College of Computer Training (CCT)

Assignment Cover Page

Module Title:	Computing Architecture/ Networking Technologies
Assignment Type:	Practical Project /Integrated Assessment
Assignment Title:	Install Operating System / Configure Network
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Assignment Due Date:	07/11/2020

Academic Year: **Year 1** ■ **Year 2** ☐ **Year 3** ☐

DECLARATION

I, the above named student, confirm that by submitting, or causing the attached assignment to be submitted, to CCT, I have not plagiarised any other person's work in this assignment and except where appropriately acknowledged, this assignment is my own work, has been expressed in my own words, and has not previously been submitted for assessment.

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Renaming the Servers.

Server A353

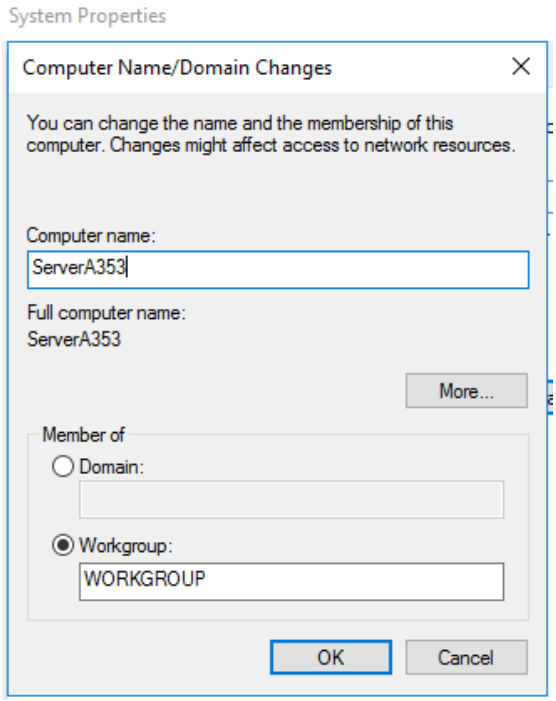
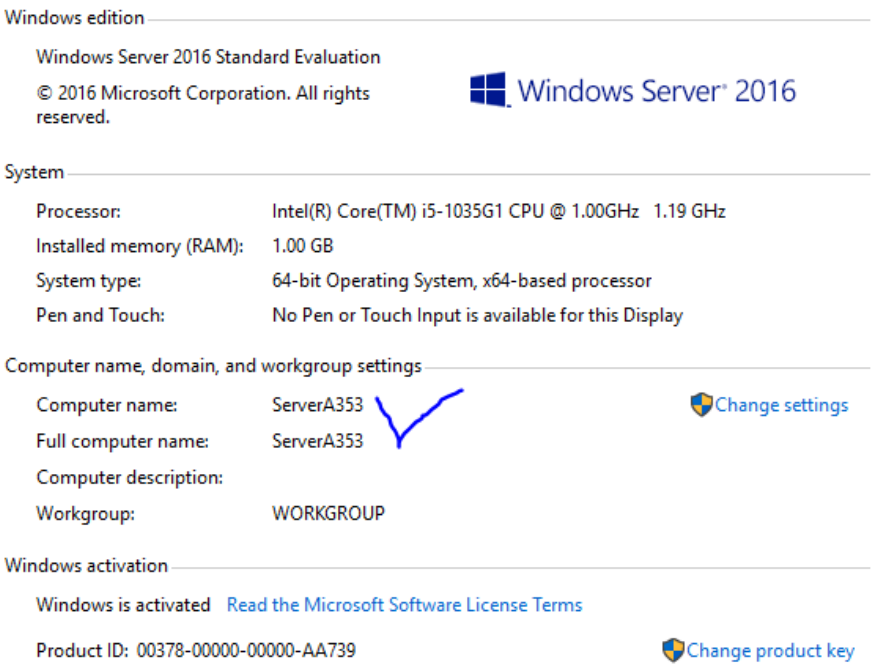


Photo of "Server A" being renamed.



Renamed “Sever A353” photo.

