Week 4 - Lab 4

Troubleshooting – DHCP, IP Addressing and subnetting

# Instructions

* Download the packet tracer file that is on Moodle
* Open this in Packet Tracer and complete the exercises below.
* Once you have completed the exercise, please upload **BOTH** your packet tracer file from exercise 1 and the lab work sheet where you answered the questions as part of exercise 2.
* You should be submitting **two files** for this lab.

## Deadline:

* 24th October 23:55

# Exercise 1: Network Troubleshooting

You have been hired as a network engineer for a software development company. The Development and HR teams have been having issues with their network and required you to troubleshoot them and fix any issues they have.

They have provided the following information to you to help you.

* All computers were previously automatically configured
* Both teams should be able to communicate to each other without issues
* The HR team’s website is currently not accessible to the development team, but it is accessible to the HR team. This should be accessible to both.
* The HR website MUST be accessible on: <http://www.hr.com> e.g., you should be able to browse to this URL from end devices.
* One of the HR team’s computers doesn’t seem to connect to the network.

You have been provided with the following network information:

Subnets

|  |  |  |
| --- | --- | --- |
| Team | Development Team | HR Team |
| Network | 192.168.0.0/24 | 192.168.1.0/24 |
| Subnet | 255.255.255.0 | 255.255.255.0 |

End Devices:

|  |  |  |
| --- | --- | --- |
| Device Name | Team | Configuration type |
| DHCP Server | Development | Static |
| PC-01 | Development | DHCP |
| PC-02 | Development | DHCP |
| DHCP Server | HR | Static |
| Web Server | HR | Static |
| PC-03 | HR | DHCP |
| Laptop01 | HR | DHCP |

The CTO has tasked you with tracking down and fixing all any issues such that:

* All devices on both teams must be able to communicate with each other without errors.
* All end devices are configured as per the above table
* Both teams must be able to access the HR website
* All end devices can browse to the HR website.

# Exercise 2: Questions

* Why are switches needed before connecting to a router (e.g. why don’t the end devices connect directly to the router)?
* If Laptop01 in the HR team was to change its IP address to 192.168.1.200 – would it still be able to communicate across the network to the Development team?
* What do you think would happen if Router0 changed its IP address of interface Gig0/0/0 to 192.168.0.30?