

Debuggers and profilers summary

Introduction

We provide state of the art programmes and tools to develop, profile and debug HPC codes at IT4Innovations. On these pages, we provide an overview of the profiling and debugging tools available on Anslem at IT4I.

Intel debugger

The intel debugger version 13.0 is available, via module intel. The debugger works for applications compiled with C and C++ compiler and the ifort fortran 77/90/95 compiler. The debugger provides java GUI environment. Use X display for running the GUI.

```
$ module load intel  
$ idb
```

Read more at the Intel Debugger page.

Allinea Forge (DDT/MAP)

Allinea DDT, is a commercial debugger primarily for debugging parallel MPI or OpenMP programs. It also has a support for GPU (CUDA) and Intel Xeon Phi accelerators. DDT provides all the standard debugging features (stack trace, breakpoints, watches, view variables, threads etc.) for every thread running as part of your program, or for every process - even if these processes are distributed across a cluster using an MPI implementation.

```
$ module load Forge  
$ forge
```

Read more at the Allinea DDT page.

Allinea Performance Reports

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. Our license is limited to 64 MPI processes.

```
$ module load PerformanceReports/6.0  
$ perf-report mpirun -n 64 ./my_application argument01 argument02
```

Read more at the Allinea Performance Reports page.

RougeWave Totalview

TotalView is a source- and machine-level debugger for multi-process, multi-threaded programs. Its wide range of tools provides ways to analyze, organize, and test programs, making it easy to isolate and identify problems in individual threads and processes in programs of great complexity.

```
$ module load totalview  
$ totalview
```

Read more at the Totalview page.

Vampir trace analyzer

Vampir is a GUI trace analyzer for traces in OTF format.

```
$ module load Vampir/8.5.0  
$ vampir
```

Read more at the Vampir page.