Multi-Level Communication Scheduling for Irregular Data Redistribution

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Abstract

Irregular array redistribution has been paid attention recently since it can distribute different size of data segment to heterogeneous processors
according to their computational ability. It's also the reason why it has been kept an eye on load balance. High Performance Fortran Version 2 (HPF2) provides GEN_BLOCK distribution format which facilitates generalized block distributions. In this paper, we present a Multi-level scheduling method to minimize the communication cost in such operation. The main idea of the proposed technique is to specify two categories of messages and schedule separate steps. The performance evaluation is given in section 5. The results show the proposed method successfully adapts to such environment and minimize the length of schedules.

Keyword：Multi-Level Communication