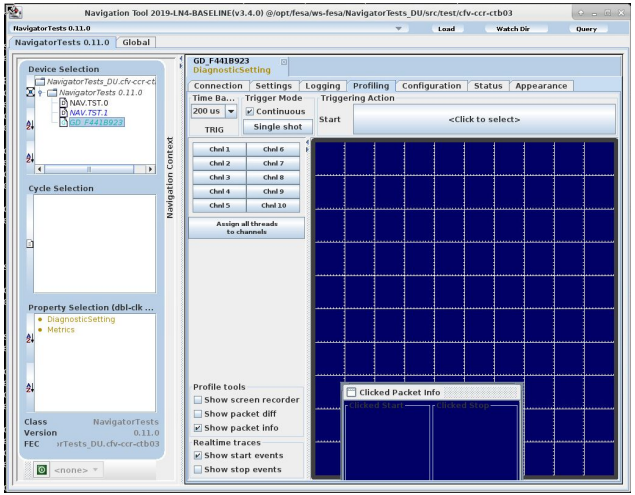
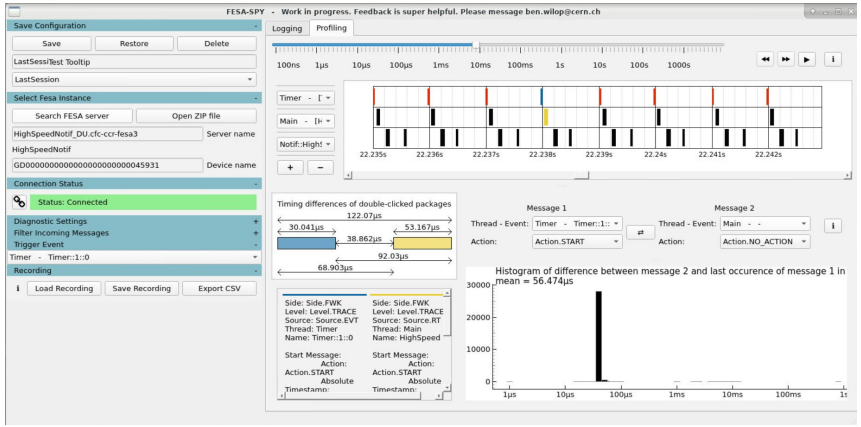




FESA Spy

CTTB Frontend Software Development Forum 22.05.2024

Ben Wilop - BE-CSS-GTA

Agenda

Introduction

Live Demo

Description of the Application & its Functionality

Limitations

Coming Up Next

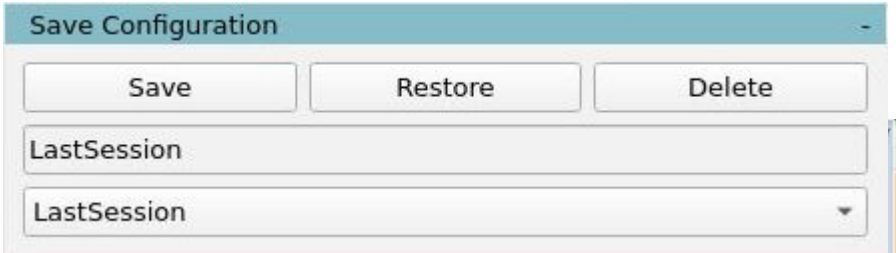
Introduction: FESA Spy

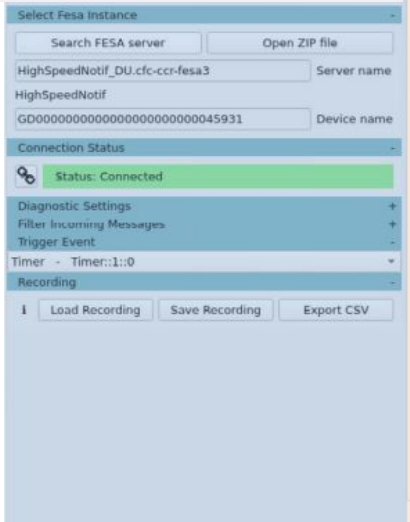
- An expert GUI to improve the diagnostics functionality of the old FESA Navigator
- Functionality:
  - Receive real-time diagnostics from FESA instance
  - Display diagnostic messages as logs
  - Oscilloscope view of events
  - Statistics of events, and jitter between events

