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Abstract

DISTRIBUTED SERVICE-ORIENTED DISASTER TOLERANT
SOLUTION FOR WEB APPLICATION SYSTEMS

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After the study of current disaster tolerant solutions, this research is seeking a substitution for the basic disaster tolerant requirements, which includes database failure, application services failure, and network failure. The paper presents an Internet adapted distributed service-oriented disaster tolerant architecture for building highly available web application system. It overcomes most shortcomings in popularly used disaster tolerant solutions, such as fully redundancy of and particular high-speed network connection. As the tradeoff between availability versus cost, this research is considered to provide continuous application services, rather than continuous operations, and achieve high benefit-cost ratio. Distributed service, diffluent database, and peer-to-peer connection are the key approaches for the proposed disaster tolerant solution. All of these approaches try to achieve the autonomous independency and social cooperation to provide reliably continuous application services by designing a reliable, flexible, and scalable architecture. A distributed ticketing service prototype is implemented based on the proposed architecture for demonstrability.

Keywords: Disaster Tolerance, Distributed Service, Diffluent Database, Multi-agent System, Peer-To-Peer Network.