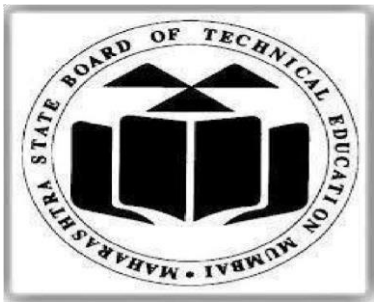

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

GOVERNMENT POLYTECHNIC, AWASARI (KH)

TAL-AMBEGAON, DIST – PUNE – 412405

ACADEMIC YEAR : 2021-22

- **COURSE NAME : Computer Networks**
- **COURSE CODE : 22417**
- **BRANCH : INFORMATION TECHNOLOGY (SY)**
- **Topic : Survey on Packet Sniffer And Tacing Software**

DETAILS OF TEAM MEMBERS:

SR. NO.	NAMES OF GROUP MEMBERS	ROLL NO.	ENROLLMENT NO.
1	GHONGE KARISHMA RAJARAM	20IF213	2010510360
2	GITE AKSHAY SANGRAM	20IF214	2010510361
3	HULE GAYATRI KERBHAU	20IF215	2010510362
4	HULE SANIKA RAJENDRA	20IF216	2010510363
5	JADHAV KISHOR HARI	20IF217	2010510364
6	JADHAV PRANAV TANAJI	20IF218	2010510365

GUIDANCE BY :

Ms. S. S. Sutar

GROUP LEADER :

AKSHAY GITE.

PART A – A MICRO PROJECT PROPOSAL

Aims / benefits of micro-project :

Aim: Survey on Packet Sniffer And Tacing Software

Benefits:

a) We Studied Packet Sniffing Software.
b) We Studied Packet Tracing Software.
c) We Learned about Softwares used in Computer Network

Course Outcomes (COs) : -

CO1: Use basic concept of networking for setting-up computer networks.

CO2: Setup a computer network for specific requirements.

CO3: Configure basic network services.

CO4: Configure the different TCP/IP services.

CO5: Implement subnetting for improved network address management.

Proposed Methodology: -

- First Teacher Created a Group of 6 Peoples
- Then Teacher assigned us Micro Project names **Survey on Packet Sniffer And Tacing Software.**
- Then we will discuss how to complete Project in Group.
- Then we will Start Researching related to the topic
- We will combine all Information We will Find and Create Report based on that Information.
- Then we will create Part B of our project in soft copy then Print hard copy and submit it in college.

Action Plan: -

Sr. No.	details of activity	planned start date	Planned Finished date	Responsible Name of members
1	Group formation and allocation of Micro project title			All team members
2	Information search and required analysis.			All team members
3	Actual project / assembly project			All team members
4	Testing of project			All team Members
5	Acquire the printout and submit it.			All team members
6	Submission of project.			All team members

Resources Required: -

Sr.no.	Name of Resource	Specification	Qty.	Remarks
1	Software	Chrome, Microsoft Word	-	
2	Websites	Wikipedia	-	

Date :- / /

TEACHER	PRINCIPAL	H.O.D
Ms. S. S. Sutar	DR.D.R.NANDANWAR	DR.D.N.REWADKAR

DEPARTMENT OF INFORMATION TECHNOLOGY

GOVERNMENT POLYTECHNIC AWASARI (KHURD)

SEMESTER —IV (2021-22)

CERTIFICATE

This is to certify the following students of semester Fourth of Diploma in Information Technology of Institute : Government polytechnic, Awasari (kh) (code : 1051) has completed the micro project satisfactorily in subject- Database Management (**22416**) for the academic year 2021-22 as prescribed in the curriculum.

SR. NO.	NAMES OF GROUP MEMBERS	ROLL NO.	ENROLLMENT NO.
1	GHONGE KARISHMA RAJARAM	20IF213	2010510360
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TEACHER	PRINCIPAL	H.O.D
Ms. S. S. Sutar	DR. D.R. NANDANWAR	DR.D.N.REWADKAR

Part – B Micro-Project Report

Aim: Survey on Packet Sniffer And Tacing Software

Rationale :-

In todays World Networking is very important concept. We can say it's part of every Human Beings Life. Everyone uses Networking Knowingly or Unknowingly. For ex while calling someone to Using Internet to Upload Images on Social Media.

