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Lan Monitoring System

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Abstract: The project's goal is to create a number of network utilities needed to efficiently monitor user activity over a LAN network. It seeks to create an integrated software solution that enables a network administrator to view his users' everyday activities from a distance through LAN. This tool enables you to build statistics reports with crucial data and receive comprehensive information on the activities your employees are involved in during working hours. Software captures photographs at pre-determined intervals covertly for the user to allow for a more thorough monitoring of the activities taking place on user PCs. These snapshots are then chronologically saved into a database. These snapshots provide comprehensive information about all users' activity in a rapid gallery view.

Keywords: Network Monitoring, client Activity Tracking, Snapshot Capturing, Client Data Storing, Network Visibility

I. INTRODUCTION

The project's main objective is to remotely manage the client computers' LAN-connected monitoring systems. The management of network resources and network monitoring has become a difficult task for an IT professional as computer networks continue to expand. In these circumstances, it becomes an administrative duty to carefully manage each client's task while utilising the snapshot.

LAN and remote monitoring system Controlled user on client PC with the aid of ser client, which provides some extra services that one may or may not be familiar with in addition to some of the already deployed and in use within an organisation services Operating systems and requested applications can be deployed using the system's monitoring. A LAN monitoring system is a software solution designed to monitor and manage the local area network (LAN) of an organization. The system allows network administrators to track network traffic, monitor device usage, and ensure network security. The LAN monitoring system project aims to create a reliable and efficient network monitoring software that can provide real-time data on network performance, bandwidth usage, and device activity.

The project involves designing and implementing a user-friendly interface that allows network administrators to view and manage network data easily. The software will include features such as network device discovery, network topology mapping, traffic analysis, and network security management.

The system will also provide real-time alerts on network issues such as bandwidth overuse, unauthorized access attempts, and network downtime. Overall, the LAN monitoring system project will enable organizations to monitor and manage their LAN infrastructure more efficiently, ensuring optimal performance and security.

II. LITERATURE REVIEW

1)The Need Of Monitoring: The speech by Cottrell (1996) lists performance tuning, troubleshooting, planning, expectations, and security as reasons for network surveillance. While troubleshooting avoids and resolves ID-related issues for the end-user to maximise processes and productivity, tuning the performance enhances the standard of service and reduces bottlenecks. Planning is being done in the interim to enhance the current system and the network strategy. Additionally, it's important to clearly define all of your standards for the network, assess whether it meets them, as well as whether the network is secure. It is challenging to watch the network environment due to numerous changes, including network structure, capacity, complexity, a reduced.

2)Lan Monitoring: The network administrator can view every device linked to the LAN using the tool for Local Area Network (LAN) performance monitoring. All of the PCs, servers, routers, printers, etc. are included in this. When something goes awry on the network, the system will send notifications if LAN monitoring is enabled. A system alert will be generated if the printer goes inactive.

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The management or administrator will benefit from LAN monitoring when making choices about the investment in IT infrastructure. Without a LAN monitoring utility, troubleshooting takes longer and there is no way to know when a system is malfunctioning (Dnsstuff, 2021]) Whenever there is no LAN surveillance

3)Remote Monitoring: The IT Department will receive a report after personally configuring the attached devices for automatic performance. (Hein, 2020). Monitoring the functioning condition of network servers for their core status in the network is required to ensure that the network can deliver standard services. (Wang et al, 2008). Wang et al. (2009) propose a content-based network monitoring system that can successfully monitor LANs and maintain the security of the content on networks in order to strengthen the control of network information and ensure the security of the content propagated on networks. A reliability mapping monitoring technique for network architecture was also suggested. (Zhang, et al, 2018). Information about the purpose of the virtual network configuration is acquired through the

4)Related Studies: A Network-based Remote Controlling and Monitoring System with Greater Security and Platform-Free Features was created by Chirandi et al. in 2012. (NRCM-SP). The idea behind this study is to create an architecture with three layers: thread layers, software interface layers, and data exchange layers.

The design of the suggested study consists of four mechanisms or functions, including data recording, delivering notifications to the network administrator, and monitoring and controlling the functioning applications. Hu, X, et al. (2021) used trident, a cutting-edge monitoring method for off path configurable streaming that gives remote analysts a fine-grained, comprehensive view of the network traffic, in different research. To further enhance the system, a brand-new fast-path packet classification algorithm and a related cached flow form are suggested.

