Abstract

In this paper, an effort for the stochastic analysis of a computer system has been made considering the idea of hardware redundancy in cold standby. The hardware and software failures occur independently in the computer system with some probability. A single server is employed immediately to conduct hardware repair and software up-gradation on need basis. The repair and up-gradation activities performed by the server are perfect. The time to hardware and software failures follows negative exponential distribution, whereas the distributions of hardware repair and software up-gradation times are taken as arbitrary with different probability density functions. The expressions for various reliability measures are derived in steady state using semi-Markov process and regenerative point technique. The graphs are drawn for arbitrary values of the parameters to depict the behaviour of some important performance measures of the system model.

References

Stochastic Modelling of a Computer System with Hardware Redundancy


Index Terms

Computer Science
System Design

Keywords

Computer System  Hardware Redundancy  Stochastic Model and Reliability Measures