



WHAT YOU NEED TO KNOW ABOUT PERFORMANCE ANALYSIS USING INTEL TOOLS

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IT4Innovations National Supercomputing Center
Studentská 6231/1B, 708 33, training room 207

LECTURER

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Collecting and understanding performance and efficiency characteristics of applications is key for High Performance Computing. During this one day course with hands-on you will be equipped with advanced information about performance and efficiency metrics and how to easily obtain them using selected Intel tools. We will pick the pearls of each tool and advise you how to extract information about your application quickly and how to explain the extracted information for your application and target architecture. Since such focus areas arise on a node level we will primarily focus on that but also address how to work on a system/cluster level. Intel tools covered will be Intel(R) VTune(TM) Amplifier XE (together with "perf"), Intel Software Development Emulator and Intel(R) Advisor. Since advanced performance analysis is architecture related, we use the available systems on the Salomon cluster, which will be used by the participants for the hands-on exercises. Salomon comprises nodes with Intel(R) Xeon(R) processors v3 (Haswell) and first generation Intel(R) Xeon Phi(TM) coprocessor (KNC). Participants are welcomed and advised to bring their own applications for the best training experience. For participants with no own applications, the trainer will provide prepared examples for the hands-on parts.

Course agenda:

09:30	09:30	Registration
09:30	09:45	Introduction & Agenda
09:45	10:45	The architectures in a nutshell What is important to know for performance analysis? What are typical performance bottlenecks? System considered is Salomon: Intel(R) Xeon(R) processors v3 (Haswell) and first generation Intel(R) Xeon Phi(TM) coprocessor (KNC)
10:45	11:00	Break
11:00	11:45	Intel(R) VTune(TM) Amplifier XE:s Obtaining key metrics from your application Black Belt Guide (understand the metrics)
11:45	12:30	Apply Intel(R) VTune(TM) Amplifier XE to your application - Hands-On
12:30	13:30	Time for lunch
13:30	14:15	Intel(R) Advisor and Intel Software Development Emulator Intel Advisor (vector tool) Roofline-Model (arithmetic intensity and FLOPS) SIMD & memory analysis Simulate different micro-architectures
14:15	15:00	Apply Intel(R) Advisor and Intel Software Development Emulator to your application - Hands-On
15:00	15:15	Break
15:15	16:45	How to use the tools at System/Cluster Level?
16:45	17:30	Final Hands-On with Q&A



More information and registration:
<http://training.it4i.cz/en/PAUIT-06-2017>