



Framesoc changes and improvements

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Réunion de démarrage SET2.0

Inria, 9/12/2014

Agenda



Under the hood



User Interaction



Framesoc Distribution

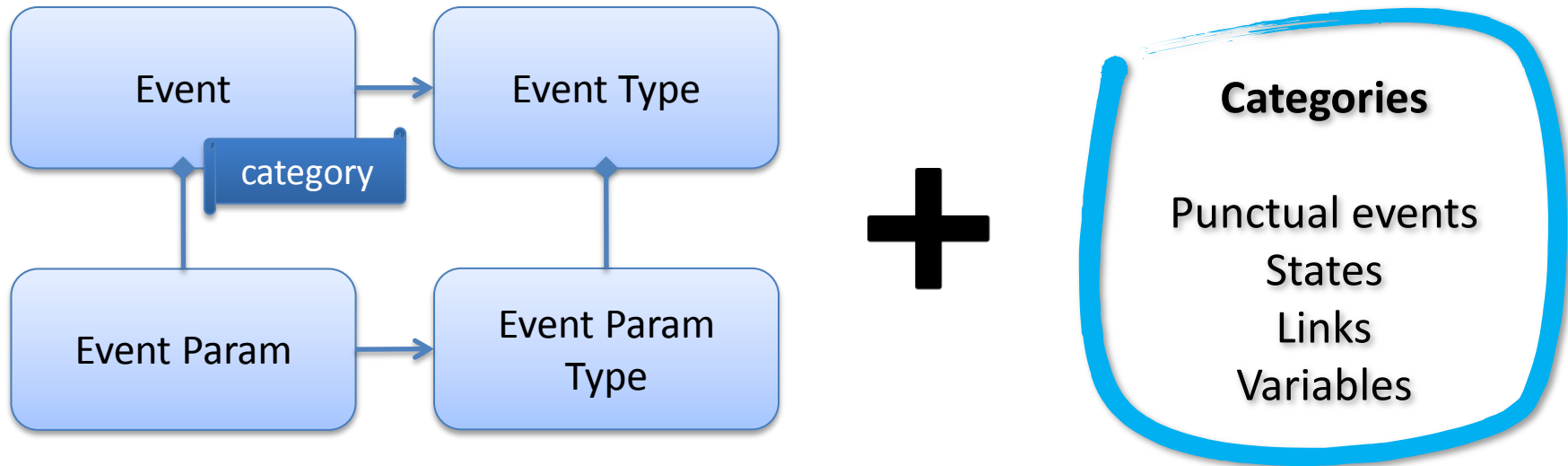


Perspectives



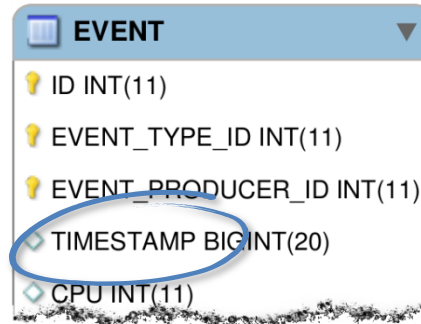
Under the hood

Enriched Data-Model



- Combine flexibility and high level semantics
- Performance improvements
 - *gantt*: about **5 times** faster for loading a generic interval

Time Indexing



- Optional database index on Event **timestamp**
- Fast retrieval of generic intervals of events
 - *gantt*: almost **10x faster** in loading generic intervals
 - no need for predefined pages
- Drawback: longer import times
 - **1.6x slower**

Color Management



- Colors are centrally managed by Framesoc
- **Importers** can specify default colors
- If not specified, **Framesoc** automatically assigns colors
 - colors are deterministically generated from entity names
- The **user** can change the colors
 - all views are notified via the Framesoc Bus

New Real-Life Trace formats

- New parsers using the enhanced data-model



CTF



OTF 2



Paraver (*experimental*)

