

**INTERNSHIP REPORT ON NETWORKING AND IT SUPPORT**

**BY**

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This Report was Submitted in Partial Fulfillment of the Requirements for the  
Bachelor's Degree in Computer Science and Engineering.

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## **APPROVAL**

This Intern, titled "**Networking and IT Support**," submitted by Md. Aktaruzzaman, ID No: 183-15-12058 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering, and its style and contents have been approved. The presentation took place on time.

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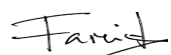
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## DECLARATION

It is hereby declared that the work presented in this internship report was completed under the supervision of **Mr. Gazi Zahirul Islam, Assistant Professor, Daffodil International University's Department of Computer Science and Engineering**, in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering. This report is my unique work, and I declare it to be so. I certify that no part of this report, or any part of it, has been presented elsewhere for the purpose of receiving a degree.

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I'd also want to thank Dr. Touhid Bhuiyan, Head of the Department of CSE, as well as other academic and staff members of Daffodil International University's CSE department, for their assistance in completing my internship.

I'd like to thank my parents in particular for their support and encouragement throughout my life and work.

Finally, and especially, I want to express my heartfelt gratitude to Almighty Allah, the beneficent, the magnificent.

## **ABSTRACT**

The Creative IT Institute is a place where we strive to enable the community to achieve a high level of learning. We strive for ongoing improvement in our leaders so that they can work to build a better future. The institute is committed to providing high-quality training programs in accordance with ISO 9001: 2015 accreditation, which distinguishes us in the IT industry. We shall continue to share our knowledge in order to contribute to individual success and to serve society's best interests.

We are dedicated to providing a platform for our students where superiority reigns supreme. We develop young talent by sharing knowledge, assisting them in learning new skills, collaborating on international standard projects, developing successful freelancers, and encouraging our youth to pursue entrepreneurship, so eliminate inequities. Our culture is vital to us, and it is guided by our team of professionals. Our deliverables are valuable because of our experienced human resources, which helps us set the bar internationally.

In today's fast-paced digital environment, success in the workplace and attaining a certain objective is contingent on the appropriate implementation of planning, implementing, and maintaining changes. As a result, working with an institution like ours will be a prudent decision. Your excellent learning experience has influenced our approach to training, and as a result, we are better able to serve our students and keep our obligations. Here, we invite you to come and join us in order to improve the outcome of your life, and we would be honored to get to know you and establish a long-term relationship with you.

## TABLE OF CONTENTS

<b>CONTENT</b>	<b>PAGE</b>
Approval	ii
Declaration	iii
Acknowledgement	iv
Abstract	v
Table of contents	vi
List of figures	viii
<b>CHAPTER 1: INTRODUCTION</b>	<b>1-3</b>
1.1 Introduction	1
1.2 Motivation	1
1.3 Internship Objectives	2
1.4 Introduction to the Company	2
1.5 Report Layout	3
<b>CHAPTER 2: ORGANIZATION</b>	<b>4-7</b>
2.1 About Creative IT Institute	4
2.2 Mission of Creative IT Institute	4
2.3 Vision of Creative IT Institute	4
2.4 Management Structure	5
2.5 Main Services of Creative IT Institute	6
2.6 Sister Concern of Creative IT Institute	7
<b>CHAPTER 3: TASK PROJECT AND ACTIVITIES</b>	<b>8-37</b>
3.1 Daily Task and Activities	8
3.2 Event and Activities	8
3.3 Project Task & Activities	9
3.3.1 Here is a demonstration of how to patch a CAT 6 cable	9
3.3.2 Create a LAN Network	11
3.3.3 How to configure a TP-Link router	13
3.3.4 Configure a MikroTik Router	17
3.3.5 Router Troubleshoot	23
3.3.6 Computer Viruses	23
3.3.7 Can't connect to the internet	24

3.3.8 DNS Server Problem	26
3.3.9 To find what is my IP	27
3.3.10 Blue screen of Death	29
3.4 FTP Transfer	32
3.5 Remote Maintenance	32
3.5.1 Using Team Viewer	33
3.6 Branch Support	33
3.6.1 Adding new application user to Server domain	33
3.6.2 Moving application user to different branch	33
3.6.3 Adding new e-mail user to Server domain	34
3.6.4 Resetting e-mail user password in network domain	34
3.6.5 Software installation on remote computer	34
3.7 Hardware Support	34
3.7.1 Setting up a computer for a new user	35
3.7.2 Transferring data between hard disk drives	35
3.8 Network Monitoring	36
3.8.1 Host addition using Pine composer (PICO)	36
3.9 Challenges	37
<b>CHAPTER 4: COMPETENCIES AND SMART PLAN</b>	<b>39-39</b>
4.1 Competencies Earned	39
4.2 Smart Plan	39
4.3 Reflection	39
<b>CHAPTER 5: CONCLUSION AND FUTURE CAREER</b>	<b>40-40</b>
5.1 Discussion and Conclusion	40
5.2 Scope for the future career	40
<b>REFERENCES</b>	<b>41</b>

## LIST OF FIGURES

<b>FIGURES</b>	<b>PAGE NO</b>
Figure 2.1: Organogram of Creative IT Institute	5
Figure 3.1: Arrange CAT 5 cable	9
Figure 3.2: Put CAT 5 cable into RJ45	10
Figure 3.3: Patch RJ45 connector	10
Figure 3.4: CAT 5/CAT 6 cable, Network switch, PC	11
Figure 3.5: LAN Network	12
Figure 3.6: TP-Link router	13
Figure 3.7: Configure TP-Link router and entering the password	13
Figure 3.8: Login page	14
Figure 3.9: Quick setup option	15
Figure 3.10: WAN Setting	15
Figure 3.11: Wireless Setup of TP-Link router	16
Figure 3.12: Complete the quick setup of TP-Link Router	16
Figure 3.13: MikroTik Router	17
Figure 3.14: MikroTik Router login page	18
Figure 3.15: Win Box login page	18
Figure 3.16: Win Box Dashboard	19
Figure 3.17: Configure Quick Set menu	20
Figure 3.18: Configure Wireless Option	21
Figure 3.19: Configure Security profile	21
Figure 3.20: Set Password into “WPA2 Pre-shared key”	22
Figure 3.21: No internet access	24
Figure 3.22: Ethernet, Change adapter option	24
Figure 3.23: click properties of IPv4, select obtain IP or DNS	25
Figure 3.24: Select obtain IP and DNS automatically	25
Figure 3.23: site can't be reached	26
Figure 3.26: cmd – ipconfig/flushdns, ipconfig/registerdns	26
Figure 3.27: cmd – ipconfig/renew	27
Figure 3.28: cmd – ipconfig	28
Figure 3.29: cmd – ipconfig/result	28
Figure 3.30: Blue screen of Death	29



Figure 3.31: Advanced options for fixing blue screen of Death	29
Figure 3.32: Troubleshoot of Blue screen of Death	30
Figure 3.33: Command prompt of Administrator	30
Figure 3.34: Command prompt of Administrator	31
Figure 3.35: Following the Blue Screen of Death Troubleshooting	31
Figure 3.36: FTP Command-Line Interface window	32
Figure 3.37: PICO configuration interface for NAGIOS	37

# CHAPTER 01

## Introduction

### 1.1 Introduction

In this day and age, network solutions and IT are two essentials. It is imperative to have internet access across the board. Today, hardly any offices, industries or universities lack internet access. Almost all offices, industries, and universities use computers and communication devices. The majority of communication takes place online. They utilize various hardware and software applications to facilitate communication. We wouldn't think of doing anything without the internet at our fingertips these days. There is a need for people who are familiar with networking and who are able to maintain all types of communication devices in every industry, office, and institute. Because communication is such a crucial component of any company, those who manage various types of communications devices keep a close eye on it. A downed network prevents all industries from communicating. A downed network can cause a lot of problems. For any business, organization, or office, it is very detrimental. Using all types of communication devices is a skill that everyone should have. One of the main functions of the IT solution sector is to maintain the devices connected to the internet.

Similarly, networking is the process of connecting multiple devices to share information and software resources. My experience as an intern has given me the opportunity to learn various things and solve a variety of problems. My superiors, who have vast experience in this particular area, have also taught me directly from first-hand experience. To learn and work on the things I am passionate about is pleasing and fascinating to me. Being able to develop my strengths in a sector that is exciting to me was a privilege.

### 1.2 Motivation

Working hard and struggling to finish something is rather amusing to me. In some situations, you have to dedicate both your mental and physical energy to finish the task. Normally we do not find our work interesting, but I do. My passion is technology, so that's what I do. When I solve the riddles and solve problems, it gives me great pleasure. Perhaps my inspiration stems based on my personal experience with previous computer - based video games versions. I discovered something special about the internet when I first used it and I began learning how to get closer to it.

### **1.3 Internship Object**

During my internship, I wanted to work as a Network and IT Engineer. There aren't many industries in the world that don't employ IT and networking professionals. Basically, they need a pastor who is experienced in IT-related issues and is knowledgeable about networks. Networking and IT support are demanding and hard-working positions. They involve a great deal of responsibility. It is important that these officers are careful and diligent when performing their duties. IT support teams are usually responsible for supporting the whole office. The support officer needs to keep every single device with new hardware and software updated to ensure that the network is being maintained properly. In response to this challenge, I am striving to become a great IT support engineer. I hope it will be beneficial to my future career. Not only do I want to make a life on this platform, but I also want to try to become an inventor who can improve the future.

### **1.4 Introduction to the Company**

Though the company started on a small scale, the organization is at the peak of success today. But the path was not easy at all. However, in line with changes, the organization has always been more developed.

Behind this improvement, there was the day and night contribution of the dreamer as well as the tireless work of some skilled and qualified people. Today's Creative IT Institute is the result of their hard work. Launched in 2008 on a small scale of 1,000 square feet, the company today stands in a range of 20,000 square feet with two campuses.

Creative-e-School, a sister concern of Creative IT, started its journey in 2016. Through which the organization has helped more than 6000 trainees to become self-reliant. In addition, another branch of Creative IT was added in Chittagong in 2016. Not only that, from 2009 to 2021, a total of 11 organizations including Creative Clipping Path, Creative Juniors, Bright Skills, Softalogy have been established as sister concerns of Creative IT Institute.

Our trained IT professionals are working worldwide. In the long 12+ years of the successful path, more than 42,000 young people from Creative IT have achieved success through skill development. Their own destiny has changed. More than 4 lakh people have got free career guidelines on IT. With the help of job placement, many young people have been freed from the curse of unemployment. With the help of Creative, employment opportunities have been created for more than 15,000 trainees till date. Starting with a few people, the number of family members is now more than 500 moreover.

- 1500+ people have been given full free scholarships in IT during the coronation period.
- More than 2,000 trainees have gotten the benefit of an online internship.
- Has given more than 1500 women the opportunity to become self-reliant through full free IT scholarships
- More than 200 physically challenged people have become self-reliant with IT training
- Has provided integration and industrial training to more than 120 polytechnics
- Creative IT Institute has made 100 senior citizens proficient in IT by providing full free scholarships.

In the meantime, the Creative IT Institute is successfully working as an academic partner with the People's Republic of Bangladesh National Parliament, Ministry of Information and Communication Technology, Ministry of Women and Children Affairs, Bangladesh Computer Council, and East Oxford Dhaka University and other reputed universities and colleges.

Soon after 12 years of success, Creative IT Institute is going to enter 13th. The Creative IT Institute is moving forward with the firm conviction of creating a skilled population in the field of IT as well as turning the population into human resources including eliminating unemployment.

## **1.5 Report Layout**

Chapter 1: I discuss my internship in this chapter, including what I did, how I did it, and why I did it. Following that, I describe my internship objectives.

Chapter 2: This section contains information about the organization where I completed my internship, including how they operated, what services they provided, and the chain of command.

Chapter 3: This chapter details the situations I've encountered and the tasks I've completed. I also discuss my initiatives and the numerous hurdles I've faced throughout my professional career.

Chapter 4: In this chapter, I'll talk about my job goals and how I plan to pursue them. I also talk about how my internship related to my future profession.

Chapter 5: Here, I've outlined my professional and personal goals for the future. I also discuss how the internship influenced my future goals.

## **CHAPTER 02**

### **Organization Profile**

#### **2.1 About Creative IT Institute**

Creative IT Institute, one of Bangladesh's major IT training institutes, provides the greatest training options. Since 2008, it has played a critical role in addressing the unemployment problem. This institute, which is rich in excellent training, has never failed to assist individuals in revealing their skills and achieving a balance between creativity and technology. Whatever your background, we have 30 courses for you to choose from, all led by qualified educators, to help you enhance your abilities.

CIT has elaborately adorned two campuses and installed state-of-the-art technology. Our pupils are ecstatic about our culture, surroundings, and excellent training style. We are committed to offering excellent service to our students. As a result, the students of this institute become successful marketers who go on to work for a variety of companies. We are committed to providing flexible training choices such as online training, 24/7 support, lifelong post-training support, and job placement.

#### **2.2 Mission of Creative IT Institute**

- To strengthen the community's belief in quality learning by ensuring state-of-the-art methods.
- To increase opportunities and progress for our future leaders by widening the areas and options available to them.
- To bring together the best human resources for the delivery of standard values that enable leaders to thrive.
- To harness the power of youth through serving and responding to developing needs both locally and globally.
- Creating an international array of excellence to minimize inequities in the best interests of society.

#### **2.3 Vision of Creative IT Institute**

To become a leading institute noted for its variety and excellence in knowledge dissemination.

