

GLEX-Alltoall: Multi-leader All-to-all Communication on Multi-core Supercomputer

Jintao Peng¹, Jie Liu^{2,*}, Min Xie³

Changsha, China

Abstract

All-to-all communication is commonly used in parallel applications like FFT. In modern supercomputers, there are multiple cores, NUMAs and network endpoints. There is no method which fully uses these features to improve the all-to-all communication. In this paper, we introduce an optimized multi-leader all-to-all library which

Keywords: `elsarticle.cls`, L^AT_EX, Elsevier, template

2010 MSC: 00-01, 99-00

1. The Elsevier article class

Installation. If the document class `elsarticle` is not available on your computer, you can download and install the system package `texlive-publishers` (Linux) or install the L^AT_EX package `elsarticle` using the package manager of your T_EX installation, which is typically T_EX Live or MikT_EX.

Usage. Once the package is properly installed, you can use the document class `elsarticle` to create a manuscript. Please make sure that your manuscript follows the guidelines in the Guide for Authors of the relevant journal. It is not necessary to typeset your manuscript in exactly the same way as an article, unless you are submitting to a camera-ready copy (CRC) journal.

Functionality. The Elsevier article class is based on the standard article class and supports almost all of the functionality of that class. In addition, it features commands and options to format the

- document style
- baselineskip
- front matter
- keywords and MSC codes
- theorems, definitions and proofs
- labels of enumerations
- citation style and labeling.

2. Front matter

The author names and affiliations could be formatted in two ways:

- (1) Group the authors per affiliation.
- (2) Use footnotes to indicate the affiliations.

See the front matter of this document for examples. You are recommended to conform your choice to the journal you are submitting to.

3. Bibliography styles

There are various bibliography styles available. You can select the style of your choice in the preamble of this document. These styles are Elsevier styles based on standard styles like Harvard and Vancouver. Please use BibT_EX to generate your bibliography and include DOIs whenever available.

Here are two sample references: [1, 2].

References

References

- [1] R. Feynman, F. Vernon Jr., The theory of a general quantum system interacting with a linear dissipative system, *Annals of Physics* 24 (1963) 118–173. doi:10.1016/0003-4916(63)90068-X.
- [2] P. Dirac, The lorentz transformation and absolute time, *Physica* 19 (1–12) (1953) 888–896. doi:10.1016/S0031-8914(53)80099-6.

*Corresponding author

¹JintaoPengCS@gmail.com

²liujie@nudt.edu.cn

³xiemin@nudt.edu.cn