

Allinea Performance Reports

quick application profiling

Introduction

Allinea Performance Reports characterize the performance of HPC application runs. After executing your application through the tool, a synthetic HTML report is generated automatically, containing information about several metrics along with clear behavior statements and hints to help you improve the efficiency of your runs.

The Allinea Performance Reports is most useful in profiling MPI programs.

Our license is limited to 64 MPI processes.

Modules

Allinea Performance Reports version 6.0 is available

```
$ module load PerformanceReports/6.0
```

The module sets up environment variables, required for using the Allinea Performance Reports. This particular command loads the default module, which is performance reports version 4.2.

Usage

Use the the perf-report wrapper on your (MPI) program.

Instead of running your MPI program the usual way, use the the perf report wrapper:

```
$ perf-report mpirun ./mympiprogram.x
```

The mpi program will run as usual. The perf-report creates two additional files, in *.txt* and *.html* format, containing the performance report. Note that demanding MPI codes should be run within the queue system.

Example

In this example, we will be profiling the mympiprogram.x MPI program, using Allinea performance reports. Assume that the code is compiled with intel compilers and linked against intel MPI library:

First, we allocate some nodes via the express queue:

```
$ qsub -q qexp -l select=2:ncpus=16:mpiprocs=16:ompthreads=1 -I
qsub: waiting for job 262197.dm2 to start
qsub: job 262197.dm2 ready
```

Then we load the modules and run the program the usual way:

```
$ module load intel impi allinea-perf-report/4.2
$ mpirun ./mympprog.x
```

Now lets profile the code:

```
$ perf-report mpirun ./mympprog.x
```

Performance report files mymmprog_32p*.txt and mymmprog_32p*.html were created. We can see that the code is very efficient on MPI and is CPU bounded.