

Trace Compass Update



Matthew Khouzam
Simon Delisle



Agenda



- Agenda (see agenda)
- What's new
- Trace Server
- Theia frontend
- Incubator

What's new

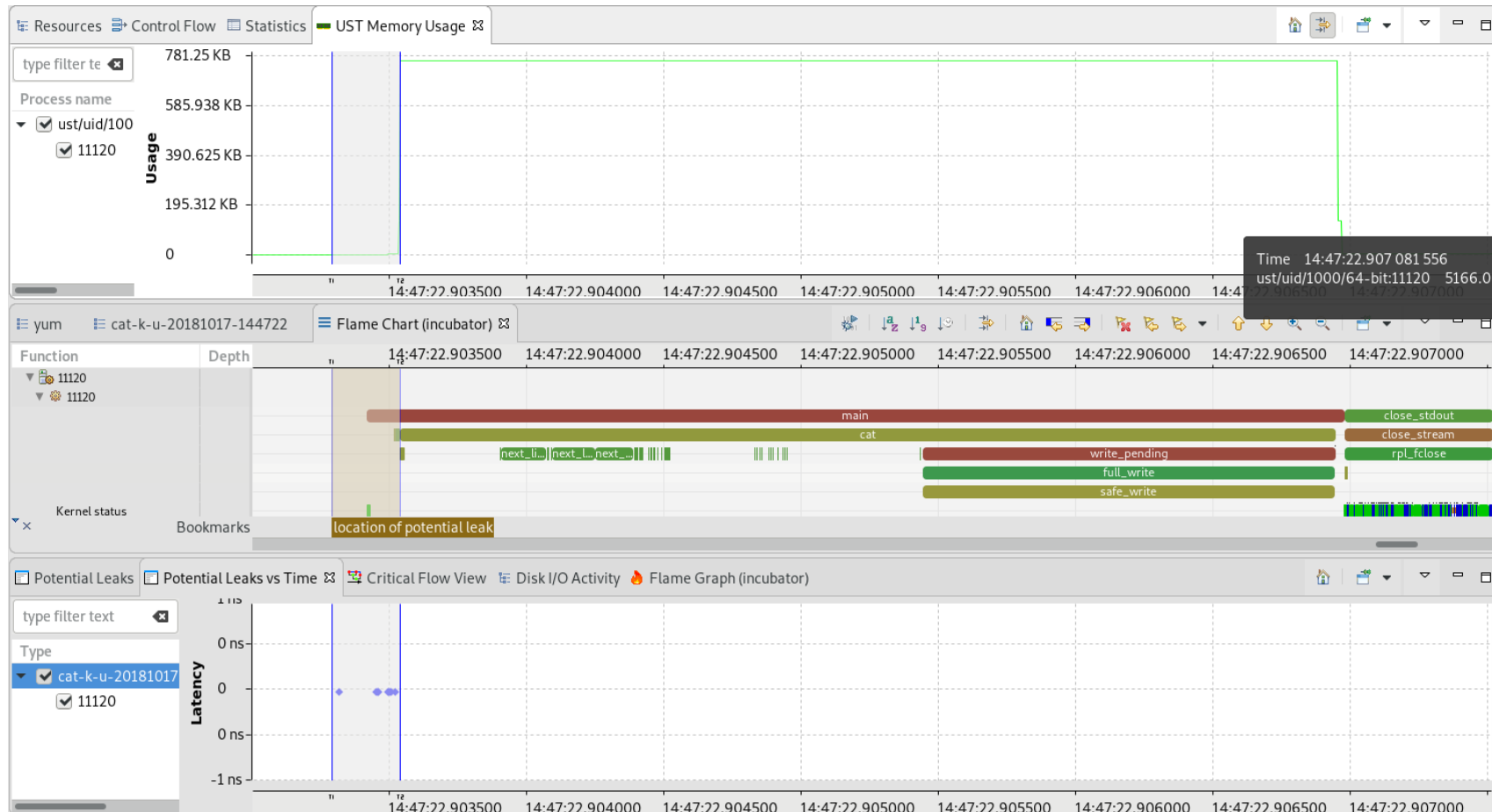


- Team updates:
 - Simon Marchi
 - Jean-Christian Kouame
 - Viet-Hung Phan
- Welcome Mbarka Soualhia (Ericsson Research)

