

Profile I/O with Darshan

In ivymuc use the following modules to use Darshan

```
module load intel
module load mpi.intel/2017
module use -a /lrz/sys/share/modules/extfiles
module load darshan/3.1.4_SLES12
```

Exercises

1. Use Darshan for profiling the IOR Benchmark for a Sequential Pattern:
 - a) sequential pattern using Independent I/O for shared file: -a MPIIO -s 1 -b 32m -t 8m
 - b) sequential pattern using Independent I/O for 1 file per process: -a MPIIO -s 1 -b 32m -t 8m -F
 - c) Compare the performance by using Darshan parser --perf option and explain the different values.
2. Use Darshan for profiling the IOR Benchmark for a Strided Pattern:
 - a) strided pattern using independent I/O: -a MPIIO -s 32 -b 1m -t 1m
 - b) strided pattern using collective I/O: -c -a MPIIO -s 32 -b 1m -t 1m
 - c) Compare the performance by using Darshan parser. Evaluate if the collective techniques are enabled. If you observe collective operations are not being used then use the ROMIO hints to enable them.

Installation of IOR Benchmark version 3.2.0

```
module load mpi.intel/2017
export CC=mpicc
export MPICC=mpicc
./configure --prefix=$PWD/install \
--with-posix \
--with-mmap \
--with-mpiio \
--with-gpfs &> 01_configure-ior-SLES12.log.sh
make
make install
```