Application Performance Snapshot (APS) Playbook

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The Playbook contains command lines starting with $

Please change $PRG, $ARGS into the path,name and parameters of your program!

Version 0.9, 08.10.2018

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0. Environment

(Juelich environment) load module for Vtune

$ module load VTune

check for important executables

$ which aps

check version

$ aps -version

Alternative Environment: PSXE 2019 (see below)

1.0 Application Performance Snapshot (APS) usage:

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Just put aps in front of the executable:

$ aps $PRG $ARGS

For MPI programs:

$ mpirun -n <N> aps -r report $PRG $ARGS

Poisson Example:

mpirun -n <N> aps -r report ./poisson.x -n 3200

Output directory name "report" may be omitted or chosen differently

Note: check with $ ls -ltr

for the last created directory.

2.0 View Results

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Summary results can be displayed by

$ aps-report -s -D report

result-dir is starting with "aps_" if result dir is not specified.

HTML results

$ aps-report -g -D report

generates aps_report_<date>_<time>.html

more MPI statistics (functions) are available.

$ aps-report -f -D report

or for the full output:

$ aps-report -a -D report

For more detailed MPI output the program has to run under the environment variable:

$ export MPS_STAT_LEVEL=2

The integer value may be raised to 3 or 4 for even more infos.

3.0 Code block for analysis may be selected

Insert MPI_Pcontrol(0) right after MPI_Init() to switch off tracing

Insert MPI_Pcontrol(1) before code block to switch on tracing

Insert MPI_Pcontrol(0) after code block to switch off tracing

see: https://software.intel.com/en-us/get-started-with-application-performance-snapshot

MPI_Pcontrol will be applied only on the MPI part. For limiting the HW counters use the _itt

library found on web page above

4.0 Jube usage (please ask instructors)

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Jube is developed by FZ Juelich (Juelich universal benchmark environment)

http://www.fz-juelich.de/ias/jsc/EN/Expertise/Support/Software/JUBE/_node.html

poisson.xml is running poisson.x under Jube. For your own program change poisson.x and parameter.

Additional include files for APS and VTune are available

$ cd Poisson_1.3

$ module load JUBE

$ export JUBE_INCLUDE_PATH=$PWD/JUBE_INCLUDE:$JUBE_INCLUDE_PATH

4.1 run jube

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run without tools

$ jube run poisson.xml -a -r

more output

$ jube run poisson.xml -a -r --tag long

with aps support

$ jube run poisson.xml -a -r --tag aps

Alternative Environment (TBD)

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Alternative PSXE 2019

$ module load Intel

$ source <path to 2019>

$ which aps