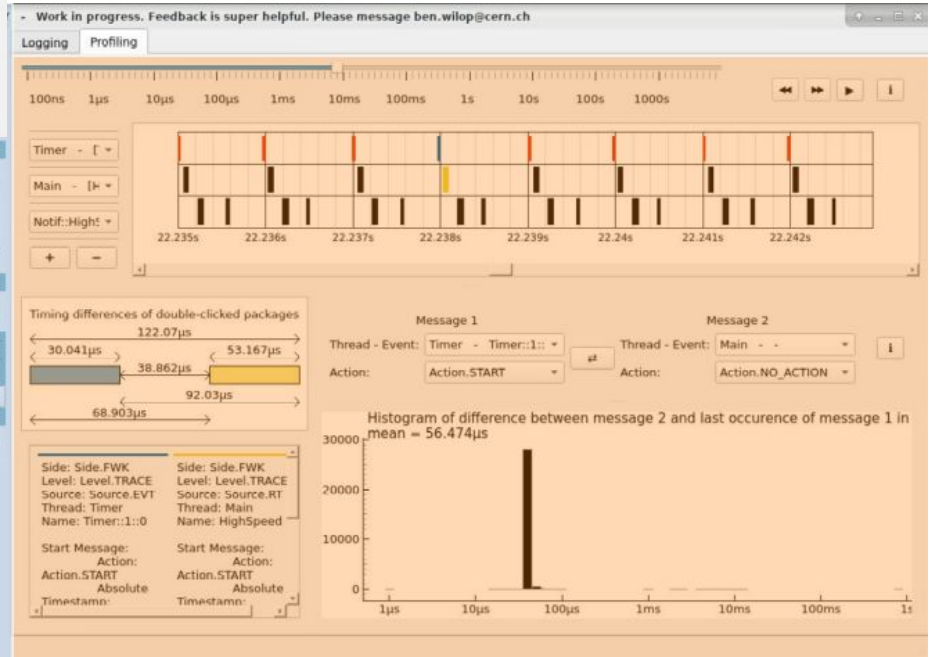
Live Demo

Try out the beta at: **`/mcr/bin/fesaspy`**

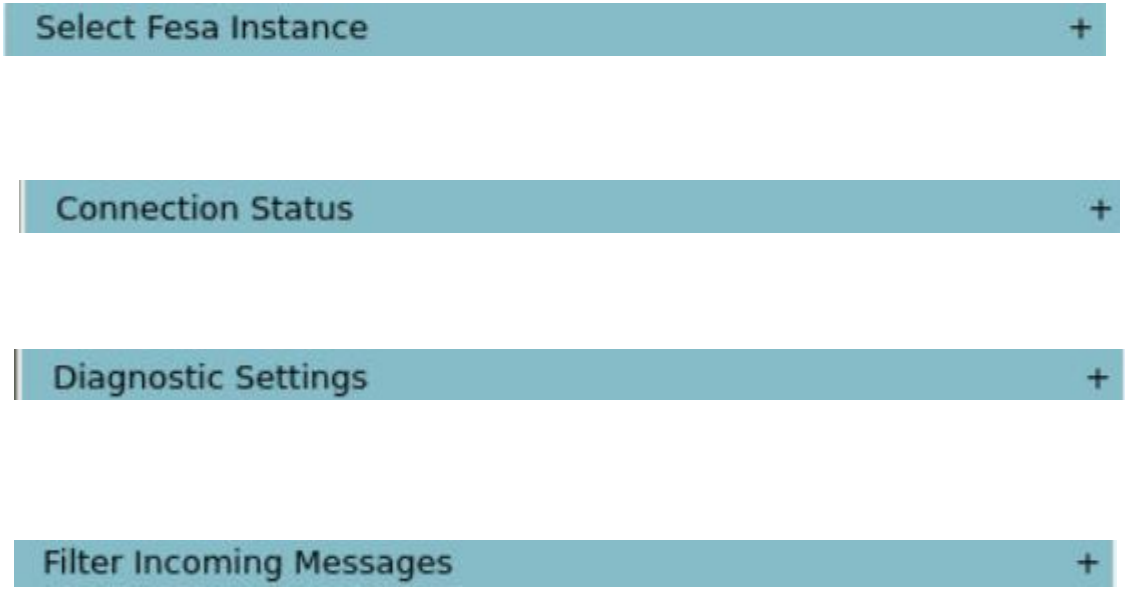
Customizable layout that can be saved







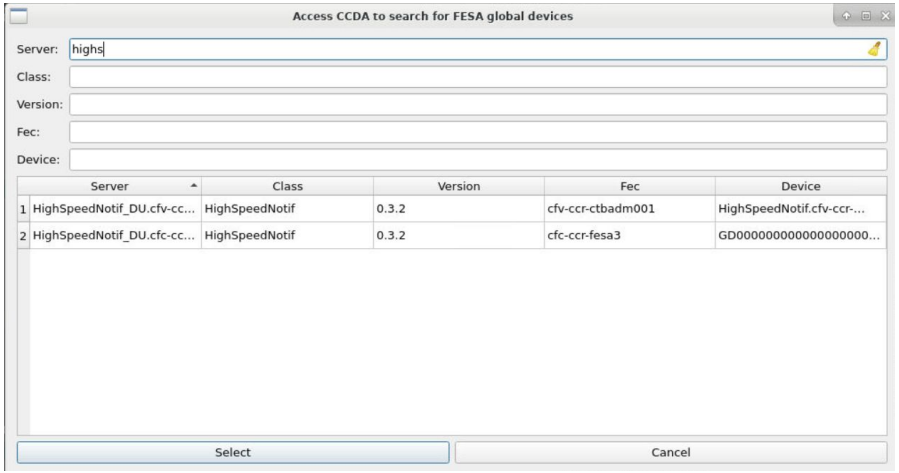
Choose Diagnostics



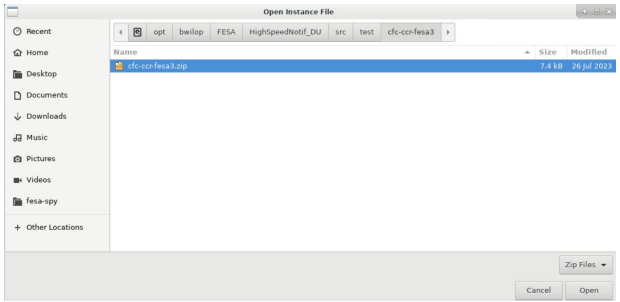
Select Fesa instance

1. Enter server name + global device

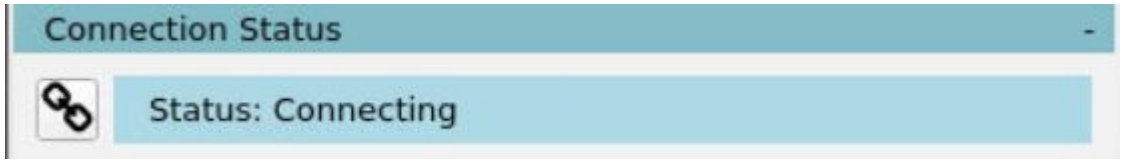
2. Search CCDB

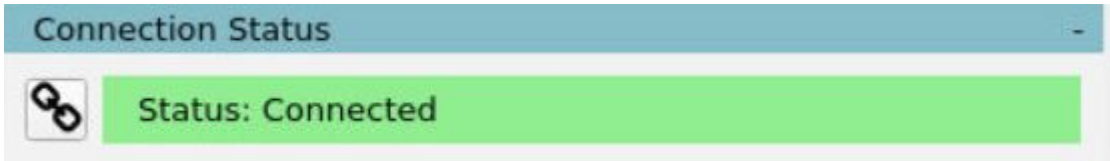


