Abstract

In the network several problems are caused due to the presence of malicious nodes. It is very important to find the malicious nodes in the network in order to eliminate the problems caused by those nodes. This paper proposes a model where Reed-Muller codes are used to find the locations of the malicious nodes and calculate the probability that a node is malicious. Based on the probability of each malicious node, the system localizes or discards the nodes which have higher error probability. Sometimes removal of a malicious node causes breakage of network into parts i.e. if it is an articulation point. It leads to the reconstruction of the network. This reconstruction process is very complex and expensive. In this case, such nodes cannot be discarded. To avoid the reconstruction of the network an algorithm is proposed to handle the malicious activity caused by an articulation point. Message tampering is the frequently occurred malicious activity in most of the networks when the communication takes place between source and destination. To handle message tampering at articulation points, this system performs error correction using Reed-Muller decoding algorithm.
References

10. Reed IS. A CLASS OF MULTIPLE-ERROR-CORRECTING CODES AND THE DECODING SCHEME.

Index Terms

Computer Science                      Information Sciences

Keywords

Coding Theory, Error Control Codes, Malicious Behaviour, Reed-Muller Codes.