

Snailwatch: Did You Make It Slow?

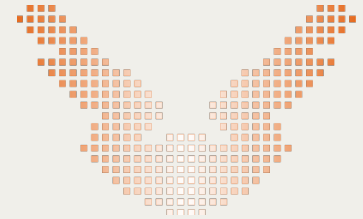
Stanislav Böhm, Jakub Beránek
IT4Innovations

<https://github.com/IT4Innovations/snailwatch>

scalasca



Score-P
Scalable performance measurement
infrastructure for parallel codes



epik_bt-mz_B_32x12_sum.summary.cube.gz

Analysis Configuration | Collection Log | Summary | **Bottom-up** | Caller/Callee | Top-down Tree | Platform

Grouping: Function / Call Stack

Function / Call Stack	CPU Time by Utilization					Spin Time	Overhead Time	Wait Time	Inactive Time	Preemption
	Idle	Poor	Ok	Ideal	Over					
updateBusinessAccount	7.915s					0s	0s	0s	0.055s	934
mainSomp\$parallel_for@269	7.915s					0s	0s	0s	0.055s	934
kmp_invoke_microfas	7.915s					0s	0s	0s	0.042s	815
updateBusinessAccount	0s					0s	0s	0s	0.013s	119
updateCustomerAccount	7.766s					0s	0s	0s	0.052s	1,111
kmpc_atomic_fixed8_add	2.772s					0s	0s	0s	0.014s	262
kmpc_critical	0s					2.021s	0s	0s	0.014s	262

Thread: OMP Worker Thread #2 (TID: 12732), OMP Worker Thread #3 (TID: 12732), rtmtest_openmp (TID: 12732), OMP Worker Thread #1 (TID: 12732), CPU Time

OpenMP Implicit Barrier Synchronization Time

Online description: Examine the times that each thread spends waiting at each implicit barrier, and if there is a significant imbalance then investigate whether a schedule clause is appropriate. Note that dynamic and guided schedules may require more OpenMP Thread Management time than at all schedules. Consider whether it is possible to employ the `wait` clause to reduce the number of implicit barrier synchronizations.

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Trace View - /Vampir/Large/wrf.otf - Vampir