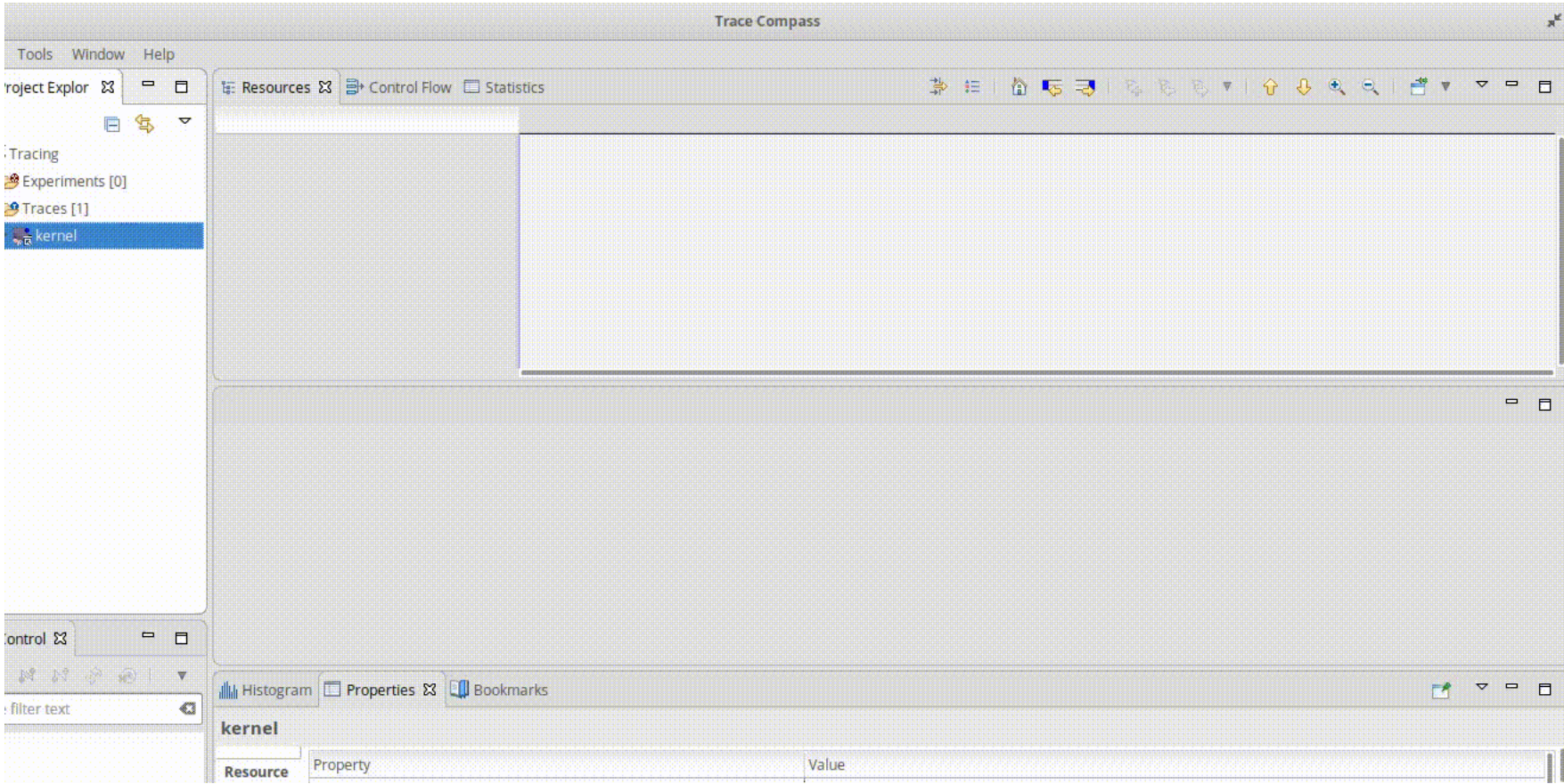
New in 4.2 to 5.0++



Detection of Potential Memory Leaks



Change Default Zoom per Trace



Removed Syscall Prefix

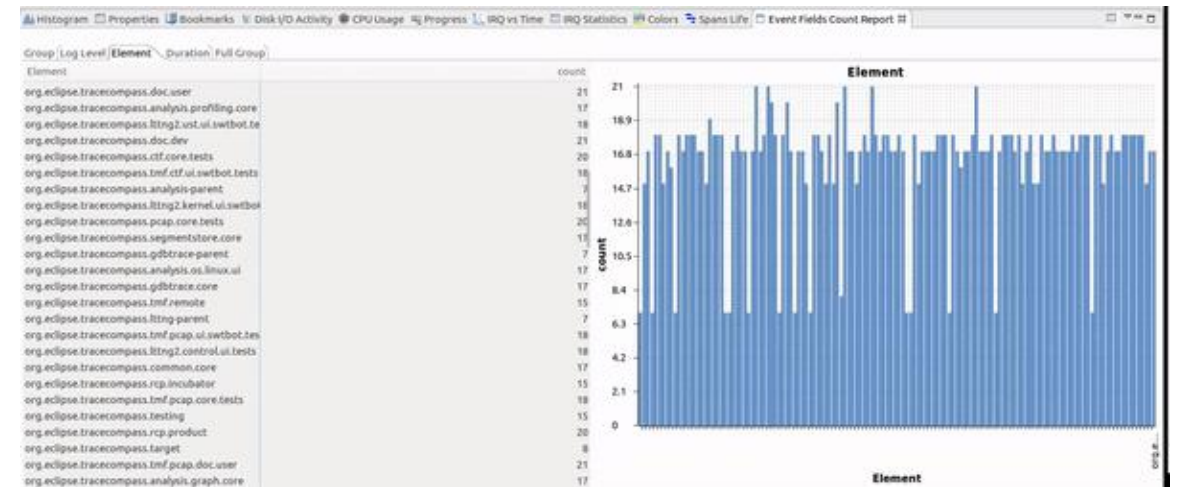


Level	Minimum	Maximum	Average	Standard Dev
▼ context-switches/context-switches-kernel				
▼ Total	0	86.870 s	24.748 ms	600.
getrlimit	4.485 µs	211.614 µs	24.478 µs	49
select	19.598 µs	11.477 s	205.638 ms	
prctl	8.278 µs	329.669 µs	35.010 µs	66
poll	9.096 µs	17.963 s	178.550 ms	
llseek	5.751 µs	394.461 µs	29.843 µs	59
rmdir	73.152 µs	2.108 ms	217.554 µs	466
statfs64	39.249 µs	522.190 µs	104.946 µs	123
lstat64	26.680 µs	264.956 ms	415.472 µs	6.
set_tid_address	9.473 µs	88.533 µs	22.735 µs	22
clock_gettime	5.756 µs	411.397 µs	18.385 µs	44
sendmmsg	132.451 µs	34.521 ms	576.824 µs	3.
pipe	33.754 µs	16.067 ms	322.867 µs	1.
getcpu	3.183 µs	163.371 ms	19.977 µs	1.
brk	7.780 µs	222.761 ms	2.263 ms	19.
rt_sigprocmask	5.231 µs	218.867 ms	57.886 µs	2.

