

Automated process: ONE view

Create and fill a ONE view configuration file

```
>  
$ maqao oneview --create-config  
$ vim config.lua
```

- Define path to the binary

```
>  
binary = "./my_app"
```

- Sequential / OpenMP profiling

```
>  
run_command = "<binary> input=a.dat..."
```

- MPI / hybrid profiling

```
>  
mpi_command = mpirun -n 32 ./my_app input=a.dat...
```

<binary> will be automatically replaced with the binary variable value

Profile and analyze

```
>  
$ maqao oneview --create-report=one xp=<exp_dir>  
--config=config.lua --format=html
```

If *exp_dir* is omitted, an experiment directory *maqao_<timestamp>* will be created.

Display

```
>  
$ firefox <exp_dir>/RESULTS/one_html/index.html &
```

Custom/advanced process: lprof + CQA

Analysis process

- 1) Profile with MAQAO LProf
- 2) Identify hotspots
 - Function names
 - Loop ids
- 3) Analyse hotspots with CQA
 - Functions body
 - Loops by functions
 - Loops by identifiers as returned by Lprof

Profile with MAQAO LProf

- Sequential / OpenMP profiling

```
> $ maqao lprof [xp=exp_dir] -- ./my_app arg1 arg2 ...
```

If *exp_dir* is omitted, an experiment directory *maqao_<timestamp>* will be created.

- MPI / hybrid profiling

```
> $ mpirun -n 32 maqao lprof [xp=exp_dir] -- ./my_app arg1 arg2 ...
```

Display Lprof results

- For functions (text output)

```
> $ maqao lprof -df xp=exp_dir
```

- For loops (text output)

```
> $ maqao lprof -dl xp=exp_dir
```

- Create HTML summary

```
> $ maqao lprof xp=exp_dir of=html
```

Analysis with CQA

- Analysing a given loop or set of loops

```
> $ maqao cqa ./my_app loop=id1,id2,id3...
```

id1, id2, id3 ... are the numerical loop identifiers returned by **lprof**.

- Analysing all innermost loops in a given function or set of functions

```
> $ maqao cqa ./my_app fct-loops="regexp"
```

- Analysing the body of a given function or set of functions

```
> $ maqao cqa ./my_app fct-body="regexp"
```

regexp is a regular expression: *foo* matches "foo1", "foo" or "afoo", while *^bar\$* matches "bar" only