

# Network Protocol Independent Performance Evaluator

## MPI

OpenMPI Intel MPI  
MPICH MVAICH

## MPI-2

MPI\_Put or MPI\_Get

## MPI-3

shared memory ops

## SHMEM

OpenMPI SHMEM  
GPShMEM

## pGAS

UPC  
Co-Array Fortran  
Chappel Titanium

## OpenMP

communication  
between threads

## NetPIPE

2-sided  
protocols

native  
communication  
software layers

1-sided  
protocols

Languages  
& Libraries

internal  
system  
measurements

## File Access

IO functions in C  
cp and scp rates

## Memory Copy

memcpy rates  
copy by doubles loops  
cache effects or not

## TCP

Ethernet

## IB verbs

InfiniBand  
RoCE  
RC and UD

## Theoretical

Ethernet  
InfiniBand

## LAPI?

IBM systems

## SHMEM

Cray systems

## UCX

## libfabric

## GASNet

Dashed outlines and text in white indicates modules that are proposed or in development  
Unidirectional, bidirectional, or aggregate performance (N cores on host1 paired with N on host2)  
Multiple independent tests for each data point provide accurate average, min and max performance  
More data points tested to fully evaluate the performance and identify even small drop outs  
Measurements can be made with and without cache effects  
Measure performance or do a full integrity check