Research on Reliability Evaluation of Big Data System

Abstract

- The application of big data system is now more pervasive. The reliability of the large data system is crucial to both the academic and the industry. However, to date there are few studies on the reliability of the big data system, and lack of evaluation model.
- This paper uses the fault tree to model the reliability of the big data system on the cloud. The type of faults is summarized and the cause of fault is analyzed by experiments.
- The fault tree analysis (FTA) is used to evaluate the reliability of the big data system, which can provide reference for the fault processing and quality assurance of big data system.

Existing system

- After the cloud computing, big data has been attracting a lot of attention. Big data has become the focus and the key technology in all walks of life in current society. In the actual application environment, various types of failures (such as hardware failure, network failure, etc.) inevitably exist in all kinds of systems.
- Although big data computing system are fault-tolerant, many hardware and software failures can be tolerated, there are still some tasks that fail or affected by performance degradation, which has a negative impact on the business and user experience.

Disadvantages

- The reliability of the large data system is crucial to both the academic and the industry.
- there are few studies on the reliability of the big data system, and lack of evaluation model.
- hardware and software failures can be tolerated, there are still some tasks that fail or affected by performance degradation, which has a negative impact on the business and user experience

Proposed system

- This paper uses the fault tree to model the reliability of the big data system on the cloud. The type of faults is summarized and the cause of fault is analyzed by experiments. The fault tree analysis (FTA) is used to evaluate the reliability of the big data system, which can provide reference for the fault processing and quality assurance of big data system.

Advantages

- there are few studies on the reliability of large scale big data system. Therefore, this paper analyzed and summarized the main fault types and logical relations of big data computing system.
- By using the most widely used fault tree in engineering, reliability modeling is carried out. Utilize fault tree analysis to research the reliability of big data system, providing reference for fault handling and reliability guarantee.

Hardware Requirements

- Processor :Intel Pentium IV 1GHz
- RAM :256MB (Min)
- Hard Drive :5GB free space
- Monitor :1024 * 768, High Color inch
- Mouse :Scroll Mouse(Logitech)
- Keyboard :104 keys

Software requirements

- OS : Windows XP/7/8
- Front End : Visual Studio 2010/ netbeans 7.1
- Back End : SQL Server 2005/ heidisql 3.2
- Browser : Any Web Browser

conclusion

- In this paper, the problems existing in the big data system are investigated in detail, and the failures and problems of the big data system are summarized. The fault tree model is established, where the big data system failure is as the top event. And the model is analyzed and evaluated, providing reference for the future data processing and reliability assurance of the big data system.

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