DEFINITION
Batched BLAS computes multiple and independent BLAS operations on small-sized matrices and/or vectors in a single routine invocation.

APPLICATIONS
Batched BLAS benefits multiple computational fields:
• Structural mechanics
• Astrophysics
• Direct sparse solvers
• High-order FEM simulations

PREMISE
In a growing number of computational science disciplines, multidimensional non-linear equations are approximated as large batches of rudimentary linear algebra computations. Batched BLAS (Basic Linear Algebra Subprograms) aims to standardize the interface to these routines through a community-driven process. This enables the users to efficiently perform thousands of small-size BLAS operations on massively parallel hardware, be it traditional multi-core CPU or a variety of computational hardware accelerators.

FIND OUT MORE AT http://icl.utk.edu/bblas

TECHNOLOGIES
• Multicore
• Accelerators

ADVANTAGES
More efficient and portable implementations
HPC Numerical library for modern architectures
Better hardware utilization and energy efficiency
Encourages, as well as simplifies, community efforts to build higher-level algorithms on top of Batched BLAS
Batched BLAS: multiple independent BLAS operations on small matrices grouped together as a single routine.

Numerous applications require Batched BLAS:
- Structural mechanics
- Astrophysics
- Direct sparse solvers
- High-order FEM simulations

WORKSHOPS

Workshop on Batched, Reproducible, and Reduced Precision BLAS 2017
Atlanta, GA

Workshop on Batched, Reproducible, and Reduced Precision BLAS 2016
Knoxville, TN

BIRDS-OF-A-FEATHER
Batched BLAS BoF’s took place at SC17, ISC2018, and SC18.

PAPERS AND RELATED MATERIAL


ReproBLAS
http://bebop.cs.berkeley.edu/reproblas/

Compact Batched API Document
Intel MKL Team
https://www.dropbox.com/s/gplop3sxhg8le3r/MKL_COMPACT_v4.docx?dl=0

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