

Performance Analysis of LINUX Operating System Connected in LAN Using Gumbel-Hougaard Family Copula Distribution

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Abstract : In this paper we have focused on the study of a Linux operating system connected in a LAN (local area network). We have considered two different topologies STAR topology (subsystem-1) and BUS topology (subsystem-2) which are placed at two different places and connected to a server through a hub. In both topologies BUS topology and STAR topology, we have assumed 'n' clients. The system has two types of failure partial failure and complete failure. Further the partial failure has been categorized as minor partial failure and major partial failure. It is assumed that minor partial failure degrades the subsystem and the major partial failure brings the subsystem to break down mode. The system can completely failed due to failure of server hacking and blocking etc. The system is studied by supplementary variable technique and Laplace transform by taking different types of failure and two types of repairs. The various measures of reliability like availability of system, MTTF, profit function for different parametric values has been discussed.

Keywords : star topology, bus topology, hacking, blocking, linux operating system, Gumbel-Hougaard family copula, supplementary variable

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