Abstract

Grid being a collection of heterogeneous resources connected through network, to execute complex jobs with high processing power requirements, is more vulnerable to faults. Faults may affect the performance and QoS of Grid. Faults are dealt with either avoiding them or recovering them by either re-execution or by resuming the execution from the point of failure by using the checkpoints. The various fault tolerance techniques use resource management, job scheduling services combined with checkpointing scheme. Different techniques targets different kind of faults and have their respective advantages and limitations. In this paper we have analyzed various faults, fault tolerance approaches and techniques. Finally different techniques have been evaluated based on resource utilization, redundancy, execution time and checkpointing overhead.

References

Comparative Analysis of Fault Tolerance Techniques in Grid Environment

- Jesus Montes, Alberto Sanchez, Maria S. Perez, "Improving Grid fault tolerance by means of global behavior modeling"; Ninth International Symposium on Parallel and Distributed Computing P 101-108 2010.
- Francisco Brasileiro, Lauro Beltrao Costa, Alisson Andrade, Walidro Cirne, "A large scale fault-tolerant Grid information service"; MGC 06 November 27, 2006 Melbourne, Australia.

Index Terms

Computer Science Distributed Computing

Keywords

Fault Tolerance Resource Management Job Scheduling Checkpointing Replication