Server B353

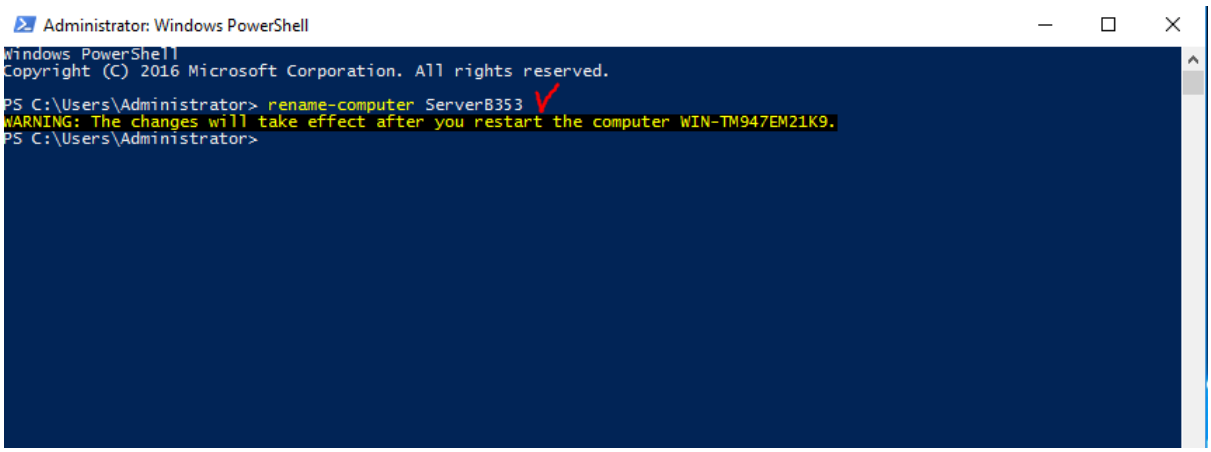
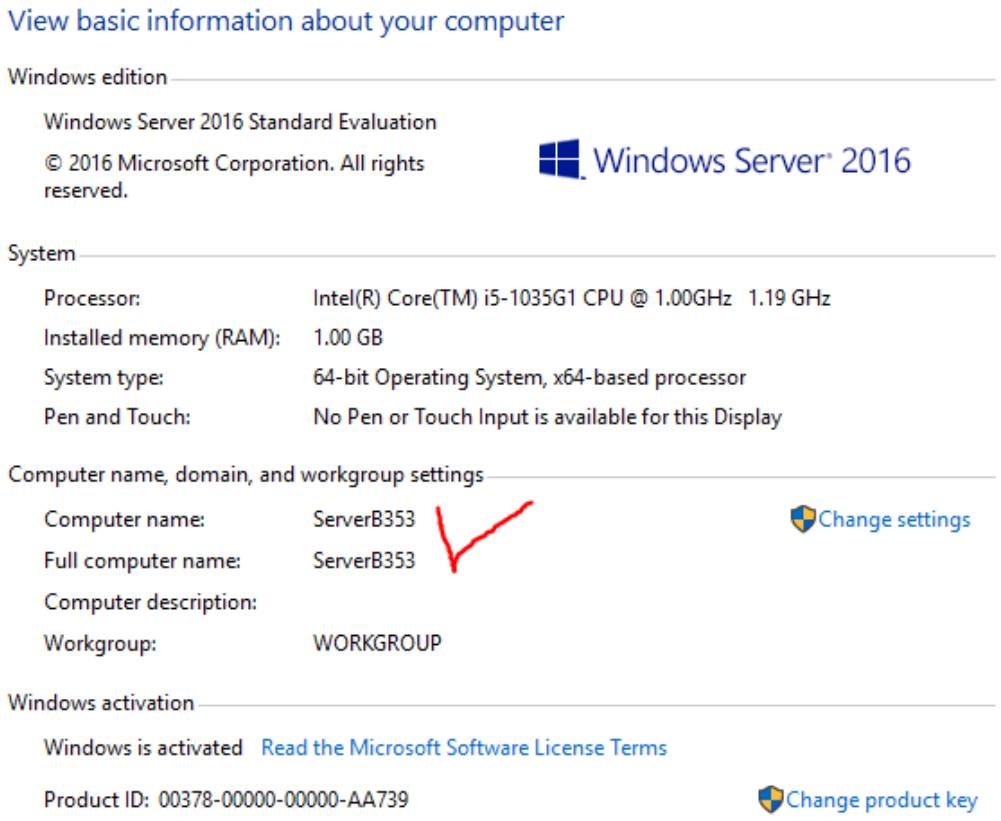


