Computer Practical – Week 10

Objectives

The aim of this week's computer practical includes:

- Assess your skills on basic router and switch network configuration
- Learn and practice the skills of troubleshooting connectivity issues

Tasks

Accordingly, you will need to complete the following tasks in this week's computer practical class:

1. **Computer Practical Test** (timed test in week 10 Computer Practical class)
2. Packet Tracer - Troubleshooting Connectivity Issues

Instructions of the activities are given on the next pages.

Assessment

This week's Computer Practical is assessed in class, and it is worth 6% of the total score of the course, including 5% for the computer practical test and 1% for the troubleshooting Packet Tracer activity.

Notes:

- To be awarded marks for this computer practical, a student must:
  - attend week 10 Computer Practical class, and being absent from the class will result in zero marks for week 10's computer practical,
  - complete the test in the class as instructed by your tutor (any attempt on the test outside your week 10 computer practical class will not be accepted), and
  - complete the troubleshooting PT activity and submit the PKA file in class using the "Computer Practical-Week 10-Task2-Submission" link in Week 10 section of Learnonline course site. If you cannot finish the activity in class, let your tutor know before leaving the class, and submit the PKA file by Sunday 11:59 pm of Week 10. Late submission will result in zero marks for the activity.
- **Information about the computer practical test**
  - The test involves configuring a network containing a router, switches and PCs, testing and achieving connectivity between the devices, in Packet Tracer.
  - At the start of week 10 computer practical class, your tutor will guide you to access the test PKA file and instruction, which will be presented using a timed quiz. You will need to use the password given by your tutor in class to start the quiz and follow the instruction given in the quiz to do test. You must upload the completed PKA file BEFORE the timed quiz is ended.
  - To prepare for the test, please review the device configuration computer practical (and practical) activities in the past weeks. You may want to make yourself a list of commands used for router and switch configuration and use Packet Tracer to practice how to configure routers, switches and PCs, and do connectivity testing using the Ping command.
  - The test is open book, which means you can use any printed or online information, but discussions with others are prohibited.
  - Please make sure that you have had Packet Tracer installed on the PC that you are going to use during your Week 10 computer practical class.
  - The test is timed, so please get into your online classroom in time, otherwise you may not have enough time to finish the test.

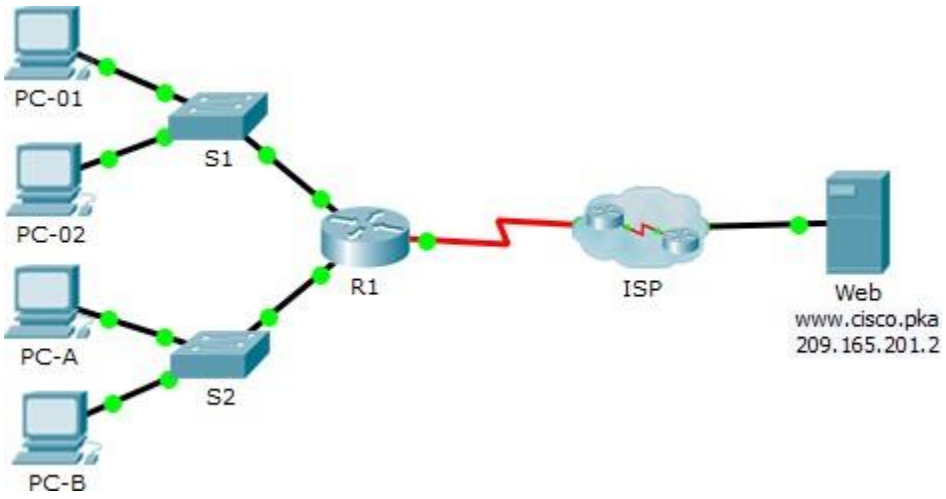
Computer Practical Test:

Follow the instruction of your tutor to complete the Computer Practical Test in Week 10 computer practical class.

After you have finished the test, follow the instruction on next pages to complete Task 2 of this week's computer practical, i.e. the troubleshooting Packet Tracer activity.

