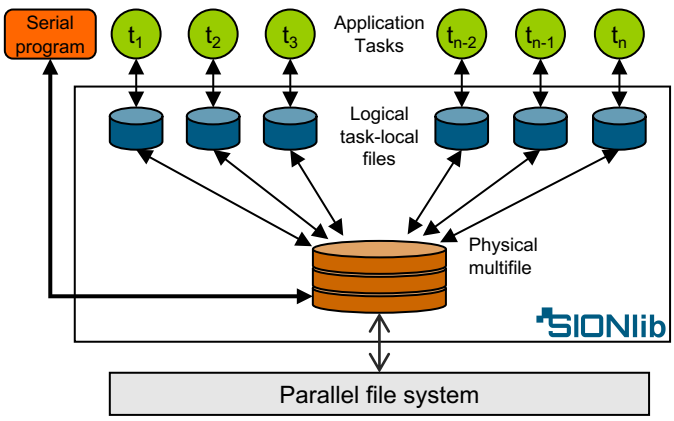
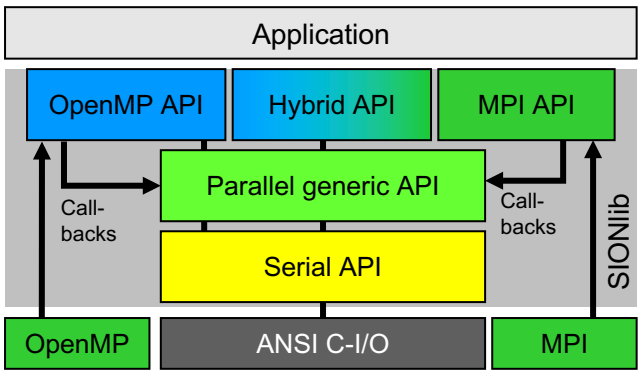
SIONlib – Scalable Massively Parallel I/O to Task-Local Files

Easy-to-use library to read and write binary task-local data from massively parallel applications

Maps large number of logical files to a single or small number of physical files
ANSI C-I/O read and write interface, minimal source-code changes

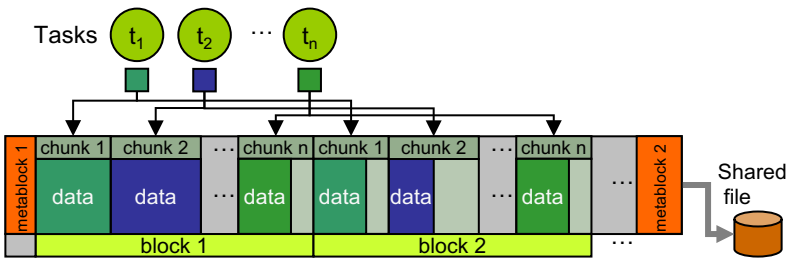
Fast optimized I/O:
Alignment at file system blocks to avoid contention during write
No bandwidth penalty compared to local file I/O





Application areas: Simulation applications writing scratch/checkpoint files, Performance measurements tools writing/reading large task-local trace files

Supported platforms: IBM Blue Gene, Cray XE/XK, Linux-based cluster, Xeon Phi, Fujitsu FX / K computer
Serial library for pre- and post-processing




```
// OPEN, collective
sid=sion_paropen_mpi(
          filename ,"bw",
          &numfiles, &chunksize,
          gcom, &lcom, &fileptr, ...);

// WRITE, local
sion_fwrite(bindata,1,nbytes, sid);

// CLOSE, collective
sion_parclose_mpi(sid)
```

Features Version 1.7.1

- Resiliency for files stored on local storage via duplication (buddy checkpointing)
- Improved documentation and stability

Coming soon in Version 2.0

Optional chunksize, simplified API, heuristics, append

Projects

- EoCoE: SIONlib for checkpointing in energy oriented applications, SIONlib plug-in in PDI

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Download SIONlib at
www.fz-juelich.de/jsc/sionlib