MICRO CONSULT

As of 23.10.2019

OpenMP: Platform-Independent Multicore Programming with C or C++

Objectives

The training shows you how to develop platform independent and portable multithreading/ multicore applications without having to deal with explicit thread programming.

You learn how existing application code that has been developed for sequential execution is parallelized without having to change its general software architecture.

You are able to design applications such that you benefit from increased performance due to additional cores, without having to adjust the application to this end.

Participants

Software developers, software architects or project managers who want to develop platform independent multithreading/multicore-applications without the need to deal with explicit thread programming.

Requirements

A working knowledge of C (or C++) and a basic knowledge of multithreading systems. (Important note: This course does not support the Fortran API of OpenMP!)

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Content

Introduction: General Multicore Programming Considerations

- CPU use scenarios
- False sharing
- Criteria for best performance results

Loop Parallelization

- The directive parallel_for
- Thread local variable
- Private variable
- lastprivate
- Reduction
- Scheduling strategies
- static
- dynamic
- guided
- runtime
- Conditional parallelization
- single
- nowait
- master
- copyprivate

Synchronization

- Atomic
- Critical regions
- Locks
- Barriers
- Ordered execution
- Data consistency between threads
- Implicit use of flush

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Miscellaneous

- Sections
- Orphaned directives
- Nested parallel regions
- Dynamic thread number adjustment
- Time measurement

Trainings

Price *	Duration
650,00 €	1 day

Training code: E-OPENMP

* Price per attendee, in Euro plus VAT

Coaching

Our coaching services offer a major advantage: our specialists introduce their expertise and experience directly in your solution process, thus contributing to the success of your projects.

We will be happy to provide you with further information or submit a quotation tailored to your requirements.