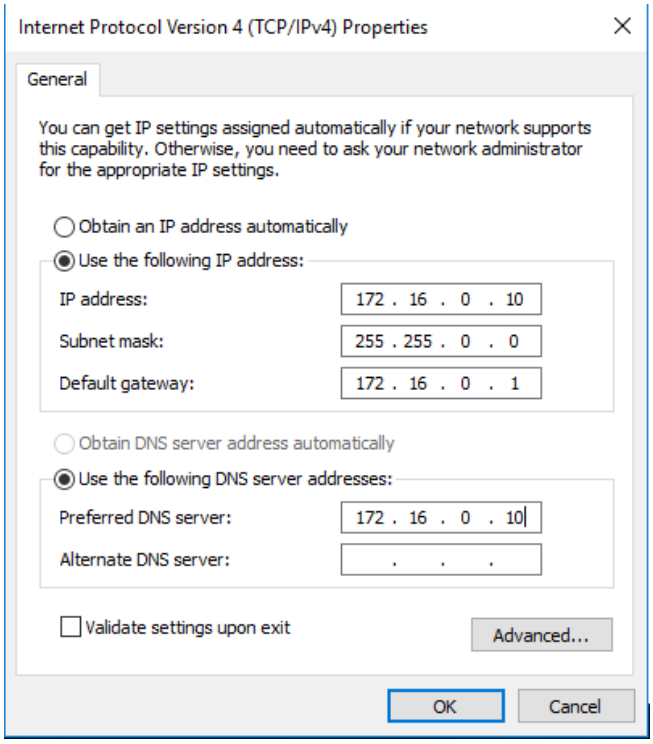
Photo of "Server B" being renamed.



Renamed “Sever B353” photo.

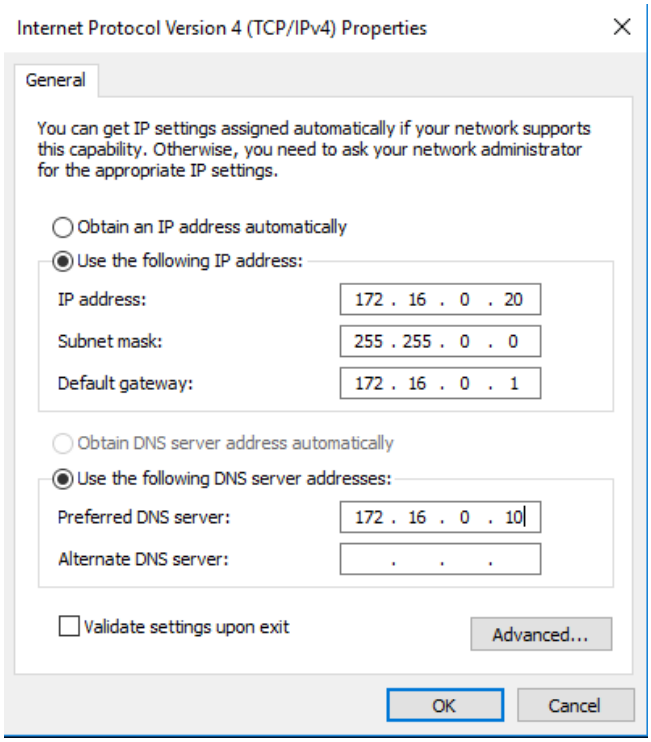
Networking the two servers and assigning as requested