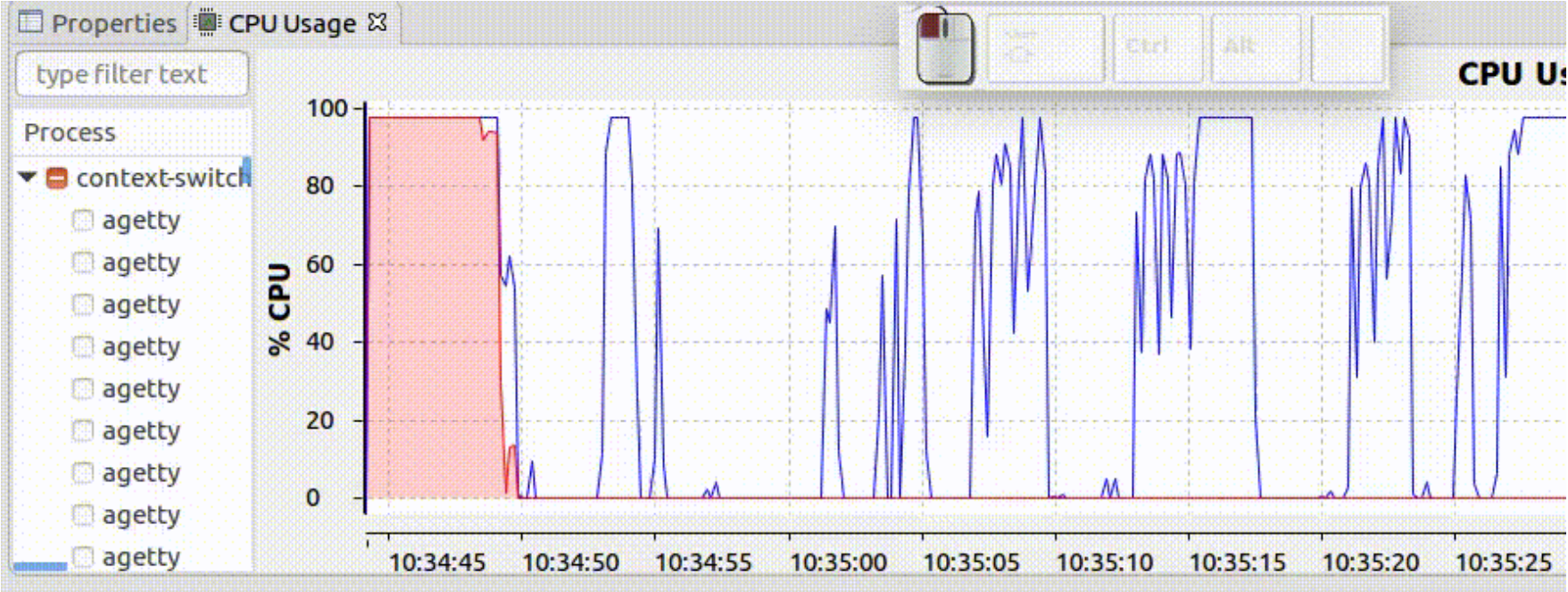
LAMI: export to tsv/png



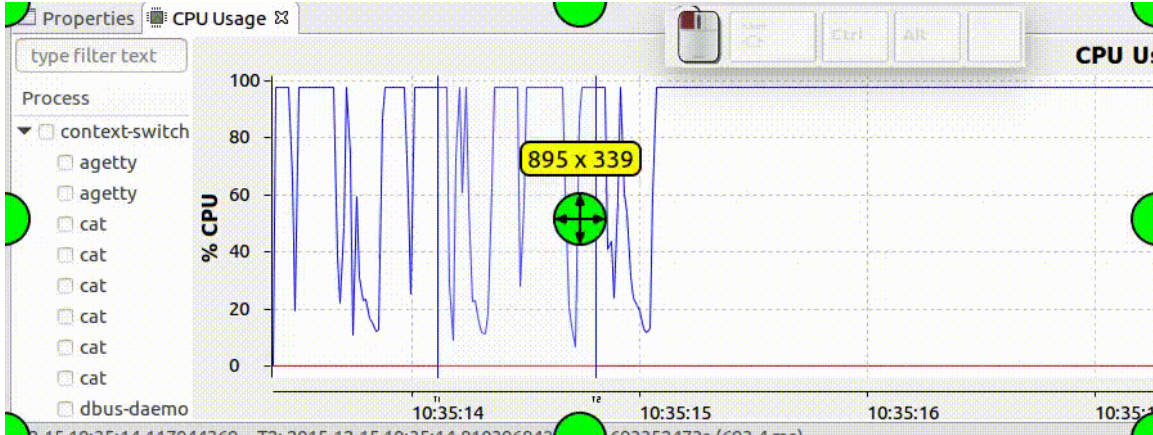
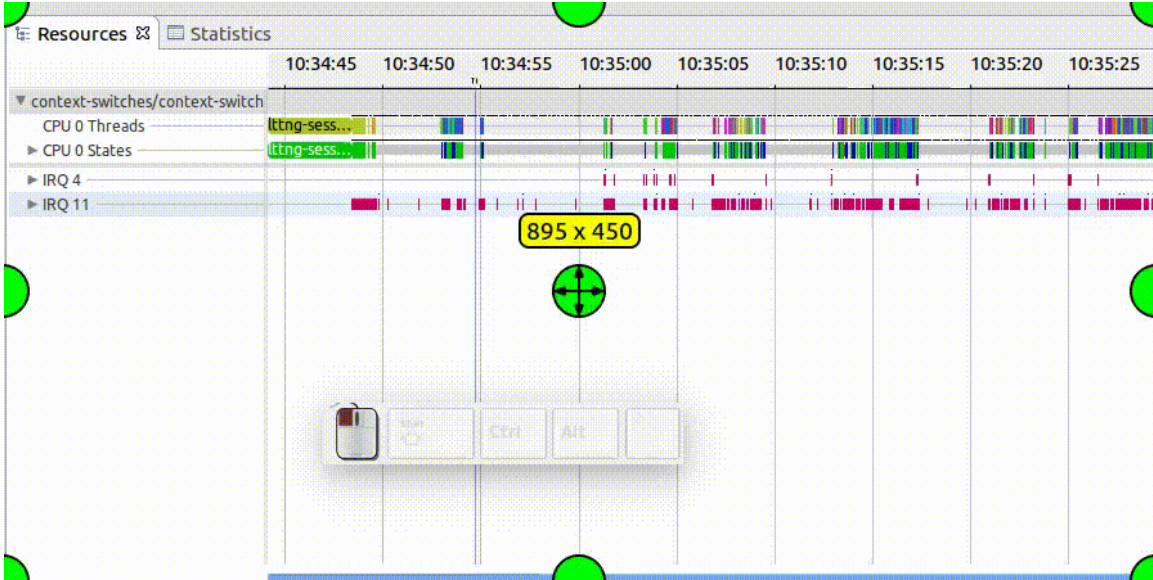
Element	count
org.eclipse.tracecompass.tmf-parent	7
org.eclipse.tracecompass.btf	15
org.eclipse.tracecompass.tmf.ui	17
org.eclipse.tracecompass.pcap-parent	7
org.eclipse.tracecompass.tmf.chart.ui.swtbot.test	18
org.eclipse.tracecompass.btf.core.tests	18
org.eclipse.tracecompass.tmf.ctf	15
org.eclipse.tracecompass.rcp.branding	17
org.eclipse.tracecompass.rcp	16
org.eclipse.tracecompass.ctf-parent	7
org.eclipse.tracecompass.tmf.ui.tests	18
org.eclipse.tracecompass.gdbtrace.ui	17
org.eclipse.tracecompass.analysis.counters.ui.sw	18
org.eclipse.tracecompass.datastore.core.tests	18
org.eclipse.tracecompass.analysis.timing.core.te	18
org.eclipse.tracecompass.analysis.counters.ui	17
org.eclipse.tracecompass.jsontrace.core	17
org.eclipse.tracecompass.jsontrace	15
org.eclipse.tracecompass.releng.site	19
org.eclipse.tracecompass.ltnng2.kernel.core.test	18
org.eclipse.tracecompass.analysis.graph.core.test	18
org.eclipse.tracecompass.tmf.chart.core.tests	18
org.eclipse.tracecompass.doc	7
org.eclipse.tracecompass.rcp-parent	7
org.eclipse.tracecompass.rcp.incubator.ui	17