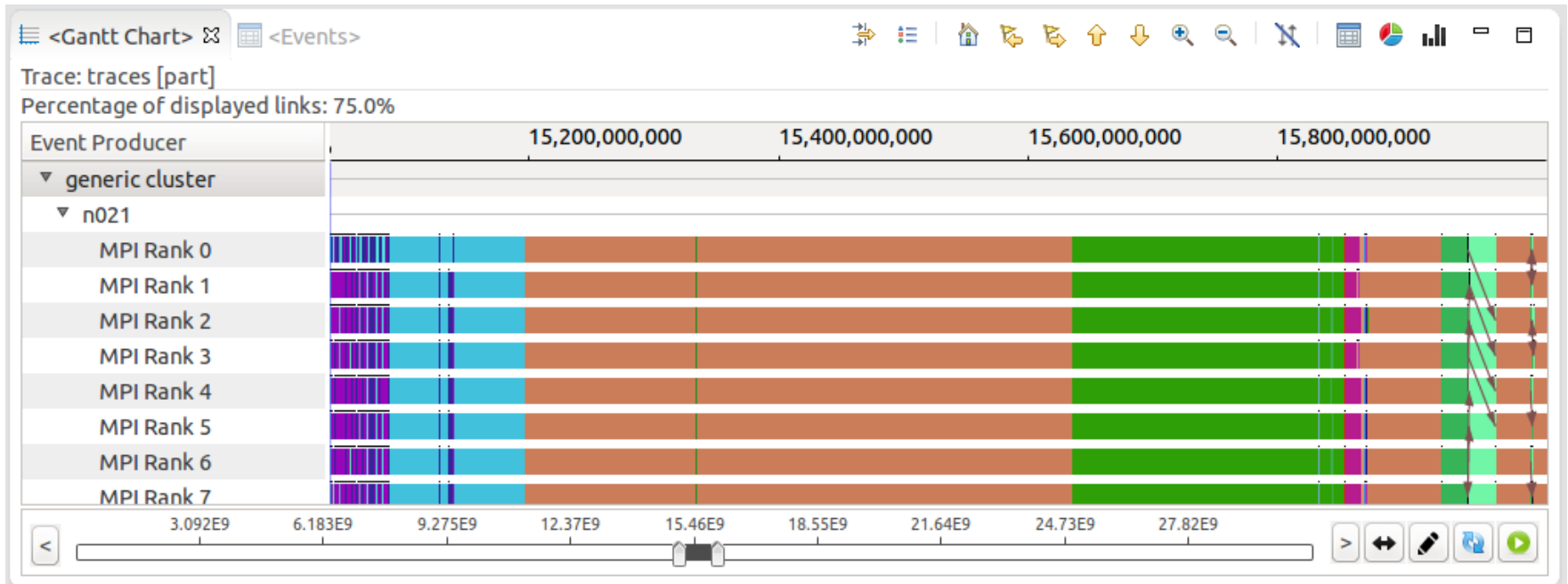


User Interaction

General Principles

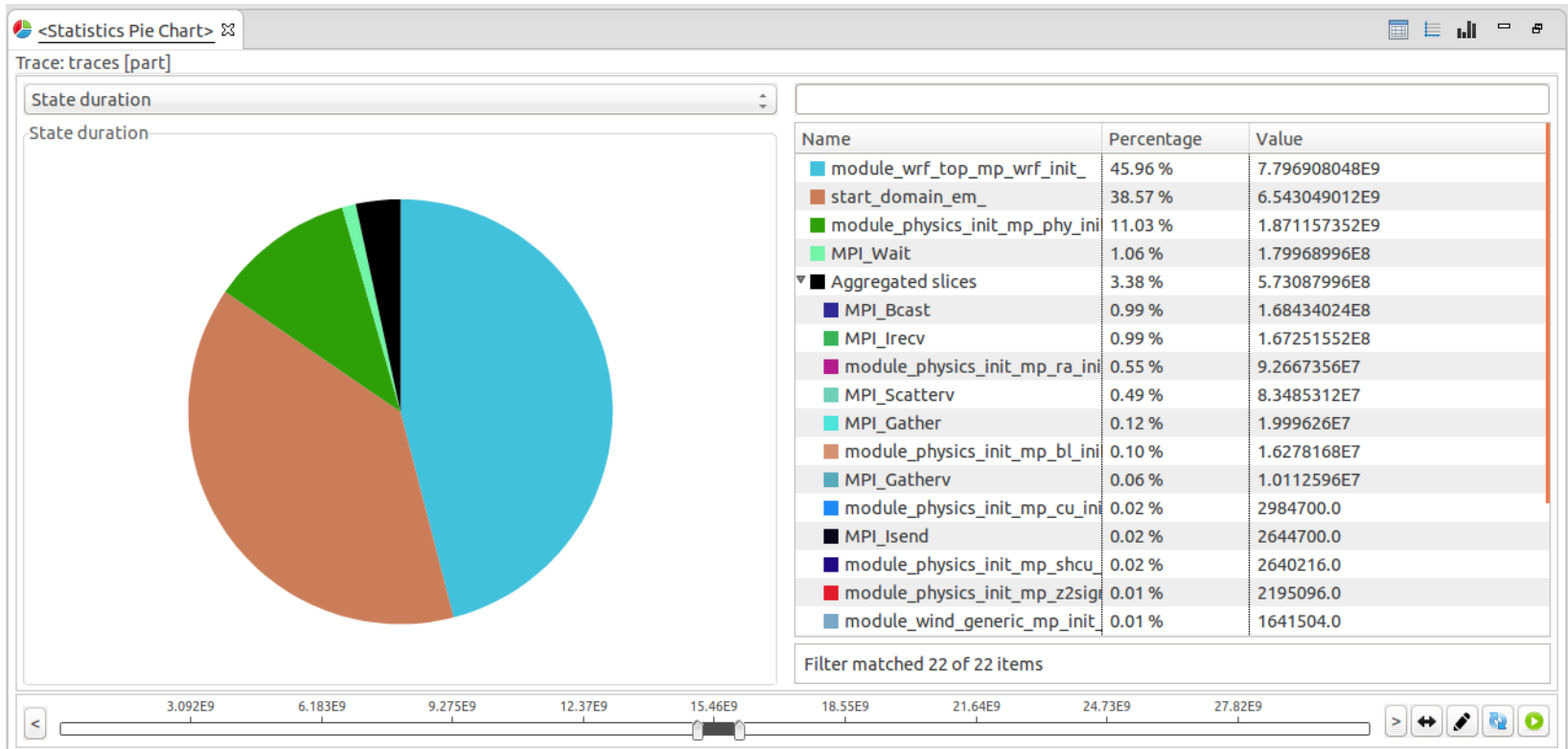
- **Pipelined** data loading and visualization
 - start working on data while loading
- Support for **partial** data loading
 - stop data loading if needed
- No predefined **time intervals**
 - load whatever time interval in a trace
- View **communication** and correlation
 - views can synchronize on time intervals and colors

New Gantt Chart



- Integration / enhancement of *TraceCompass* Gantt
 - **10x faster, 10x less memory**
- State aggregation / link filtering
- Event producer filtering

New Statistics Pie Chart



- Extension point for **new statistics operators**
- Statistics computed on generic time interval

New Event Table

Trace: traces [part]