Networking means to Connecting two or more Devices Together and helping them to form Connection so that they can Communicate.

Similar way Computer Network just means Causing communication between two or More Computers. Computer network can also be used to share Hardware and software which is very Useful in Commercial and Industrial Sectors.

There are many Softwares used to Monitor , Modify , Manage how the Communication is happening. These Software are mostly called as Networking Softwares.

Course Outcomes (COs) : -

CO1: Use basic concept of networking for setting-up computer networks.

CO2: Setup a computer network for specific requirements.

CO3: Configure basic network services.

Co4: Configure the different TCP/IP services.

CO5: Implement subnetting for improved network address management.

Actual Methodology followed :-

- First Teacher Created a Group of 6 Peoples
- Then Teacher assigned us Micro Project names **Survey on Packet Sniffer And Tacing Software.**
- Then we had discuss how to complete Project in Group.
- Then we Started Researching related to the topic
- We combined all the Information We had Found and Created Report based on that Information.
- Then we have created Part B of our project in soft copy then Printed hard copy and submitted it in college.

➢ Actual Resources Required: -

Sr.no.	Name of Resource	Specification	Qty.	Remarks
1	Software	Chrome, Microsoft Word	-	
2	Websites	Wikipedia	-	

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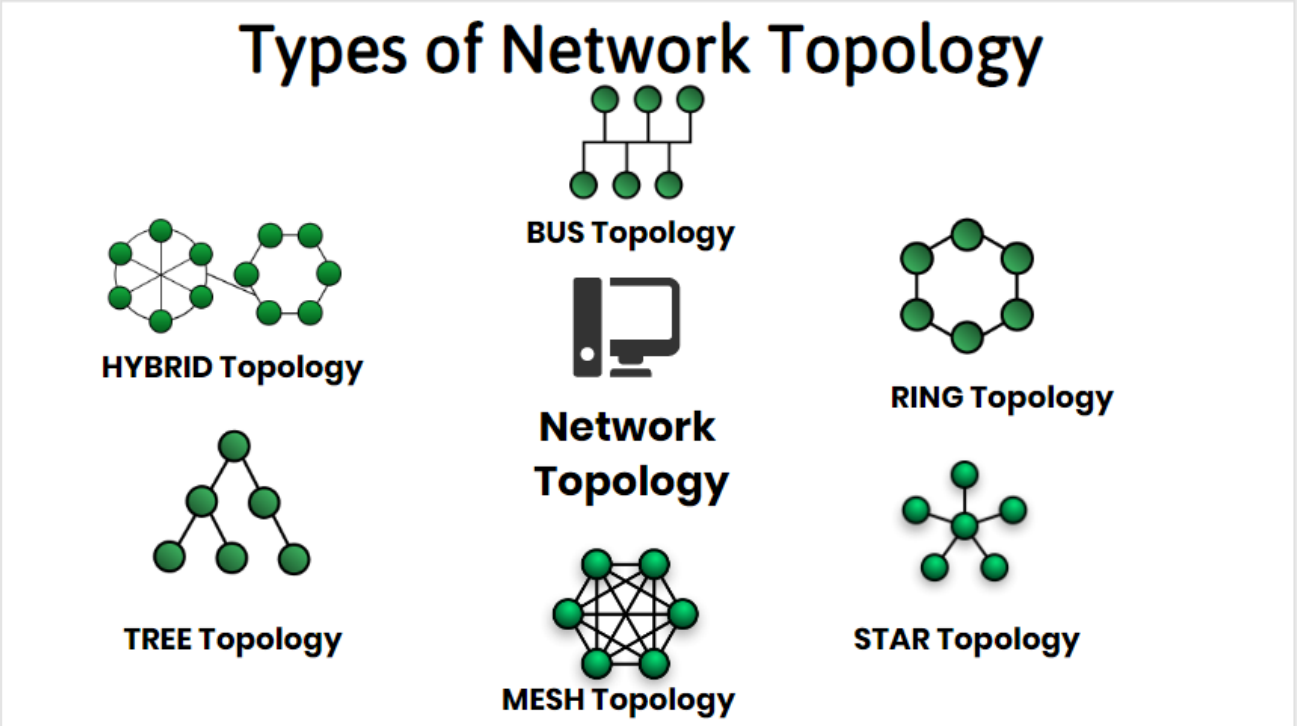
❖ Introduction