## 2.4 Management Structure

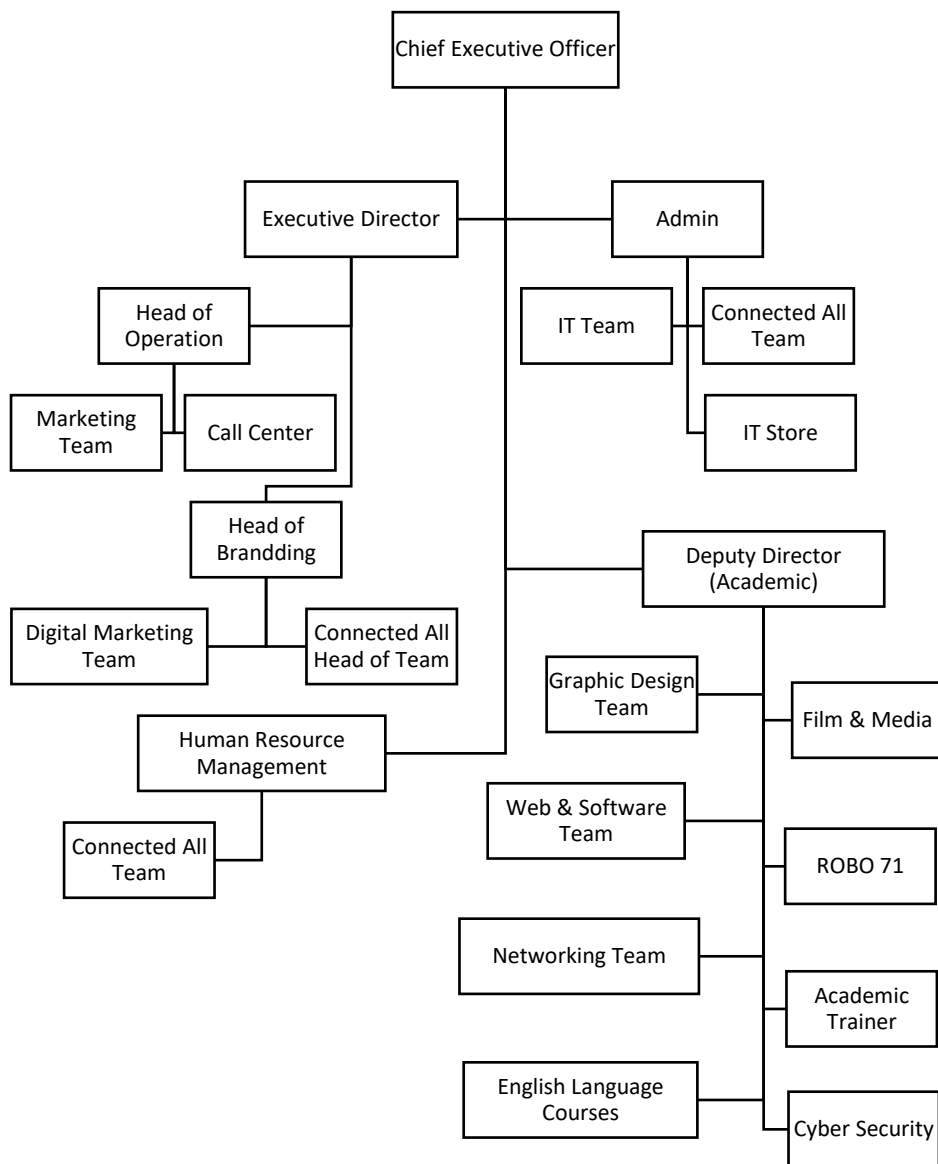


Table 2.1 Organogram of Creative IT Institute

## **2.5 Main Services of Creative IT Institute**

### **Graphic Design Training**

- Professional Graphic Design
- Advanced Graphic Design
- Digital Image Editing
- UI/UX Design
- Motion Graphics

### **Web & Software Training**

- Responsive Web Design
- Web Development
- Apps Development
- MERN Stack Development
- Python

### **Digital Marketing Training**

- Digital Marketing
- Affiliate Marketing
- Social Media Marketing (SMM)

### **3D Animation & Visualization Training**

- Professional Interior & Exterior Design
- 3D Animation

### **Networking Training**

- CompTIA A+
- CCNA
- CCNP
- MikroTik
- Red Hat Server
- Windows Server 2016
- Diploma in Networking

### **Film & Media Training**

- YouTube Video Making
- Digital Film Making

### **Robotics & Automation Training**

- Robotics

### **Cyber Security Training**

- Cyber Security

### **English Language Courses**

- Communicative English
- Spoken English
- Professional English Writing
- English Phonetics

## **2.6 Sister Concern of Creative IT Institute**

- Creative Business Group
- Creative Clipping Path Limited
- Softalogy Limited
- Creative E-school
- ROBO71
- EDUMASS
- Excellence Architecture
- SynoBiz
- Movreel Studios
- Ocaasaiya
- Piximo Studios
- Priyolekha



## **CHAPTER 03**

### **Task Project and Activities**

#### **3.1 Daily Task and Activities**

I learned a lot of things that aren't taught in standard classes while working as an intern. Most of my experiences were gained by studying under my superiors and instructors. Sometimes, I have to work shifts that are longer than my duty time. I worked 54 hours every week on average. Furthermore, I had to come to the workplace at 9 AM and must depart by 6 PM. The first thing I had to do was verify attendance, check my to-do list, check my order list, and do a number of other things. In my first month, I learned many new things through practical experience. It is important to handle situations that are unfamiliar and try out new techniques for doing something. As a network administrator, I was responsible for maintaining all network connections and IT devices. It was my responsibility to check each internet connection. Provide support for all IT devices, and make sure the system software is up to date. It was my responsibility to make sure each computer or laptop operated as expected. My biggest challenge lies in this assignment since we have so many users of computers and laptops. Everyone in the office spends most of their day on computers and laptops. I sometimes had problems with these devices and tried to resolve them accurately. Monitoring the operation and maintenance of the company's computing needs is a primary duty of the job.

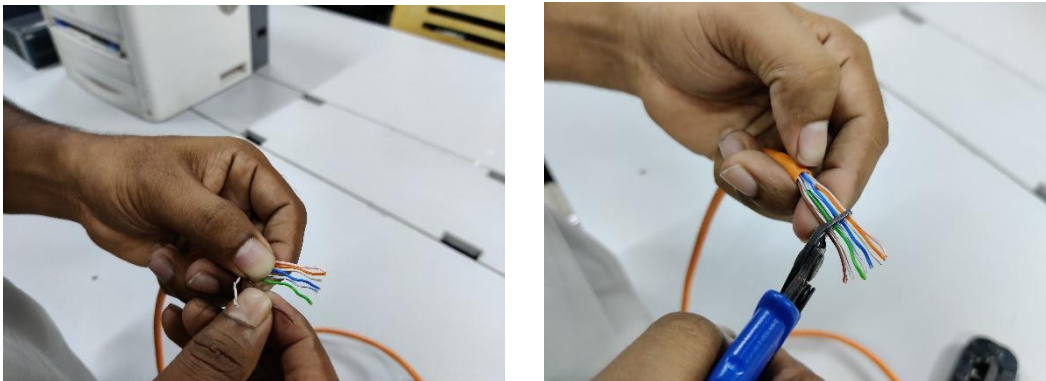
#### **3.2 Event and Activities**

I participated in all the events and training programs when I was doing my internship. My career and professional development were greatly impacted by these events. They helped me gain invaluable experience, solve many problems and overcome many obstacles. The router configuration, management, and providing internet were all taught to me. Also, I am knowledgeable about how office environments are set up. Every intern needs to have a good understanding of that. While doing this internship, I obtained valuable experience managing an office and working in a corporate environment. “Creative IT Institute” provides numerous trainings for their interns as well as host many event programs. After setting up a MikroTik router, I ensured that the network was properly distributed. My educational objectives included troubleshooting computer problems, installing OS (Operating System), LAN, MAN, WAN, and building Wi-Fi networks, administering Client and System Servers, Client Server, and Storage Servers. Maintaining a CCTV system was another thing I learned. The company makes

sure each intern learns as much as possible about the task at hand. And by observing the office environment day after day, interns will be able to adjust to it.

### 3.3 Project Task and Activities

As an intern, I was given the chance to work on a wide variety of projects and learn a large amount of information. Once that was completed, I was asked to take part in various projects. The tasks were varied and I have completed all of them. I have based my activities entirely on the tasks I have been assigned. I learned a lot of things at the beginning of my internship.



**3.3.1 Here is a demonstration of how to patch a CAT 6 cable:** To begin, I selected a CAT 6 cable, peeled off the cover, and organized the cables by color subs: orange white, Orange, Green white, Blue, Blue white, Green, Brown white, Brown.

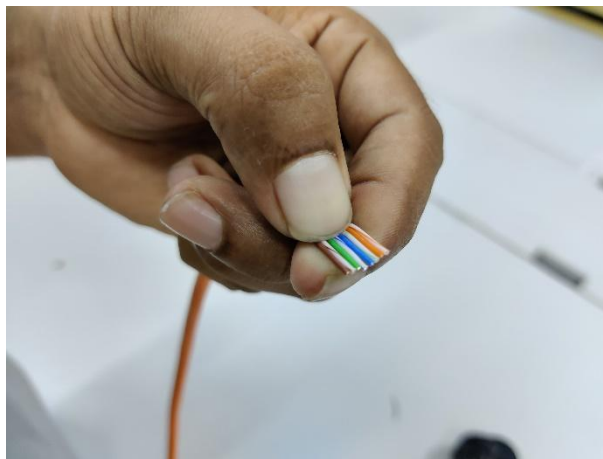


Figure 3.1: Arrange CAT 6 cable

And I'll cut them perfectly and carefully insert them into the RJ45 connector.

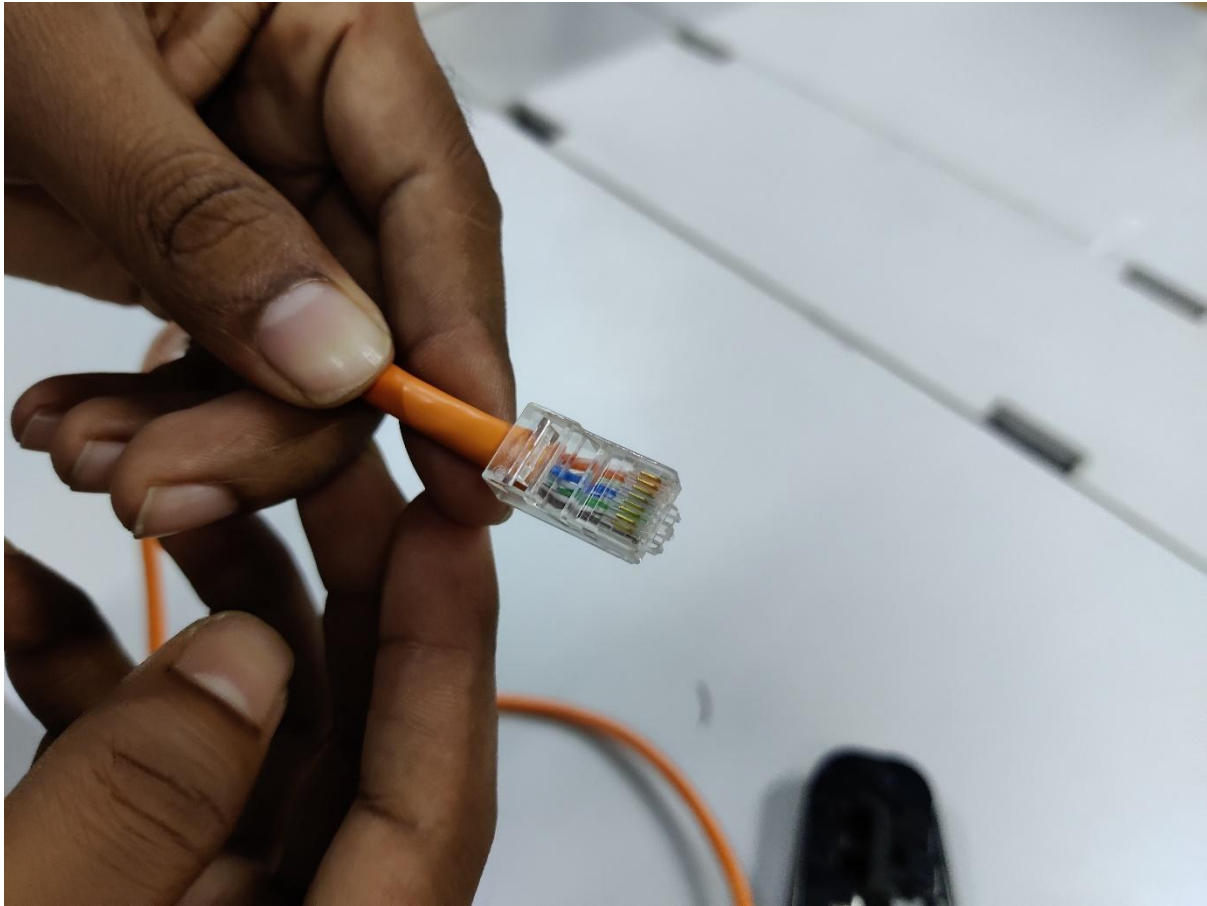


Figure 3.2: Put CAT 6 cable into RJ45 connector

Then take the RJ45 clipping tool and insert the connector into it. Then carefully press the tool, and the patch is complete. [2]

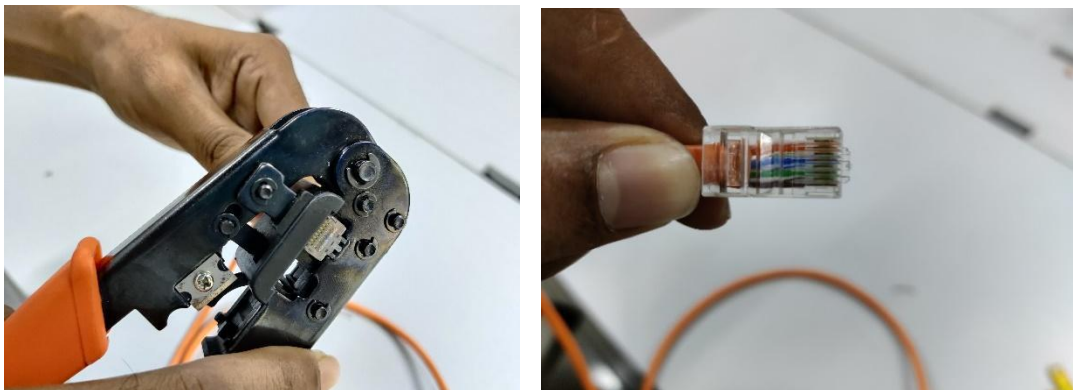


Figure 3.3: Patch RJ45 connector

**3.3.2 Create a LAN Network:** After that, I learn how to set up a LAN network. To start, we'll need CAT 5 or CAT 6 cable to build our LAN network. To complete this task, we must use a RJ45 connector, a Network switch, and a clipping tool for RJ45. We need one or more Network switches based on the number of connections required. A 16-port or 24-port network switch is needed if we are going to connect 15 PCs.