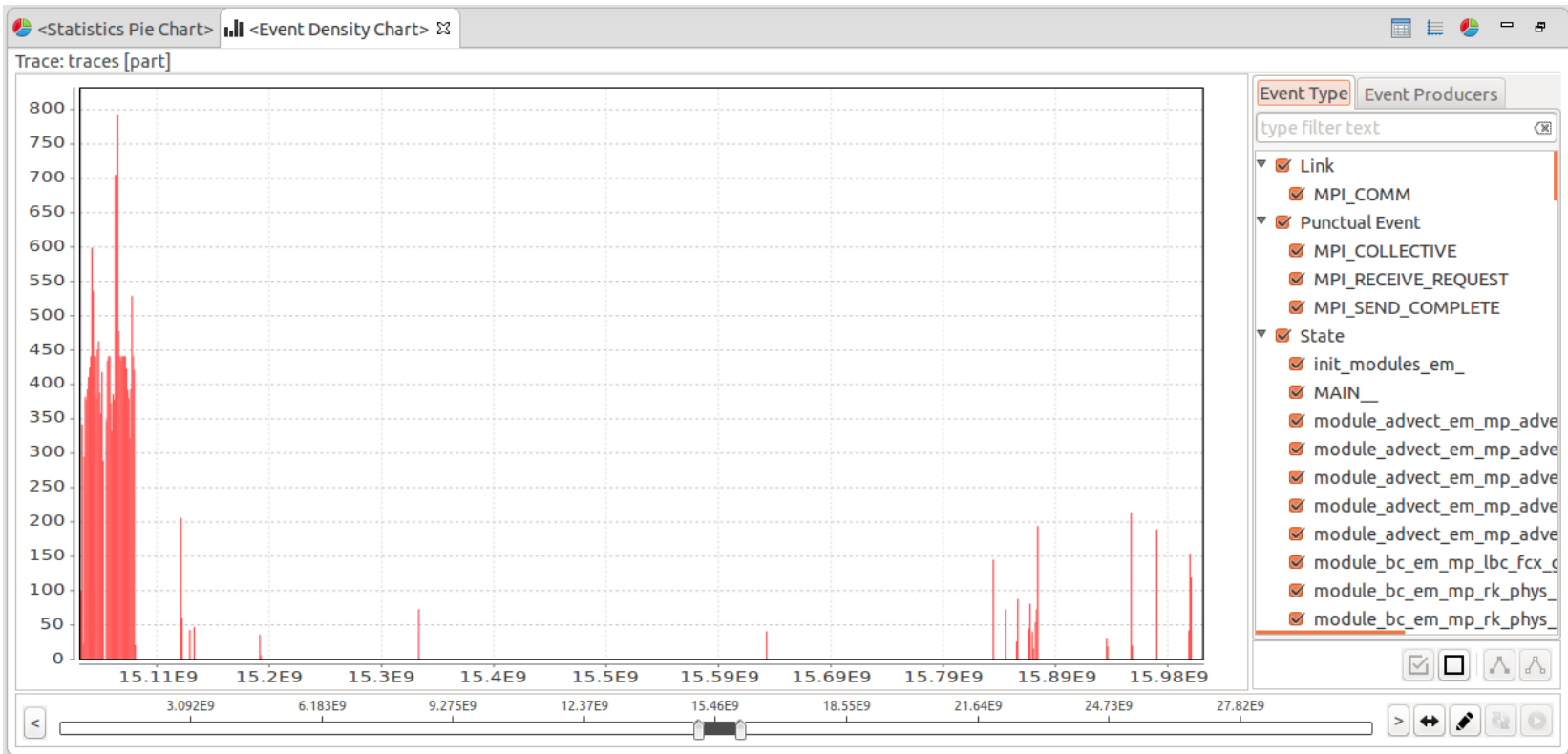
| Timestamp | CPU | Event Producer | Category | Event Type | Parameters |
|-------------|----------|----------------|----------------|----------------|--|
| <filter> | <filter> | <filter> | <filter> | <filter> | <filter> |
| 15040396020 | 0 | MPI Rank 0 | Variable | PAPI_L2_TCM | ID='27647', VALUE='713959.0' |
| 15040396020 | 0 | MPI Rank 0 | Variable | PAPI_TLB_DM | ID='27648', VALUE='87871.0' |
| 15040396020 | 0 | MPI Rank 0 | Variable | PAPI_BR_MSP | ID='27649', VALUE='1268435.0' |
| 15040396020 | 0 | MPI Rank 0 | Variable | PAPI_FP_OPS | ID='27650', VALUE='353.0' |
| 15040396020 | 0 | MPI Rank 0 | State | MPI_Gather | END_TIMESTAMP='15040429980', IMBRICATION='2' |
| 15040396020 | 0 | MPI Rank 0 | Punctual Event | MPI_COLLECTIVE | |
| 15040429980 | 0 | MPI Rank 0 | Punctual Event | MPI_COLLECTIVE | |
| 15040429980 | 0 | MPI Rank 0 | Variable | PAPI_L2_TCM | ID='27654', VALUE='713973.0' |
| 15040429980 | 0 | MPI Rank 0 | Variable | PAPI_TLB_DM | ID='27655', VALUE='87872.0' |
| 15040429980 | 0 | MPI Rank 0 | Variable | PAPI_BR_MSP | ID='27656', VALUE='1268495.0' |
| 15040429980 | 0 | MPI Rank 0 | Variable | PAPI_FP_OPS | ID='27657', VALUE='353.0' |
| 15040450060 | 0 | MPI Rank 0 | Variable | PAPI_L2_TCM | ID='27658', VALUE='713973.0' |
| 15040450060 | 0 | MPI Rank 0 | Variable | PAPI_TLB_DM | ID='27659', VALUE='87872.0' |
| 15040450060 | 0 | MPI Rank 0 | Variable | PAPI_BR_MSP | ID='27660', VALUE='1268515.0' |
| 15040450060 | 0 | MPI Rank 0 | Variable | PAPI_FP_OPS | ID='27661', VALUE='353.0' |
| 15040450060 | 0 | MPI Rank 0 | State | MPI_Scatterv | END_TIMESTAMP='15040818780', IMBRICATION='2' |
| 15040450060 | 0 | MPI Rank 0 | Punctual Event | MPI_COLLECTIVE | |
| 15040517692 | 0 | MPI Rank 1 | Punctual Event | MPI_COLLECTIVE | |

