Arm DDT

HPC Café 14.07.2020

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Arm DDT

- DDT is part of Arm Forge, which also contains MAP, a performance profiler
- DDT can debug
  - Serial programs
  - OpenMP-parallel programs
  - MPI-parallel SPMD and MPMD programs
- Usual feature set
  - Single stepping, into, out of, over functions, inspect variables, watchpoints, tracepoints, etc.
  - C/C++/Fortran support
  - Some nice integration of parallel features

Arm DDT interface

Thread/process control

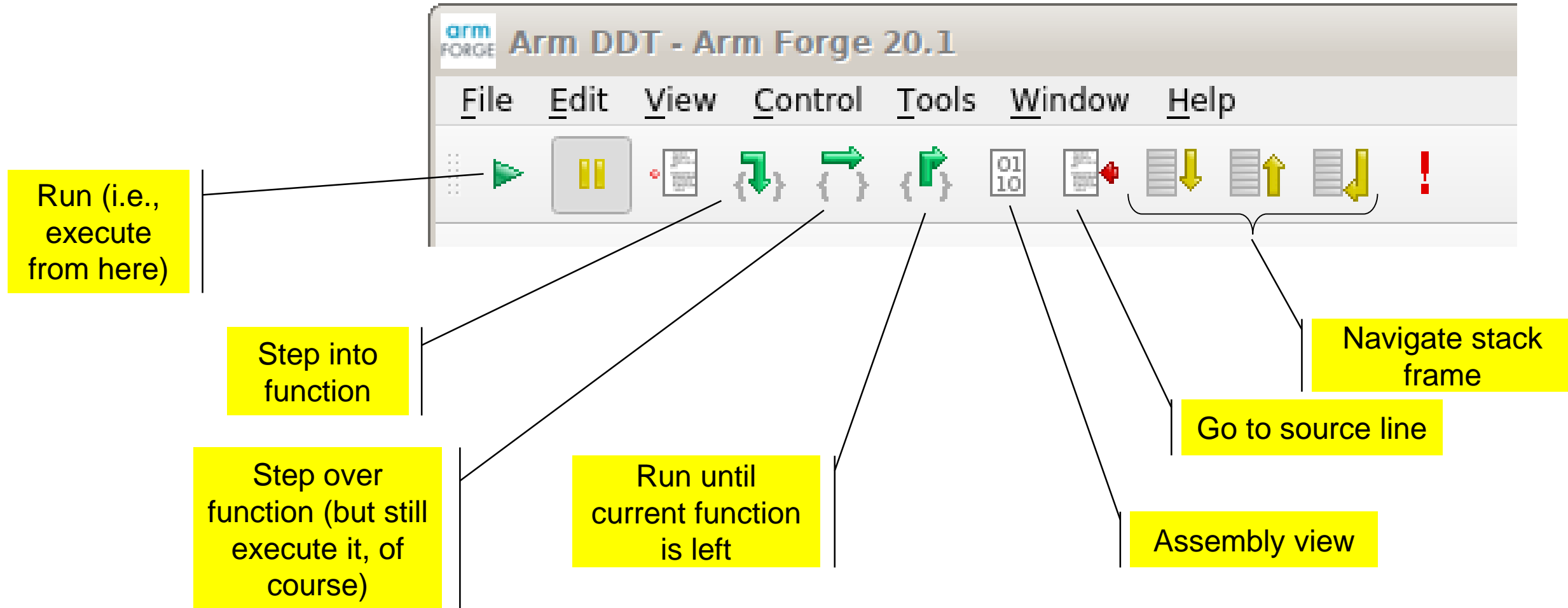File and function navigation

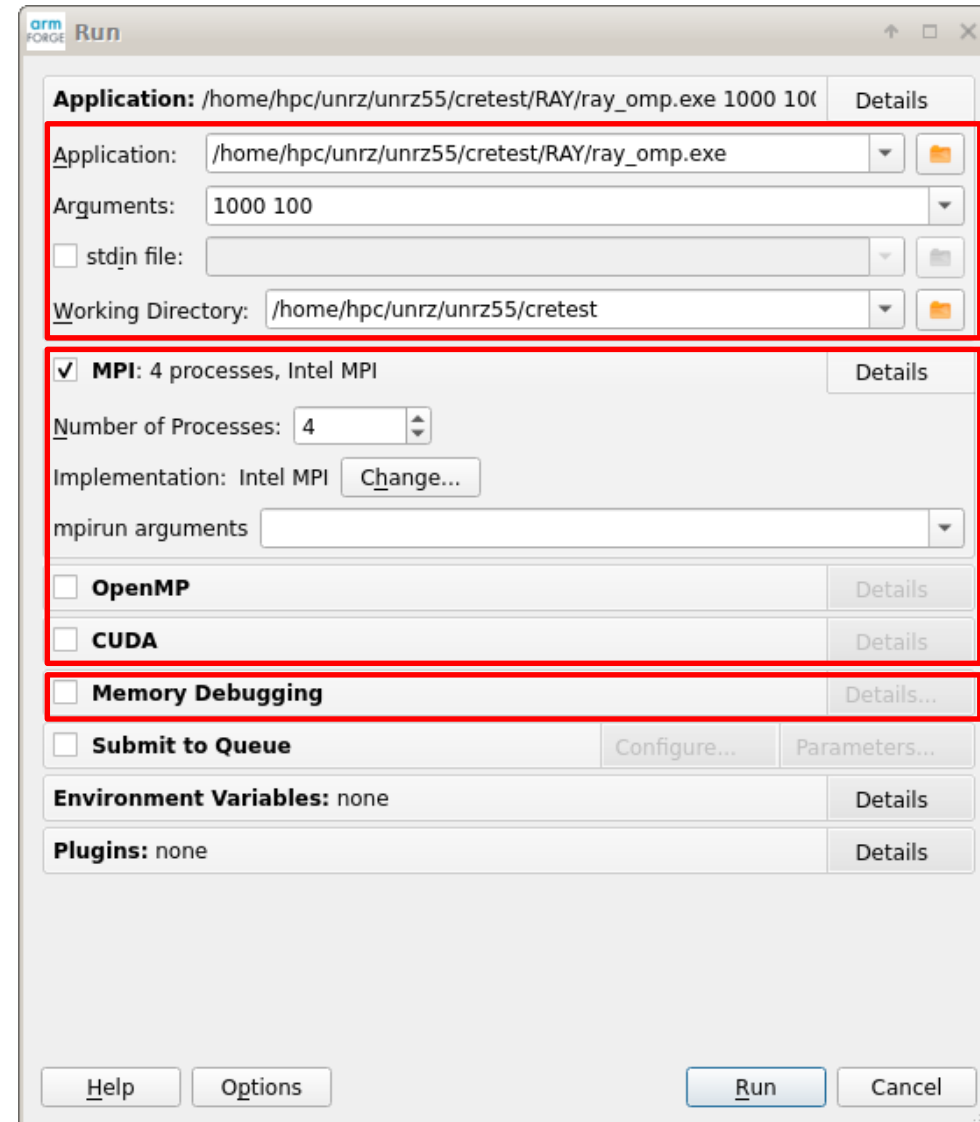Stack trace/watchpoints/etc.

Variable and array inspection

Code window

Evaluation of expressions

Arm DDT interface

Run (i.e., execute from here)

Step into function

Step over function (but still execute it, of course)

Run until current function is left

Assembly view

Go to source line

Navigate stack frame

Starting Arm DDT

Starting Arm DDT

… or just

```
$ ddt -start -n 4 ./a.out arg1 arg2 arg3…
```

…or:

```
$ OMP_NUM_THREADS=4 ddt -start ./a.out arg1 arg2 arg3…
```

Some hints

- **OpenMP debugging** is "difficult"
    - Weird behavior of private vs. shared variables
    - No stepping into and out of parallel regions
    - Inactive threads sit in OpenMP runtime functions
    - Some compiler optimizations may be applied despite `-O0`

- Always distinguish between "step all" and "step current thread/process"
- Use **tracepoints** and **watchpoints** for fun and profit