pbdR
Programming with Big Data in R

Focus on who owns what data and what communication is needed

snow
Rmpi
pbdMPI

Sockets
MPI
Hadoop

RHIPE

LAPACK
BLAS

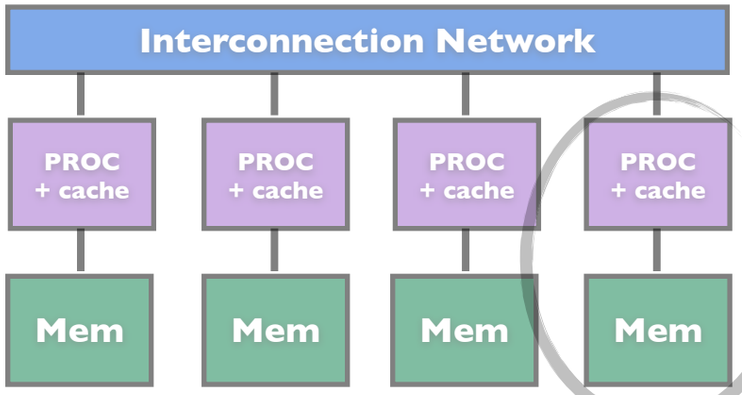
ScaLAPACK
PBLAS
BLACS

PETSc

Trilin

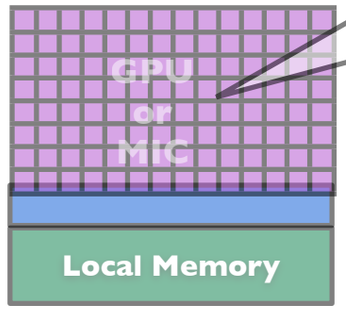
pbdDMAT

Distributed Memory



Same Task on Blocks of data

Co-Processor



GPU: Graphical Processing Unit

MIC: Many Integrated Core

CUDA
OpenCL
OpenACC

.C
.Call
Rcpp
OpenCL
inline

OpenMP
OpenACC

magma

CUBLAS

MAGMA

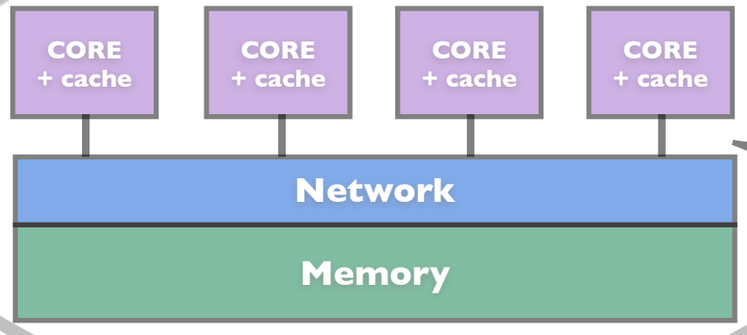
MKL
ACML
LibSci

HiPLARM

DPLASMA

PLASMA

Shared Memory



Focus on which tasks can be parallel

OpenMP
Threads
fork

multicore
(fork)

snow + multicore = parallel