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## Prediction-based Resource Allocation Model for Real-time Tasks

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### Abstract

High Performance Computing (HPC) platform provides computing, storage, and communication facilities to process real-time applications efficiently. Such applications produce less important results if the deadlines are missed. Most of the real-time algorithms decently schedule application tasks offline, but they usually take longer in processing which results in deadlines miss when tasks need some data from remote storage locations. In this paper, we propose a prediction-based model which analyze tasks feasibility before scheduling on the HPC resources when tasks have data-intensive constraints. The main advantage of the prediction analysis module is to save time by refraining further analysis on non-schedulable tasks. The model helps in searching suitable resources and improved resource utilization by considering task workload in advance.

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