Dimemas Hands-On

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Copy files for the hands-on

- You can download the material for most of the hands on from the web site https://tools.bsc.es/tools-hands-on.

- Dimemas has to be executed on a Linux machine.

```
> ls -l tools-material
  … clustering/
  … dimemas/
  … extrae/
  … traces/
```

Using Dimemas

- **Step 1:** Translate Paraver tracefile to Dimemas format

```
$ module load dimemas

$ cd tools-material/dimemas

$ prv2dim ../traces/lulesh2_27p.prv lulesh2_27p.dim
```
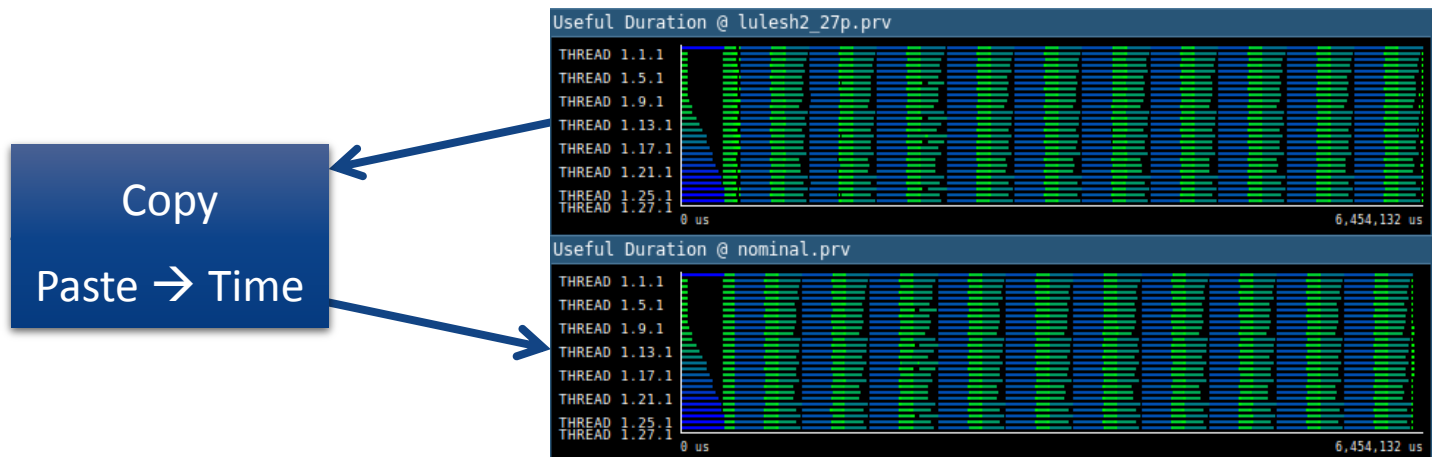
- **Step 2:** Run Dimemas

```
$ Dimemas –S 32K --dim *.dim –p nominal.prv cluster.cfg
```

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Modeling the execution cluster

- **Step 3:** Open the new trace with Paraver

```
$ ${HOME}/paraver/bin/wxparaver nominal.prv
```

- **Step 4:** Compare the original with the simulated trace
  - File → Load configuration → General/views/useful_duration.cfg

Tuning the configuration file

- **Step 1:** Run the Dimemas GUI

```
$ DimemasGUI cluster.cfg
```

- **Step 2:** Set processors 10 times faster
  - Configuration → Configure target machine → Node information →
    → Relative Processor Speed → 10.0
  - **Do all the same**
  - Save and Close window

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Tuning the configuration file

- **Step 3:** Decrease network bandwidth one order of magnitude
  - Configuration → Configure target machine →
    → Environment information → Network bandwidth → 102.4
  - Save and Close window

- **Step 4:** Save configuration
  - Configuration → Save configuration → '`my_cluster.cfg`'
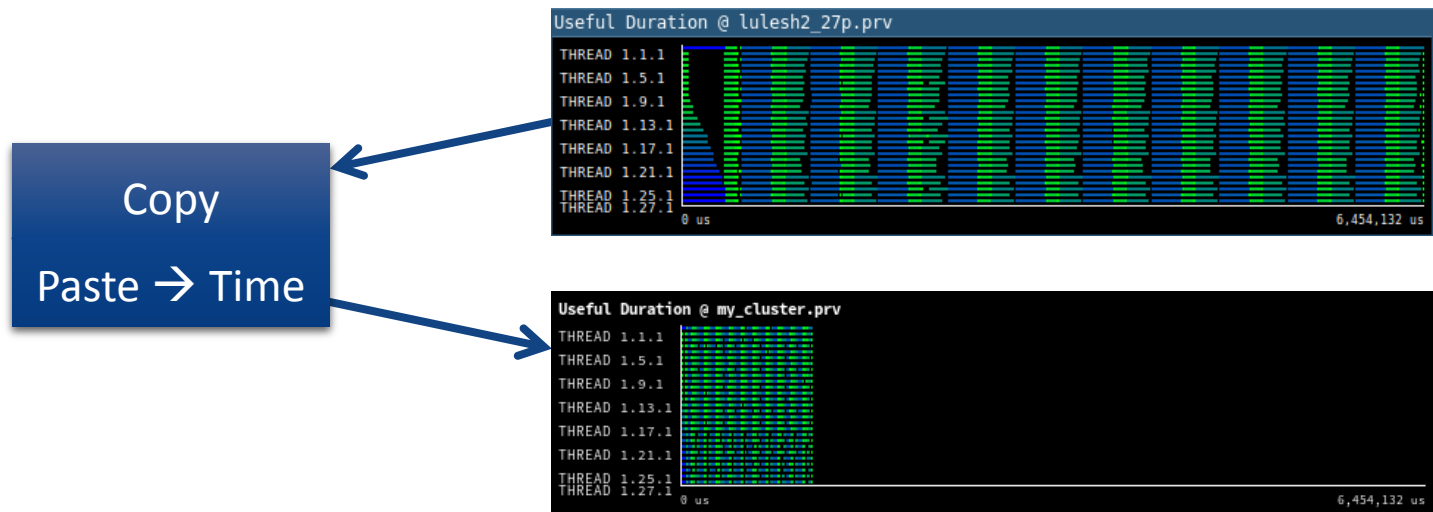
- **Step 5:** Run Dimemas with this configuration

```
$ Dimemas –S 32K --dim *.dim –p my_cluster.prv my_cluster.cfg
```

What if … my machine had a faster CPU but a slower network?

- **Step 6:** Open the new trace with Paraver

```
$ ${HOME}/paraver/bin/wxparaver my_cluster.prv
```

- **Step 7:** Compare with previous

Copy

Paste → Time

Paraver

- Most of the Paraver tutorials cover topics about Dimemas

  - Introductory tutorial on the usage of Dimemas
  - General Paraver & Dimemas analysis methodology
  - Tools applied to some codes
    - WRF
    - HydroC