

## Checkpointing in selected most fitted resource task scheduling in grid computing

### ABSTRACT

Grid applications run on environment that is prone to different kinds of failures. Fault tolerance is the ability to ensure successful delivery of services despite faults that may occur. Our research adds fault tolerance capacity with checkpointing and machine failure, to the current research, Selected Most Fitted (SMF) Task Scheduling for grid computing. This paper simulates one of fault tolerance techniques for grid computing, which is implementing checkpointing into Select Most Fitting Resource for Task Scheduling algorithm (SMF). We applied the algorithm of MeanFailure with Checkpointing in the SMF algorithm and named it MeanFailureCP-SMF. The MeanFailureCP-SMF is simulated using Gridsim with initial checkpointing interval at 20% job execution time. Results show that with MeanFailureCP-SMF has reduce the average execution time (AET) compare to the current SMF and MeanFailure Algorithm.

**Keyword:** Fault tolerance; Checkpointing; GridSim; Job scheduling; Grid computing