Intel Advisor XE (Vectorisation analysis)

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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".