Abstract

Power laws are observed in many large networks such as Internet, WWW, automobile networks, etc. First half of the paper captures some of the instance of internet over a period of time. Now after comparing topologies of Internet with power laws, it cannot be ignored by saying it a mere coincidence. So, real networks (Internet) thus follows power law. Determining the behavior of such a large network has always been curiosity. Owing to that, different parameters such as number of nodes and edges, average neighborhood size, etc. has been derived to better predict behavior. Second half of paper discuss about generating topologies nearly same as realistic graphs. Also the generated topology must adhere to power laws. Some factors are imposed on topologies to get finer results. To better predict the behavior of topologies some more parameters such as diameter, Incremental Growth and Preferential Connectivity are considered. At last some extension of proposed method is discussed along with its possible application.

References

Is Power Law the Universal Law for Large Real Graph: Internet?

Index Terms

Computer Science

Networks

Keywords

Power Laws  Pareto distribution  Zipf distribution  Rank  Eigenvalue  Internet topology  Incremental Growth  Preferential Connectivity  Data Mining.