

(2-07-07)

Recently Completed Work:

- Refining of prototype implementation of PIO in POP. [Dennis]
1. - Added support for writing of 'holes'.
- Partial simplification of the initDecomp interface. Remove the need to have displace arrays in the interface and added dims array. About half way to eventual goal. [Dennis]
 - Phase I rearrangement of directory structure [Loy]
 - Rearrangement of directory structure and improvement of build procedure. [Loy]

Ongoing Work:

1. -
- Evaluate extensibility of PIO interface [Vertenstein, Craig, Eaton, Worley, Edwards]
 - Rebusiness of the MCT
 - Unknown macro: {binary files,pNetCDF}
 - Hint: This problem only appears to occur for a small number of IO processes on BGL (<32) [Loy, Dennis]
 - Rebusiness of netCDF
 - Unknown macro: {binary, pNetCDF}
 - Hint: This problem only appears to occur for a small number of IO processes on BGL (<32) [Dennis]
 - Support for use of serial netCDF calls. Use MCT rearranger to redistribute data to a single processor. Disk I/O is subsequently performed by calling the serial netCDF interface. [Loy]
 - Support for use of serial binary calls. Use MCT rearranger to redistribute data to a single processor. Disk I/O is subsequently performed by calling a FORTRAN read or write.[Loy]
 - Improve support for 1D and 3D arrays in PIO. Create a test code that exercises 1D and 3D array writes. [Dennis]

Additional Work:

1. -
- Need to simplify the interface to PIO_initDecomp. This could probably be done by using a single global segmap or GDOF approach. Code within PIO_initDecomp could subsequently translate decomposition information for use by MPI data structures or pNetCDF.
 - Add support for broadcasting of output arguments for I/O performed on subset of processors.
 - Improved support for binary I/O
1. - Support for sequential binary
 2. - addition of record numbers for direct binary
- Improve parallel performance. Possibly through the use of MPI-IO hints, or careful use of MCT and layouts.
 - More extensive testing is need. Currently it has only been lightly tested on BGL and AIX5.
 - Support for calling of PIO from non-MPI environment.
- General restructuring of the PIO internals. Need to modify code such that it can be easily compiled without pNetCDF, or without MPI-IO, etc...