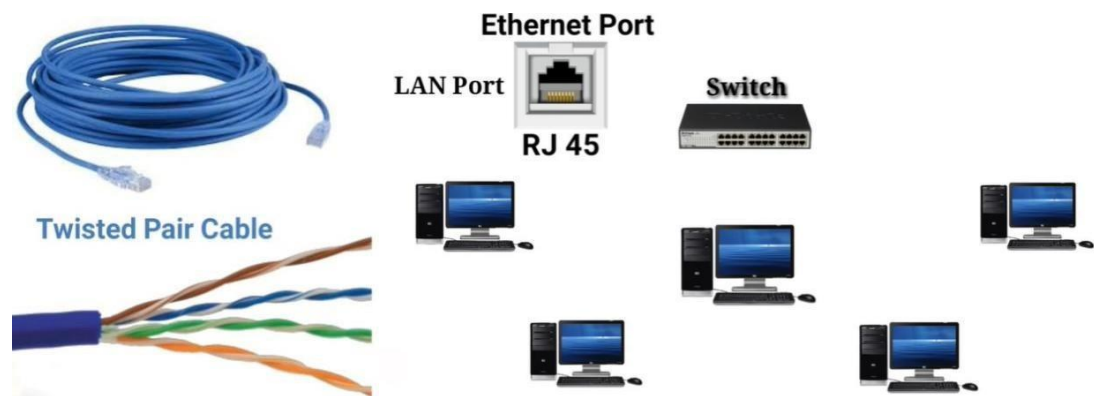


Figure 3.4: CAT 5/CAT 6 cable, Network switch, PC

As soon as we collect all the equipment, we begin working. Once we know how many computers we need to connect, the electrical wiring can be cut to our needs, we can patch the RJ45 connector, and all of the computers can be connected to the network switch. Our LAN Network work has been completed in this way. [3]

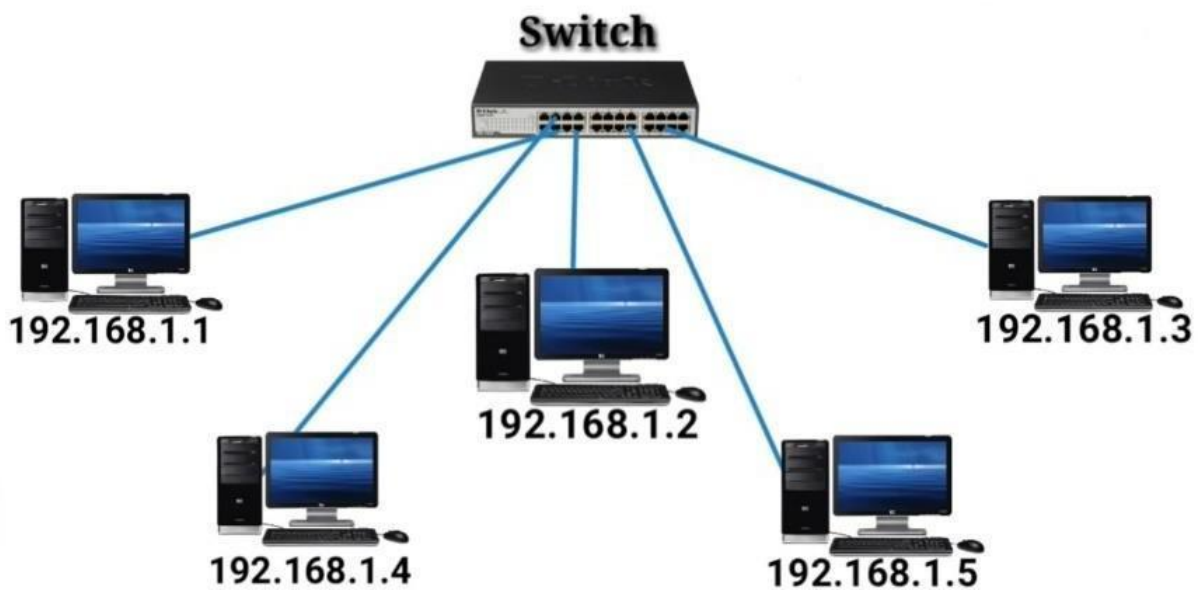
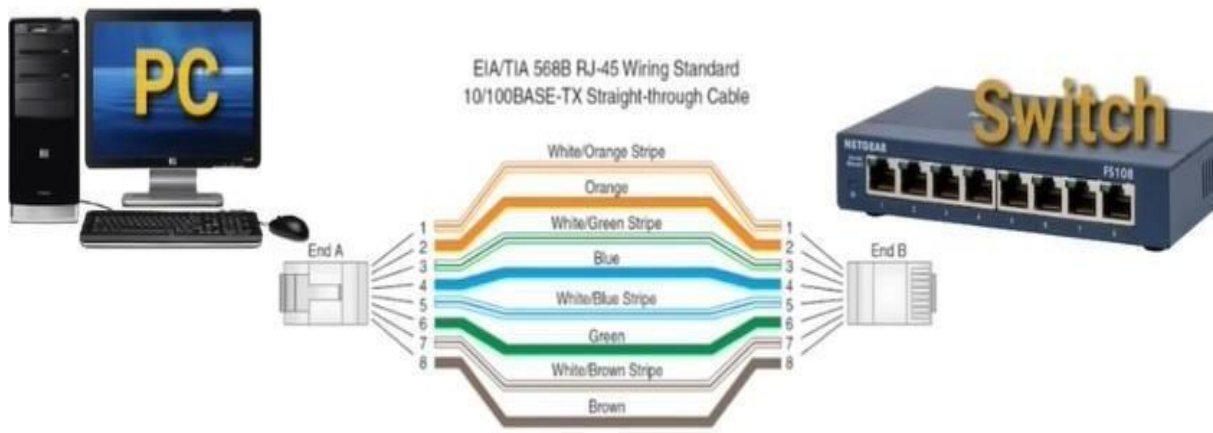


Figure 3.5: LAN Network

**3.3.3 How to configure a TP-Link router:** After completing the LAN Network connection, I learned how to configure a TP-Link router. To begin, I'll need a TP-Link router to connect to electricity. After connecting the power, I attached the cable to the router's WAN port. After that, the internet connection will be established. After that, the router must be configured. Using my laptop, I will go to the Wi-Fi menu, search for TP-Link, and then click and enter the password to connect to the router.



Figure 3.6: TP-Link router



Figure 3.7: Configure TP-Link router and entering the password

I launch a search engine on my laptop as soon as I've connected to the router. Following that, I go to the browsing choices. After entering `http://tplinkwifi.net`, a login box will display. Then I press the login button after entering the username "admin" and password "admin." After that, I choose "fast setup" to start the installation. Then select "Static IP" and enter your IP address in the "IP address" field, followed by subnet mask, Gateway, and DNS server. Once you've input all of this information, click the "Save" button.

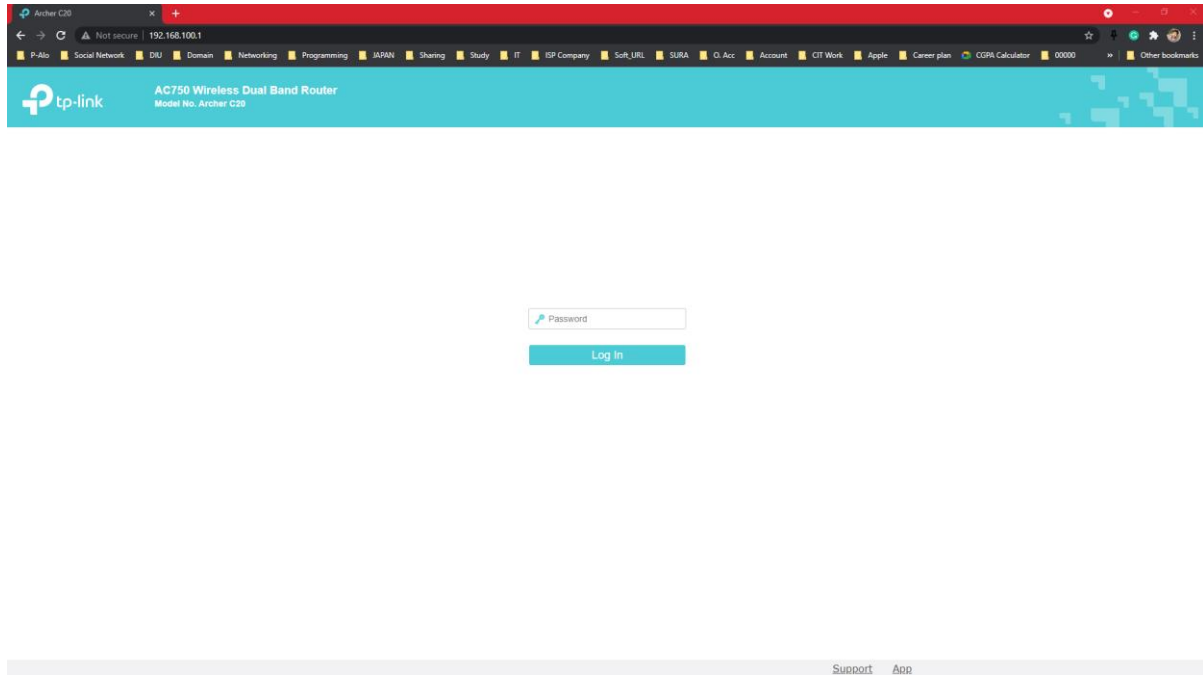


Figure 3.8: Login page

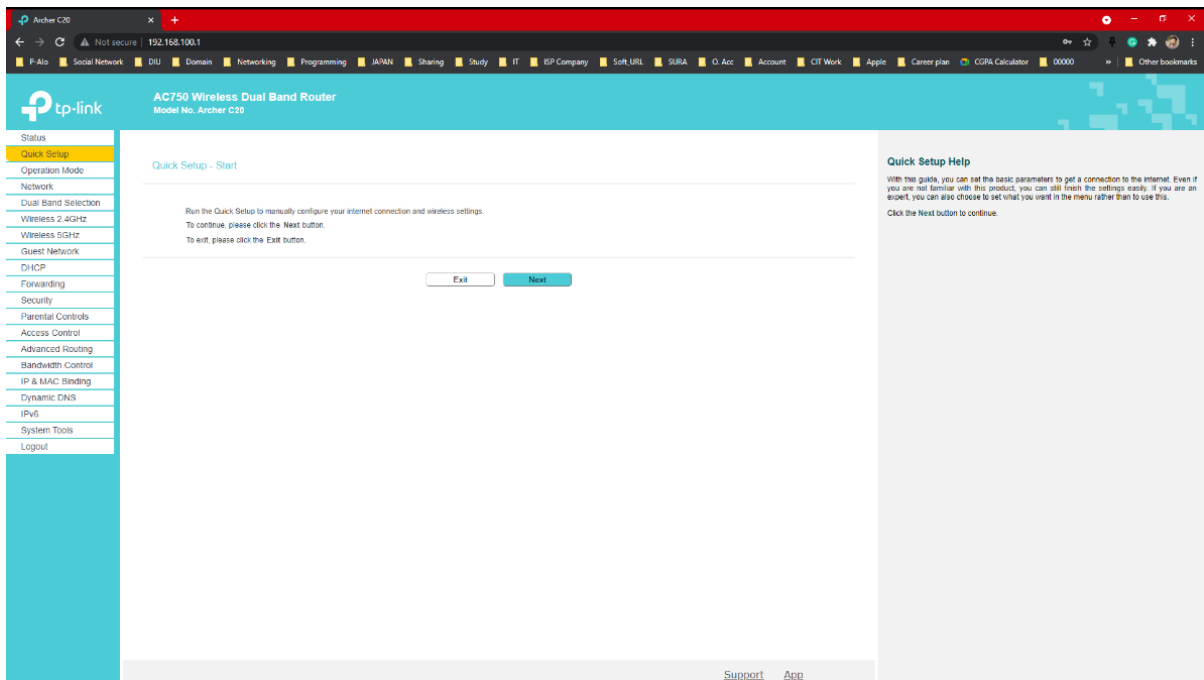


Figure 3.9: Quick setup option

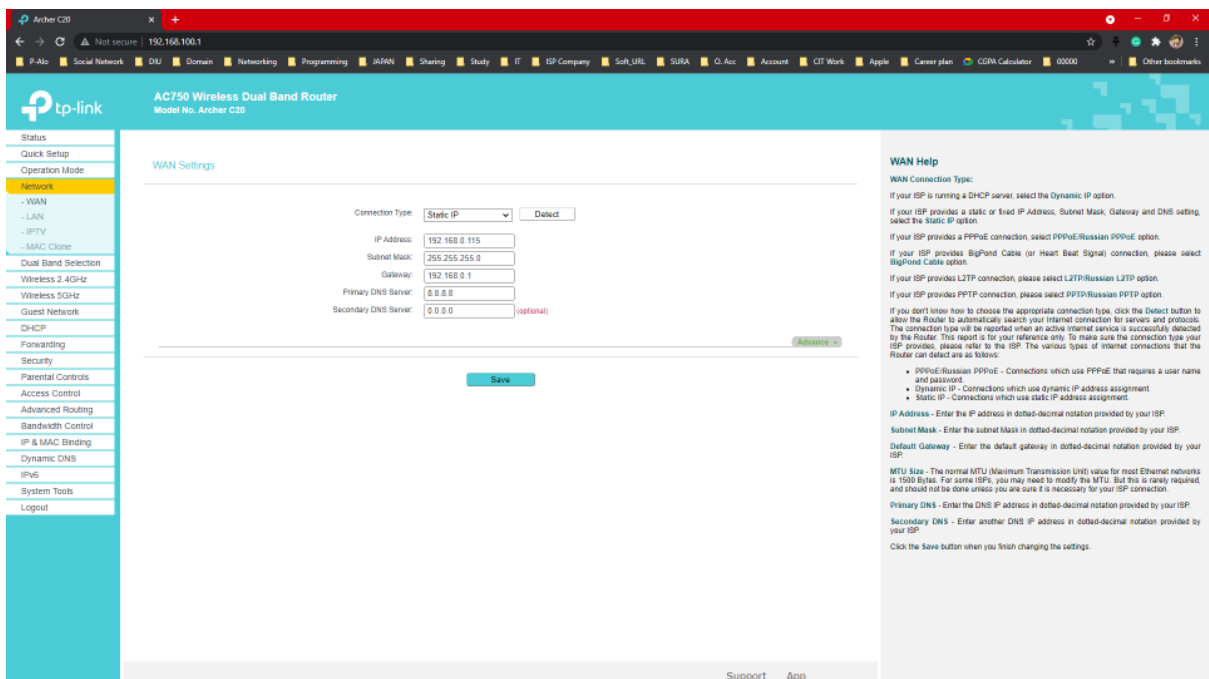


Figure 3.10: WAN Setting

Click the Quick setup Wi-Fi option after you've configured the WAN settings. Next, I'll alter the wireless network's name, then make a secure password and click "Next." Click "Finish" if everything has been set up correctly. It was my first time configuring a router. [4]