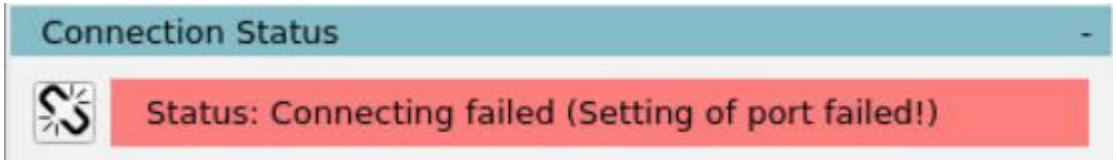
3. Open FESA-Plugin ZIP file



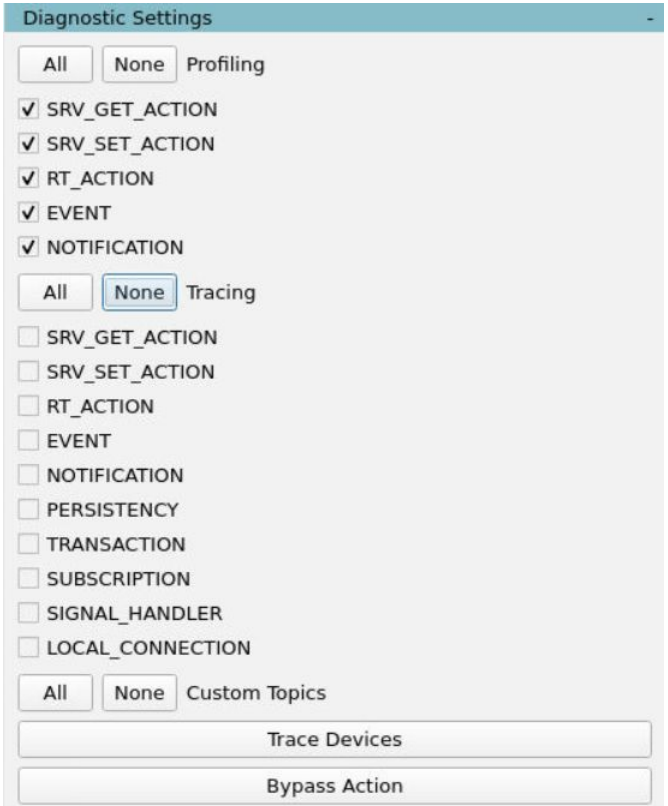
Connection status

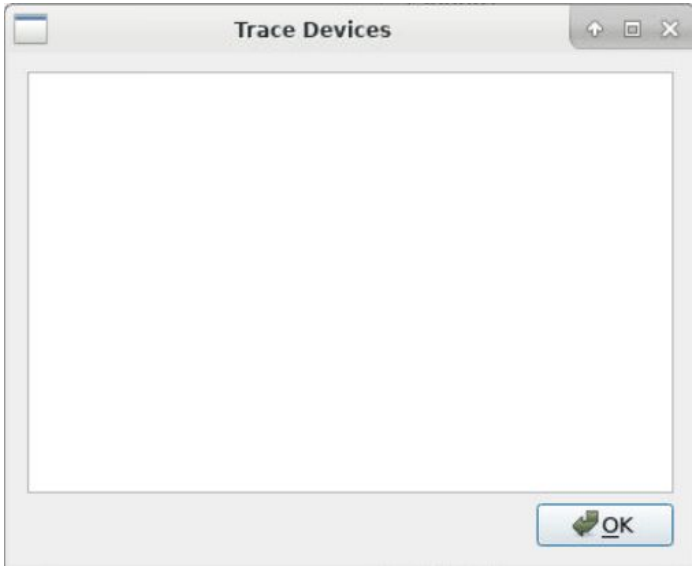






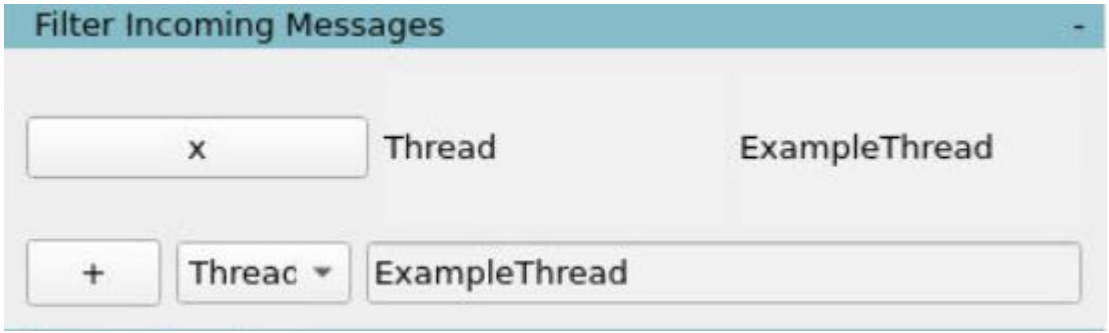
Diagnostic settings (server side)





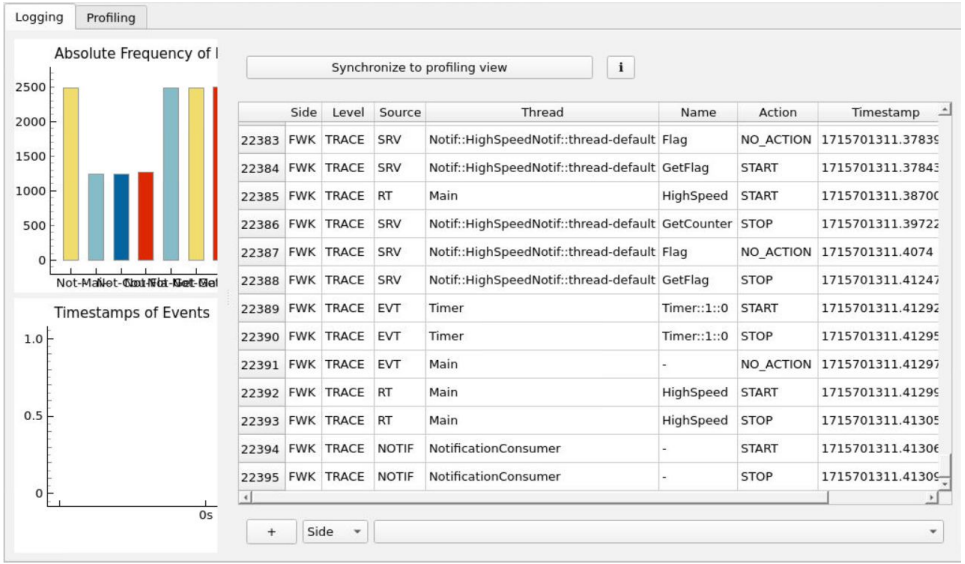
Filter incoming messages (local)

- Delete all messages that do not match at least one filter (“or” filter)
- Avoids memory problems