XY WASD navigation



Z to Zoom



Other



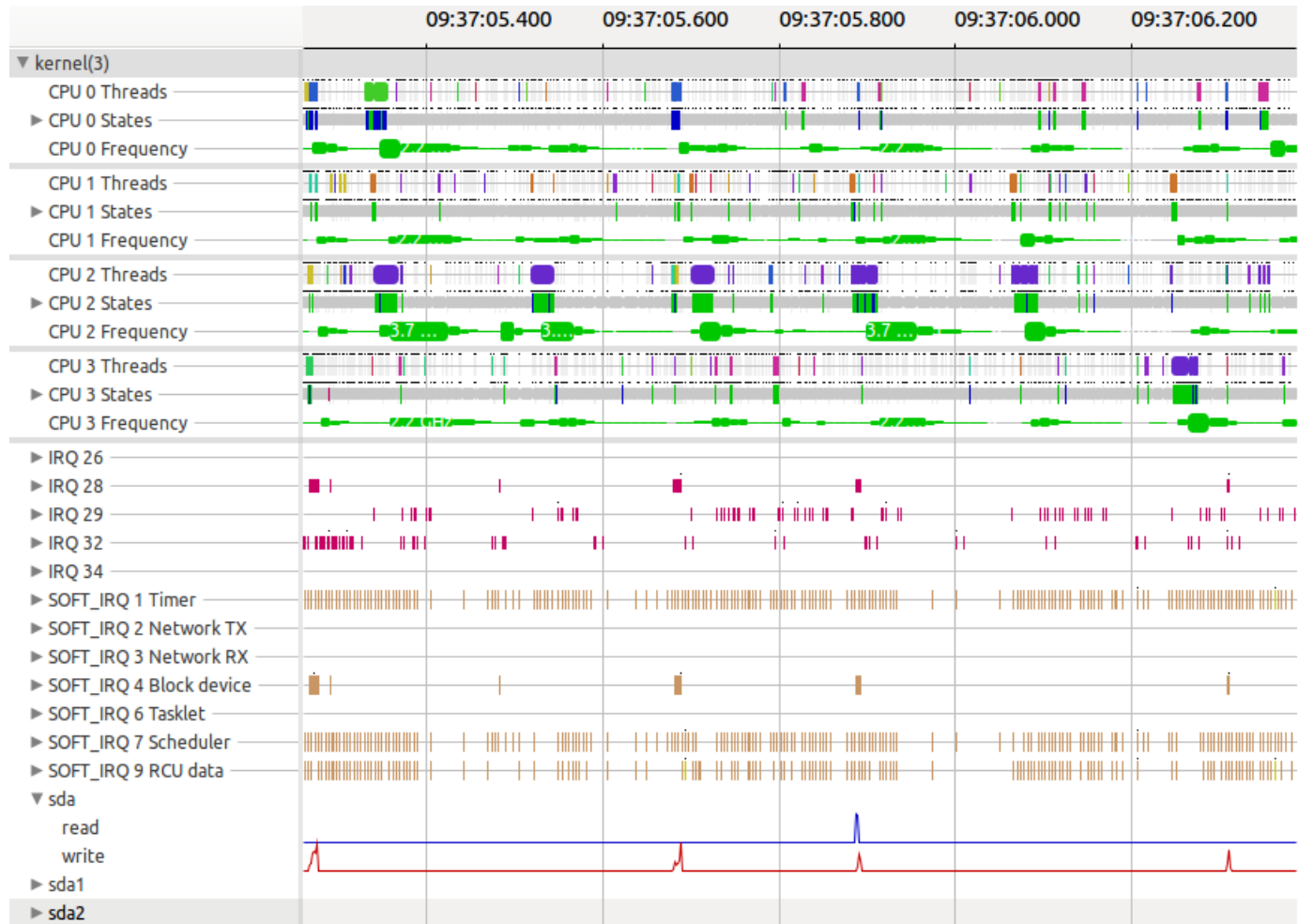
- Export experiments to archive
- JSON Trace format API
 - Unsorted trace
- PCAPng Support
- Data Driven Analysis improvements:
 - Documentation
 - Add "duration" support
 - MUCH better error reporting
- Support for PID and TID aspects to model

