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## FAULT MANAGEMENT STRATEGIES FOR TIMELY DETECTION OF FAILURES

S.Thirunavukkarasu<sup>1</sup>, Dr.K.P.Kaliyamurthie<sup>2</sup>

Research Scholar, Department of Computer Science and Engineering, Bharath University, Chennai<sup>1</sup>

Professor, Department of Computer Science and Engineering, Bharath University, Chennai

Email: [ststarasu@gmail.com](mailto:ststarasu@gmail.com)

Received on: 15.10.2016

Accepted on: 22.11.2016

### Abstract

Fault management is that the management of laptop networks, the foremost basic and necessary functions. This paper studies for network fault management and projected intelligent network fault management technique for intelligent network failures ordered the muse for any development.

**Keyword:** Intelligent Network Fault Event mental object

### 1. Introduction

A network management system has 5 useful domains: fault management, configuration management, performance management, accounting management and security management that, fault management is that the most elementary and most significant functions. the aim is to confirm continuous and reliable operation of the network will be. If the network service unexpectedly terminated, are going to be on production and living a good impact, which needs a collection of scientific failure management ways, the timely detection of failures, troubleshooting. Now, some network management computer code tends to be computing professional system Technology into the network fault identification and rule out. Failure to enhance the intelligence network can facilitate the network economical, reliable operation. Of intelligent network management is additionally AN inevitable trend of development. to the present finish this paper, intelligent network fault management studies and projected the institution of the event mental object to enhance the extent of intelligent fault management technique for intelligent network failures ordered the muse for any development.

#### 1.1 Fault Management summary

Failure refers to the hardware and computer code deficiencies; error is an incorrect output of the hardware and software; failure refers to any or all and therefore the error caused by a fault on the network of non-normal operation. A network

failure by life-cycle will be divided into a permanent fault, 3 styles of temporary failures and transient failures; by failures on the network failure caused by the scope of the house the scale of failure will be divided into four categories: task failure, basic network element failure, node failure and sub-network failure. Fault management's main task is to notice and troubleshoot network issues. In general, fault management includes the subsequent elements: failure to watch and capture the fault generated connected events and alarm; positioning analysis of failures to record fault logs; if doable, troubleshooting then on.

## **1.2 The sort of fault management**

Fault sort refers to possess some characteristics of the fault classification. sometimes we are able to place the supply of failure is completely different from them divided into 2 classes, particularly hardware failure (hard errors) and soft faults (soft errors). Exhausting failure refers to the network hardware devices within the work of the varied errors generated within the method. These errors square measure closely connected with the role of the device, the network complexity of the system is exactly thanks to the range of apparatus embodied. consistent with this the role of network instrumentality, we are able to additionally fail merely divided into the subsequent 3 categories:

### **1.2.1 Connect breakdown**

This failure development is especially the physical network property problems; they'll be referred to as path failure. Caused by failure could also be owing to disconnected cables, transceivers, disconnected or not operating properly and different issues with the interface between connected devices then on. consistent with completely different sources of such failures, we've got the categories of faults will be countermined into line failure, network interface failure, transceiver failure, router failure, etc., of such failure is that the fault management of the most objects.

### **1.2.2 Sharing of apparatus failure**

The performance of such a failure of apparatus for resource-sharing issues, cannot give or relish the services required. Similarly, the sort of failure may also be divided into a server failure (the printer failures, fileserver bother, etc.), digital computer failures then on.

### **1.2.3 Different instrumentality failures**

Soft fault is that the network software package programming error. Soft fault detection and treatment is within the management method is bit by bit being recognized, as a result of the computer code is AN intangible factor, the matter of

the performance of the hardware but intuitive. during this sense, the soft fault identification and identification tougher.

Fault management in addressing soft errors by that specialize in network communication and service-related system computer code, which may be directly into the network computer code, together with rule computer code failures, network classification system (FNS) failure, file transfer computer code failure, name Service System (DNS), etc., within which communication protocol computer code failures square measure the main focus of systematic analysis. This error is typically encountered within the protocol computer code to run AN abnormal conditions (such as buffer queue full), or protocol computer code itself doesn't give a reliable mechanism, resulting in transmission failure, packet loss.

Fault sort isn't changeless, because the networks increase the complexness and scale, network fault management necessities are increasing. New technology and instrumentality to change the applying of the sort of failure, fault reason, fault supply different aspects have modified, which needs fault management system should be addition of latest content.

### **1.3 The fault management options**

The elemental goal of fault management is to rule out the emergence of a range of network failure, to attain this objective needs that the system should be a minimum of have the detection, isolation and therefore the ability to correct the fault.

Fault detection (detection) refers to the system's performance and standing of scrutiny and testing, supported the results and a few identification rules to work out whether or not the system failure. Fault detection system monitors the network needs management to examine the state of the network and its changes if it's found at once device failure.

Fault isolation (isolation) is to work out the placement of failure occurred, layman's terms is to illustrate United Nations agency is that the failure occurred, like that sub-networks, that instrumentality or devices that elements square measure such for the soft fault that system a drag. because the network could be a complicated system, fault sorts, causes, sources of error varied, and completely different performance failures could also be a similar, that junction rectifier to the complexness of fault isolation. Isolation system ought to be the maximum amount as doable to slender the scope of the supply fault.

