

FOUR MONTHS INDUSTRIAL TRAINING

SYNOPSIS

HIMACHAL PRADESH TECHNICAL UNIVERSITY, HAMIRPUR

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE
AWARD

OF THE DEGREE OF

BACHELOR OF TECHNOLOGY

(Computer Science & Engineering)



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SUBMITTED TO:

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15 MARCH – 15 JULY, 2022

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

HIMACHAL INSTITUTE OF ENGINEERING AND TECHNOLOGY

COMPANY PROFILE

A2itsoft is an integrated IT solutions and service provider headquartered at Chandigarh, India. Our offerings span across Software Product Engineering, Application Development, Application Management, Mobile Application Development, Enterprise Business Solutions, Business Applications and Consulting.

With an indomitable spirit to succeed, soft made a modest start in the year 2001, from a small office with a team of six. Today, with over a hundred people family, we have come a long way and the same inspiration to achieve continues to drive us from one success to another.



We have a global footprint with development center at Hyderabad and Sales & Customer Service centers in Hyderabad, Australia, New Zealand, Canada & UK catering to our clients spread across the continents of Asia, America, Europe, Australia and New Zealand.

Our Core Values

Value Teamwork

A2it Team values collaboration. In a teamwork environment, people understand and believe that thinking, planning, decisions and actions are better when done cooperatively. People recognize, and even assimilate, the belief that “none of us is as good as all of us.

Lead by Example

We understand every company has a different requirements and unique parameter when it comes to Web Designing and Development. We make your projects to be able to stand out from your competitors.

Focus on the Future

We focus on the future, not on the past because better days lie ahead. It is time for us to turn a corner and come together, put our differences behind us and focus on the future technologies.

Be Respectful

We communicate openly, honestly, and respectfully in a timely manner. All emails and phone calls which require a response will be answered within 24 hours or sooner. Internal A2it and external communications with customers and teammates have equal priority.

Challenge the Status Quo

Our mission is that your requirements being met on time and with high quality. We deliver products that are cost – effective and as per customer requirements.

Strive for Excellence

Excellence is not just a word; it is an ethics in a2it. We try to make excellence a habit. We deeply value customer satisfaction. We try our best to deliver product to customer within time as per their requirements.

Vision

To be the competent and complete value added technology partner to our clients and be the admired Global software solutions & services provider in Information Technology space in our chosen markets.

Mission

To deliver the right business solutions that integrate People, Process and emerging Technology to help our clients to achieve the business benefits of a collaborative enterprise at very affordable prices.

BRIEF INTRODUCTION TO PROJECT

In today's world, Networking is most necessary but everyone wants a secured network in this project I used NAT which provide us a fully secured LAN network. Security is much more difficult in Network; this project can control the user of wireless network and make a secure wireless network. In this project, we replace a router with a PC.

My Project includes the concepts and configuration of Local Area Networks (LANs), Switching, Wide Area Networking (WAN), and Router Technologies. In my project I used the Windows XP, Windows server. I also used hardware's during practice i.e. Router, Switch, Hub. I also used crimple tools, connectors and cable wires to make straight and cross cable wires. I used NAT (Network address Translation) Technology in my project. I also used ACL in my project to control the traffic from one router or switch from another device.

In my project I made a network using router which acts as an equipment between Local Network and the Internet. I made virtual LANs in a network and uses network address translation to make more different IP addresses from one private IP to make a Local Area Network.

