

# Network coding techniques

## Abstract:

The increase in the number of users of the internet and other network available resources has lead to increase in network traffic and congestion. To accommodate this problem and the increasing needs of the users, idea of Network coding has been proposed by many researchers in the recent past. Networking coding better utilizes the network resources to transmit information than the current routing techniques. With network coding, intermediate nodes may send out packets that are linear combinations of previously received information. The simple “Store and Forward” technique is modified into “Encode and Forward”. The network coding technique is applied to a simple topology and investigation (theoretical results) of performance benefits such as reduced delay, better bandwidth utilization and over all throughput, of network coding over traditional multicast techniques .

## Importance:

Network coding has become a field of interest from the year 2000 when its idea was first introduced. Through the years network resources like available bandwidth, router, and servers have been used to increase the performance. Network coding utilizes cheap computational power to increase the performance of a system, in sense that network coding brings complexity to packet routing which can be neglected when compared to the performance enhancement it provides. The concept of network coding has been applied to various applications such as content distribution, P2P networks, web chatting protocols and unicast communication. In network coding scheme of routing the intermediate nodes in the route to the final destination have more importance as well as more tasks to perform when compared to the tradition routing schemes where it has to just forward the packet in the outgoing links while looking at its routing table. Intrinsic properties of network coding like information dissemination along multiple paths and algebraic dependencies among the packets make it robust to link failures and also gives better security. Since it's a new area of research there are many potential applications that can be benefited from this technique and also the development in area of error correction and detection in network coding are still in its infancy.

I would like to choose presentation of the topic rather than a paper because it will be more interactive and effective.

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Sowmya Moturi