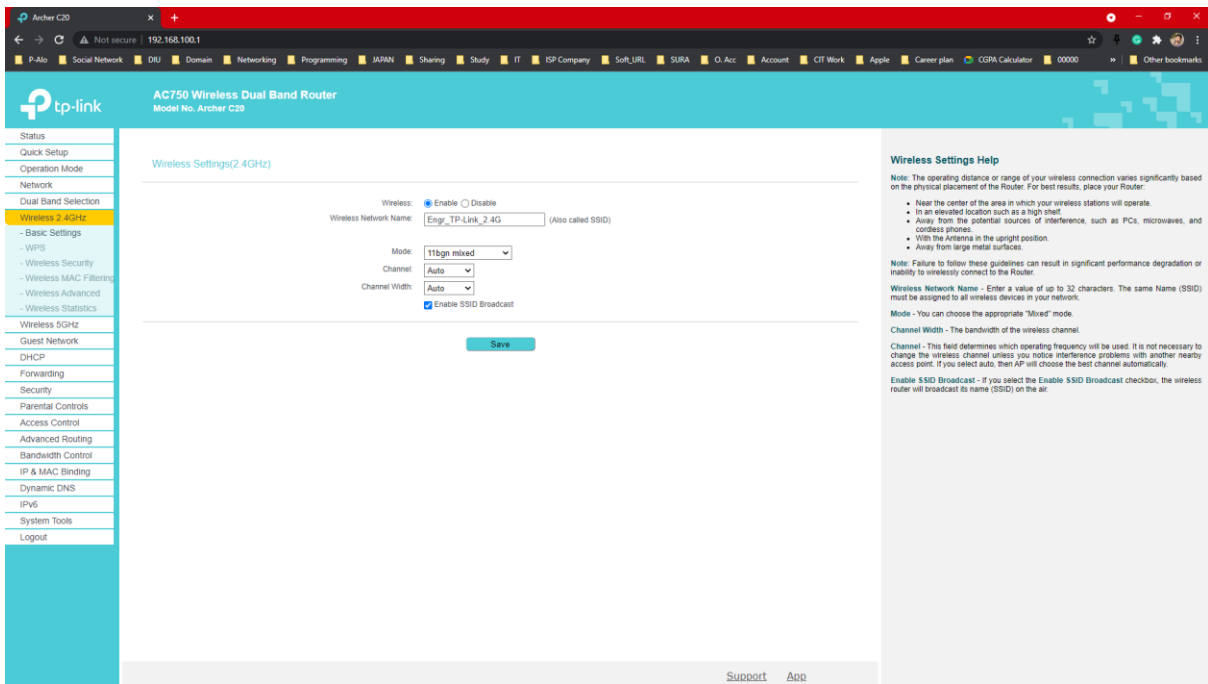


Figure 3.11: Wireless Setup of TP-Link router

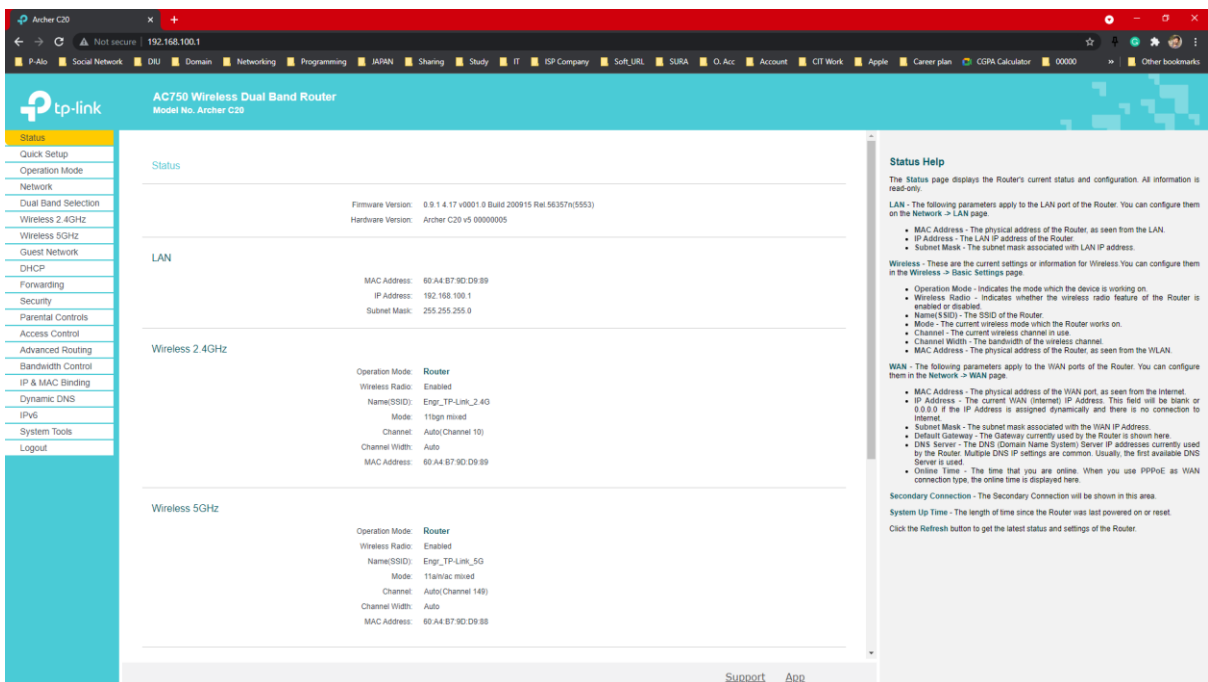


Figure 3.12: Complete the quick setup of TP-Link Router

**3.3.4 Configure a MikroTik Router:** Once I had finished a few tasks, they gave me a job that required me to configure a MikroTik router. Although the assignment was difficult for me, I was aided by my supervisor. The following is a rundown of the steps I took.



Figure 3.13: MikroTik Router

To configure (MikroTik Router), we must first plug the MikroTik router into our computer. We then attempt to log into the MikroTik router.

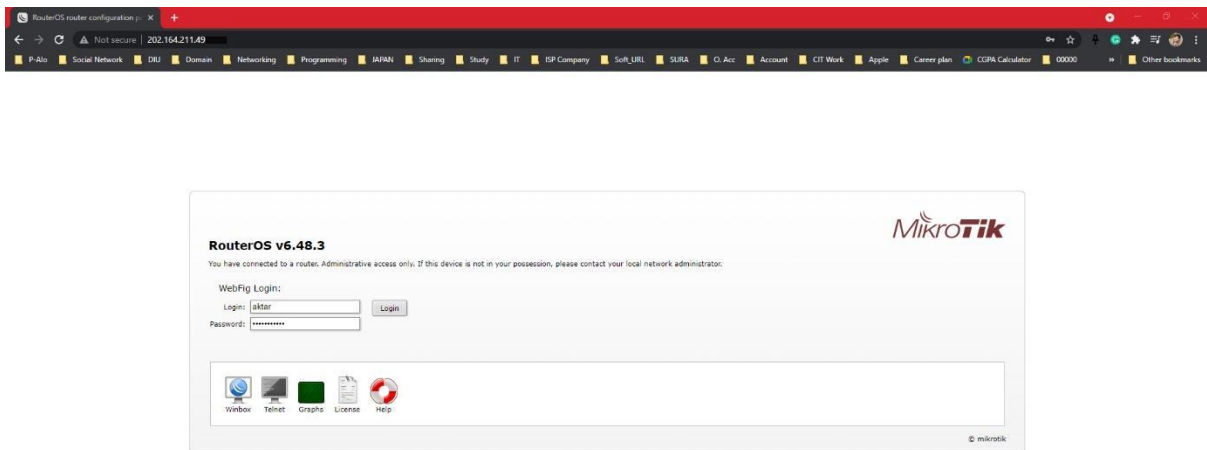


Figure 3.14: MikroTik Router login page

Win Box is a software program that allows us to access and use MikroTik routers easily. The user-friendly software is designed for easier access and more complete network security. Many network engineers use Win Box on a daily basis. Even I configure a MikroTik router with Win Box. Below is a link to the Win Box Login Page.

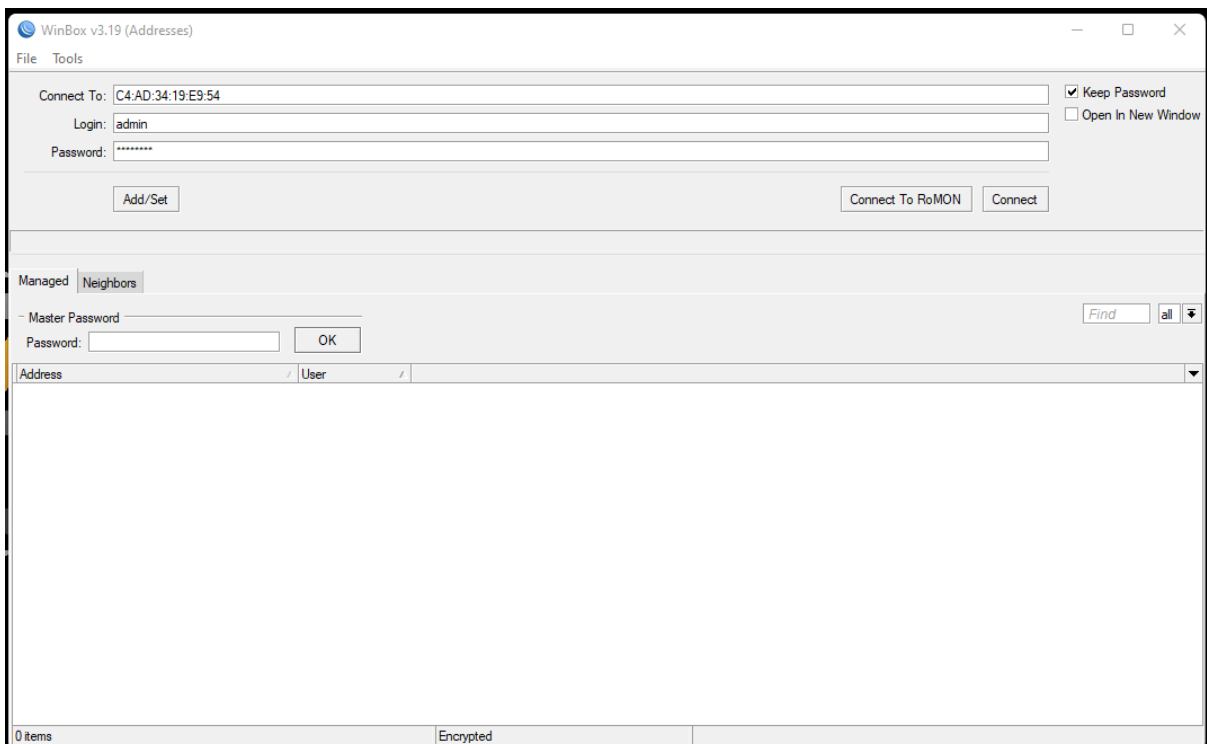


Figure 3.15: Win Box login page

Once the Win Box login page opens, we type in the password as well as the login name or ID, as well as the MikroTik router's IP or Mac address. After you've entered the MikroTik router, the Dashboard appears. Below is a screenshot of the dashboard.

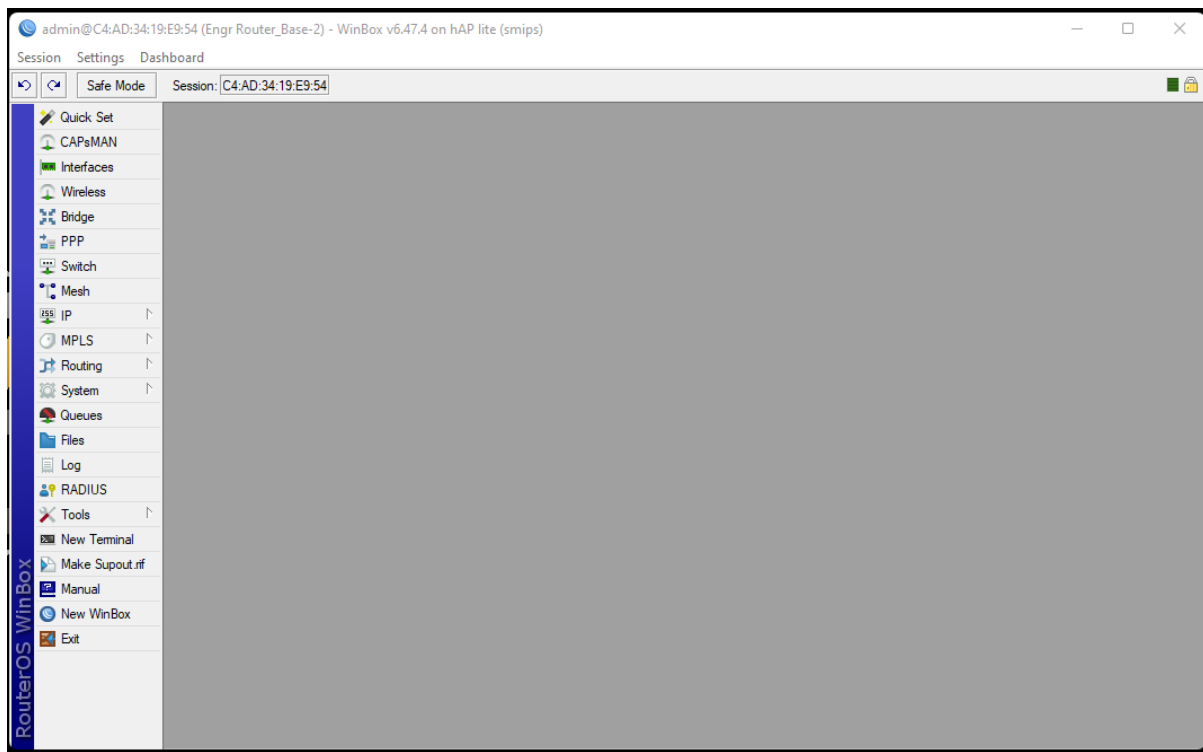


Figure 3.16: Win Box Dashboard

The "Quick Set" menu is used to complete the basic configuration. An option for setting up notifications will appear after clicking on the menu. It displays a warning that losing connectivity may occur if we change modes. Click "yes" to proceed. We will now choose either WISP AP or home AP. A notification option will show after we pick Home AP. To continue, select "Yes." The wireless network name was then set. The Internet address acquisition method is thus set to "Automatic." Fill out the Local Network settings, then enter an IP address in the "IP Address" bar, the Netmask / sub-network mask in the "Netmask" box, and "DHCP Server" as the last choice. Click the "NAT" button after entering the DHCP server range, such as 192.168.5.10 - 192.168.5.254. To double-check your changes, press "Apply" and then "OK."

