Abstract

Distributed Computing systems are prone to errors and faults and a major amount of time is wasted in maintaining the system and bringing it back to a stable state after a fault. Human resources in the distributed systems architecture currently handle this maintenance. Despite the emergence of ultra-reliable components, failure in distributed computing systems is still an unmitigated problem. As a result of this a lot of resources in the form of money and manpower and efforts in the form of man months are wasted. The proposed mechanism focuses efforts to make a distributed systems environment reliable and robust by proposing an autonomic, self-healing architecture. A holistic approach to the problem is adopted and an architecture that
A Holistic Approach to Autonomic Self-Healing Distributed Computing System

is general enough to be adopted by a wide range of existing systems is proposed. Some of the major challenges include selecting the appropriate actions for healing and reducing the overhead thus making healing lightweight and transparent, yet effective. The proposed system architecture makes use of data mining techniques to generate rules based on gathered system data from logs. The rules are used to make decisions of corrective action and hence carry out the self-healing mechanism.

References

- Y. Liang and Y. Zhang, Failure prediction in ibm bluegene/l event logs. &quot;
Index Terms

Computer Science
Distributed Systems

Keywords

Autonomic Computing  Self-Healing Systems  Healing Engine  Reliable Systems
Dependable Systems