Upcoming

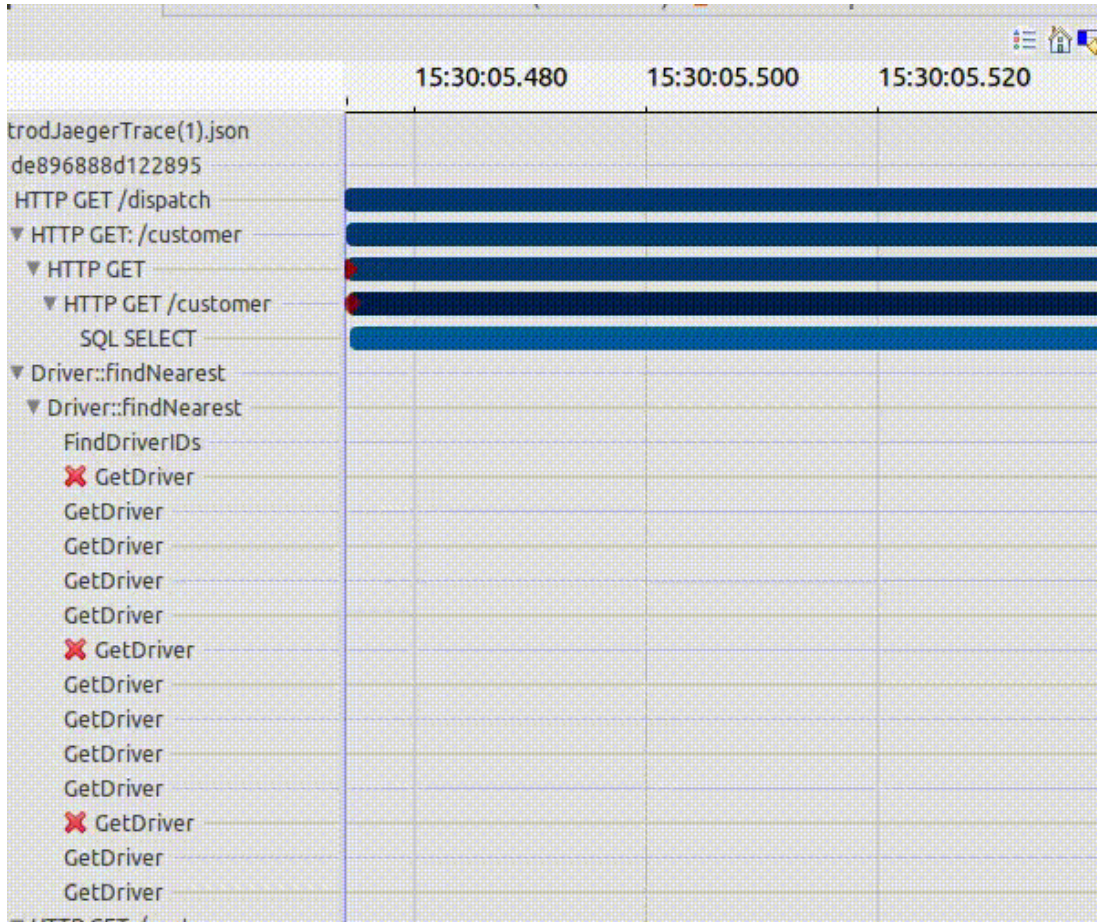


- Scripting support (a Genevieve and Bernd collaboration)
- Mixed mode views
- Tooltips improvement

Mixed mode views: XY + States + violin plot!