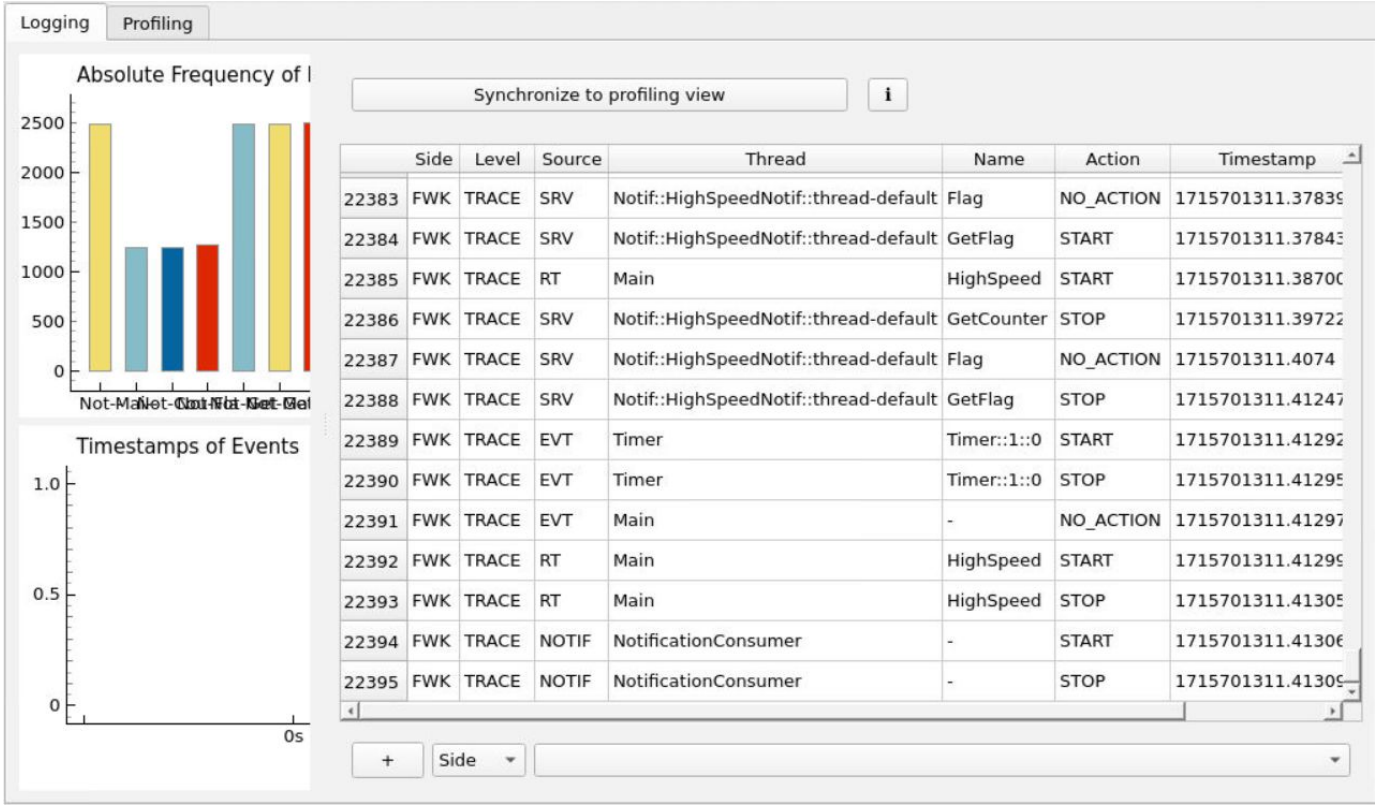
Investigate Diagnostics

Logging

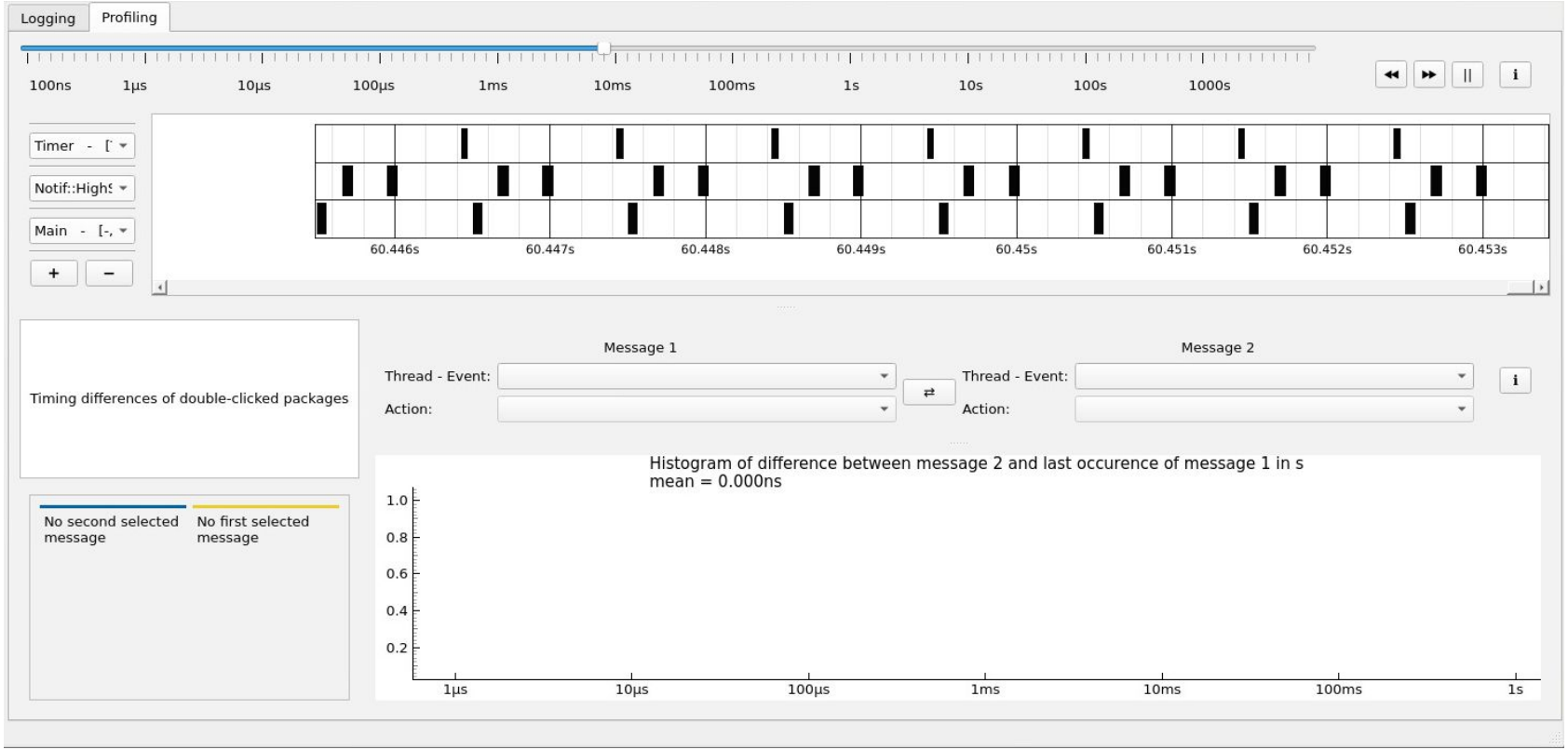


Profiling

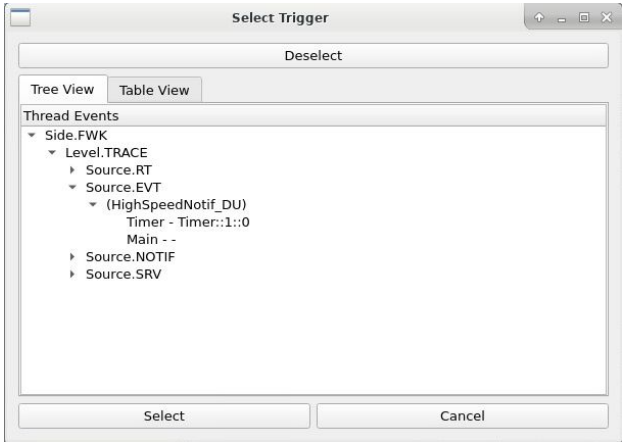
Logging

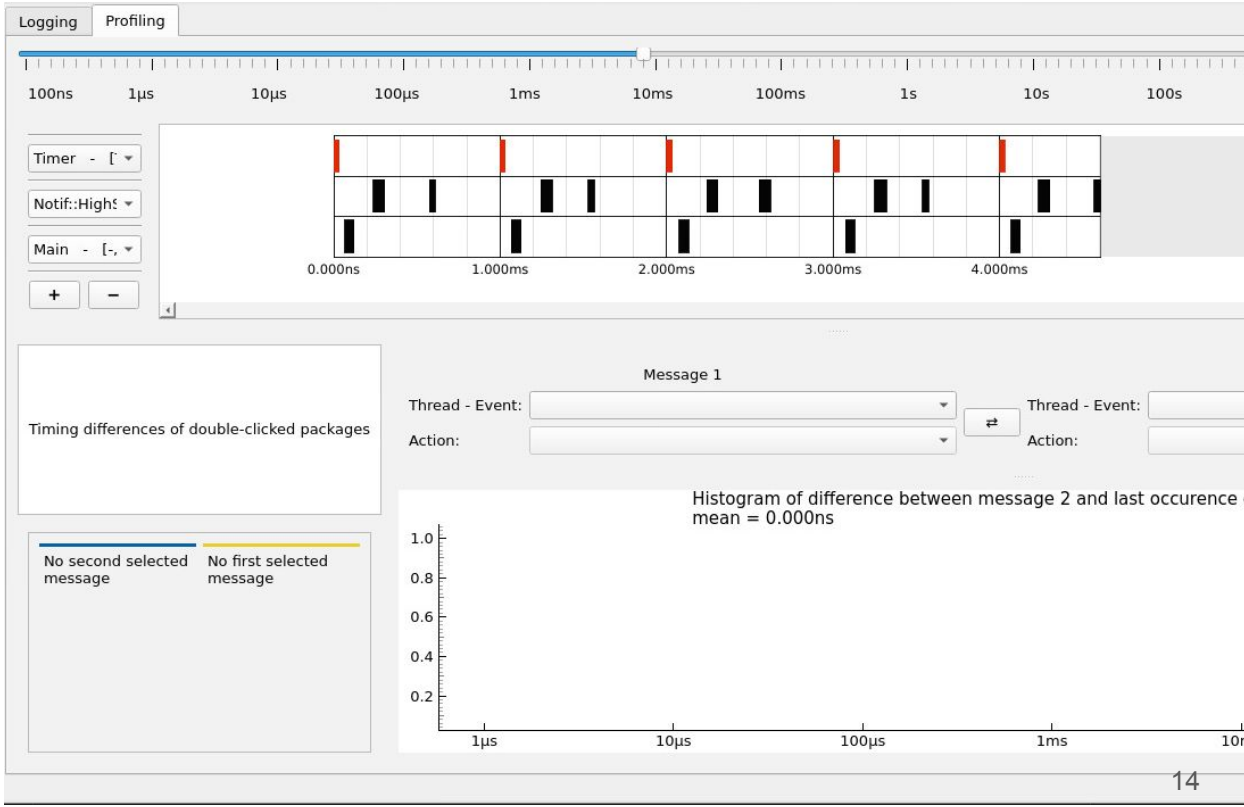

Logging
Profiling
Absolute Frequency of
2500
2000
1500
1000
500
0
Timestamps of Events
1.0
0.5
0
0s
Synchronize to profiling view
i
Side
Level
Source
Thread
Name
Action
Timestamp
22383 FWK TRACE SRV Notif::HighSpeedNotif::thread-default Flag NO_ACTION 1715701311.3783
22384 FWK TRACE SRV Notif::HighSpeedNotif::thread-default GetFlag START 1715701311.3784
22385 FWK TRACE RT Main HighSpeed START 1715701311.3870
22386 FWK TRACE SRV Notif::HighSpeedNotif::thread-default GetCounter STOP 1715701311.3972
22387 FWK TRACE SRV Notif::HighSpeedNotif::thread-default Flag NO_ACTION 1715701311.4074
22388 FWK TRACE SRV Notif::HighSpeedNotif::thread-default GetFlag STOP 1715701311.4124
22389 FWK TRACE EVT Timer Timer::1::0 START 1715701311.4129
22390 FWK TRACE EVT Timer Timer::1::0 STOP 1715701311.4129
22391 FWK TRACE EVT Main - NO_ACTION 1715701311.4129
22392 FWK TRACE RT Main HighSpeed START 1715701311.4129
22393 FWK TRACE RT Main HighSpeed STOP 1715701311.4130
22394 FWK TRACE NOTIF NotificationConsumer - START 1715701311.4130
22395 FWK TRACE NOTIF NotificationConsumer - STOP 1715701311.4130
+
Side

