INTEL ADVISOR:
ROOFLINE AUTOMATION COMMAND LINE AND GUI

Intel Software and Services, 2017
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Roofline access and how-to

• For 2017 Update 1
  (!) Requires env variable set before running command line or GUI:
    export ADVIXE_EXPERIMENTAL=roofline

• Starting from 2017 Update 2

  Just available by default
Roofline access and how-to command line example

(optional) > source advixe-vars.sh
(optional) > export ADVIXE_EXPERIMENTAL=roofline

> advixe-cl --collect survey -no-auto-finalize --project-dir ./your_project
  -- <your-executable-with-parameters>

> advixe-cl --collect tripcounts -flops-and-masks --project-dir ./your_project
  -- <your-executable-with-parameters>

> advixe-gui ./your_project

FLOP/S = #FLOP/Seconds

1st pass
Obtain “Seconds”
1.1x overhead

2nd pass
Obtain #FLOP count:
3x-5x overhead

Launch GUI
MPI and Cori-specific

1"st step:

```bash
srun -n <num-of-ranks> -c <num_of_cores_per_rank> advixe-cl -v -collect survey -project-dir=<same_dir_name> -data-limit=0 <your_executable>
```

2"nd step:

```bash
srun -n <num-of-ranks> -c <num_of_cores_per_rank> advixe-cl -v -collect tripcounts -flops-and-masks -project-dir=<same_dir_name> -data-limit=0 <your_executable>
```

Don't use home dir, use

cd $SCRATCH
1) “Run Roofline” is most automated way.

2) You can also use 2 separate runs:
   1. Survey
   2. TripCounts (remember to switch FLOPs ON)

3) Batch Mode
Roofline Chart
Trouble-shooting
Observe slower Suvey analysis or “finalization”? (1.5x slower than native run and more)

Change default call stacks processing mode (especially for Fortran)
- `collect survey -stackwalk-mode=online -no-stack-stitching`

Consider disabling system modules and non-interesting moduels processing:
- `collect survey -module-filter-mode=include -module-filter=foo.so`
Observe slower Suvey analysis or “finalization”? (1.5x slower than native run and more )

Same thing is configurable via GUI:
Observe slow tripcounts/FLOP analysis??
( > 8x slower than native and more )

**FLOPS only**, disable TripCounts:

**TripCounts only**, disable FLOPS (No Roofline):
- collect tripcounts

**TripCounts and FLOPS**:
- collect tripcounts –flops-and-masks
Backup
Batch Mode Workflow Saves Time

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- **Turn On Batch Mode**
  - Run several analyses in batch as a single run

- **Select analyses to run**
  - Contains pre-selected criteria for advanced analyses

- **Click Collect all**
  - Image of software interface with options for batch mode and analysis selection.
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Notice revision #20110804
## Configurations for Binomial Options SP

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Performance measured in Intel Labs by Intel employees

### Platform Hardware and Software Configuration

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<thead>
<tr>
<th>Platform</th>
<th>Core Count</th>
<th>Socket</th>
<th>Memory</th>
<th>Memory Frequency</th>
<th>L1 Cache</th>
<th>L2 Cache</th>
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<th>Memory Access</th>
<th>H/W Prefetchers</th>
<th>HT Enabled</th>
<th>Turbo Enabled</th>
<th>C States</th>
<th>O/S Name</th>
<th>Operating System</th>
<th>Compiler Version</th>
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