III. SYSTEM ARCHITECTURE

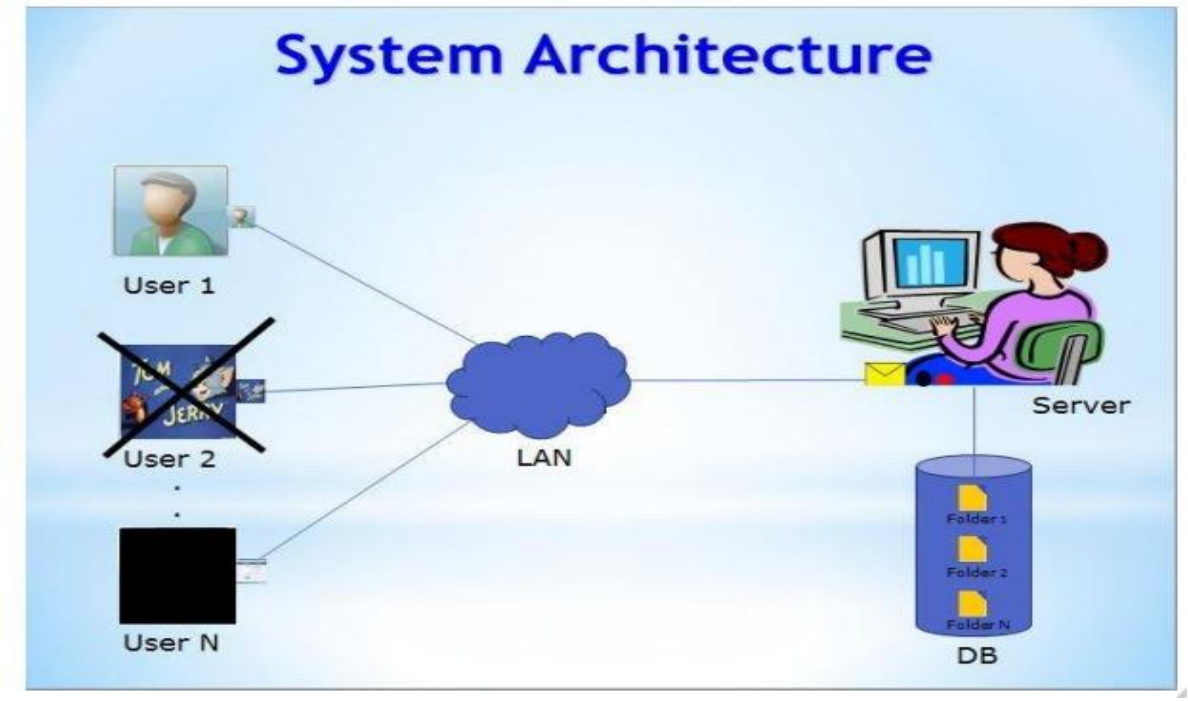

Fig.1 System Architecture

As seen in the system architecture above, our server is a centrally located server that is connected to a number of clients over a shared LAN network. as well as a storage server linked to the primary server. With the aid of remot control logic, the UMS may remotely access user data.

All UMS functionality is controlled by the admin, who is solely available on the server side. The list of conventions and acronyms used in this paper and project is provided below.