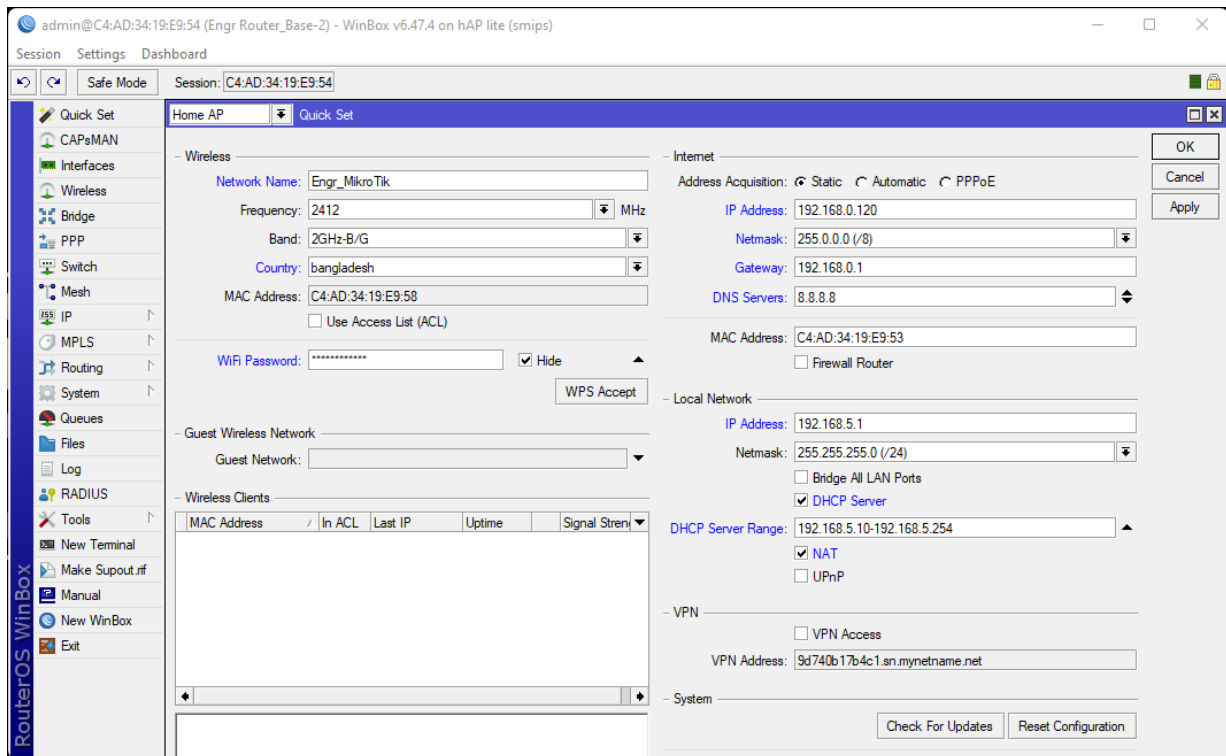


Figure 3.17: Configure Quick Set menu

The next step is to set up wireless. To do so, go to the wireless icon and look for "wlan1". After that, double-click it, choose "ap bridge" as the mood, then "frequency" and "auto". The SSID option, which reflects the wireless access point's IP address, must then be filled up. Click "ok" when you're finished. The Security Profiles must then be configured. You'll see one default security profile when you click that security profile. Double-click it and select "dynamic keys" to modify its mood. Then, under Authentication Types, choose "WPA2 PSK". After that, click "Ok" and input a password in the WPA2 Pre-shared key area.

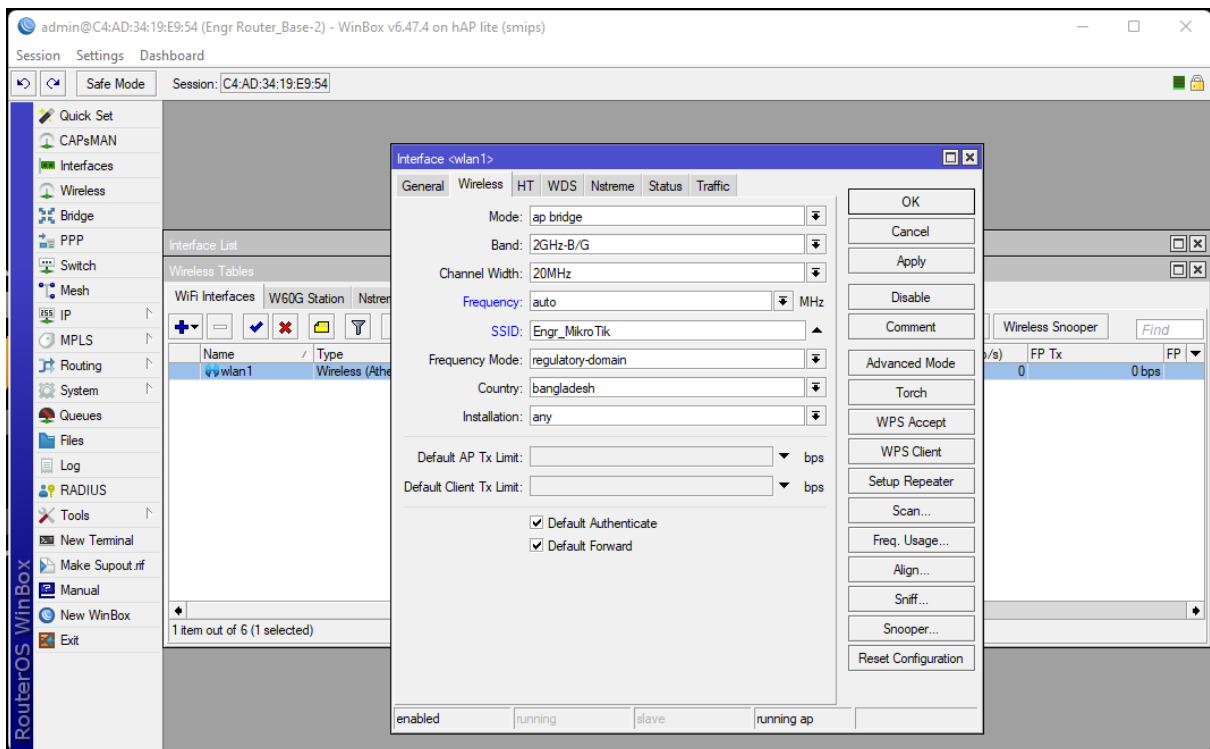


Figure 3.18: Configure Wireless Option

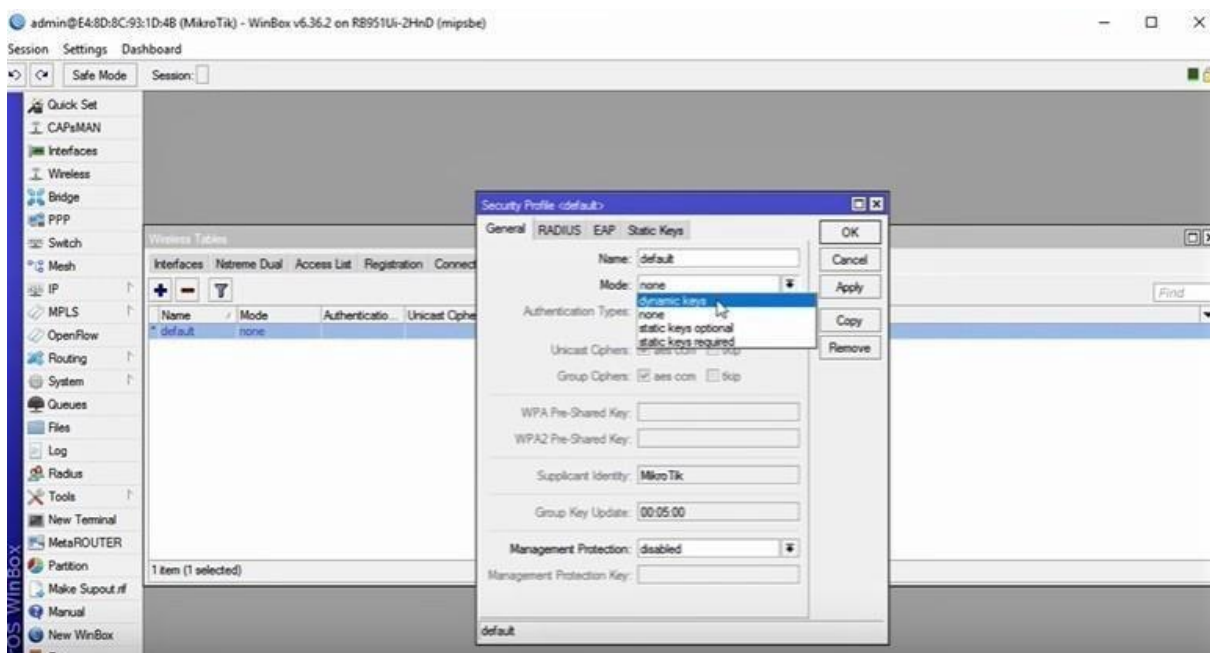


Figure 3.19: Configure Security profile

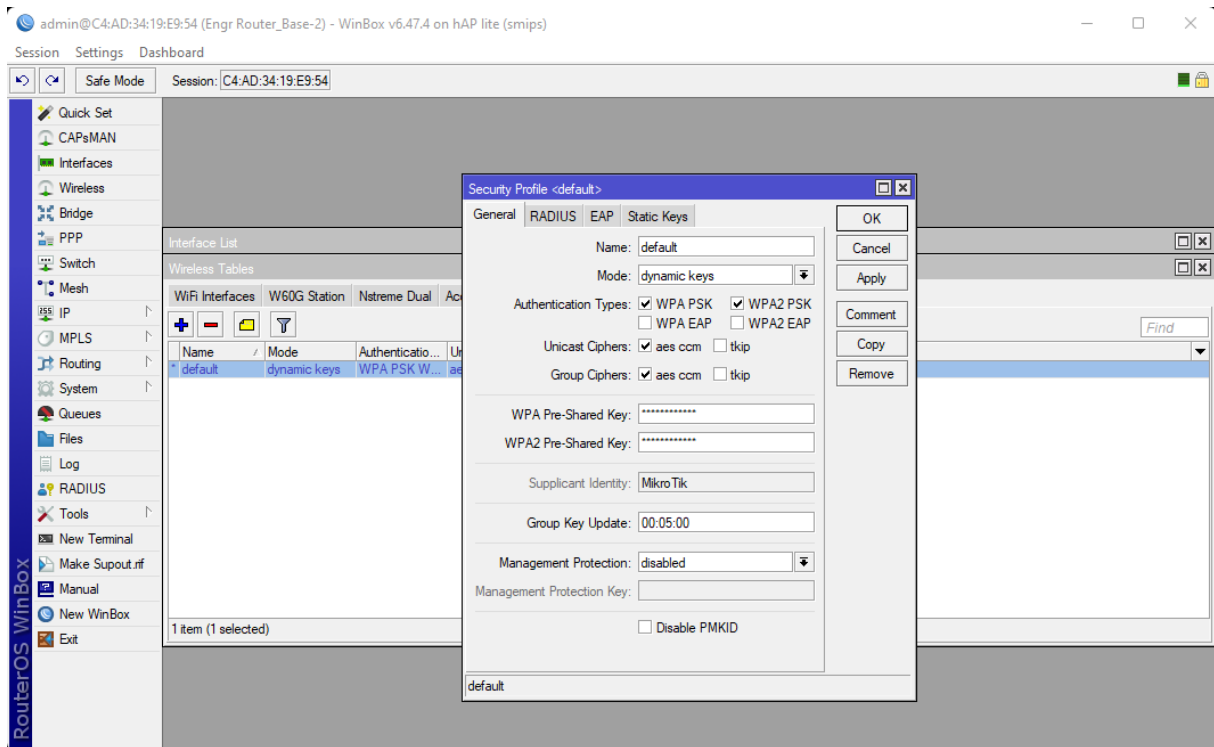
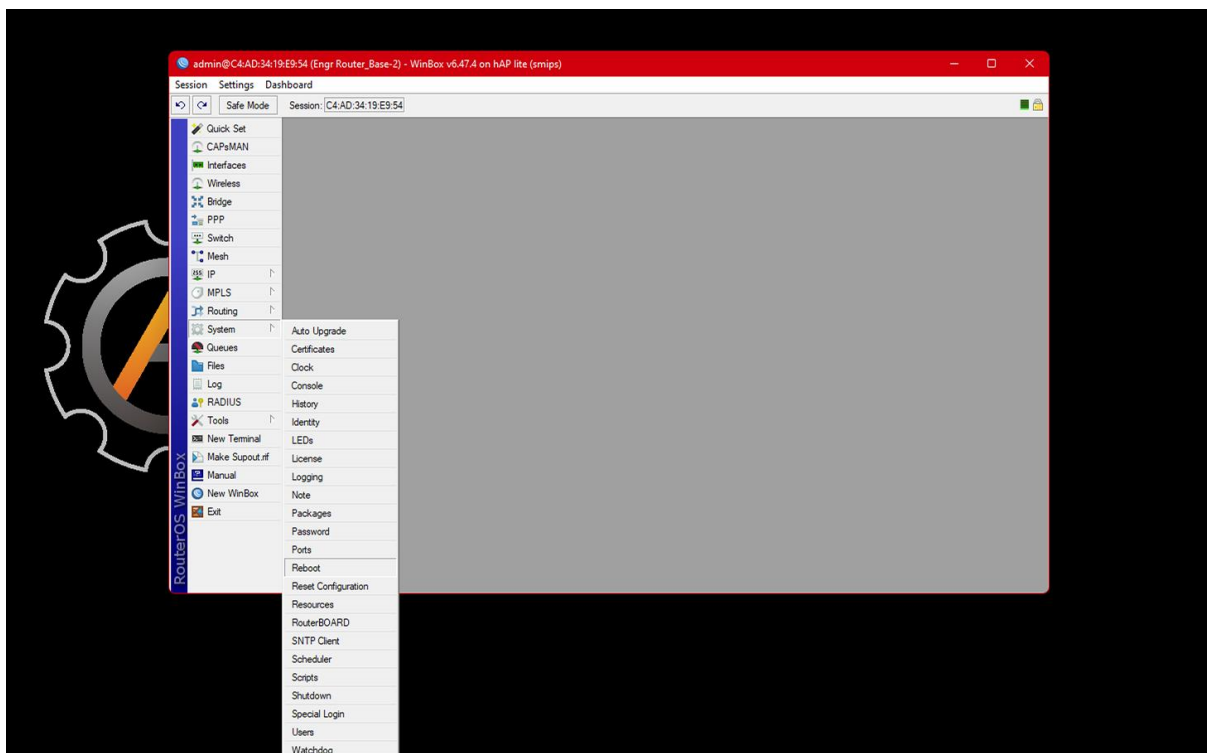


Figure 3.20: Set Password into “WPA2 Pre-shared key

After you've completed all of your tasks, go to the left bar and choose "System," then "Reboot," and a notification alert will appear. Is it safe for me to reboot this Router? Then press "Yes" again.



“So whole procedure is How to Basic Configuring in a MikroTik Router” [5]

Furthermore, I have also learned how to troubleshoot network and router issues. A task I once had to complete consisted of troubleshooting the entire router for a building. I checked all other routers to confirm what the problem was and found that only the main router was affected. Here is a short explanation of the steps that I took:

### 3.3.5 Router Troubleshoot

Router Troubleshoot	I checked all of the routers first, then rebooted and configured them all. Then I looked for the source of the connectivity issues.
	I discovered a few defective connectors, which I replaced, and then I connected all of the other routers. After that, I discovered a badly ripped wire, which I had to replace along with the connector.
	I received a call from the administrator, who advised me to locate the hub and determine whether or not there was an issue. I discovered a rats' "mischif" and replaced the cable and connector before connecting the line.

Table 3.1: Router Troubleshoot

Additionally, I also studied typical troubleshooting techniques such as issues connecting to the internet, computer viruses, DNS problems, ping, IP config, Blue Screen of Death, DLL file not found, Application running very slowly, Malware problem, and Internet network connectivity issue, among others. [6].

**3.3.6 Computer Viruses:** It is not uncommon for people to get computer viruses. We can't think in this world without computers. Every piece of software we utilize will necessitate the usage of a computer to complete our tasks. It is quite common for us to face this problem when using a computer. Turn off the "Firewall," then uninstall all installed applications, install antivirus software, never open any threat email, unwanted email, unknown email, or file, keep your antivirus software up to date, never visit any threatened websites, never download any file



from any untrusted websites, and never copy any file from any removable device without first scanning it. Our computer will be better protected from viruses if we do all of these things. [7].

