

基于 Petri 网的大规模网络服务系统故障预测与演化

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摘要: 介绍一种模糊 Petri 网的正向矩阵预测和反向预测方法, 并基于预测方法设计出大规模网络服务系统故障预测模型, 通过该模型与传统故障树方法进行对比, 验证模型的准确性和高效性. 采用概率重要度的计算和初始库的重要度分析, 通过对大规模网络服务系统软件故障的演化和硬件故障的演化, 验证了所设计的大规模网络服务系统故障预测模型的实用性.

关键词: 模糊 Petri 网; 网络服务系统故障; 正向矩阵预测; 反向矩阵预测

Fault Prediction and Evolution of Large Scale

Network Service System Based on Petri Net

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Abstract: This paper presents a positive matrix prediction and reverse prediction method of fuzzy Petri net, and design a fault prediction method based on large scale network service system model, through comparing the traditional model and the fault tree method to verify the accuracy of the model and efficiency. An analysis using the probability importance calculation and initial library, through the evolution of hardware and software fault fault of large scale network service system, fault prediction model is practical large-scale network service system to validate the design.

Key words: fuzzy Petri net; network service system failure; forward matrix prediction; backward matrix prediction

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