# Wikiprint Book

Title: Intel Advisor XE (Vectorisation analysis)

Subject: DEEP - Public/User\_Guide/IA

Version: 3

Date: 20.04.2025 04:04:24

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### Intel Advisor XE (Vectorisation analysis)

Version 0.1, 09.01.2017 Please send feedback or questions to heinrich.bockhorst@?

#### Load the necessary modules

\$ module load Intel
\$ module load Advisor

#### Analysis

This tool analyses SIMD vectorisation of programs compiled with Intel compiler. Please add "-g" to the compile line. The analysis is done in several steps. The results of each step are accumulated into the current display. All steps can be done using the Advisor GUI:

#### \$ advixe-gui

For analysis on clusters it may be good to do these steps using the command line interface because there might be no X connection.

- Getting help:
   \$ advixe-cl -help > advisor\_help.txt
- Getting help on collection:
   \$ advixe-cl -help collect > advisor\_help\_collect.txt
- Survey analysis (light weight profiling):
   \$ advixe-cl —collect survey —project-dir ADV \$PRG \$FLAGS
- Analyse survey results subset of loops printed in csv format:
   \$ advixe-cl -report=survey -format=csv —project-dir ADV | cut -d "," -f 1,2,3,5,6 > survey\_short.txt
   —> Shows all loops. Loops that are not vectorised are marked with "SCALAR". Note the IDs (first column) of the top scalar loops for later use.
   —> Can be also viewed by the GUI.
- Trip count and flops analysis:
- \$ advixe-cl —collect tripcounts -flops-and-masks —project-dir ADV \$PRG \$FLAGS
- Dependency analysis for Loop ID=5 shows to be scalar in survey above (for example, you may have other IDs):
   \$ advixe-cl —collect dependencies —mark-up-list=5 —project-dir ADV \$PRG \$FLAGS
- Map (memory) analyis for the above loop showing stride:
   \$ advixe-cl —collect map —mark-up-list=5 —project-dir ADV \$PRG \$FLAGS
   > view results with GUI or ASCII report
- Generate snapshot (compressed result file). Can be copied to another computer and analysed:
   \$ advixe-cl —snapshot —project-dir ADV —pack —cache-sources —cache-binaries snapshot\_01
   —> Open snapshot by starting the GUI and select "open result".