### A Project Report on

### **Small Organization Set Up in CISCO Packet Tracer-Documentation**

### Submitted in partial fulfillment of completion of the course

### Advanced Diploma in IT, Networking and Cloud

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### **Table of Contents**:

### Introduction to Problem

### Proposed Solution

### Requirements

### 3.1 Technology Stack

### 3.2 Hardware

### 3.3 Software

### 3.4 Deployment Environment

### 4. User Requirements

### 5. Design Documentation

### 6. Implementation Details

### 7. Testing

### 8. Deployment

### 9. Conclusion

### Appendix A Project Code

### Appendix B Screenshot of Project

### Appendix C abbreviation

### References

### **Abstract:**

### The basic idea is to allow self-determining and confidential communication to exchange of data between real-world devices and applications of the Internet of things. The computer network area requires professionals with solid networking theory and practical hands-on experience.

### Together with the fast technological advancement in the field of computer networks and Information

### Technology industry, the need for a large number of skilled network experts also increased.

### Cisco Packet Tracer is an effective education simulation software that supports computer networking students to experiment and practice network tasks. Cisco Networking Academy Program (CNAP) introduced Packet Tracer as a tool for teaching and learning of computer network courses by providing “simulation, visualization, authoring, collaboration capabilities and assessment”

### Cisco Packet Tracer is a tool built by Cisco and it provides network simulation to practice simple and complex networks. The main purpose of the Cisco Packet Tracer is to help students learn the principles of networking and demonstrate the networking concepts. A DHCP Server is a network server that automatically assigns IP addresses, default gateways, and other network parameters to client devices.

### **Acknowledgement:**

### Team ‘The Bright Spark’ (comprised of 2 members, namely Shikha Kumari, Srimana Maity) are thankful to our teacher, Ms. Arpita Roy for her guidance and supervision which has provided a lot of resources needed in completing our project.

### We are also thankful for the efforts put in by our team members and their contributions to the preparation of this project.

**Team Composition and Workload Division:**

Our team is comprised of 2 members.

* Shikha Kumari (Leader): Design and configuration of the network infrastructure in CISCO Packet Tracer.
* Srimana Maity (Member): Testing, troubleshooting, Documentation

### **Introduction to Problem:**

### The computer network area requires professionals with solid networking theory and practical hands-on experience. Together with the fast technological advancement in the field of computer networks and Information Technology industry, the need for a large number of skilled network experts also increased.

### Cisco Packet Tracer is an effective education simulation software that supports computer networking students to experiment and practice network tasks.

### **Proposed Solution:**

### The use of virtual laboratories is very important. In this study, we also implemented Cisco Packet Tracer, which enables us to work on test scenarios without using any physical components virtually to design an advanced computer network. The Cisco Packet Tracer is used not only to simulate computer networks but also to learn computer networks.

### **Requirements:**

### **Technology Stack**:

### Networking

### **Hardware**:

### Processor: Intel(R) Core (TM) i5-9500

### CPU @ 3.00GHz 3.00 GHz

### Installed RAM 8.00 GB (7.81 GB usable)

### **Software**:

### CISCO Packet Tracer

### **Deployment Environment**:

### It is deployed in CISCO Packet Tracer

### **User Requirements:**

### Students

### **Step 1:** Open the Cisco Packet Tracer.

### **Step 2.:** After opening the Cisco Packet tracer, add a router, 4 switches, 6 PCs, and a server to build a network for a small organization.

|  |  |
| --- | --- |
| **Router** | 1 |
| **Switch** | 4 |
| **Server** | 1 |
| **PC** | 6 |

### **Assume there’re four sections in this small organization**:

### 1. Administration section 2. Accounts and Finance 3. Information Technology (IT). 4. Database section.

### **There are four different networks in this organization**:

### 1. 192.168.1.0/24 2. 192.168.2.0/24 3. 192.168.3.0/24 4. 192.168.4.0/24.

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### **Step 3:**Connect the router with 4 switches, 3 switches are connected with 2PCs each, and 1 switch is connected with the server using a cable.  There are four different networks in this organization: - 192.168.1.0/24, 192.168.2.0/24, 192.168.3.0/24, and 192.168.4.0/24.

### **Step 4:**Give IP, subnet mask, default gateway, and DNS server to each PC and server in this network. To assign IP to each PC and server, click on each PC, go to Desktop, and then click on IP configuration.

| **Components** | **IP Address** | **Subnet Mask** | **Default Gateway** | **DNS server** |
| --- | --- | --- | --- | --- |
| PC0 | 192.168.2.3 | 255.255.255.0 | 192.168.2.1 | 192.168.1.100 |
| PC1 | 192.168.2.2 | 255.255.255.0 | 192.168.2.1 | 192.168.1.100 |
| PC2 | 192.168.3.3 | 255.255.255.0 | 192.168.3.1 | 192.168.1.100 |
| PC3 | 192.168.3.2 | 255.255.255.0 | 192.168.3.1 | 192.168.1.100 |
| PC4 | 192.168.4.3 | 255.255.255.0 | 192.168.4.1 | 192.168.1.100 |
| PC5 | 192.168.4.2 | 255.255.255.0 | 192.168.4.1 | 192.168.1.100 |
| Server | 192.168.1.100 | 255.255.255.0 | 192.168.1.1 | 192.168.1.100 |

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### **Design Documentation:**

### 

### **Testing:**

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### **Deployment:**

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### **Future Scope:**

### The future scope of this small organization set up in Cisco Packet Tracer is to expand the network and make it suitable for larger organizations. We can add more switches, routers, and servers to the network to accommodate more devices and improve the network's scalability.

### In addition, we can configure the network for other services such as VoIP, VPN, and cloud services. This will add more value to the network and make it suitable for a wide range of organizations with varying requirements.

### Overall, the small organization set up in Cisco Packet Tracer is just the beginning, and the sky is the limit when it comes to network design and implementation. With the right skills and resources, we can create complex networks for businesses and organizations of all sizes. So, it is very important to translate the configurations and protocols in proper English for effective communication and understanding.

### **Conclusion:**

### The Small Organization Cisco Set-Up project aims to provide a robust and secure network infrastructure tailored to the needs of the organization. By leveraging Cisco's technology, the organization will benefit from improved communication, data security, scalability, and remote access capabilities. The successful implementation of this project will enable the organization to operate efficiently, adapt to growth, and stay competitive in its industry. Close monitoring and risk mitigation strategies will be essential to ensure the project's successful and timely completion within budget.

### **Appendix A Screenshot of Project:**

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### **REFERENCES:**

### <https://www.geeksforgeeks.org/>

### <https://youtu.be/Teyqx0eb0zw?si=Scq_GUkSbKAYd546>

### <https://skillsforall.com/course/getting-started-cisco-packet-tracer?courseLang=en-US>