Filter matched 21789 of 21789 loaded events

Timeline: 3.092E9, 6.183E9, 9.275E9, 12.37E9, 15.46E9, 18.55E9, 21.64E9, 24.73E9, 27.82E9

- Lightweight table (based on *TraceCompass* swt code)
- Filtering in background threads

New Event Density Chart



- Event type filtering
- Event producer filtering

Advanced Trace Management (1)

Trace: Large_Scorep

| Property | Value |
|--------------------|--------------------------------------|
| Alias | Large_Scorep |
| Tracing date | 2014-10-30 19:08:22.0 |
| Traced application | MPI_app |
| Board | none |
| Operating System | Linux |
| Number of CPUs | 1 |
| Number of events | 9733832 |
| Output device | otf2-print |
| Description | otf2 trace imported 30 Oct 2014 18:0 |
| Min Timestamp | 15356 |
| Max Timestamp | 115538509356 |
| Time-unit | ns |
| DB name | traces_20141030_180737_GMT |

New custom trace parameter

Name: ISSUE

Type: INTEGER

Value: 11

Cancel OK

Trace: Large_Scorep

| Property | Value |
|--------------------|--------------------------------------|
| Alias | Large_Scorep |
| Tracing date | 2014-10-30 19:08:22.0 |
| Traced application | MPI_app |
| Board | none |
| Operating System | Linux |
| Number of CPUs | 1 |
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| ISSUE | 11 |

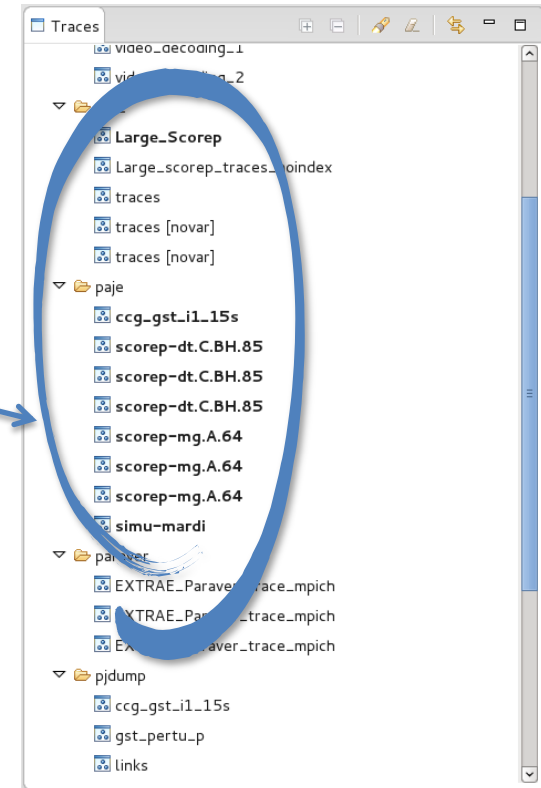
- Adding custom metadata to traces
- Tag traces!