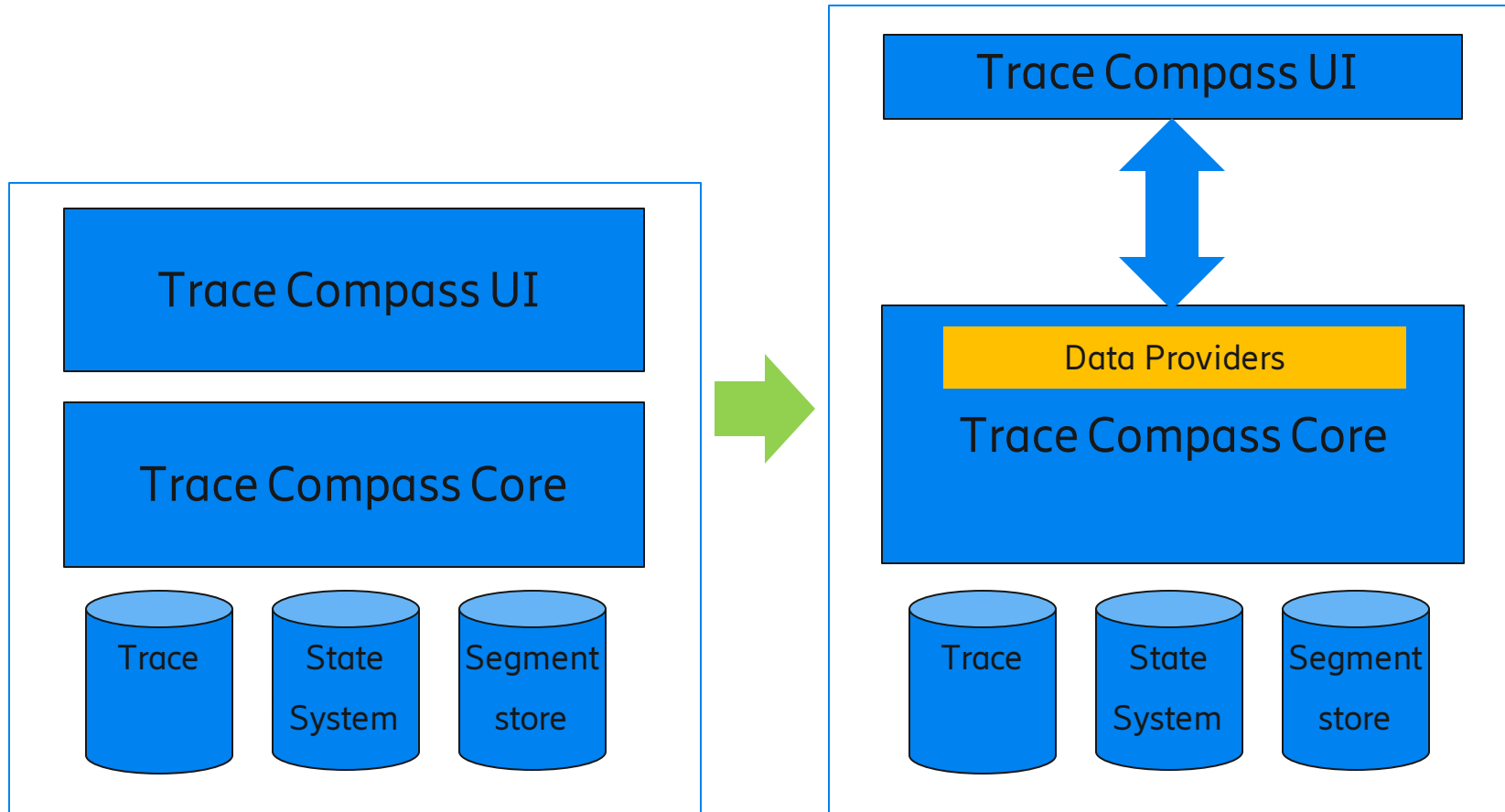


Tooltips

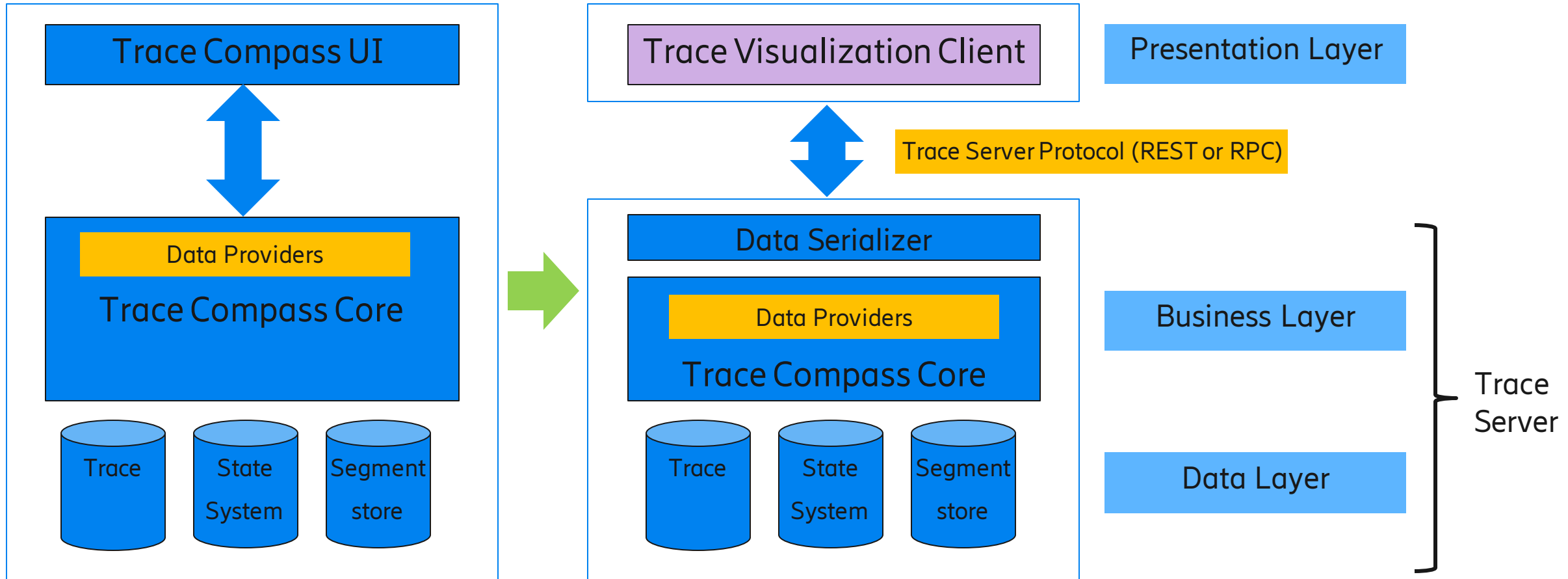


- Features:
 - Persistent
 - 'ctrl-c'able content
 - Navigable
 - Interactive

Trace Compass Architecture (current)



Trace Compass Architecture



Trace Server Protocol (TSP)



- Protocol built to handle communication between backend and frontend of trace viewer, allowing traces to reside and be analysed on the backend.
- Exchange visualization data between the backend and the frontend
- Integration with next generation IDEs (e.g. Theia or VS Code)
- <https://github.com/theia-ide/trace-server-protocol>