Server A353



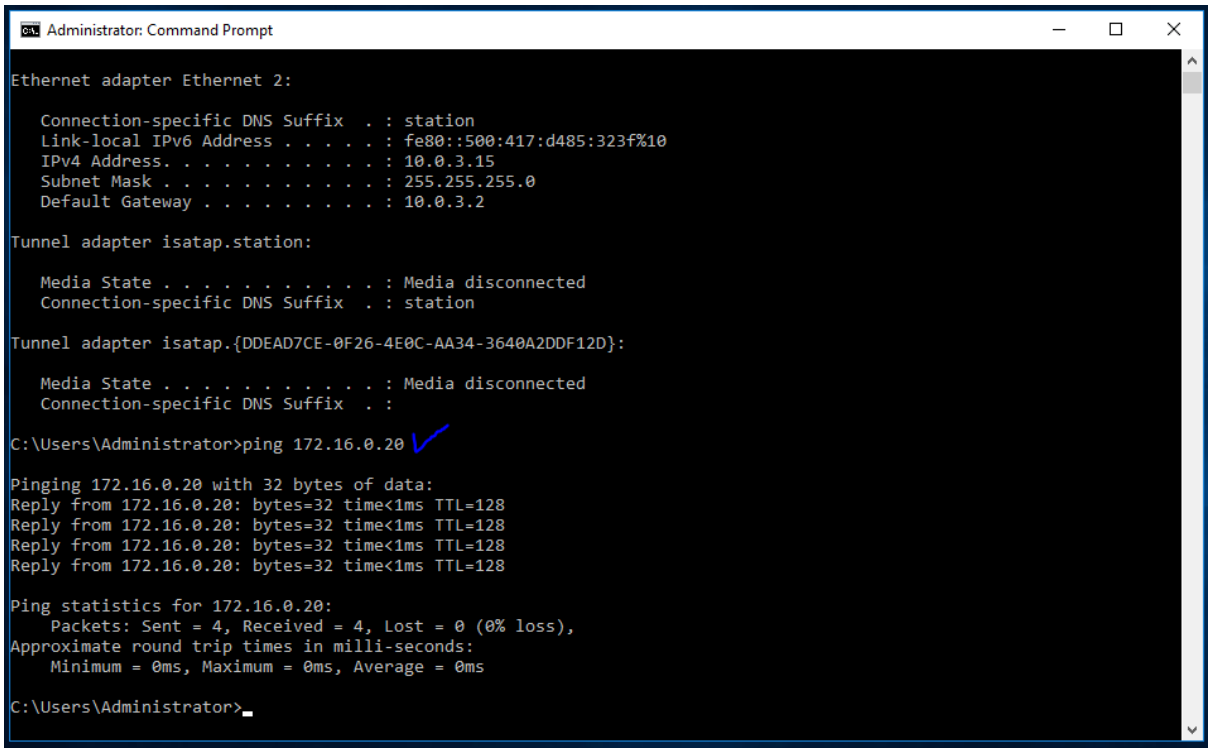
Setting up the A353 Server.