Profiling: Newest message

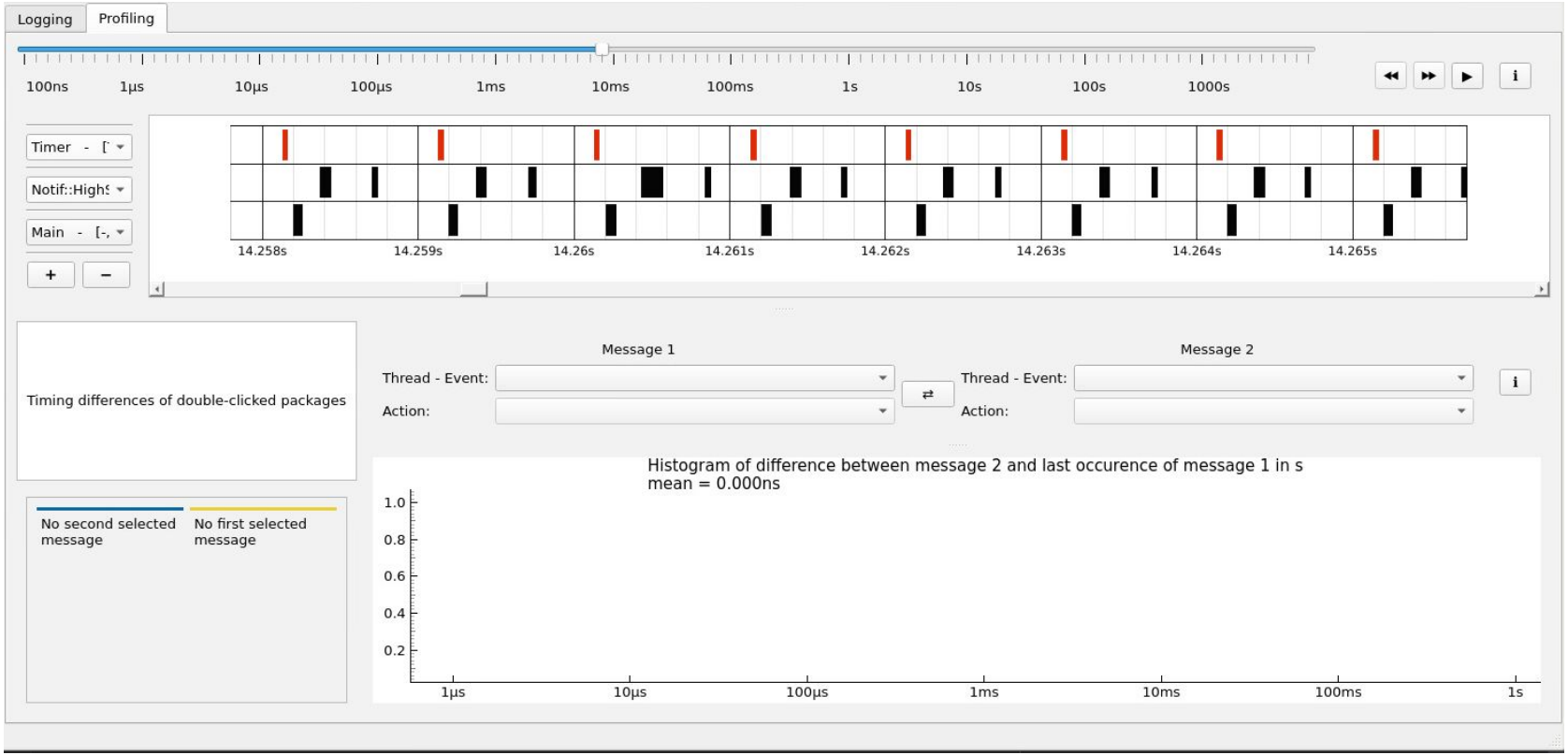


Profiling: Locked on Trigger

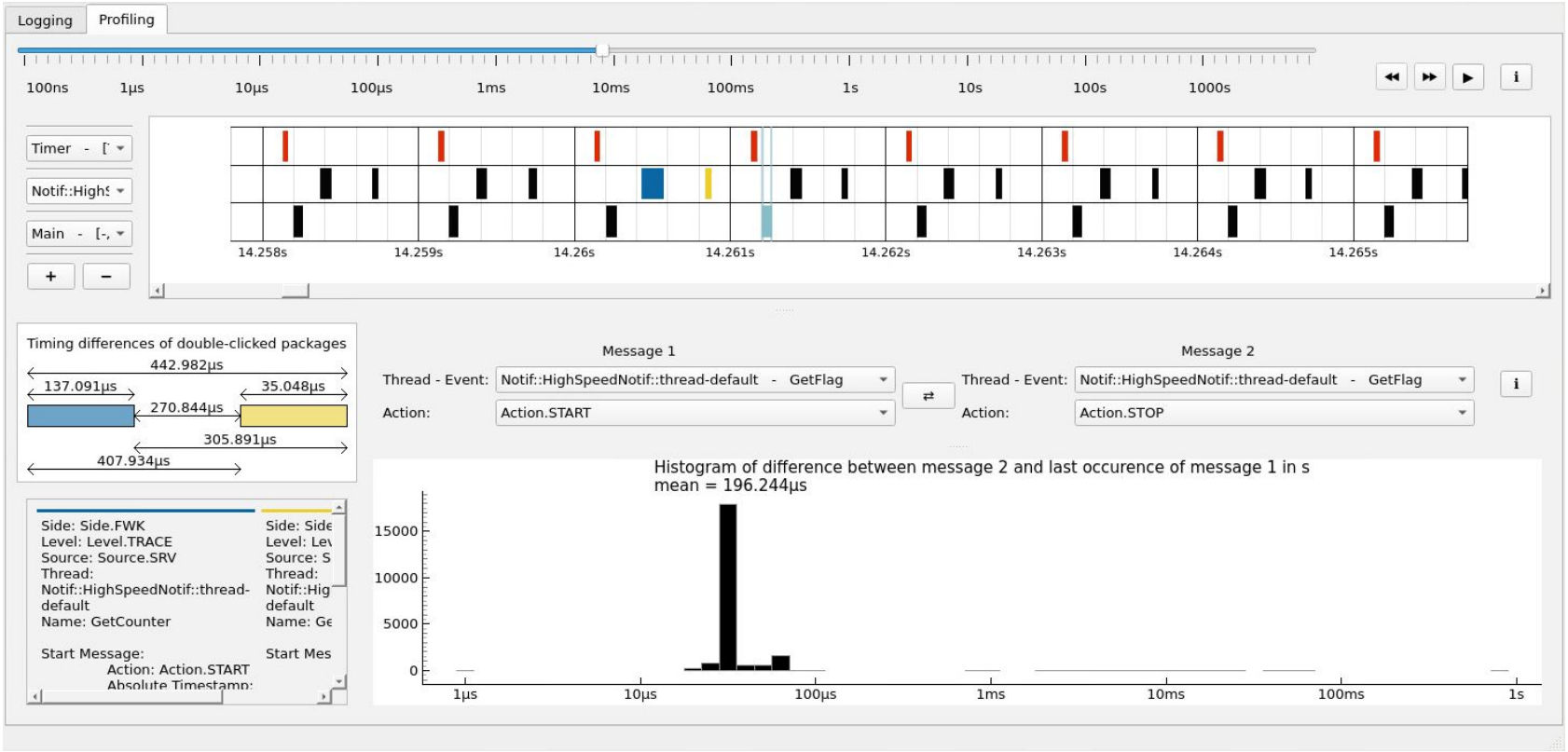




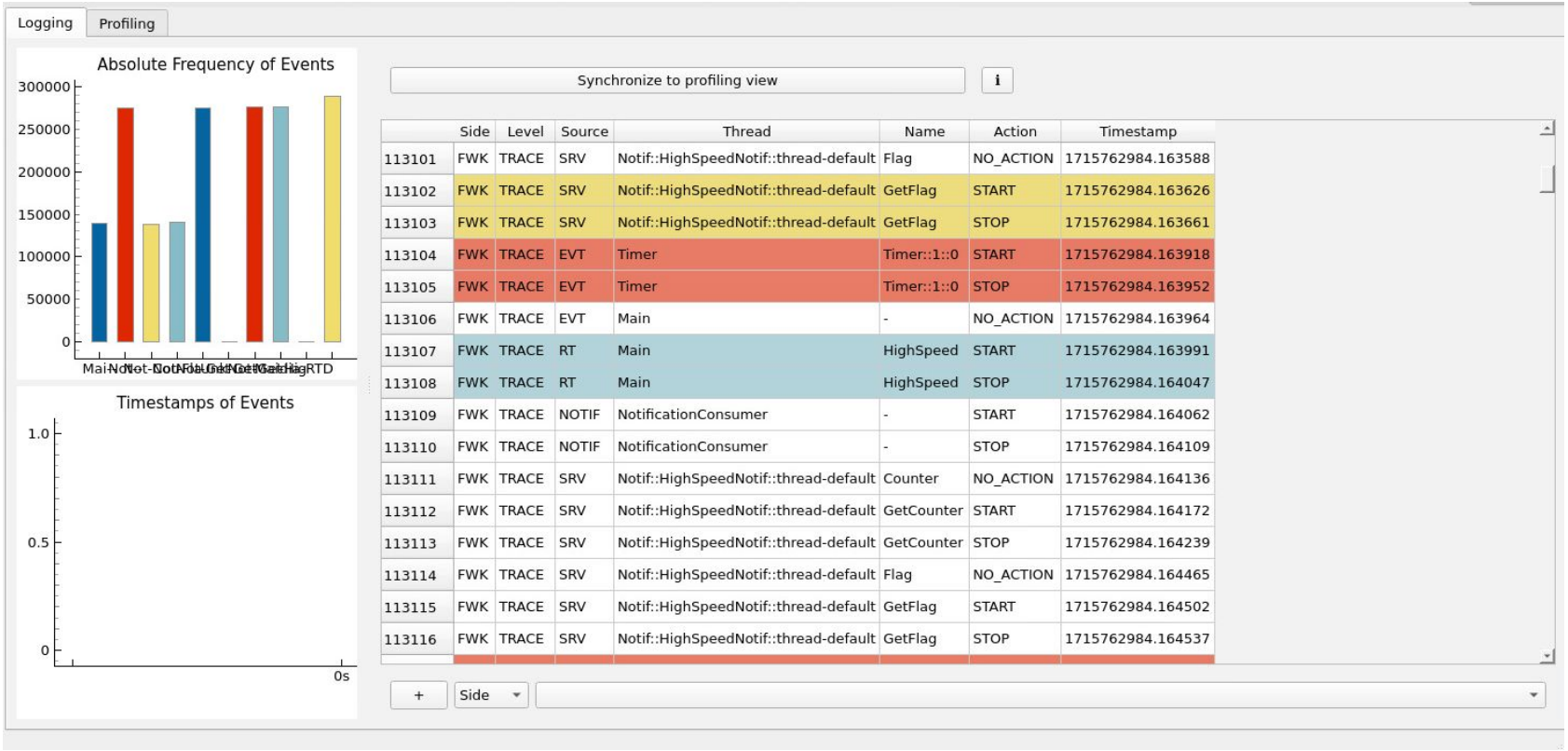
Profiling: History



Profiling: Inspect selected messages



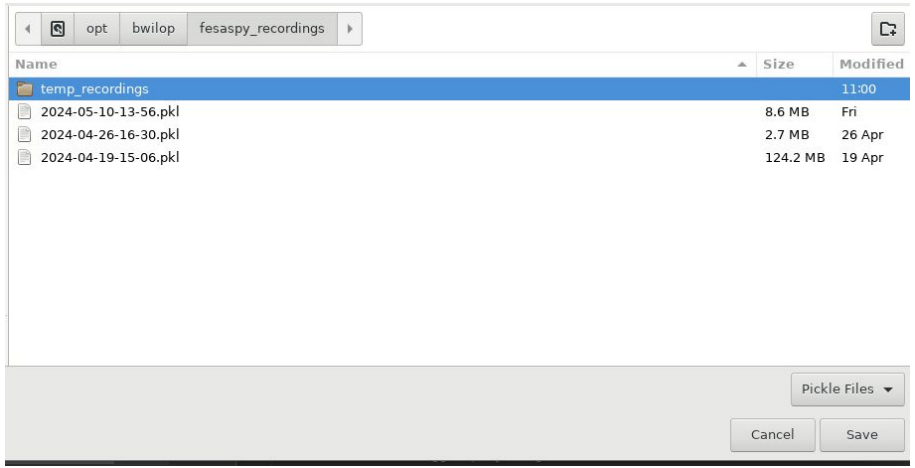
Connection Logging <---> Profiling

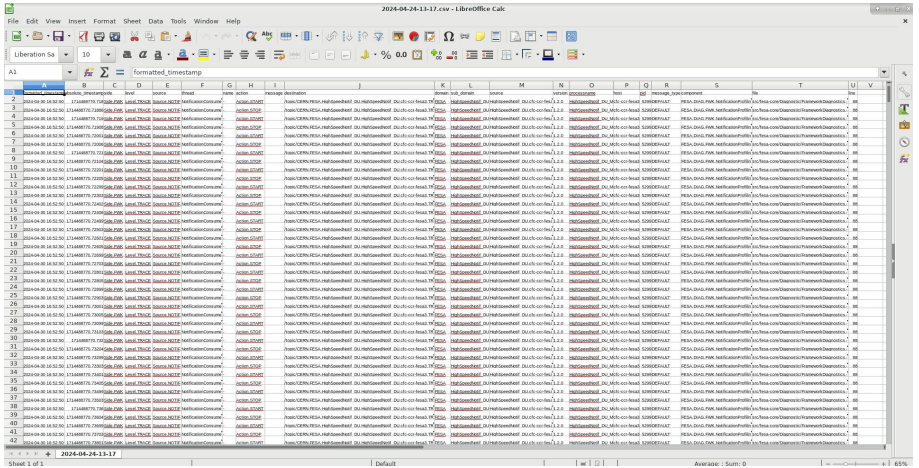


	Side	Level	Source	Thread	Name	Action	Timestamp
113101	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	Flag	NO_ACTION	1715762984.163588
113102	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetFlag	START	1715762984.163626
113103	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetFlag	STOP	1715762984.163661
113104	FWK	TRACE	EVT	Timer	Timer::1::0	START	1715762984.163918
113105	FWK	TRACE	EVT	Timer	Timer::1::0	STOP	1715762984.163952
113106	FWK	TRACE	EVT	Main	-	NO_ACTION	1715762984.163964
113107	FWK	TRACE	RT	Main	HighSpeed	START	1715762984.163991
113108	FWK	TRACE	RT	Main	HighSpeed	STOP	1715762984.164047
113109	FWK	TRACE	NOTIF	NotificationConsumer	-	START	1715762984.164062
113110	FWK	TRACE	NOTIF	NotificationConsumer	-	STOP	1715762984.164109
113111	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	Counter	NO_ACTION	1715762984.164136
113112	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetCounter	START	1715762984.164172
113113	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetCounter	STOP	1715762984.164239
113114	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	Flag	NO_ACTION	1715762984.164465
113115	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetFlag	START	1715762984.164502
113116	FWK	TRACE	SRV	Notif::HighSpeedNotif::thread-default	GetFlag	STOP	1715762984.164537

