Abstract

Use of ICT (Information and Communication Technology) or the computer communication using electronic messaging has increased tremendously in recent years. Also the modern networks that support ICT are robust, i.e., its failure due to links, routing protocols, congestion etc is rare and as a result, the estimation of the overall reliability of the communication networks, which is \#P- complete problem, is very important. This paper presents two linear time complexity algorithms for approximate assessment and the enhancement of the reliability of the given networks. The proposed techniques basically identify the node-pairs having lower reliability, insert communication links in them and calculate the increase in reliability on insertion iteratively until the satisfactory reliability is achieved. The simulated experimentation of the proposed algorithms have been done and compared with the existing methods, which show satisfactory performance.

Reference


Index Terms

Computer Science

Communication
Key words

ICT

Communication Networks

Network

Reliability Estimation

Link Insertion and Enhancement of the Network Reliability