router.
OSPF SBA	In the OSPF lab, Learning Objectives section, the sixth objective is incorrectly stated.	For both student SBA lab and instructor SBA lab: Change: Configure OSPF authentication To: Verify OSPF operation
OSPF SBA	In the OSPF lab, Task 2, Table 2: The subnet mask for the Ethernet network in the topology is listed as 255.255.255.252 and should be 255.255.255.248.	For both student SBA lab and instructor SBA lab: For the ISP router interface Fa0/0 Change: 10.10.10.1 255.255.255.252 To: 10.10.10.1 255.255.255.248

		For the Remote_1 router interface Fa0/0 Change: 10.10.10.3 255.255.255.252 To: 10.10.10.3 255.255.255.248 For the Remote_2 router interface Fa0/0 Change: 10.10.10.2 255.255.255.252 To: 10.10.10.2 255.255.255.248
OSPF SBA	In the OSPF lab, Task 1, Table 1: The subnet mask for the Ethernet network in the instructors answer key is listed as 255.255.255.252 and should be 255.255.255.248.	For instructor SBA lab: For the ISP router interface Fa0/0 Change: 10.10.10.1 255.255.255.252 To: 10.10.10.1 255.255.255.248 For the Remote_1 router interface Fa0/0 Change: 10.10.10.3 255.255.255.252 To: 10.10.10.3 255.255.255.248 For the Remote_2 router interface Fa0/0 Change: 10.10.10.2 255.255.255.252 To: 10.10.10.2 255.255.255.248
OSPF SBA	In the OSPF lab, Task 4 Step 4 states that the student should reload the "Switch". Students have not covered this skill and may find the instructions confusing.	For both student SBA lab and instructor SBA lab: Change: Step 4: Reload the switch to force the OSPF election process. To: Step 4: Reboot the switch using the reload command to force the OSPF election process.
OSPF SBA	In the OSPF lab, Below the "Scenario" heading, the last sentence states that authentication must be set on the router. This is not covered in the course at this time nor does the lab actually have the student do this.	For both student SBA lab and instructor SBA lab: Remove: Authentication must also be set so that a rouge router cannot connect to the network and propagate false routes into the network.
EIGRP SBA	In the EIGRP lab, the 10.10.10.0/29 in the topology graphic is not used in the exam.	For both student SBA lab and instructor SBA lab: Remove the 10.10.10.0/29 from the lab topology diagram.
EIGRP SBA	In the EIGRP lab, there is a stray reference to FA0/0 on the left side of Router2 in the topology graphic.	For both student SBA lab and instructor SBA lab: Remove the FA0/0 from the left side of Router2 on the lab topology diagram.

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