**3.3.7 Can't connect to the internet:** This is also a fairly common issue. We are occasionally unable to connect to the internet but remain connected to the network. This problem has a straightforward solution. Right-click the internet icon in the taskbar to fix the problem.

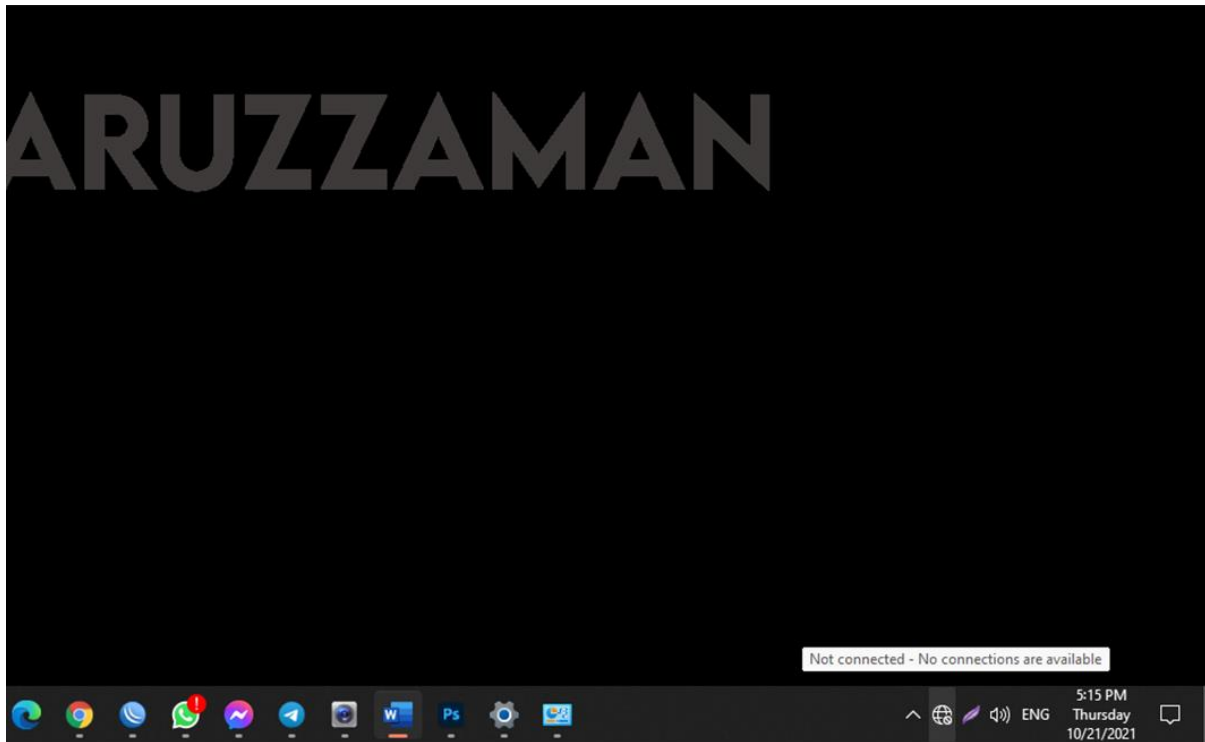


Figure 3.21: No internet access

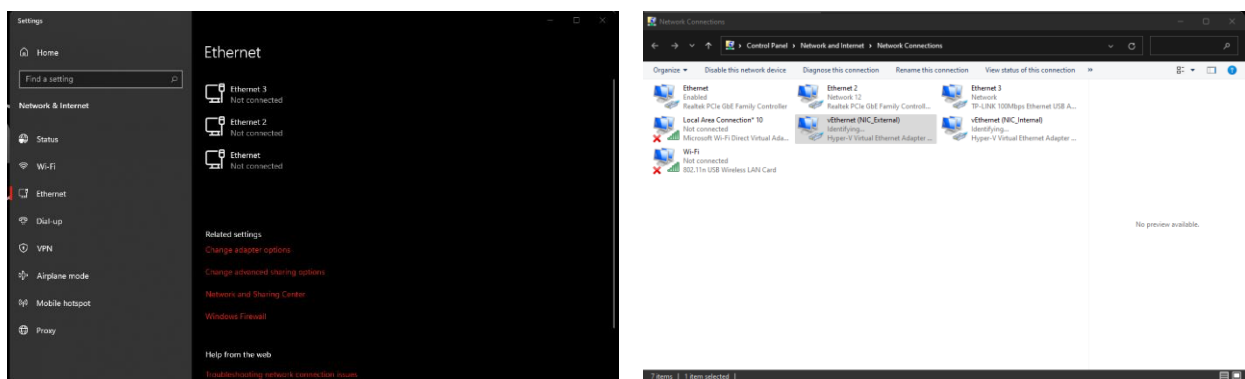


Figure 3.22: Ethernet, Change adapter option

From there, go to Network and Internet Settings. On the next step, click "Ethernet" option, and then select "Change Adapter". Choose, in the properties window, right-click on the Ethernet

option, then properties, and then twice on IPv4 in the properties window. After that, select the option to automatically obtain an IP address and also the option to automatically obtain a DNS server. You can connect your computer or laptop to the internet after you've completed all of this work [8].

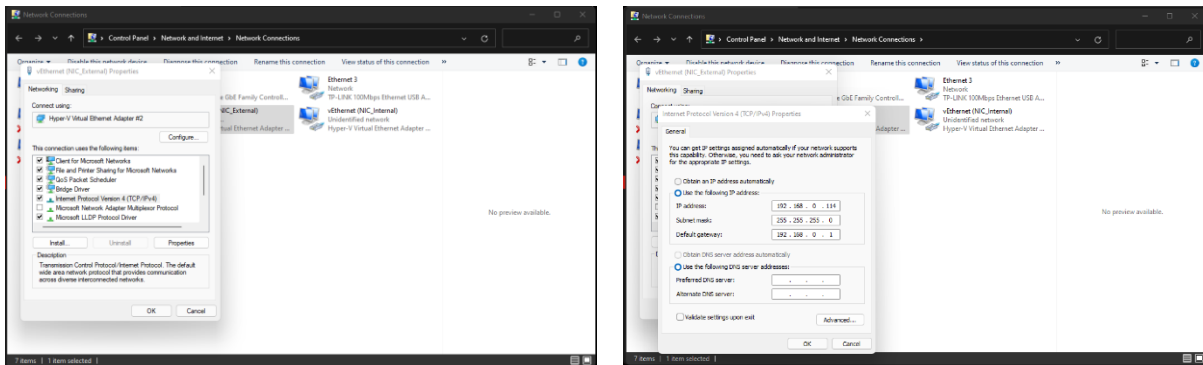


Figure 3.23: click properties of IPv4, select obtain IP or DNS

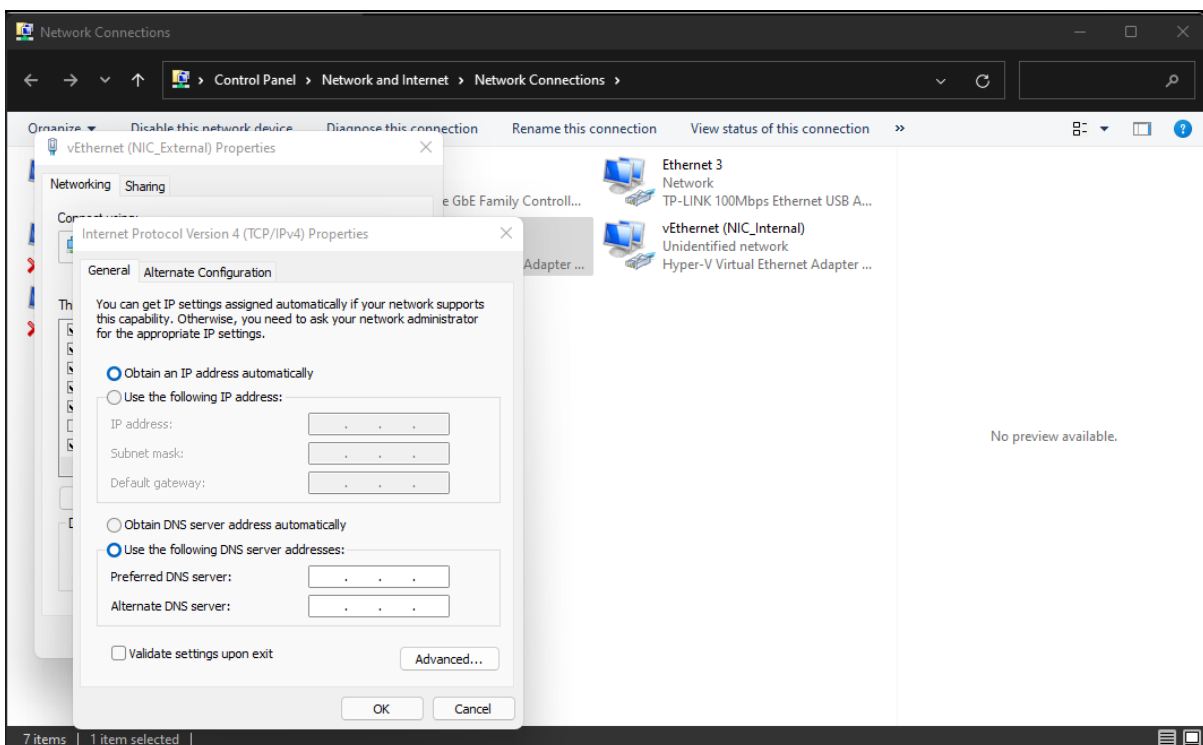


Figure 3.24: Select obtain IP and DNS automatically

**3.3.8 DNS Server Problem:** As part of my learning, I also learn how to fix DNS issues. We sometimes experience this issue. Although we are unable to visit any websites sometimes, we are still able to connect to the network. However, our browser displays "The website cannot be accessed"

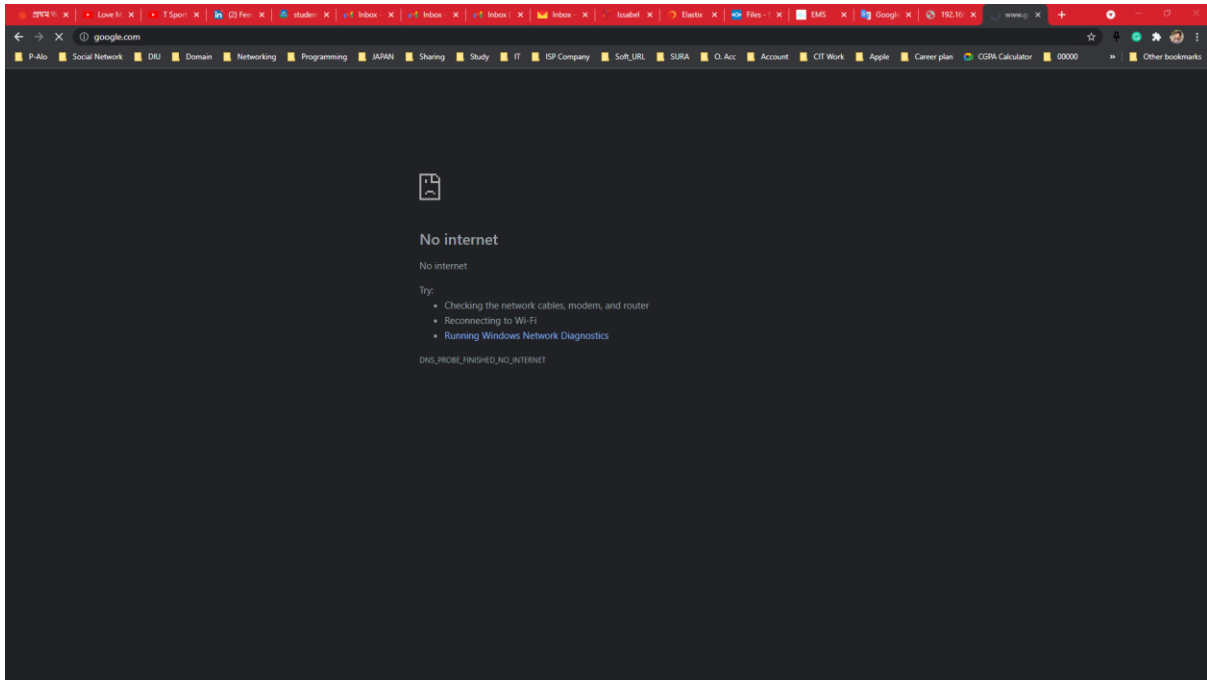


Figure 3.25: site can't be reached

If this happens, we use the to solve the issue. "cmd" command, to use cmd, first open the run option, then type cmd and click OK. When this window appears, type "ipconfig/flushdns" and click Enter. Then, on the command line, type "ipconfig/registerdns" and press Enter. Enter the command "ipconfig/release" and then press Enter again. Finally, type "ipconfig /renew" into the command prompt.