A computer network is a set of computers sharing resources located on or provided by network nodes. The computers use common communication protocols over digital interconnections to communicate with each other. These interconnections are made up of telecommunication network technologies, based on physically wired, optical, and wireless radio-frequency methods that may be arranged in a variety of network topologies.

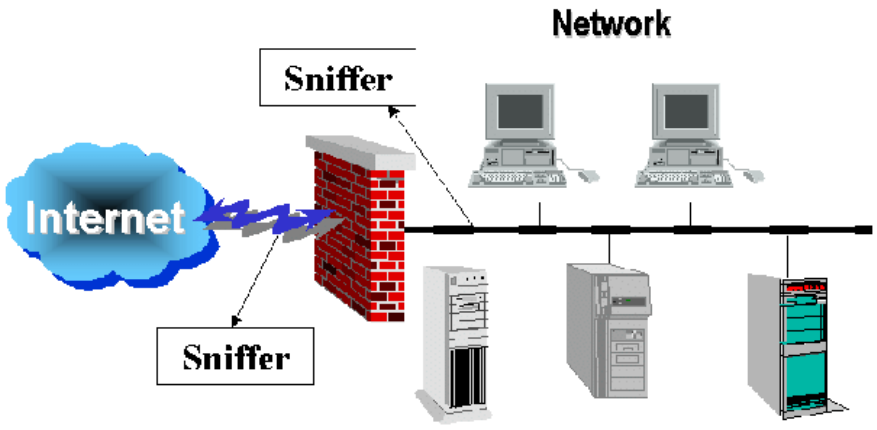


There are many computer network softwares that are used to monitor, handle packets in the network. Most important of them are Packet sniffing softwares and Tracing softwares.

❖ Packet Sniffer

A packet sniffer — also known as a packet analyzer, protocol analyzer or network analyzer — is a piece of hardware or software used to monitor network traffic. Sniffers work by examining streams of data packets that flow between computers on a network as well as between networked computers and the larger Internet. These packets are intended for — and addressed to — specific machines, but using a packet sniffer in "promiscuous mode" allows IT professionals, end users or malicious intruders to examine any packet, regardless of destination. It's possible to configure sniffers in two ways. The first is "unfiltered," meaning they will capture all packets possible and write them to a local hard drive for later examination. Next is "filtered" mode, meaning analyzers will only capture packets that contain specific data elements.

Packet sniffers can be used on both wired and wireless networks — their efficacy depends on how much they are able to "see" as a result of network security protocols. On a wired network, sniffers might have access to the packets of every connected machine or may be limited by the placement of network switches. On a wireless network, most sniffers can only scan one channel at a time, but the use of multiple wireless interfaces can expand this capability.



