allinea
MAP

Profile your code and increase performance

allinea FORGE

Source line performance analysis

Deep metrics for CPU, IO and communication performance

Powerful interface to profile, edit and build your code

> *It needed to be simple to use, but powerful. It needed to be non-invasive and low overhead. The only profiler that met all the requirements? Allinea MAP, of course!*
>
> *Rebecca Hartman-Baker, IVEC CSIRO*

Discover how easy profiling can be with a free trial of Allinea MAP

www.allinea.com/trials

Allinea MAP is the scalable profiler for developers optimizing high-performance applications to run faster and scale higher.

Find and remove the performance bottlenecks that slow down your code

Allinea MAP provides the information that you need to develop faster and more scalable software.

High-speed, accurate, low-overhead measurement and extreme scalability pinpoints performance issues – whether in computation, communication, synchronization or I/O – and shows the source lines that cost your application time.

For developers, scientists, application analysts and support teams

- **Source code profiling** – see the lines of code that slow down your application.

- **Understand the causes** – with memory usage, CPU vectorization, I/O, MPI and threading charts over time.

- **Fast** – typically less than 5% overhead and small data files so that you can profile codes at scales and durations where the problems occur.

- **Scalable** – intelligent aggregations and outlier display prevents visual overload.

- **Ready to use** – no instrumentation is needed to run Allinea MAP – profile your codes immediately.

- **Easy to use** – visual performance clarity makes Allinea MAP a tool that every computational scientist and developer can share and understand.

High performance software tools

www.allinea.com

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Capable, scalable and easy to use profiling

Allinea MAP takes you straight to the causes of scalability and performance problems so that you can fix them quicker.

• Identify the functions and source lines that consume the most time.
• CPU instruction analysis shows where vectorization is used or missing.
• Discover memory performance bottlenecks and usage over time
• Pinpoint computation or MPI communication imbalance.
• Detect OpenMP or pthread synchronization performance issues
• Find the I/O that slows down your application.
• Its small profiler data files can be easily shared or stored for benchmarking and regression testing.
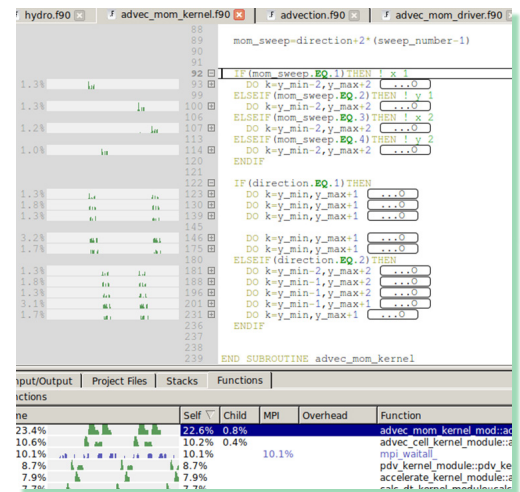
"Allinea MAP provides us with a scalable way to visualize performance bottlenecks and give hints for optimization. We see it as a key tool in our armoury."

Mark Parsons,
Edinburgh Parallel Computing Centre, ARCHER system

The profiler for productive high performance computing

Allinea MAP is part of the Allinea Forge toolkit.

• It is quick and easy to master and designed for scientists, developer and analysts alike.
• A modern interface with code editing, full syntax highlighting and version control integration makes applying and testing performance optimizations easy.
• Remote access clients make connecting to and profiling and editing on distant systems easy from OS/X, Windows or Linux.
• The common user interface with Allinea DDT enhances user adoption of profiling and shrinks the training and support costs.
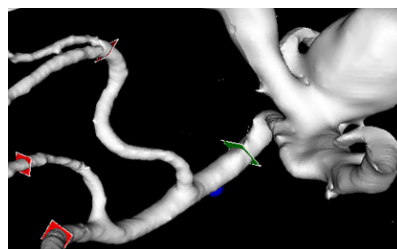
The HemeLB team fixed a critical scalability bottleneck with a single Allinea MAP profile.

The team continued profiling up to 49,152 cores and improved performance by >25%.

www.allinea.com/ucl

Stephen Hawking's COSMOS team used Allinea MAP and Allinea DDT together to successfully port and scale CAMB on the Intel® Xeon Phi™.

www.allinea.com/cosmos

High performance software tools

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