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Research & Analysis For Limitations Of Ethernet Cable Connecting Multiple Computer Devices In Series

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ABSTRACT

This paper proposes a new innovation of connecting multiple devices via a single LAN (Ethernet) cable. In order to reduce the complexity and cost of cables which are used to provide internet to the devices is the cause of our project. In LMC (Ethernet Multiple Connection) we are trying to make such a connection that can supply internet through a single Ethernet cable. As we know, research is an ongoing process. So, whatever the results may come will be logged in an Excel sheet daily, depicting our research about the project proposal. If this project is falling through this is going to be a study/research project for students.

Keyword: - LMC- Lan Multiple Connection, limitations for ethernet cable, multiple connections in series, LAN connection

1. TITLE

The composition of LMC is related to Local Area Network. When it comes to guided media we think of Ethernet, a physical medium via which the signals are transmitted. The guided media provides a conduit from one machine to another that can have twisted-pair, coaxial, and fiber-optic cable. It is also known as Bounded media.
Ethernet architecture is based on connecting multiple computers to a long cable, sometimes called the ether, thereby forming a bus structure.LMC stands for "Lan Multiple Connection". It provides multiple access to the stations connected through wired internet via single Lan cable.

The Switch is the device used here for accepting responses generated by the server and then forwarding it to other devices which are connected through LMC cables. It connects devices in a network to each other, enabling them to talk by exchanging data packets. The LAN cable is then divided into more than one cable by bifurcating the inner combinations of wire, resulting in the multitude of a single Ethernet cable. It operates at the first two layers Data Link and Physical layer of the OSI model. LMC works on Bus topology. The transmission speed of the network is the maximum speed that can be attained over the network in ideal conditions. In the case of LMC, the speed is up to 100 Mbps which indicates that a normal Ethernet cable and LMC's speed do not vary from each other also it ranges over 100 meters of maximum distance. The type of connection LMC provides is serial in nature thus, making it less complex

