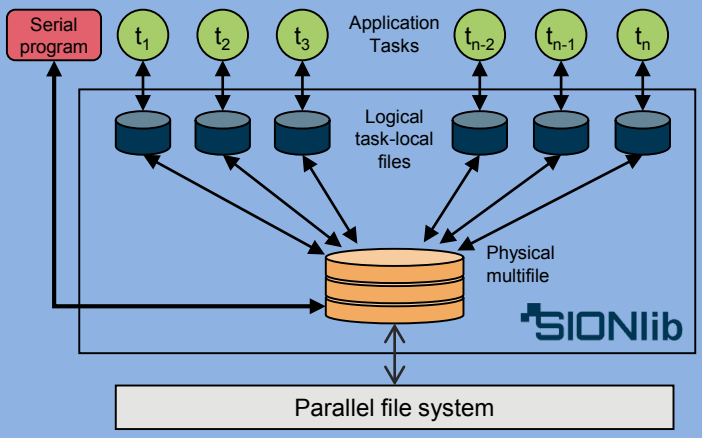
SIONlib

JÜLICH Forschungszentrum | JÜLICH SUPERCOMPUTING CENTRE

SIONLIB

Scalable Massively Parallel I/O to Task-Local Files



- **Easy-to-use library for reading and writing binary task-local data**
- **Maps a large number of logical files to a small number of physical files**
- **API resembles C standard library resulting in minimal source code changes**
- **Fast, optimized I/O, aligned access to filesystem blocks avoids contention**
- **No bandwidth penalty compared to local I/O**

Application Areas

- Simulation applications writing scratch or checkpoint files
- Performance measurement tools writing or reading large task-local trace files

Pre- and post-processing

Serial version of the library is included

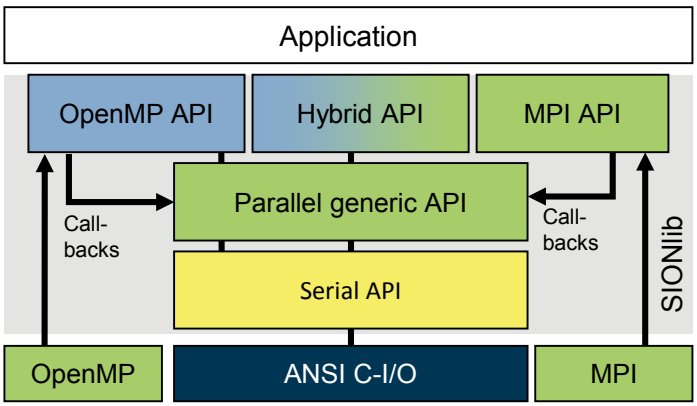
```
// OPEN, collective
sid = sion_paropen_mpi(filename, "bw",
        &numfiles, &chunksize, gcom,
        &lcom, &fileptr, ...);

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

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

Projects

- DEEP-EST: platform aware collectives
- EoCoE-II: native access to I/O accelerators



New Features in Version 1.7.4

- Modular Supercomputer Architecture aware collective I/O
- CUDA aware read and write functions

Coming soon in Version 2.0

- Optional chunk size
- Simplified API
- Append mode
- Release candidate 2 out now

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