Advanced Trace Management (2)

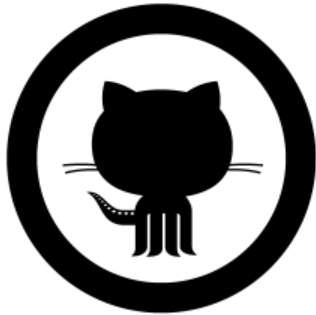
Check the traces to highlight them in the Traces view.

| Alias | Date | Events | Out device | Description | Ts unit | Parameters | DB |
|---|-----------------------|----------|------------|-------------------|----------|----------------|-----------|
| <input checked="" type="checkbox"/> <filter> | <filter> | <filter> | <filter> | <filter> | <filter> | .*ISSUE='11'.* | <filter> |
| <input checked="" type="checkbox"/> Large_Scorep | 2014-10-30 19:08:22.0 | 9733832 | otf2-print | otf2 trace imp ns | | ISSUE='11' | traces_20 |
| <input checked="" type="checkbox"/> scorep-dt.C.BH.85 | 2014-11-14 11:18:24.0 | 678 | paraver | paje trace imp ns | | ISSUE='11' | scorep_dt |
| <input checked="" type="checkbox"/> ccg_gst_i1_15s | 2014-11-14 11:20:51.0 | 1500315 | paraver | paje trace imp ns | | ISSUE='11' | ccg_gst_i |
| <input checked="" type="checkbox"/> scorep-dt.C.BH.85 | 2014-11-14 11:21:18.0 | 1500315 | paraver | paje trace imp ns | | ISSUE='11' | scorep_dt |
| <input checked="" type="checkbox"/> scorep-mg.A.64 | 2014-11-14 11:21:18.0 | 0 | paraver | paje trace imp ns | | ISSUE='11' | scorep_m |
| <input checked="" type="checkbox"/> simu-mardi | 2014-11-14 11:21:19.0 | 0 | paraver | paje trace imp ns | | ISSUE='11' | simu_mari |
| <input checked="" type="checkbox"/> scorep-dt.C.BH.85 | 2014-11-14 11:24:40.0 | 678 | paraver | paje trace imp ns | | ISSUE='11' | scorep_dt |
| <input checked="" type="checkbox"/> scorep-mg.A.64 | 2014-11-14 11:24:40.0 | 678 | paraver | paje trace imp ns | | ISSUE='11' | scorep_m |
| <input checked="" type="checkbox"/> scorep-mg.A.64 | 2014-11-14 11:26:39.0 | 136608 | paraver | paje trace imp ns | | ISSUE='11' | scorep_m |

Cancel OK



- Filter and highlight interesting traces



Framesoc Distribution

Source Management

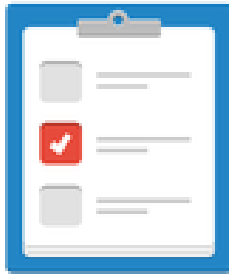
GitHub

- Code hosted on GitHub **soctrace-inria** organization
 - <https://github.com/soctrace-inria/>
- GitHub Services:
 - wiki (<https://github.com/soctrace-inria/framesoc/wiki>)
 - issue/milestone management
 - website (<http://soctrace-inria.github.io/framesoc/>)
 - contributions via pull requests

Installation



- Installation via Eclipse **update site** mechanism
- *Help > Install New Software... > Work with:*
<http://soctrace-inria.github.io/updatesite/>
- Then follow the wizard and... that's it!



Perspectives

Some perspectives

- Database architecture
 - Separate results from trace DB?
 - NoSQL storage experience?
- Custom input forms for tool parameters
- User friendly configuration through GUI
- ...

Just have a look at our **github:issues**

<https://github.com/soctrace-inria/framesoc/issues>

Questions?