tsp-typescript-client



- Provide a TSP ready client to perform your requests
- Abstract the technology used (REST, HTTP)
- NPM package available
 - Use it in any Javascript/Typescript client
 - <https://www.npmjs.com/package/tsp-typescript-client>
- GitHub: <https://github.com/theia-ide/tsp-typescript-client>

Trace server update



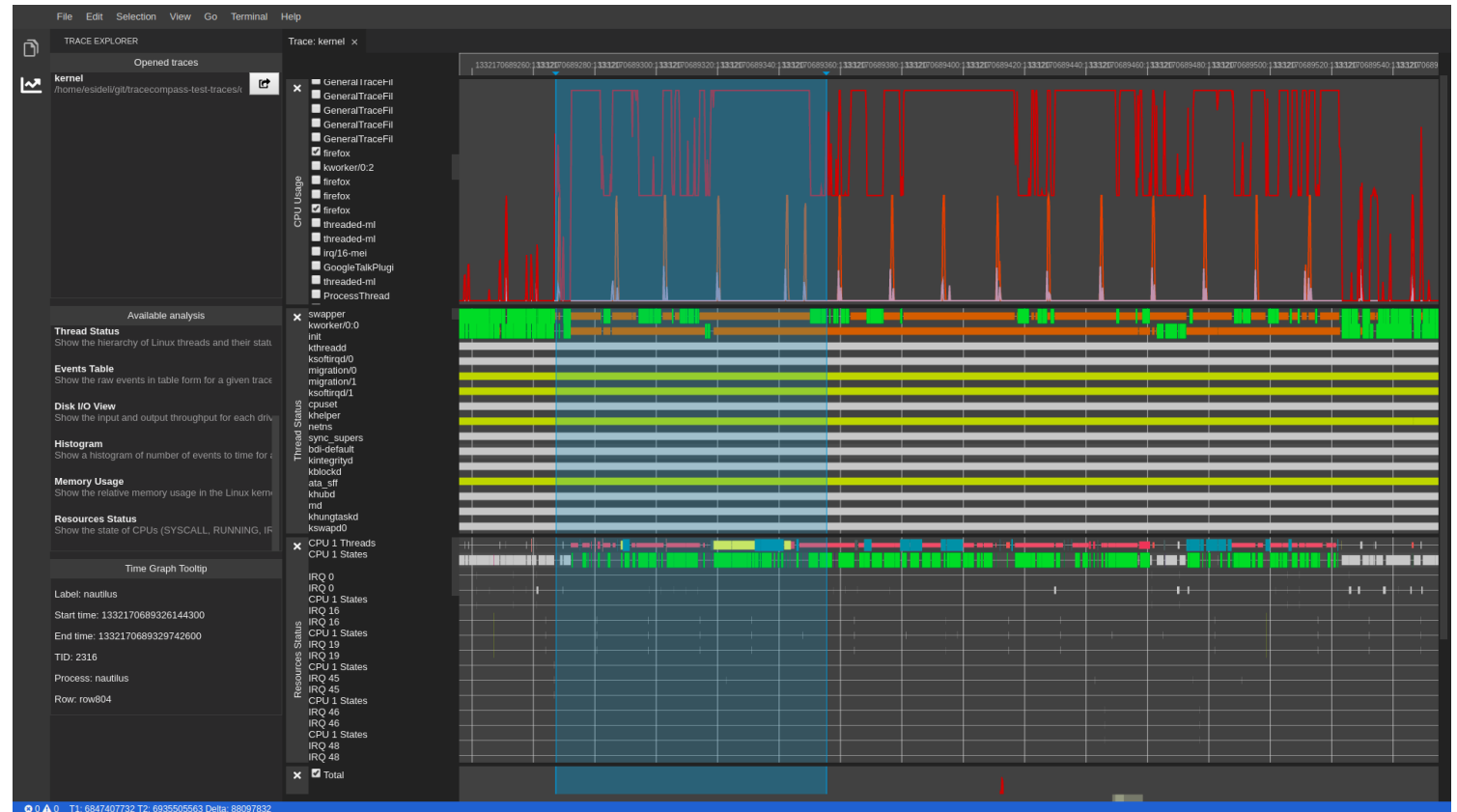
- Trace server based on Trace Compass core components
- Leverage all existing analysis from Trace Compass
- Change in the dataprovider API to offer more flexibility
- Available in the trace-server branch in the incubator and main repository