Save data

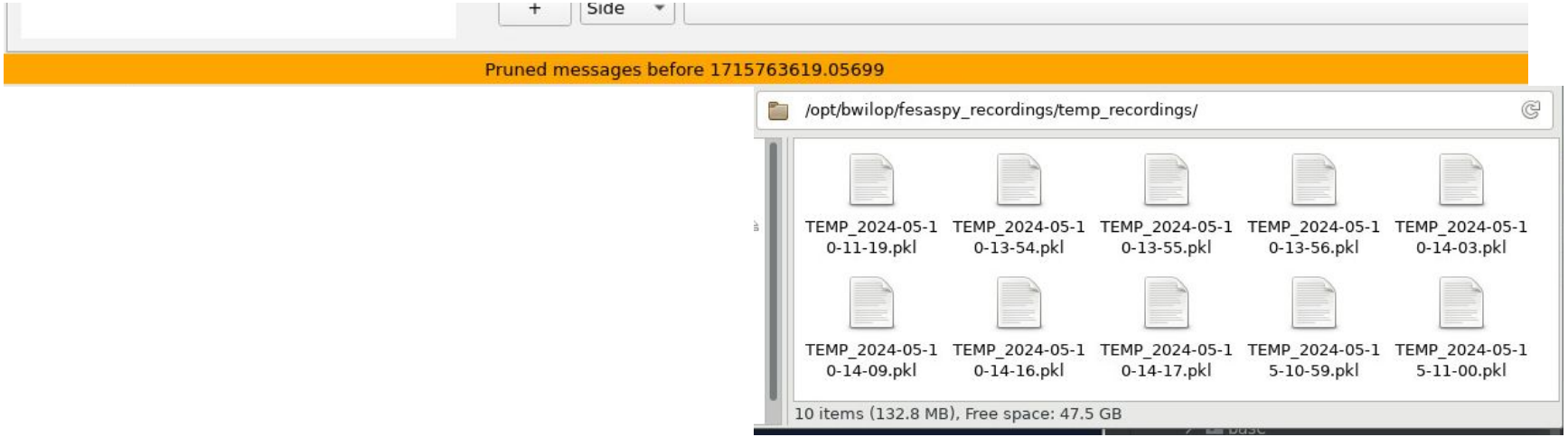

Recording
Load Recording
Save Recording
Export CSV


opt
bwilop
fesaspy_recordings
Name
Size
Modified
temp_recordings
11:00
2024-05-10-13-56.pkl
8.6 MB
Fri
2024-04-26-16-30.pkl
2.7 MB
26 Apr
2024-04-19-15-06.pkl
124.2 MB
19 Apr
Pickle Files
Cancel
Save



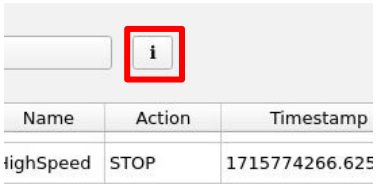
Limitations

- The functionality of the FESA Spy is based on the information available from the FESA process.
- Data management:
  - We save 4M messages, then truncate to 2M
  - Deleted messages automatically saved as recording (rolling buffer of 10)

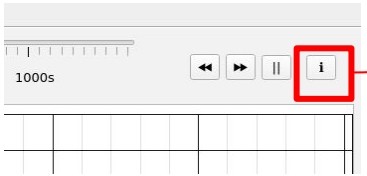


Support

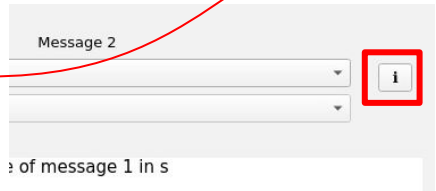
- Info buttons



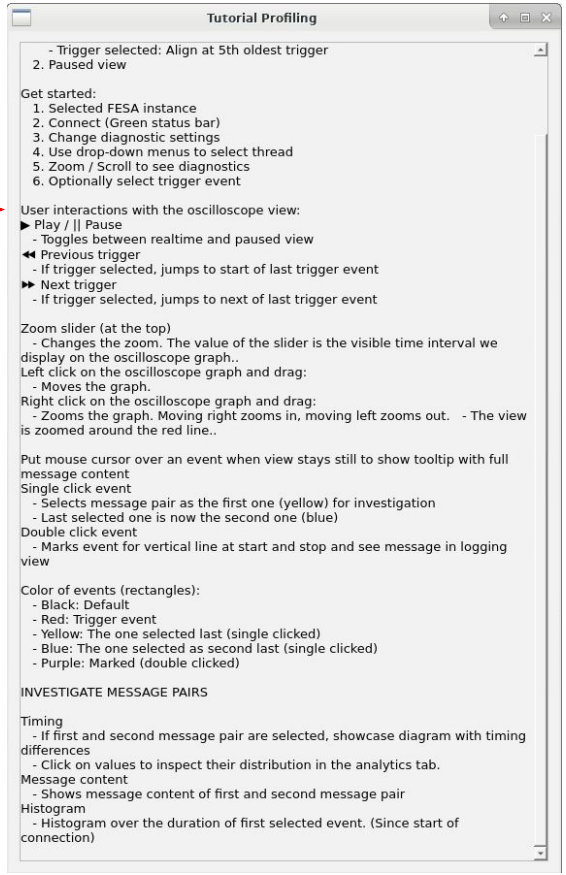
Logging



Profiling



Analytics



- User manual:

  https://acc-py.web.cern.ch/gitlab/acc-co/fesa/extra/fesa-spy/docs/master/

- Questions, remarks, issues, feature requests: **fesa-support@cern.ch**

Coming Up Next

Integration to the FESA Eclipse Plugin: very soon

Feature refinements & bugfixes

Inspect memory of the device fields (no release date yet)

Thank You for Your Attention!

Try it out (beta version) at: **`/mcr/bin/fesaspy`**

Feedback welcome: **fesa-support@cern.ch**

Questions?