Failure to correct (correction) is to correct the error occurred, restore the system work properly. Failure to correct the premise of the institution of the previous 2, the means that being taken additionally to hardware maintenance, system

restart, an exact degree of recovery, however additionally together with some non-technical activities, like the employment of personnel and technical coaching similarly as instrumentality makers of the support.

### **1.3 The factors that have an effect on the fault management**

Like with the network management, fault management should additionally contemplate 3 factors: method, instrumentality and tools, and personnel. productive fault management Strategy could be a complete combination of all 3, not only 1 facet of them. Reposted elsewhere within the paper at no cost transfer. Mainly refers to the method to attain the fault management functions disbursed the operation, consequent section describes the contents of the fault on the a part of the management method. Understanding of management normally and therefore the method is to develop a sensible fault management system relies. Instrumentality and tools for fault management refers to the hardware and computer code tools, together with fault detection instrumentality, maintenance instrumentality and sensible fault management systems. Instrumentality and tools in fault management plays a really necessary role, it will facilitate managers and engineers within the implementation of management functions, troubleshooting to confirm the traditional operation of network systems. Here could be a few dedicated physical device:

**1.4.1 Time Domain Reflection meter (TDR).** By showing the physical media transmission signal wave shows whether or not the device or link failure.

**1.4.2 Network monitor.** Every node on the network to watch the state received a range of network statistics to work out whether or not the failure.

**1.4.3 Network analyzer.** Time period analysis of the transceiver node packets to assist managers track and isolate faults. Managers within the main task of fault management is to take care of the operation of management systems and tools, and facilitate them to finish the troubleshooting and system recovery.

## **2. The summary of intelligent network management**

A lot of effectively on a range of huge and sophisticated network management, and plenty of researchers of computing technology to network management. though a comprehensive intelligent network management from the sensible application there's quite an great distance to travel, however within the implementation of specific areas of network management intelligence, above all, relies on professional system technology, network management is possible.

Used for fault management professional system consists of information base, reasoning engine, information acquisition and interpretation of interface module four main elements. professional System with its time period, cooperative management, and stratified characteristics, significantly appropriate to be used in network fault management. At a similar time professional system additionally moon-faced with some difficulties:

2.1 Dynamic network changes may have to often update the mental object.

2.2 could also be owing to network failure associated with several different events, it's tough to work out the symptoms related to a begin and finish time to clarify the complicated and comprehensive data.

2.3 could need an oversized range of directions to spot the particular network standing, and therefore the would like for professional systems and their interfaces.

2.4 The professional system for information acquisition has long been a bottleneck, so as to with success access network fault information, need AN experienced network specialists.

Within the realization of intelligent network management system, should additionally grasp the system complexness and system performance relationship. Not solely to use computing technology are going to be a lot of mature, however additionally to think about the belief of the complexness and therefore the introduction of computing technology to the impact of system performance and stability.

### **3. Information of the incident**

The professional systems, information illustration logical illustration, linguistics network illustration, rules of illustration, identity illustration, frame illustration and therefore the method of illustration. Generative illustration of these rules, aforementioned the law is that the most typical type of illustration. Characterized by modularity, consistency, and nature. information could be a assortment of information, within the strict sense of the mental object, together with ideas, facts and rules solely part, square measure indispensable.

In order to enhance fault management of the intelligence level, you'll be able to produce an occasion mental object (EKB, Event mental object, accustomed store all famed styles of events, manufacturing reason behind the incident and therefore the impact, similarly as what measures ought to be taken and a few different details of the The static description. The EKB isn't a real sense of the mental object, its knowledge solely contains the attribute values and tuples, whereas the property price, aforementioned the idea of yuan, aforementioned the very fact that cluster. However, the

study EKB will establish a sound mental object for the long run lay foundation. Within the EKB hold on within the incident are known. Initially, the event known variety of criteria is proscribed to events and measures. because the network operation and system feedback, EKB of content can still increase. The best state is in a position to spot all the events. the subsequent square measure

EKB hold on within the incident are known could also be concerned in relevant information, like the event class (such as: performance, system, network, application events, or otherwise), severity (such as: serious, major, minor, warning, etc.), leading to the incident device identification, indicating the sort of apparatus, event impact (such as: impact of network speed, one user cannot access, etc.) reference troubleshooting strategy, last updated time / time on this event, the Notes data, details of the incident descriptions. time period event within the table could also be accustomed give variety of fields accustomed record the events of the network operation, such as: the device ID (from the informatics address or question the device tables available), time period event standing (such as: add, to confirm, clear, etc.), consistent with the corresponding bother price {ticket} ID to get fault ticket data. Instrumentality data kind key recording parameters of every device. as an example, the device ID range, IP address, device name, manufacturer, type, importance level then on. EKB hold on within the information of the relevant events in the main return from the consultants. Developers can get the information to the system and fault management-related, consistent with completely different systems of information ought to be allotted consequently to enhance system performance. Though the EKB isn't a strict sense of the mental object, however within the Development method, you'll be able to still increase and amend the contents of the EKB, to an exact extent, improve the system's intelligence.

#### **4. Conclusion**

This paper analyzes the categories of network issues and recommend the incident mental object for intelligent management of network failure. Experiments show that the failure of the pc network to supply intelligent management of knowledge-based decision-making tools than the standard management approach incorporates a higher level of decision-making for the professional system technology within the fault detection and isolation has become a lot of wide used, birth an exact foundation.

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