Abstract

The main aim of this paper is to carry out the probabilistic analysis of a computer system of two identical units in which one is operative and the other is in cold standby. In each unit h/w and s/w components fail independently and work together. A server visits the system immediately to inspect the h/w components at their failure to see the feasibility of repair. If repair of the h/w is not feasible, it is replaced by new one in the unit. However, only replacement of the s/w components is made by new one at their failure. Priority to the replacement and repair of the h/w components is given over the replacement of the s/w components. All the failure time distributions are assumed to be negative exponential while that of inspection, repair and replacement times are taken as arbitrary. Some reliability and economic measures of system effectiveness are evaluated using semi-Markov process and regenerative point technique. The graphs are drawn for a particular case to show the behavior of MTSF, availability and profit of the system models.

References

Probabilistic Analysis of a Computer System with Inspection and Priority for Repair Activities of H/W over Replacement of S/W


Index Terms

Computer Science  Applied Sciences

Keywords

Computer System  Hardware And Software Failures  Feasibility Of Repair  Priority For Replacement  Repair And Inspection  Probabilistic Analysis