Timeline: 0 s to 208.364 s

Metric: PAPI_FP_OPS

Process 0 to Process 15

0 G, 1 G, 2 G, 3 G

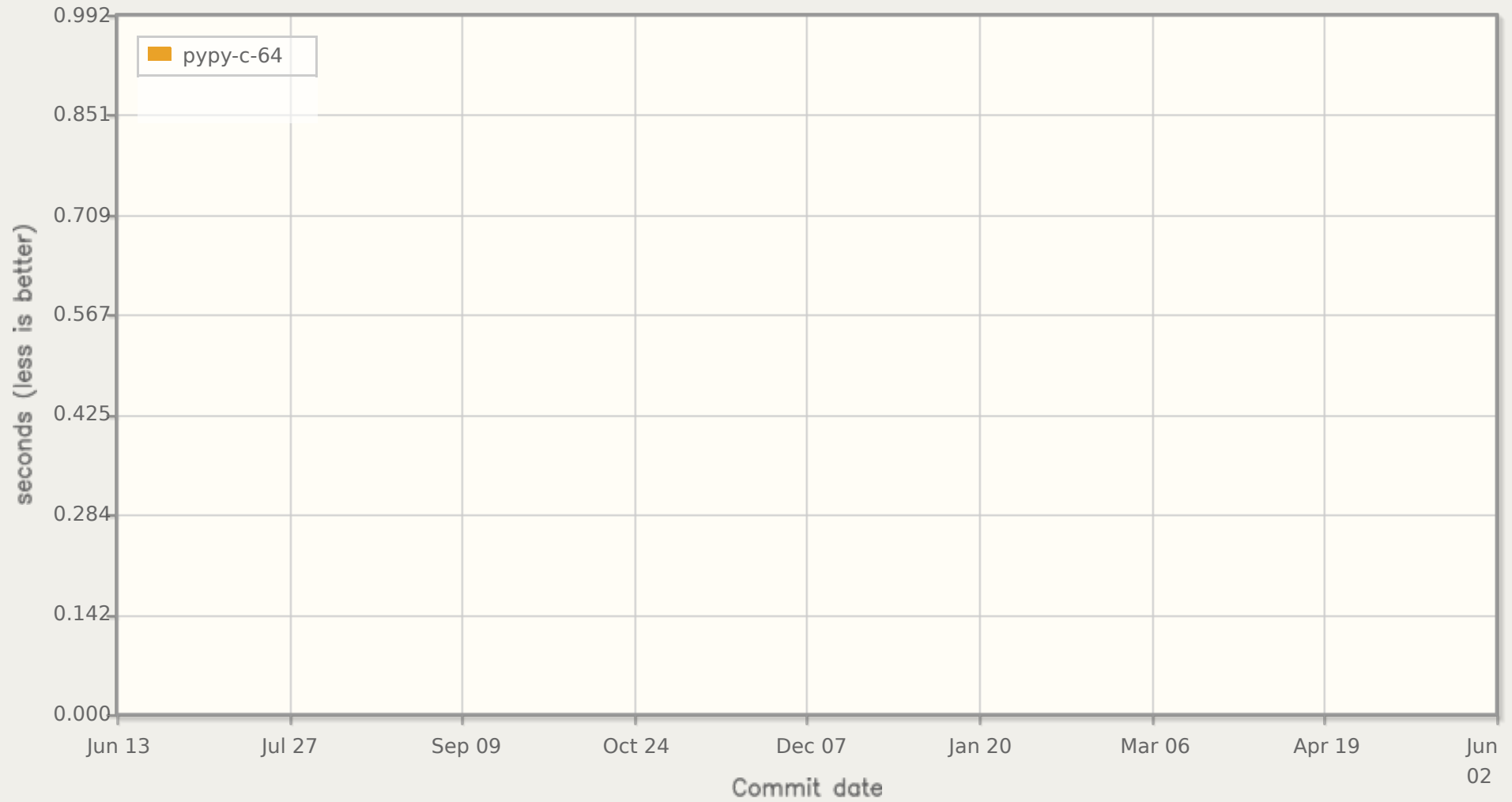