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- **Implementation**

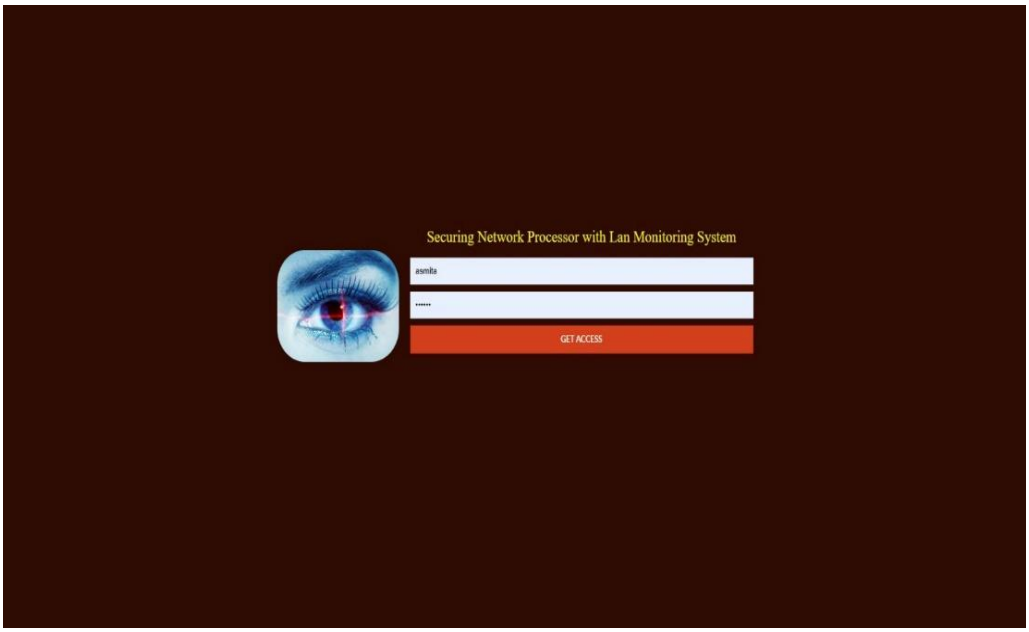

Fig.2 Login Page

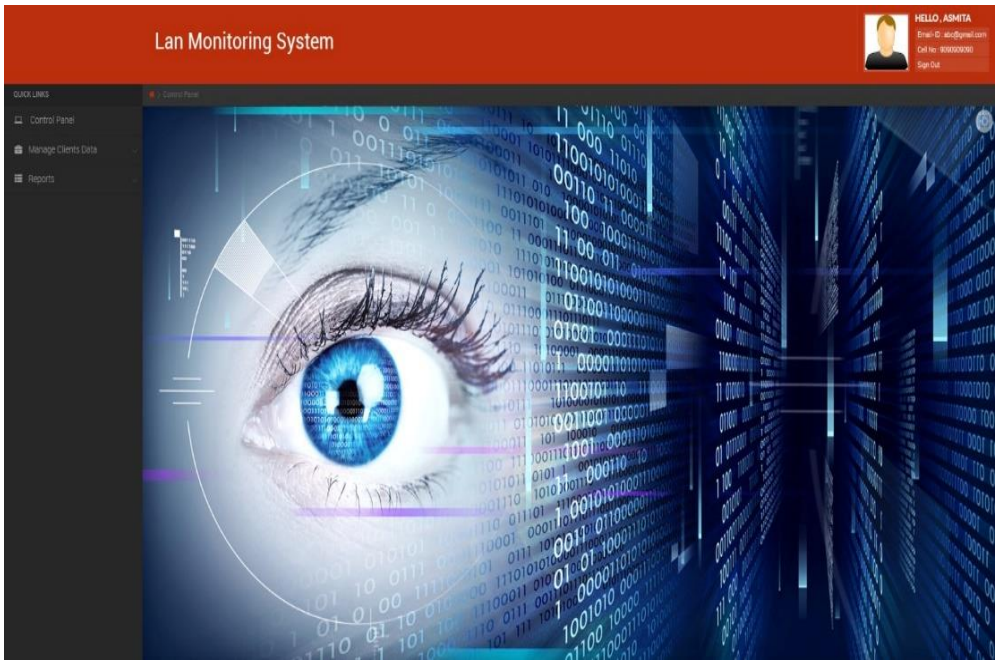

Fig.3 Control Panel

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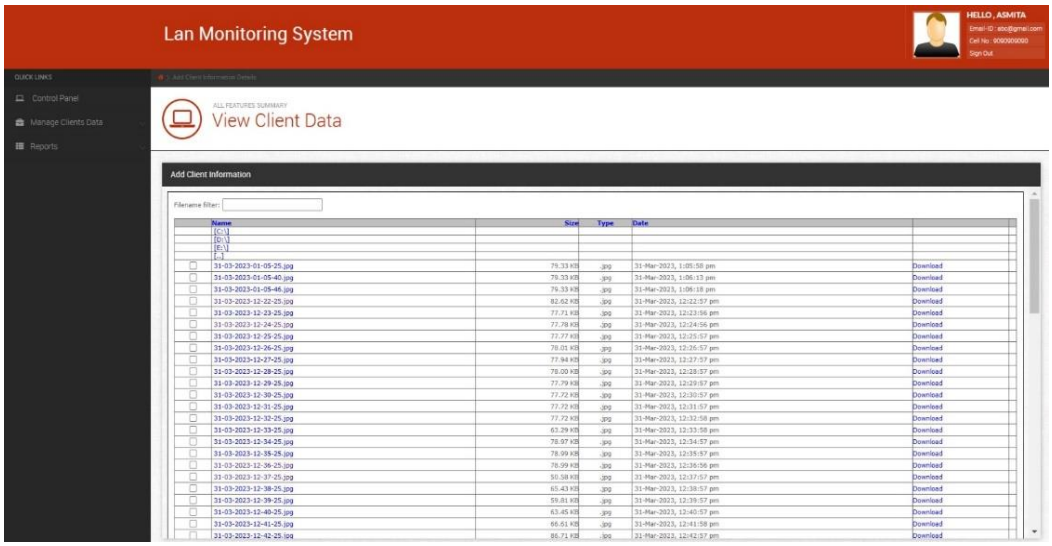

Fig .4: Client Data1

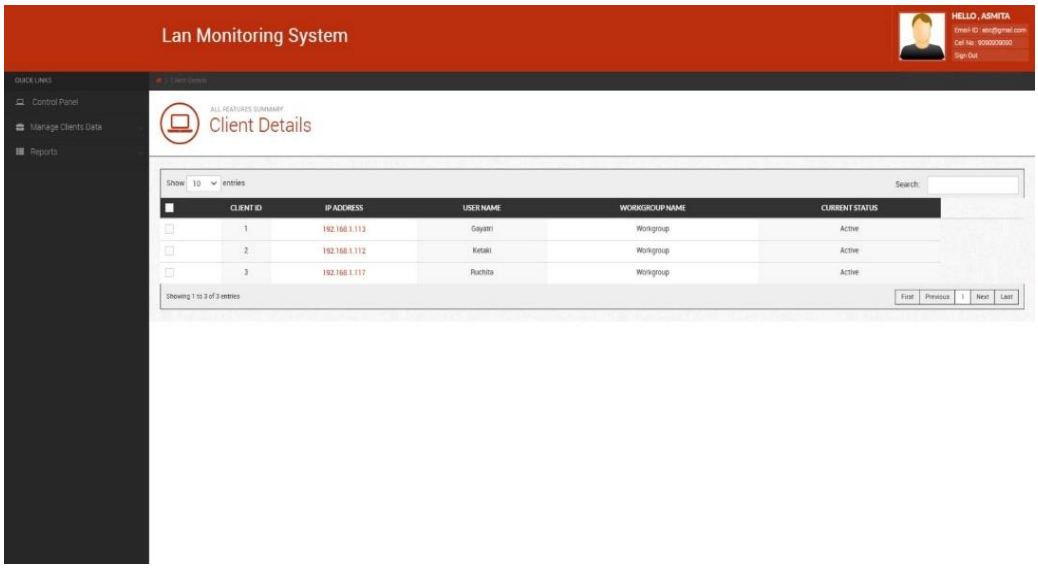

Fig .5: Reports

IV. CONCLUSION

In conclusion, a LAN monitoring system is a critical tool for network administrators to ensure the security, performance, and availability of their network infrastructure. By capturing and analysing network traffic data, the system can identify potential security threats, performance bottlenecks, and other issues that could impact the network and the users who rely on it. The success of a LAN monitoring system project depends on several factors, including the selection of appropriate hardware and software components, the design of an effective system architecture, and the implementation of robust data collection, processing, and storage mechanisms.

Additionally, the system should be configured to provide alerts and notifications when potential issues are detected, and it should provide user-friendly interfaces for administrators to view and interact with the data. Overall, a well-designed and implemented LAN monitoring system can help organizations to proactively identify and address network issues, reduce downtime, and improve the ove all security and performance of their network infrastructure.

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