❖ Uses of Packet Sniffer

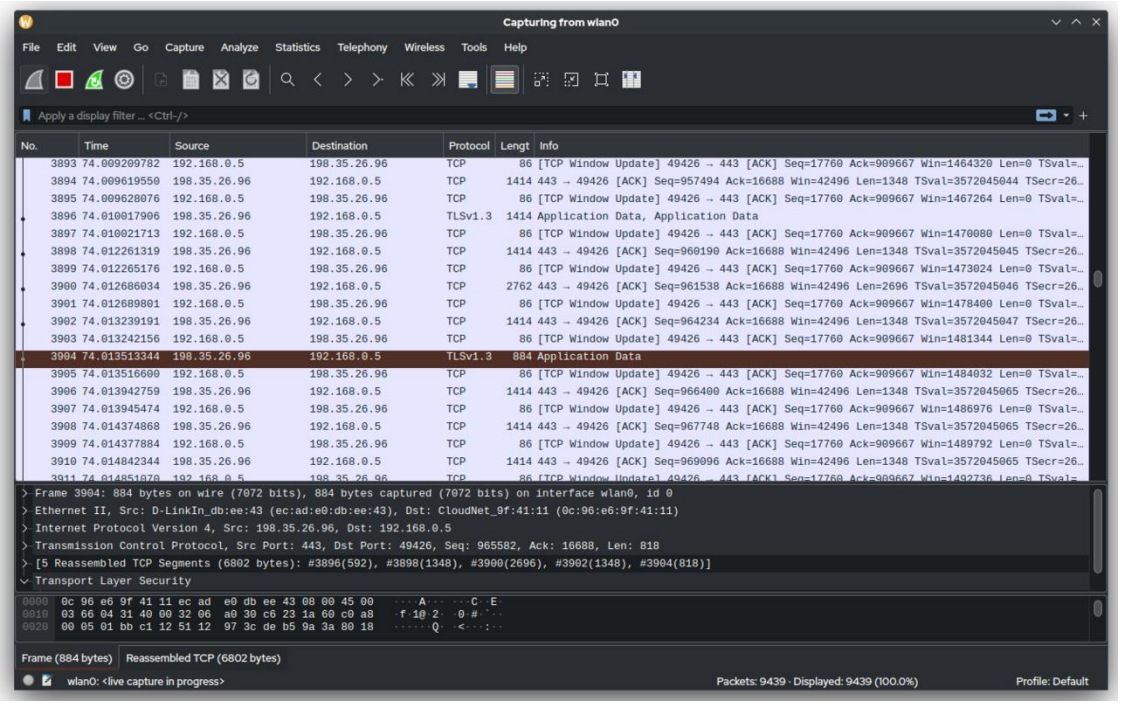
- Analyze network problems
- Detect network intrusion attempts
- Detect network misuse by internal and external users
- Documenting regulatory compliance through logging all perimeter and endpoint traffic
- Gain information for effecting a network intrusion
- Identify data collection and sharing of software such as operating systems (for strengthening privacy, control and security)
- Aid in gathering information to isolate exploited systems
- Monitor WAN bandwidth utilization
- Monitor network usage (including internal and external users and systems)
- Monitor data in transit
- Monitor WAN and endpoint security status
- Gather and report network statistics
- Identify suspect content in network traffic
- Troubleshoot performance problems by monitoring network data from an application
- Serve as the primary data source for day-to-day network monitoring and management
- Spy on other network users and collect sensitive information such as login details or users cookies (depending on any content encryption methods that may be in use)
- Reverse engineer proprietary protocols used over the network
- Debug client/server communications
- Debug network protocol implementations
- Verify adds, moves, and changes
- Verify internal control system effectiveness (firewalls, access control, Web filter, spam filter, proxy)

❖ Packet Sniffing Softwares / Tools

• Wireshark

Wireshark is a free and open-source packet analyzer. It is used for network troubleshooting, analysis, software and communications protocol development, and education. Originally named Ethereal, the project was renamed Wireshark in May 2006 due to trademark issues.

Wireshark is cross-platform, using the Qt widget toolkit in current releases to implement its user interface, and using pcap to capture packets; it runs on Linux, macOS, BSD, Solaris, some other Unix-like operating systems, and Microsoft Windows. There is also a terminal-based (non-GUI) version called TShark. Wireshark, and the other programs distributed with it such as TShark, are free software, released under the terms of the GNU General Public License version 2 or any later version.



❖ Features

- **<u>Deep inspection of hundreds of protocols</u>, with more being added all the time**
- **Live capture and offline analysis**
- **Standard three-pane packet browser**
- **Multi-platform: Runs on Windows, Linux, OS X, FreeBSD, NetBSD, and many others**
- **Captured network data can be browsed via a GUI, or via the TTY-mode TShark utility**
- **The most powerful display filters in the industry**

❖ System Requirements

- Universal C Runtime. This is included with Windows 10 and Windows Server 2019 and is installed automatically on earlier versions if Microsoft Windows Update is enabled. Otherwise you must install KB2999226 or KB3118401.
- Any modern 64-bit AMD64/x86-64 or 32-bit x86 processor.
- 500 MB available RAM. Larger capture files require more RAM.
- 500 MB available disk space. Capture files require additional disk space.
- Any modern display. 1280 × 1024 or higher resolution is recommended