Theia Frontend Prototype



- Theia based prototype using the TSP
- Prototype available on GitHub (<https://github.com/delislesim/theia-trace-extension/tree/theiaCompass>)

- Opportunity for a new UI/UX
- React
- Chart.js
- New timegraph library



Demo



Next steps

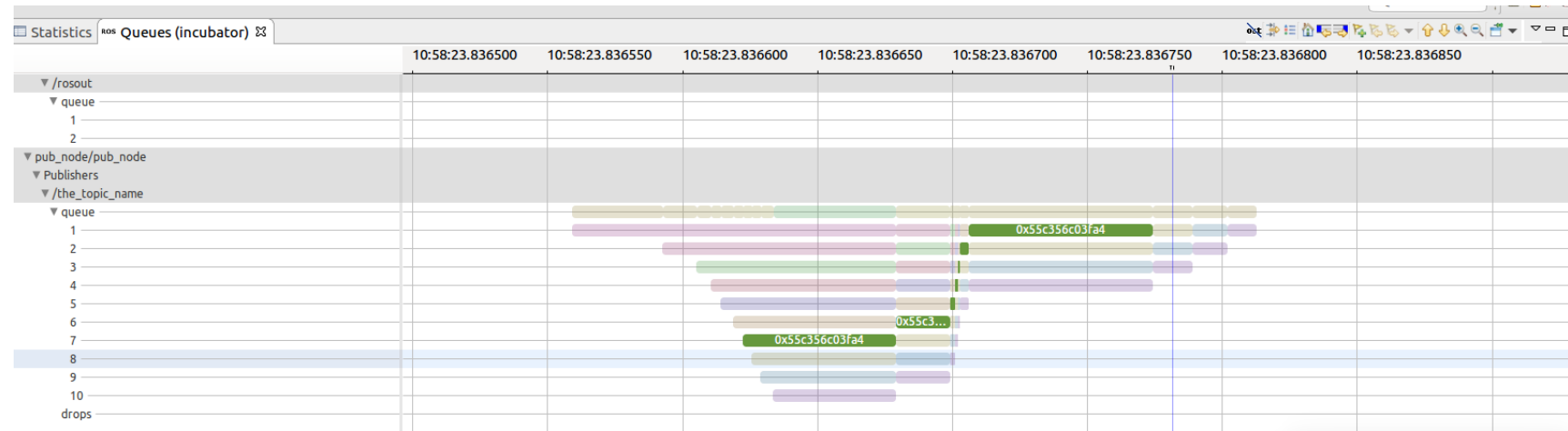


- Tree support in charts
- Configuration options (JSON)
- Tooltips on graphs
- Time formatting
- Annotations
- Improve performance
- Automatically launch the trace server when opening traces
- ... and more

Incubator and other updates



- ROS trace support!!! New Committer!
- LSP integration on filters
- Event Count Analysis
- File access view
- Trace server improvements
- Trace Event improvements
- More trace parsers:
 - Check the [wiki](#)
 - Analyses too



For our extenders and devs



- Please note an interesting feature: **future events**
 - A promise that an event will occur later
 - Useful for out of order events
 - Useful for events with durations implicit or explicit
- Give XML a new try
- Contact us (Give Feedback/Report Bugs)
- You the real MVP



Q & A

Contact



- Online
 - Mailing list: tracecompass-dev@eclipse.org
 - IRC: oftc.net #tracecompass
- Offline
 - We are still human. We talk!