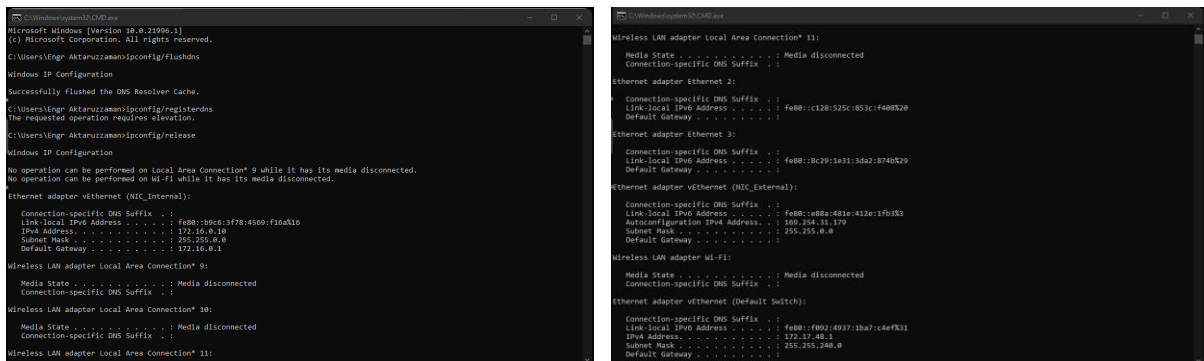
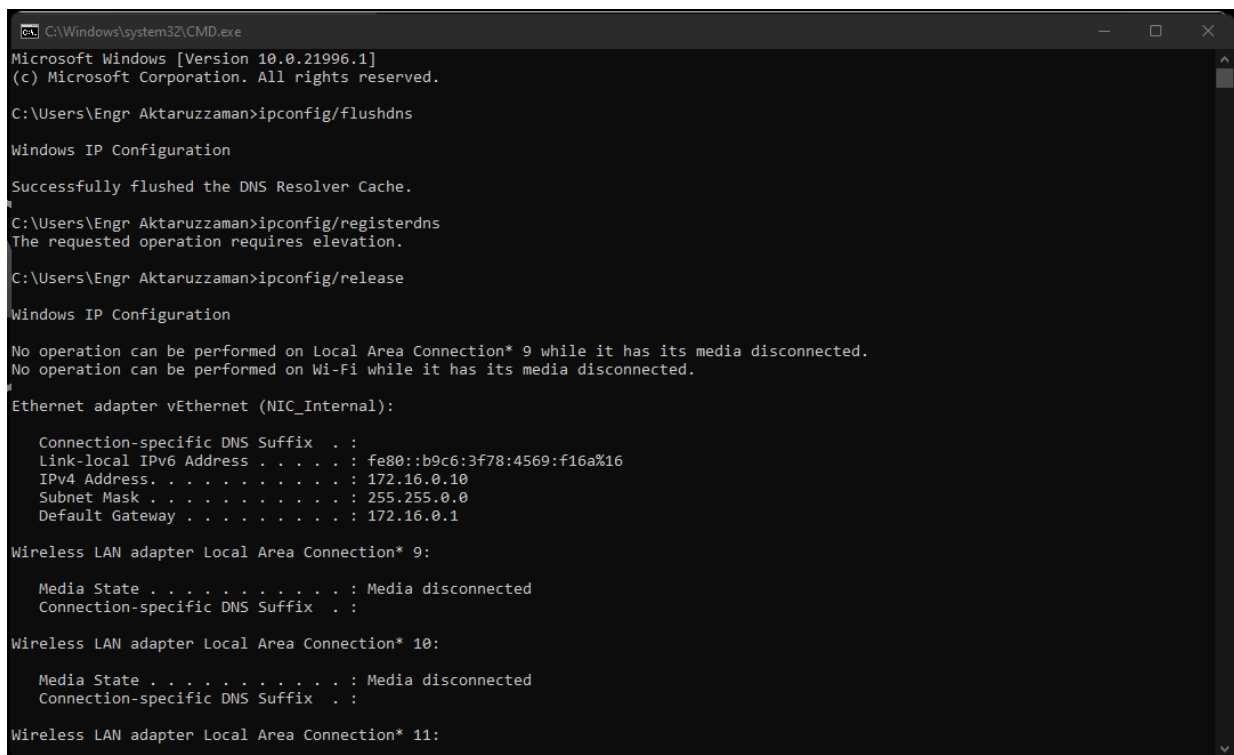


Figure 3.26: cmd – ipconfig / flushdns, ipconfig / registerdns

**3.3.9 To find what is my IP:** There are many situations at work when we need to know which is our computer's IP address. In most cases, we need to access the network remotely. So, it is therefore important to know where to find a computer's IP address. We can type "cmd" and push enter by choosing the run option or using the Window key + R. The command prompt will open as a result of this. At the command prompt, type "ipconfig." After that, you'll be able to determine the IP address of any computer.



```
C:\Windows\system32\CMD.exe
Microsoft Windows [Version 10.0.21996.1]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Engr Aktaruzzaman>ipconfig/flushtdns

Windows IP Configuration

Successfully flushed the DNS Resolver Cache.

C:\Users\Engr Aktaruzzaman>ipconfig/registerdns
The requested operation requires elevation.

C:\Users\Engr Aktaruzzaman>ipconfig/release

Windows IP Configuration

No operation can be performed on Local Area Connection* 9 while it has its media disconnected.
No operation can be performed on Wi-Fi while it has its media disconnected.

Ethernet adapter vEthernet (NIC_Internal):

    Connection-specific DNS Suffix . . . :
    Link-local IPv6 Address . . . . . : fe80::b9c6:3f78:4569:f16a%16
    IPv4 Address. . . . . : 172.16.0.10
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 172.16.0.1

Wireless LAN adapter Local Area Connection* 9:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . . :

Wireless LAN adapter Local Area Connection* 10:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . . :

Wireless LAN adapter Local Area Connection* 11:
```

Figure 3.27: cmd – ipconfig / renew

Using the commands shown in cmd, we can resolve the DNS issue [9].

```
C:\Windows\system32\CMD.exe
IPv4 Address. . . . . : 172.17.48.1
Subnet Mask . . . . . : 255.255.240.0
Default Gateway . . . . . :

C:\Users\Engr Aktaruzzaman>ipconfig
```

Figure 3.28: cmd – ipconfig

```
C:\Windows\system32\CMD.exe
Default Gateway . . . . . :

C:\Users\Engr Aktaruzzaman>ipconfig

Windows IP Configuration

Ethernet adapter vEthernet (NIC_Internal):

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::b9c6:3f78:4569:f16a%16
    IPv4 Address. . . . . : 172.16.0.10
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 172.16.0.1

Wireless LAN adapter Local Area Connection* 9:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 11:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::c128:525c:853c:f408%20
    IPv4 Address. . . . . : 192.168.200.251
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.200.1
```

Figure 3.29: cmd – ipconfig/result

**3.3.10 Blue screen of Death:** We are all familiar with the blue screen of death. There are times when we experience this problem. Usually, a message pops up advising the computer to restart. That “your PC ran into a problem and need to restart”.

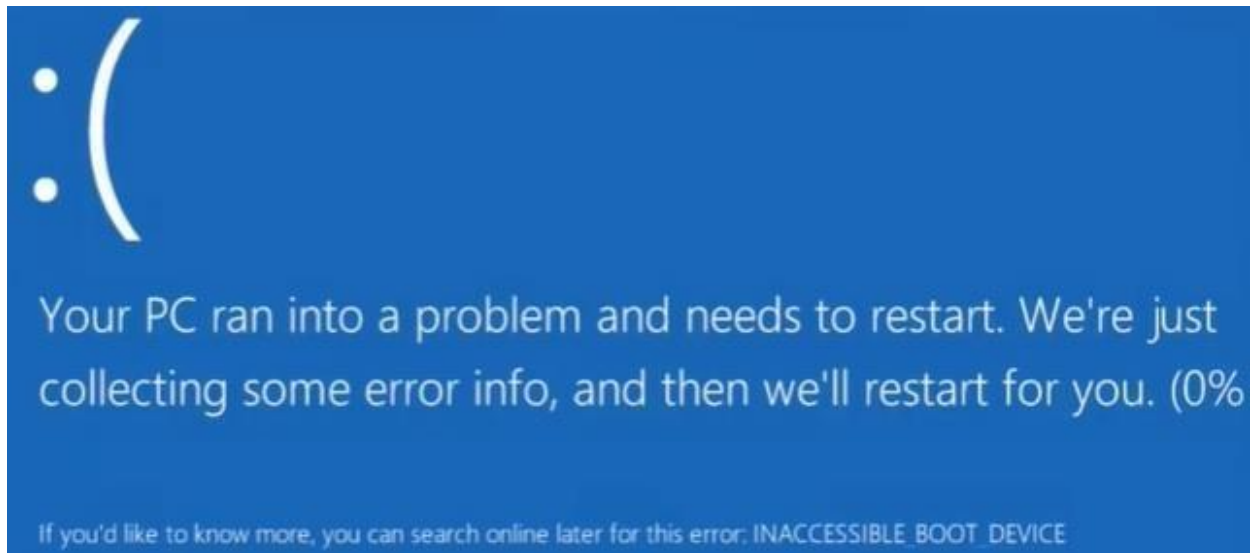


Figure 3.30: Blue screen of Death

The error is also known as "INACCESSIBLE BUT DEVICE", So, let's take a look at the inaccessible yet device error/Blue Screen of Death scenario. Following these instructions will help fix this problem. I'm also following this guide. To begin, I clicked on "Advanced Options".

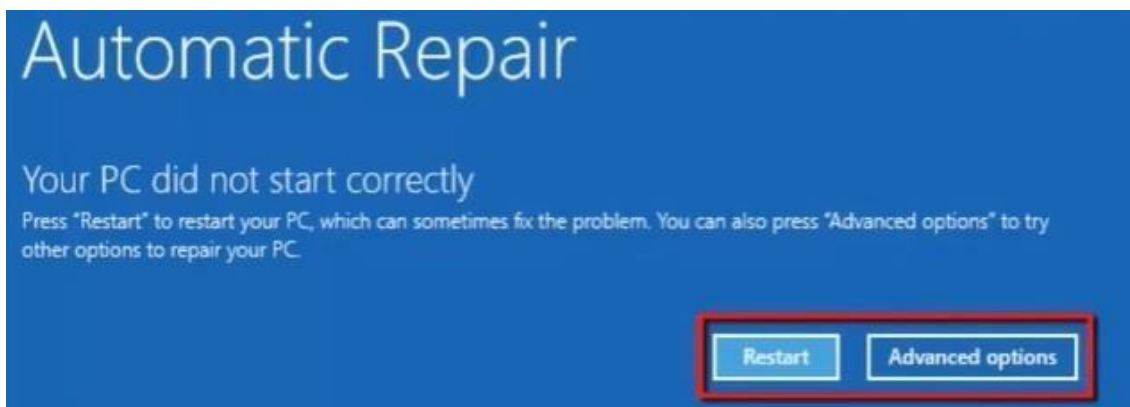


Figure 3.31: Advanced options for fixing blue screen of Death

Following that, we have three choices: continue, debug, or shut down your machine. You'll see more options after you've hit troubleshoot. Click "Advanced choices" to refresh your computer,

reset your machine, and access the Microsoft toolset. Then select Administrator from the drop-down menu. You'll be redirected to a command prompt.

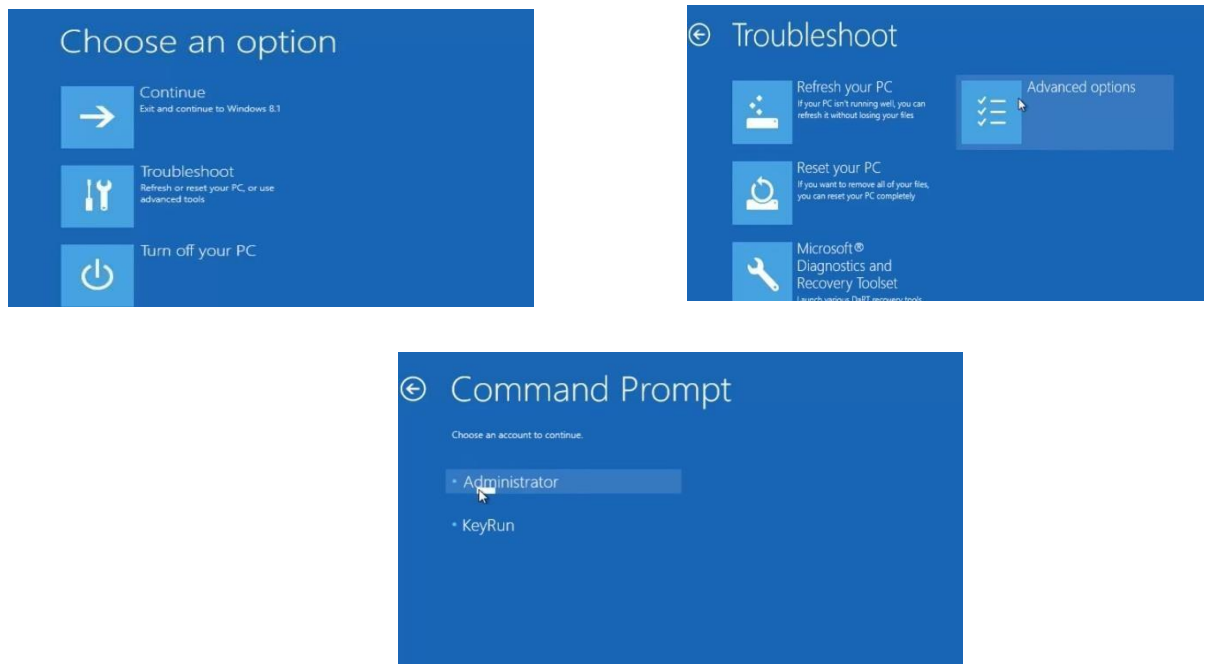


Figure 3.32: Troubleshoot of Blue screen of Death

Typing "C:", followed by typing ">CD windows/system32", then typing "CD config", then pressing enter. Next, type in "CD RegBack" and hit enter. Next type in "DIR" and hit enter.

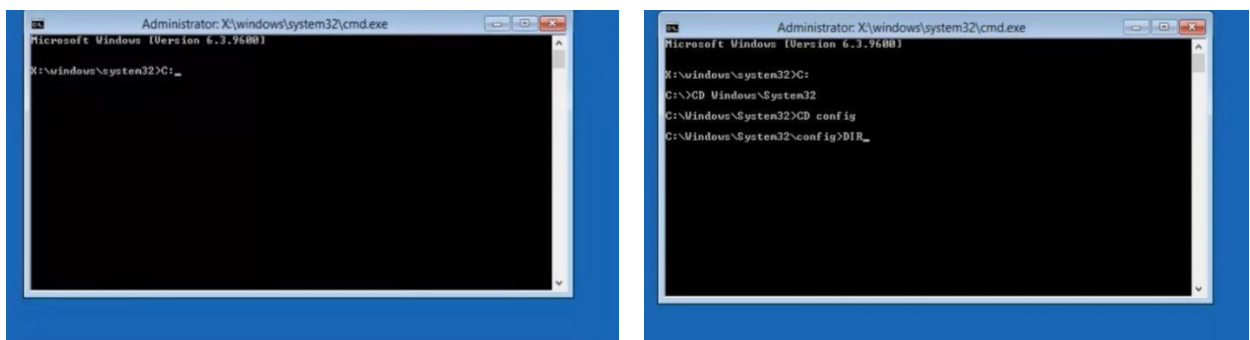


Figure 3.33: Command prompt of Administrator

After that, write "CD RegBack" and click enter. Then write "DIR" and press enter one more.

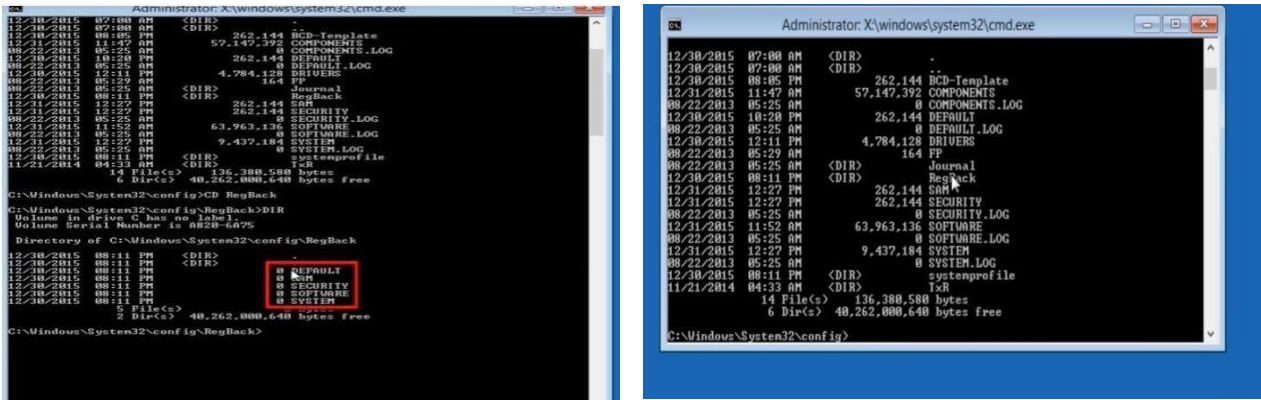


Figure 3.34: Command prompt of Administrator

The register backup directory contains five backup folders: DEFAULT, SECURITY, SOFTWARE, and SYSTEM. Then I renamed the files in the directory. So I return to the directory and type "CD," followed by REN DEFAULT DEFAULT1, REN SAM SAM1, REN SECURITY SECURITY1, REN SOFTWARE SOFTWARE1, and REN SYSTEM SYSTEM1. Then press enter after typing "CD RegBack" and "copy \*C:\windows\system32\config". Finally, to turn off the computer, type Exit. Turn it back on, and the problem should be resolved [10].