Server B353

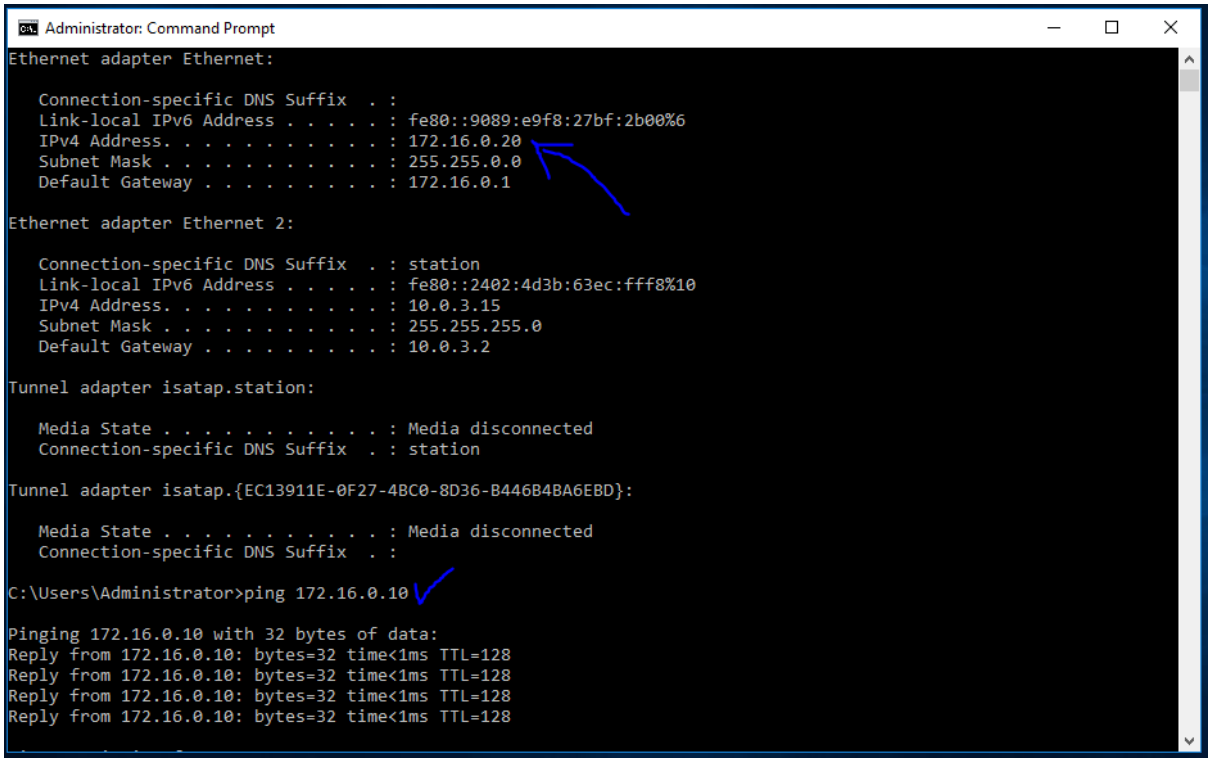


Setting up the B353 Server.

PING passing through the ICMP port



Command PING - Server A353.



Command PING - Server B353.

Internet RFCs and RFC 1918

How RFCs helped build the Internet?

In 1969 the first RFC has been created by Steve Crocker to document how packets would be sent from computer to computer to ARPA ((U.S.) Advanced Research Projects Agency). The ARPA has created a new project for the interconnection of computers. This distributed communication and control system was for a military and research centre called ARPANET.

The RFC is an acronym for “Request for comments” and when it was created the purpose was to write some specifications that would help to connect the computers. Thenceforth RFCs are being used until now and the first form it was named IPv4. Today there are more than 8.500 RFCs which is managed by an RFC Editor team.

RFC 1918 and its specifications

An RFC 1918 is an IP address that is designated by an enterprise organization to an internal host. It has been used to create standards by which networking equipment assigns IP addresses in a private network. A private network can only use a single public IP address. In truth, it is been required by the Internet that each host has a unique IP address, but the RFC removes this requirement.

We can see below the ranges of IP that can not be routed on the Internet:

10.0.0.0 - 10.255.255.255 (10/8 prefix)

172.16.0.0 - 172.31.255.255 (172.16/12 prefix)

192.168.0.0 - 192.168.255.255 (192.168/16 prefix)

Each address will be unique on that network but not outside of it, the address inside those ranges can be assigned in a private network. The private IP cannot have direct communication with external computers because they are not globally exclusive, and they cannot have an address on the public Internet.

High Availability and Fault Tolerance

What is high availability?

It is a system that aims to guarantee the continuity of the service in case of failure, without data loss and, often, without any perception on the part of the user that something wrong has happened. These systems are solutions that have redundancy against Hardware, Software, and energy failure.

Two examples of servers that need to have maximum uptime

In large companies, a small interruption in the operation can cause great financial and operational losses, to ensure that this does not happen, you must invest in high quality hardware combined with robust and modern software. Some HA Systems need to operate with an uptime of more than 99.9% working 24/7 Usually telecommunication service, Database Servers, email, web and others.

What is fault tolerance?

Fault tolerance is a technique that ensures correct functioning of the system even in the event of failures and is all based on redundancy, requiring additional components or special algorithms. Consequently, failure prevention and removal are not enough when the system discharge availability or high availability.

Three types of fault tolerance that might be used to provide high availability to a server

There are more than three types of fault tolerance to provide high availability there are masking, which the failures are not manifested as errors due to it is masked at the source. This one is included in a first class whichever generally employs more redundancy than the second.

The second class spends time on tasks of detection location and configuration, it is usually preferred for critical real-time systems. Below we can see some of the types:

Type	mechanism
error detection	duplication and comparison time limit tests watchdog timers reverse tests
error recovery	Backward error recovery forward error recovery

References

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