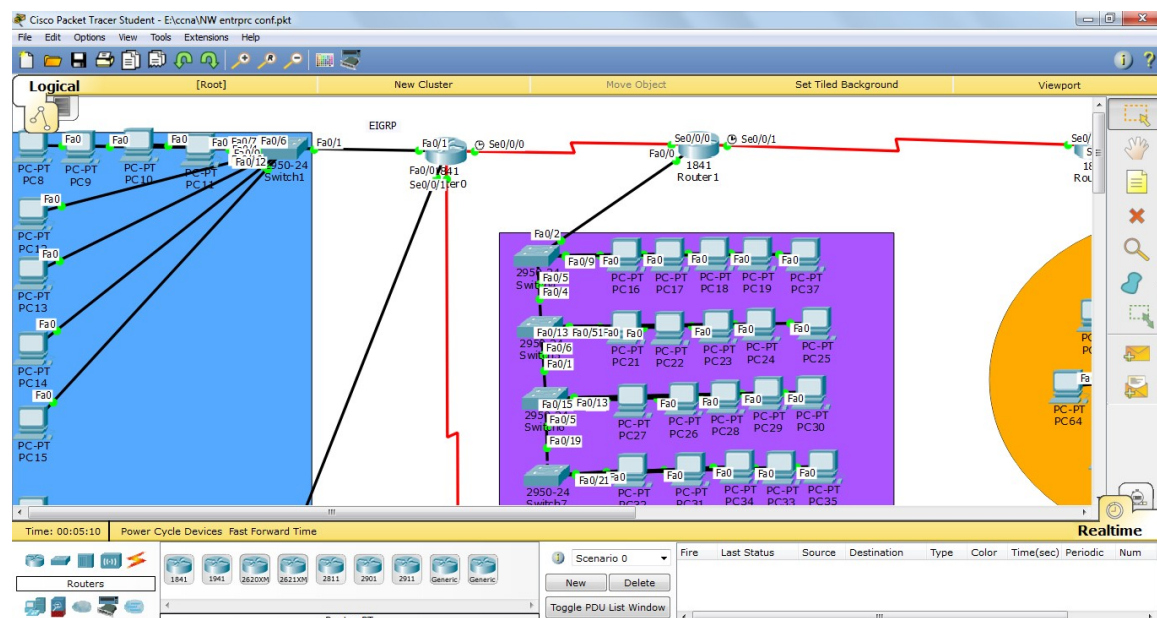
In my project Now I am working on

CAMPUS AREA NETWORK use of a routing protocol to advertise routes that are learned by some other means, such as by another routing protocol, static routes, or directly connected routes, is called redistribution. While running a single routing protocol throughout your entire IP internetwork is desirable, multi-protocol routing is common for a number of reasons, such as company mergers, multiple departments managed by multiple network administrators, and multi-vendor environments. Running different routing protocols is often part of a network design. In any case, having a multiple protocol environment makes redistribution a necessity.

Differences in routing protocol characteristics, such as metrics, administrative distance, classful and classless capabilities can effect redistribution. Consideration must be given to these differences for redistribution to succeed.

Metrics

When you redistribute one protocol into another, remember that the metrics of each protocol play an important role in redistribution. Each protocol uses different metrics. For example, the Routing Information Protocol (RIP) metric is based on hop count, but Interior Gateway Routing Protocol (IGRP) and Enhanced Interior Gateway Routing Protocol (EIGRP) use a composite metric based on bandwidth, delay, reliability, load, and maximum transmission unit (MTU), where bandwidth and delay are the only parameters used by default. When routes are redistributed, you must define a metric that is understandable to the receiving protocol. There are two methods to define metrics when redistributing routes.



DESIGN OF SOLUTION

In my project I made a network using router which acts as an equipment between local network and the internet. In this I made virtual LAN's in a network and uses network address translation to make more different ip addresses from one private ip to make a local area network. I also apply access control list in my project to deny some features or services to local area network.

The project includes:

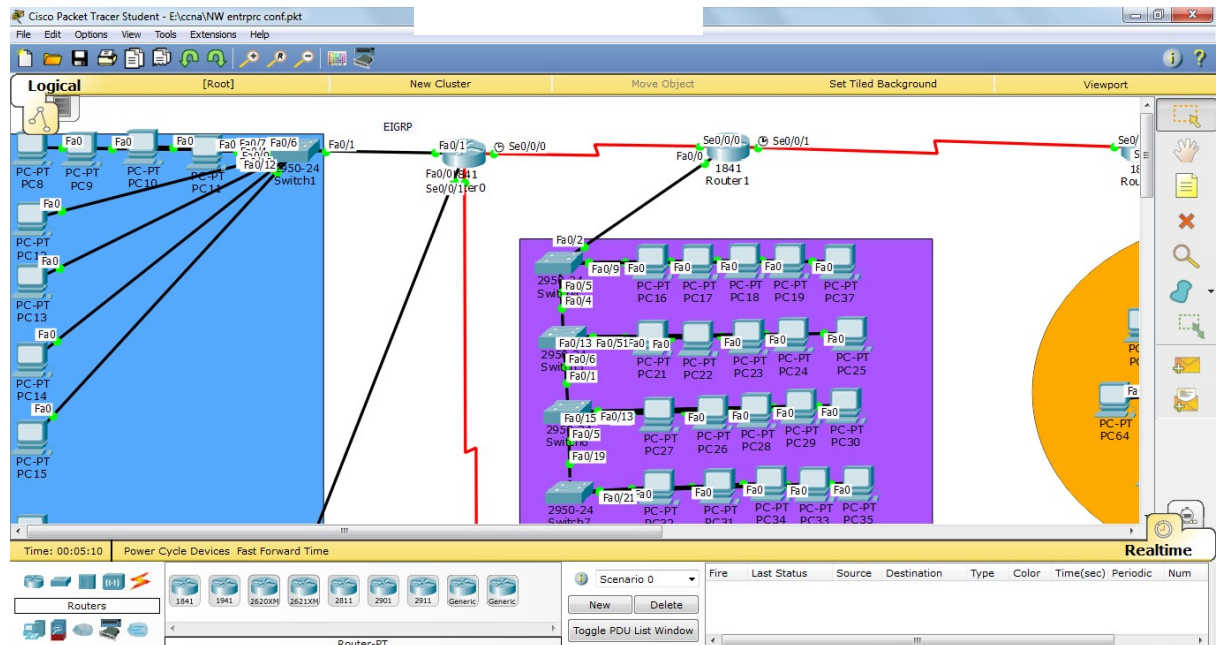
- Introduction to networking
- IP addressing
- Subnetting
- Static Routing
- Dynamic Routing
- Routing protocols:
 - RIP
 - IGRP
 - EIGRP
 - OSPF
- Virtual Lan
- Inter Virtual LAN Routing
- Access Control List(ACL)
- Network Address Translation (NAT)
- Wide Area Networks Technologies
- Frame-Relay