Packet Tracer - Troubleshooting Connectivity Issues

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	172.16.1.1	255.255.255.0	N/A
	G0/1	172.16.2.1	255.255.255.0	N/A
	S0/0/0	209.165.200.226	255.255.255.252	N/A
R2	G0/0	209.165.201.1	255.255.255.224	N/A
	S0/0/0 (DCE)	209.165.200.225	255.255.255.252	N/A
PC-01	NIC	172.16.1.3	255.255.255.0	172.16.1.1
PC-02	NIC	172.16.1.4	255.255.255.0	172.16.1.1
PC-A	NIC	172.16.2.3	255.255.255.0	172.16.2.1
PC-B	NIC	172.16.2.4	255.255.255.0	172.16.2.1
Web	NIC	209.165.201.2	255.255.255.224	209.165.201.1
DNS1	NIC	209.165.201.3	255.255.255.224	209.165.201.1
DNS2	NIC	209.165.201.4	255.255.255.224	209.165.201.1

Objectives

The objective of this Packet Tracer activity is to troubleshoot and resolve connectivity issues, if possible. Otherwise, the issues should be clearly documented and so they can be escalated.

Background / Scenario

Users are reporting that they cannot access the web server, www.cisco.pka after a recent upgrade that included adding a second DNS server (i.e. DNS2 in the Addressing Table). You must determine the cause and attempt to resolve the issues for the users. Clearly document the issues and any solution(s). You do not have access to the devices in the cloud or the server www.cisco.pka. Escalate the problem if necessary.

Router R1 can accessed with the username **Admin01** and password **cisco12345**.

Step 1: Determine the connectivity issue between PC-01 and web server.

a. On PC-01, open the command prompt. Enter the command **ipconfig** to verify what IP address and default gateway has been assigned to PC-01. Correct as necessary.

b. After checking and correcting (as necessary) the IP addressing issues on PC-01, issue the pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Ping to default gateway (172.16.1.1) _____

To web server (209.165.201.2) _____

Ping to PC-02 _____

To PC-A _____

To PC-B _____

c. Open the web browser on PC-01 to access the web server.

Enter the web server's URL www.cisco.pka in the browser. Can PC-01 access the webpage on the web server? _____

Enter the web server's IP address 209.165.201.2 in the browser. Can PC-01 access the webpage on the webserver? _____

d. Document the issues and provide the solution(s). Correct the issues if possible.

_____

Step 2: Determine the connectivity issue between PC-02 and web server.

a. On PC-02, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After checking and correcting (as necessary) the IP addressing issues on PC-02, issue the pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Ping to default gateway (172.16.1.1) _____

To web server (209.165.201.2) _____

Ping to PC-01 _____

To PC-A_____To PC-B _____

c. Open the web browser on PC-02 to access the web server.

Enter the web server's URL www.cisco.pka in the browser. Can PC-02 access the webpage on the web server? _____

Enter the web server's IP address 209.165.201.2 in the browser. Can PC-02 access the webpage on the webserver? _____

d. Document the issues and provide the solution(s). Correct the issues if possible.

_____

Step 3: Determine the connectivity issue between PC-A and web server.

a. On PC-A, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After checking and correcting (as necessary) the IP addressing issues on PC-A, issue the pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Ping to default gateway (172.16.2.1) _____

To web server (209.165.201.2) _____

Ping to PC-B _____

To PC-01 _____

To PC-02 _____

c. Open the web browser on PC-A to access the web server.

Enter the web server's URL www.cisco.pka in the browser. Can PC-A access the webpage on the web server? _____

Enter the web server's IP address 209.165.201.2 in the browser. Can PC-A access the webpage on the webserver? _____

d. Document the issues and provide the solution(s). Correct the issues if possible.

_____

Step 4: Determine the connectivity issue between PC-B and web server.

a. On PC-B, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After checking and correcting (as necessary) the IP addressing issues on PC-B, issue the pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Ping to default gateway (172.16.2.1) _____

To web server (209.165.201.2) _

Ping to PC-A _____

To PC-01 _____

To PC-02 _____

c. Open the web browser on PC-B to access the web server.

Enter the web server's URL www.cisco.pka in the browser. Can PC-B access the webpage on the web server? _____

Enter the web server's IP address 209.165.201.2 in the browser. Can PC-B access the webpage on the webserver? _____

d. Document the issues and provide the solution(s). Correct the issues if possible.

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Step 5: Verify connectivity.

Verify that all the PCs can access the web server www.cisco.pka.

Your completion percentage should be 100%. If not, click **Check Results** to see which required components are not yet completed. However, please firstly go through the above steps to try to identify the problems by yourself, as in real life such a "Check Results" button does not exist!