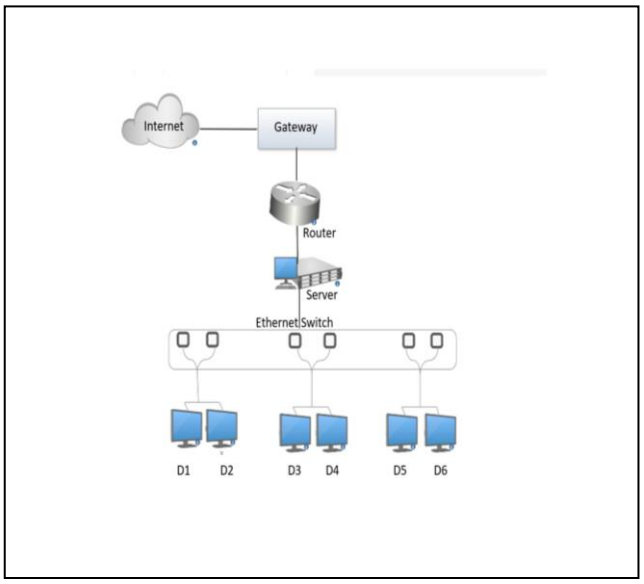

Fig 1: Architecture of LMC

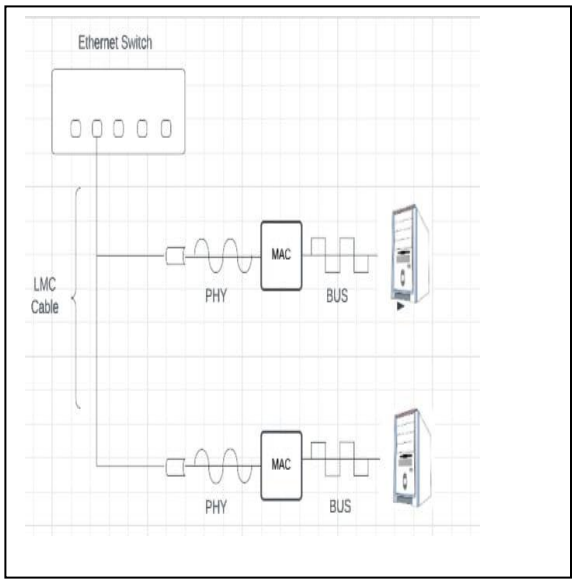

Fig 02: LMC and its technology

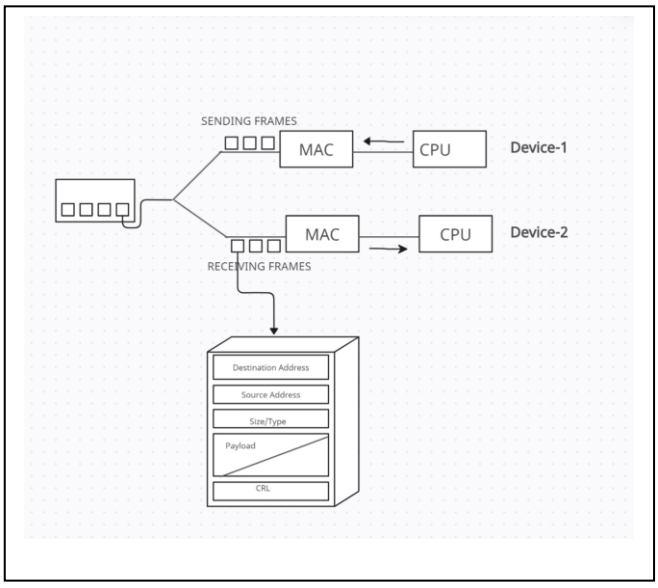

Fig 03: Distribution of Frames

2 OBJECTIVE

In order to reduce complexity and cost of cables which are used to provide internet to the devices is the cause of our project. In LMC (Ethernet Multiple Connection) we are trying to make such a connection that can supply internet to multiple devices through a single Ethernet cable.

we trimmed-crimped and conducted connection tests on numerous LAN combinations. Basically Bus topology architecture is being used here which makes it easy to implement and makes easy for an individual to understand and carry out experiments this easy architecture equally reduces complexity of the device.

the enforcement of this project can be done in both smaller and larger networks where work can be done at moderate speedwork

3. PROBLEM STATEMENT

In the fast growing world of communication, Internet is comparatively a new entrant. But it has brought about a great revolution in the field of communication. In simple terms, internet means the connection of a large number of computers with one another.
In 1970 Ethernet technology, which uses a coaxial-based or twisted copper transport system, was developed. Though the technology has a number of merits there are shortcomings too. For example, noise in network, complexity, cost and maintainability. To overcome such problems, the proposed system is LMC.
LMC stands for Lan Multiple Connection.
LMC is the enhanced version of Ethernet LAN cables. It provides multiple access of wired internet connection via single LAN cable. The transformation is based on the concept of demultiplex.

4 APPLICATIONS

1) It is used for connecting a desktop, or laptop through the router to the entry port of the internet.
2)It is also used to connect devices through a cable that need a network or internet to work like laptops, TV, electronic gadgets, etc.
3)We also used it in different organizations like hospitals Companies, schools, etc. Where we can able to connect two PC through a single Ethernet cable.
4) Connection through cable so it provides security, dependability & speed

5. LIMITATIONS

Twisted pair cable, there are eight wires they all have their own working pattern when we distribute the wires in a particular combination they affect speed and have difficulty identifying the MAC A**d**dress

This can cause data loss and cross-communication since MAC addresses are used to send data to specific clients. The avoidance and detection of collisions are not possible

6. CONCLUSIONS

Idea of multiple data provider via a single Ethernet cable has been proposed. This device can turn to be a key component for for both smaller and larger networks where work can be done at moderate speed. Here we focus more on reducing the complexity as the number of cables being used are getting reduced, the downloading and uploading speed is similar that's why the work and functioning of the device goes on without any hitch. Measurements, logs and test cases confirms the potentialities of the device.

Future evolution of the device will focus on advancement in the serial connection and maximization of the data transfer rate

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