Scope:

Networking is vital to career growth. Often confused with selling, Networking is actually about building long-term relationships and a good reputation over time. It involves meeting and getting to know people who you can assist, and who can potentially help you in return. Your network includes everyone from friends and family to work colleagues and members of groups to which you belong.

In today's world networking is most necessary but everyone wants a secured network in this project I used NAT which provide us a fully secured LAN network. Security is much more difficult in network; this project can control the user of network and make a secure network. In this project, we replace a router with a pc. In this project ACL used which provide us the service to deny any service from the network.

PROJECT :CAMPUS AREA NETWORK



DESCRIPTION

The project is based on the concepts of networking. It includes configuring different network devices like Router, Switch, Bridge & connecting it with Hubs & PCs by using different types of connecting wires by allocating the IP Addresses to all the interfaces after the sub netting of network id. The beauty of configuring network devices is that it helps users access the network with few constraints like allowing some to access the website but not allowing them to access the mail server on the internet on private IP address which are otherwise excluded by internet service provider (ISP).

We have used inter VLAN technology to make work efficient between 4 different and independent departments.

We have four different departments in an organization. We have purchased a network id and divided that network id into number of small network ids by using Variable Length Subnet mask (VLSM).

We have used 5 Routers & apply various configuration settings on each router.

On Router1 we have configured NAT with translates private range of IPs into public range. We have used Router 2 as Internet Service Provider (ISP). Extended Access Control List has been applied to Router 3. Router 4 is used only to connect Campus LAB with the network. Switch 2 connected with Router 5 is used to create VLANs.

We also have a separate network in our cafeteria and we have used a PC as a router to connect that network to the campus network

HARDWARE AND SOFTWARE REQUIRED:

Hardware:

- Router
- Switch
- Lan cables (cat 5 or cat 6)
cross cable
Straight cable
Console or Roll over cable
- Crimping tool
- Lan tester
- Pc or Laptop

Software:

- Cisco Packet tracer
- GNS-3

FUTURE SCOPE OF PROJECT:

Active Networking is vital to career growth. Often confused with selling, Networking is actually about building long-term relationships and a good reputation over time. It involves meeting and getting to know people who you can assist, and who can potentially help you in return. Your network includes everyone from friends and family to work colleagues and members of groups to which you belong.

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FACILITIES REQUIRED FOR PROPOSED WORK

Here at A2it Company we are working in a corporate environment where we interact with technical supervisors and management coordinators.

We have been provided with maximum core facilities which are a must during industrial training.

The interface provided to the trainees by the management is worth appreciation.

Extra classes and special technical advices are provided to keen learners.

The corporate environment is helping us to polish our skills in communication and interaction with the clients and the management staff.

The core facilities provided are:

Regarding Project:

1. Well equipped computer laboratories.
2. Software access.
3. Hardware interface.
4. Expert lectures.

Regarding Personality Development:

1. PD classes
2. Mock interviews.
3. Interactive sessions.
4. Skilled lectures.

BIBLIOGRAPHY:

- www.google.com
- <http://www.cisco.com/>
- www.wikipedia.com
- www.encyclopedia.com
- www.ebookee.org