Introduction

- OpenSHMEM is an effort to create a standardized SHMEM library for C and Fortran.
- OpenSHMEM is a Partitioned Global Address Space (PGAS) library and supports Single Program Multiple Data (SPMD) style of programming.
- SGI's SHMEM API is the baseline for OpenSHMEM Specification 1.0.

OpenSHMEM Features

- Use of symmetric variables and point to point "put" and "get" operations.
- Remote direct memory access enables one-sided operations, leading to performance benefits.
- A standard API for different hardware provides network hardware independence and renders support to different network layer technologies.
- Along with data transfer operations the library provides synchronization mechanisms (barrier, fence, quiet, wait), collective operations (broadcast, collection, reduction), and atomic memory operations (swap, add, increment).
- Open to the community for reviews and contributions.

Current Status

- University of Houston is in the process of developing a portable OpenSHMEM library.
- OpenSHMEM Specification 1.0 man pages are available.
- OpenSHMEM mailing list for discussions and contributions can be joined at https://email.ornl.gov/mailman/listinfo/openshmem.
- Website for OpenSHMEM and a Wiki for community use are available.

Future Work and Goals

- To build a portable OpenSHMEM library.
- Re-use concepts from existing libraries to enrich and extend OpenSHMEM API and functionality.
- Develop OpenSHMEM Specification 2.0 with the co-operation and contribution from the SHMEM community.