❖ Where to Download Wireshark

Link - https://www.wireshark.org/download.html

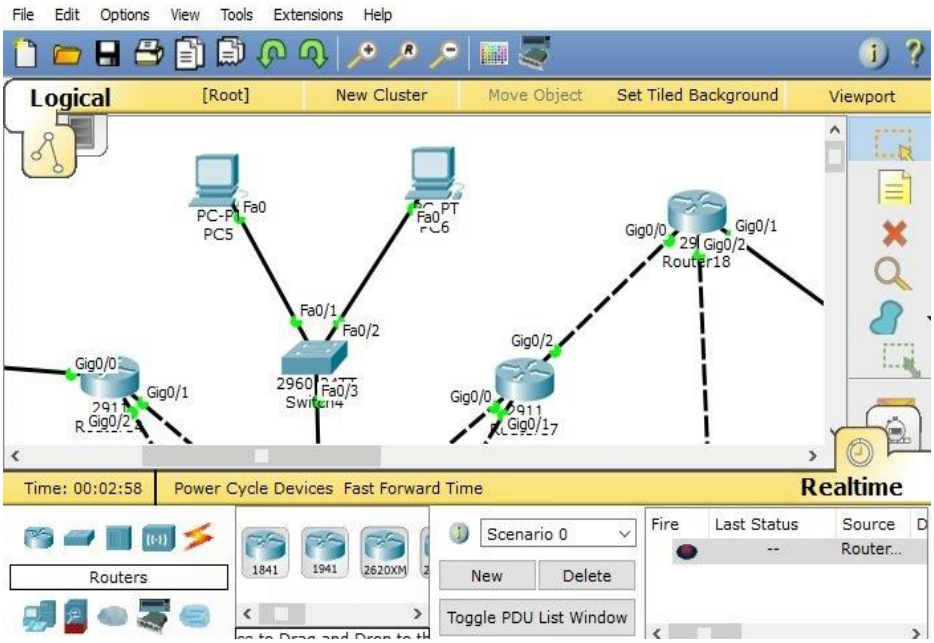
❖ Tracing Software

A network tracking tool is an application that helps network administrators monitor the moves, additions as well as changes (referred to as MACs) to a network's hardware infrastructure. Certain network tracking tools monitor just cabling MACs, whereas other tools have the ability to monitor every device attached to the network and provide a visual diagram of the network configuration, which shows all the configurations done to the network right from the beginning.

Most popular Tracing Software used is Cisco Packet Tracer.

❖ Cisco Packet Tracer

Cisco Packet Tracer is a cross-platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface. Packet Tracer makes use of a drag and drop user interface, allowing users to add and remove simulated network devices as they see fit.



❖ Features

- **Unlimited devices**
- **E-learning**
- **Customize single/multi user activities**
- **Interactive Environment**
- **Visualizing Networks**
- **Real-time mode and Simulation mode**
- **Self-paced**
- **Supports majority of networking protocols**
- **International language support**
- **Cross platform compatibility**

❖ System Requirments

Cisco Packet Tracer 8.1 (64 bit):

- Computer with one of the following operating systems: Microsoft Windows 8.1, 10, 11 (64bit), Ubuntu 20.04 LTS (64bit) or macOS 10.14 or newer.
- amd64(x86-64) CPU
- 4GB of free RAM
- 1.4 GB of free disk space

Cisco Packet Tracer 8.1 (32 bit):

- Computer with one of the following operating systems: Microsoft Windows 8.1, 10, 11 (32bit)
- x86 compatible CPU
- 2GB of free RAM
- 1.4 GB of free disk space

❖ Where to Download Cisco Packet Tracer

Link - https://www.netacad.com/courses/packet-tracer

Link - https://www.packettracernetwork.com/download/download-packet-tracer.html

➢ Conclusion

The project was Survey on Packet Sniffer and Tracing Software. So we researched on Packet sniffing and tracing softwares and created report where we mentioned important information like what is Packet Sniffing and Tracing, what are the available softwares in the market, What is the System Requirements of them. We understood the concept of Packet Sniffing and Tracing.