Figure 3.35: Following the Blue Screen of Death Troubleshooting



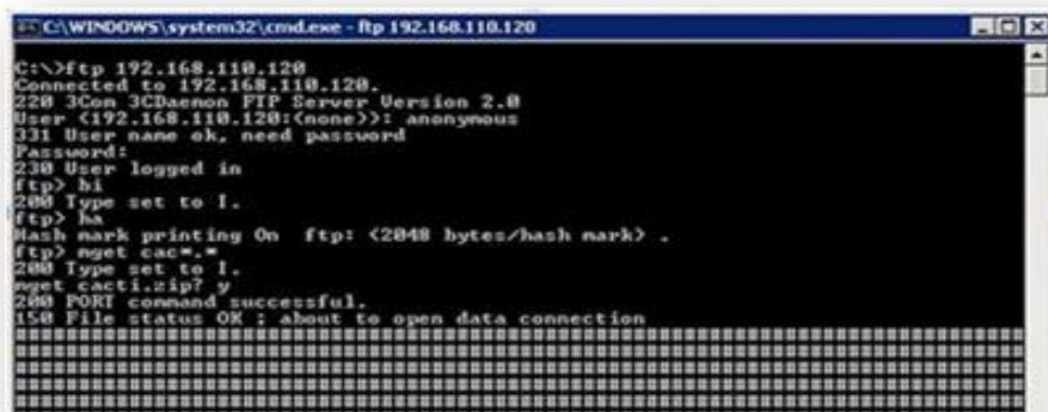
### 3.4 FTP Transfer

This assignment needed me to use command-line interface I to download vital software and data to many remote machines via file transfer protocol (FTP).

When it came to FTP operations, I usually did the following:

Using the Run command to start the CLI

- Specifying the source directory's address
- Using the destination computer's IP address, I connected to it for file transfer.
- Using the ID and password requested on the interface, I was able to connect to this computer.
- Using the command to switch from FTP to binary mode
- Printing of hash marks is enabled.
- To begin the transfer, type the source file's address and hit Enter.
- Finally, end the connection with the exit command.
- Here's a screenshot of the FTP Command-Line Interface in action—



```
C:\WINDOWS\system32\cmd.exe - Rp 192.168.110.120
C:\>ftp 192.168.110.120
Connected to 192.168.110.120.
220 3Com 3C Daemon FTP Server Version 2.0
User <192.168.110.120:(none)>: anonymous
331 User name ok, need password
Password:
230 User logged in
ftp> hi
200 Type set to I.
ftp> ha
Hash mark printing On ftp: <2048 bytes/hash mark> .
ftp> mget cac*.zip
200 Type set to I.
mget cac*.zip? y
200 PORT command successful.
150 File status OK ; about to open data connection
#####
```

Figure 3.36: Windows for the FTP Command-Line Interface

### **3.5. Remote Maintenance**

This activity included installing, modifying and removing various applications/hardware via TeamViewer.

#### **3.5.1 Using Team Viewer**

When I was providing remote assistance/maintenance with TeamViewer, I usually did the following —

- Team Viewer can be launched from the desktop or the start menu.
- Enter the computer name and the type of encryption you want to use.
- Specify a username and password.
- When a remote window is opened, it connects to a specified remote machine.
- The distant machine in question is logged in as an administrator.
- Ensure that the application is up to date.
- I personally signed out and closed the remote window.

### **3.6 Campus Support**

Using remote access technologies, the Creative IT Institute Operations Center provides support to all of its branches. The following are some troubleshooting procedures:

#### **3.6.1 Adding a new application user to a domain on the server**

- Using software for remote access, log in to the Active Directory server.
- Activate the Active Directory services.
- Place the list's branch beneath the domain.
- You've created a new user from the branch's user folder using the new command.
- Followed the on-screen directions to add new user information.
- Close Active Directory Services and log off the server once you've added all of the essential information.

#### **3.6.2 Moving application users to different campus**

- Using remote access software, I connected to the Active Directory server.
- Active Directory Services should be opened.
- Place the branch beneath the domain in the list.
- Select the appropriate user in the Users folder, then use the Move command to move the person to the destination branch.

- After moving the user, close Active Directory services and disconnect from the server.

### **3.6.3 Adding new e-mail user to Server domain**

- Using remote access software, connect to Microsoft Exchange Server 2007.
- Active directory services should be enabled.
- Choose a branch from the drop-down menu under the domain.
- To create a new user, run the new command from the branch's Users folder.
- Followed the on-screen directions to add new user information.
- Select the user again from the User folder, add a new swap activity, and then add specific additional attributes.

### **3.6.4 In a network domain, resetting an e-mail user's password**

- Using remote access software, I logged into the Exchange server.
- Active Directory services should be opened.
- The branch was located from the domain's list.
- A user from the "Person" folder is selected, and the user is given a new password via the "Reset password" menu.

### **6.3.5 Installation of software on a remote computer**

- Using remote access software, log in as an administrator to the remote computer.
- Using the playlist, open the ADC computer branch.
- Installing the necessary software configuration files on a server ADC
- Copy the software installation files to a different machine.
- Install the software.
- To complete the installation, restart the remote computer (if necessary)
- Log off of the computer if the installation was successful; otherwise, repeat the instructions.

## **3.7 Hardware Support**

With the support of its hardware staff and a regular maintenance approach, the company has been able to achieve its goals. Creative IT Institute's IT section provides hardware support services. This team performs a variety of hardware troubleshooting methods, which are described below:

### **3.7.1 Introducing a new user to a computer**

- If a new computer is delivered, all components are either installed according to instructions or transported for main hardware inspection.
- The computer is checked for component failures, glitches, conflicts, and other issues during the primary check.
- If such an issue is discovered, please address it immediately, and the machine will be cleaned.
- Components are cleaned to remove any dirt or dust particles before being supplied to be installed with the software.
- The hard drive of the computer is formatted, and new partitions are created.
- A valid license for the Windows 10 operating system has been installed.
- According to IT policy, when it is run for the first time after installing the operating system, the computer is given a name that corresponds to the user.
- The graphics card, sound card, chipset, and network interface card drivers are installed on the motherboard.
- Other device drivers, such as printers, scanners, and modems, are installed as well.
- Anti-virus software, Office document editor, PDF Reader, file compression software, remote access software, relevant banking software, and so on are all required office software.
- The computer is rechecked for problems after all hardware and software installations are complete, and if no difficulties are discovered, it is sent to the appropriate branch office for the new user.
- Finally, the computer is ready to be used for formal work by the user.

### **3.7.2 Exporting data from one hard disk device to another**

- Turned off the power to the CPUs that store the source and destination hard drives.
- Disconnect the source hard drive from the CPU in its casing.
- Using the SATA / IDE interface, connected to the enclosure CPU carrying the target hard disk.
- A converter is used if the two hard drives do not have the same connecting ports. Which is connected to the Central Processing Unit of the Target USB (Universal Serial Bus).
- You must ensure that the target CPU's hard disk is set to the highest priority boot device.
- The target computer turns on once the source hard drive is correctly attached.

- After turning on the computer, the source hard disk partitions appear as separate logical drives alongside logical drives in a computer.
- The required information is then transmitted from the source hard drives to the logical disks with the required free spaces on the destination's hard drives.
- The destination computer is switched off and the source hard disk is detached from the destination computer once the data transfer is complete.

### **3.8 Network Surveillance**

NAGIOS and CACTI were the major software used to monitor the network.

#### **3.8.1 Host addition using Pine composer (PICO)**

The following technique was used to upload information for each host belonging to different Creative IT Institute branches using the Pine Composer text editor (PICO) through Telnet, with the goal of monitoring Nagios:

- Using username and password, I logged into Telnet.
- It's in the Nagios directory you're looking for.
- Located in the required link where the configuration will take place.
- You updated the configuration file with new information by using the relevant command.
- I saved my work and then exited the session.



Figure 3.37: NAGIOS PICO setup interface

### 3.9 Challenges

Internships are always challenging for students, but for me, they have been an opportunity and I have pushed myself to keep up with the pace. There have been many new experiences and situations that have excited me. As I learn to accept my current problems and move forward, I gain new perspectives. As my colleagues guided me through everything that I had to do during my internship, I gained new perspectives on challenges.

In “Creative IT” network problems and troubleshooting are solved by a diverse group of technicians. So, starting out as a new employee was quite challenging. Nevertheless, after a few weeks, it became normal to allow myself to flow with what was going on. While I was doing my internship, I did not ever complain about anything because I didn't want to have my respected teachers embarrassed. Nonetheless, I made it through the situation and achieved what was required.

Despite my experience, they treated me well and provided me with numerous opportunities to work on a range of projects, including cabling, RJ-45 clipping, LAN network, Wi-Fi network, configurations of routers, and a wide range of hardware and software problems.

While I have balanced my work and university studies well, I am proud of my achievements. I believe my efforts have been rewarded. The professionals were very accommodating in all circumstances. Having worked as a student intern has been extremely worthwhile to me.

## CHAPTER 4

### Competencies and a Well-Planned Strategy

#### 4.1 Earned Competencies

I learned a lot during my internship at the "Creative IT Institute," and I consider myself competent. Although I know I'm not a judge, I'm confident I will succeed at any task you give me. My experience has taught me to complete any job under any circumstances at any time. My experience allows me to learn and do more work since I have earned the quality. A lot of interns hope to earn competencies during their internship, as they are only able to do so when they start their program. In my situation, I had previously worked for a range of organizations, and now that my internship is over, I can confidently say that I achieved my internships goals.

#### 4.2 Smart Plan

Plan ahead of time Anyone who wishes to advance in life must plan; however, even the most intelligent person can employ planning badly at times. I learned a lot while working at the "Creative IT Institute" company and had the opportunity to work with higher-ups who shared their fantastic experiences with me. My objective of becoming a perfect Networker has now been set, and I plan to strive toward it. While I have a few missions and visions, my main objective would be to spend a few years learning everything I can in order to improve my talents. As a professional engineer, my goal is to have high-quality talents that can survive any situation. In terms of my professional future, I intend to obtain a networking degree. My ambition is to work for a global network company. My ambition is to rise to the top of the engineering hierarchy.

#### 4.3 Reflection

In retrospect, I can only say that my internship taught me a lot and allowed me to study and work on a variety of platforms and scenarios. It is very essential to gain field experience prior to joining any job on a professional level. The opportunity to work there also meant that I could overcome a few of my weaknesses and come around. As a result, I am confident that I will have a fantastic opportunity to demonstrate my knowledge and skills. I was also able to demonstrate my commitment, and I now know what I want to accomplish in the future and how to start my career.



## **CHAPTER 5**

### **Conclusion and Future Career**

#### **5.1 Conclusions and Discussions**

As you can see from the report, I learned a lot throughout this internship. The networking sector of “Creative IT Institute” offered me the chance to gain valuable experience. It is a vast system that I gained a lot of knowledge from. I was given the opportunity to improve my knowledge of routers. Additionally, I have included other skills that I have acquired. These skills have been applied to numerous situations. Working as a professional and following orders was invaluable to me. I am currently pursuing a career in computer science and will benefit greatly from my experience. I believe that this internship will offer me an advantage over my colleagues. “Creative IT Institute” has been a real blessing to me. Working for them has changed my outlook on work and my outlook on life in general. “Creative IT Institute” mentors have been very helpful to me in determining my path and into my career. I am grateful to them for helping me along the way.

#### **5.2 Scope for the future Career**

This department has plenty of room for growth. From my point of view, I am in a highly competitive position. Many students succeed in their education and work. So, competition is very high. As their classmate, I believe I will blend into their group and function correctly. Many organizations might be willing to supply me with a work surface. Bangladesh is presently a developing nation with a wide range of job opportunities; I would prefer to work in the networking area here. My internship provided me with the opportunity to establish some solid relationships with various people, thereby encouraging me to get to where I want to be. As far as my career is concerned, I am very confident.

## REFERENCES

- [1] Creative IT Institute Official Website [Online], available: <<<https://www.creativeit institute.com>>>, last accessed on 10 February 2021 at 9:00 AM
- [2] "How to make a cat5 patch cable", *Warehousecables.com*, 2020 [Online], available: <<<https://www.warehousecables.com/how-to-make-a-cat5-patch-cable>>>, last accessed on 20 February 2021 at 11:30 AM
- [3] R. Tech, "LAN, How to Set Up LAN Network? – Router Switch Blog", *Blog.router-switch.com*, 2020 [Online] available: <<<https://blog.router-switch.com/2012/02/lan-how-to-set-up-lan-network>>>, last accessed on 2 April 2021 at 10:00 AM
- [4] "TP-Link Router Quick Setup", *YouTube*, 2018 [Online] available: <<<https://www.youtube.com/watch?v=XvYNIN8dofY>>>, last accessed on 20 April 2021 at 12:30 PM
- [5] "MikroTik Tutorial 1 - Getting Started Basic Configuration", *YouTube*, 2017 [Online], available: <<<https://www.youtube.com/watch?v=76nK1LXyPMA>>>, last accessed on 2 May 2021 at 9:00 AM
- [6] I. Khan, "(PDF) An introduction to computer viruses: Problems and solutions", *ResearchGate*, 2012. [Online], available: <<[https://www.researchgate.net/publication/241849825\\_An\\_introduction\\_to\\_computer\\_viruses\\_Problems\\_and\\_solutions](https://www.researchgate.net/publication/241849825_An_introduction_to_computer_viruses_Problems_and_solutions)>>, last accessed on 28 May 2021 at 10:00 AM
- [7] M. Stanojevic, "Get all the possible fixes to 'Windows 10 Can't Connect to This Network'", *Windows Report | Error-free Tech Life*, 2020 [Online], available: <<<https://windowsreport.com/windows-10-cant-connect-this-network/>>> last accessed on 2 June 2021 at 12:10 AM
- [8] "How To Fix the DNS Server Not Responding Error", *YouTube*, 2017 [Online], available: <<[https://www.youtube.com/watch?v=v1-f2VB\\_98E](https://www.youtube.com/watch?v=v1-f2VB_98E)>>, last accessed on 10 June 2021 at 11:00 PM
- [9] "Windows 10 Blue Screen of Death FIX", *YouTube*, 2017. [Online], available: <<<https://www.youtube.com/watch?v=x7FTQV0oZYk>>>, last accessed on 24 June 2021 at 10:00 PM

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