129.5 s

17.3s

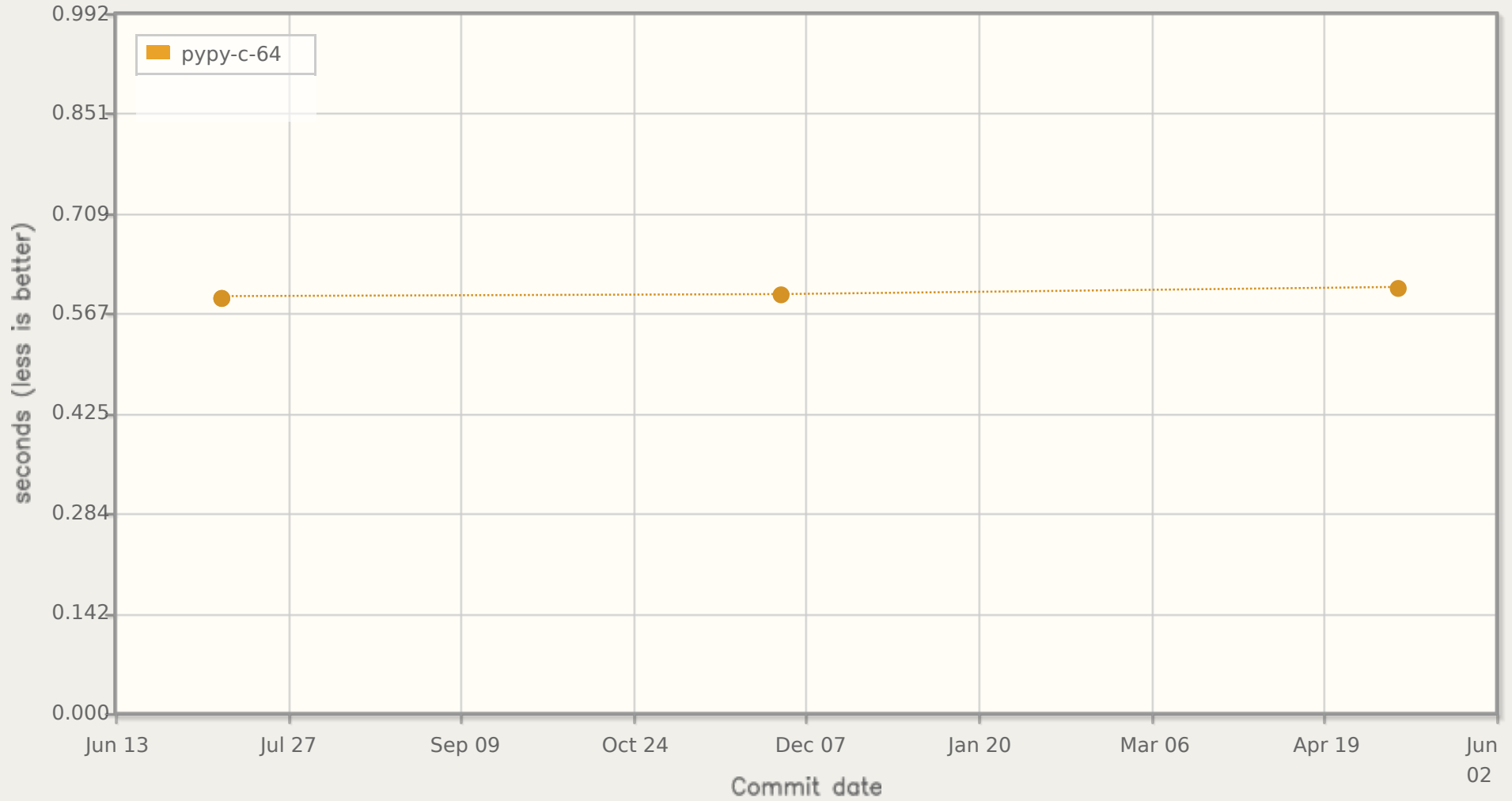
17.3s

± 0.3

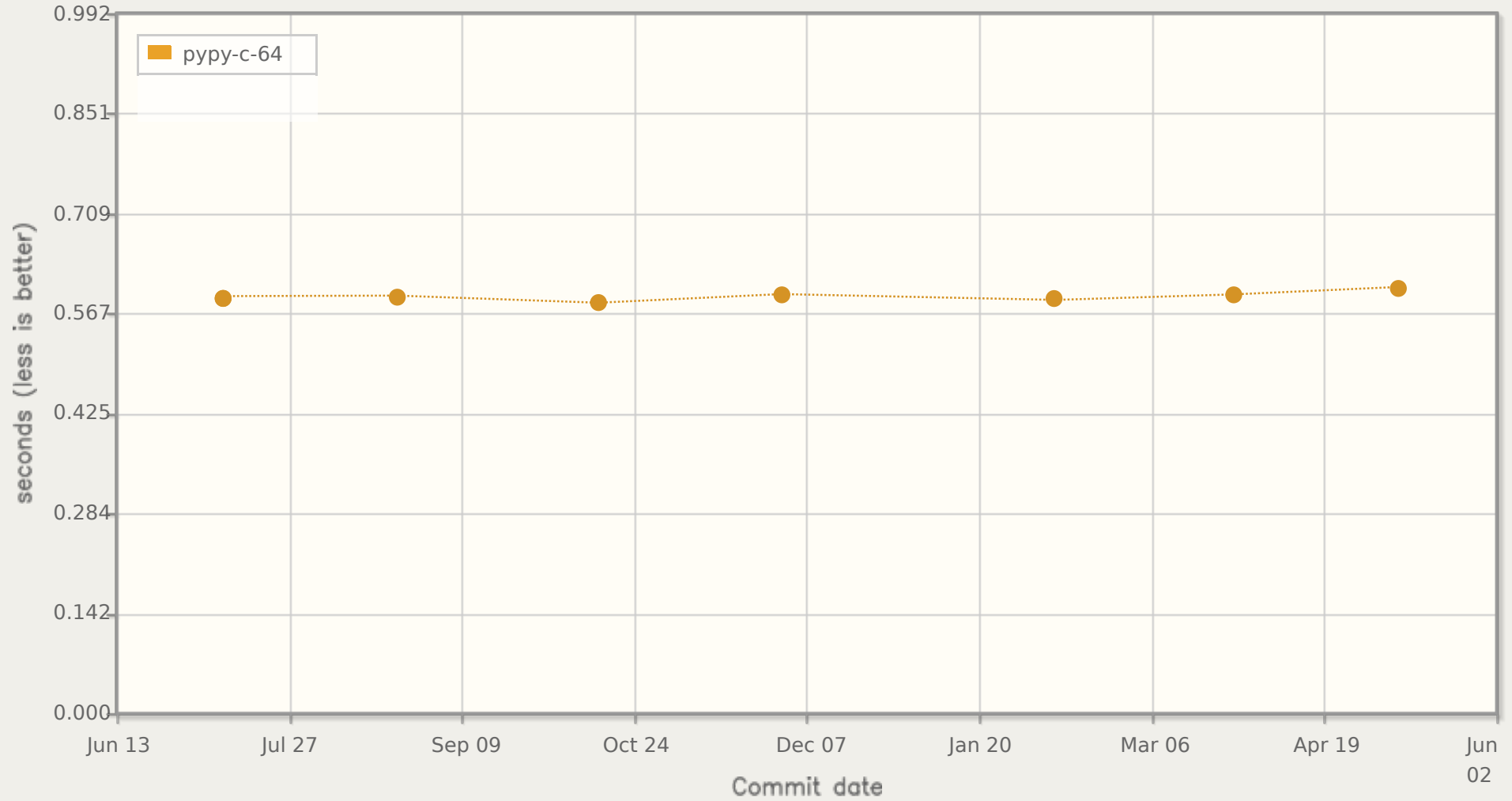
genshi_xml



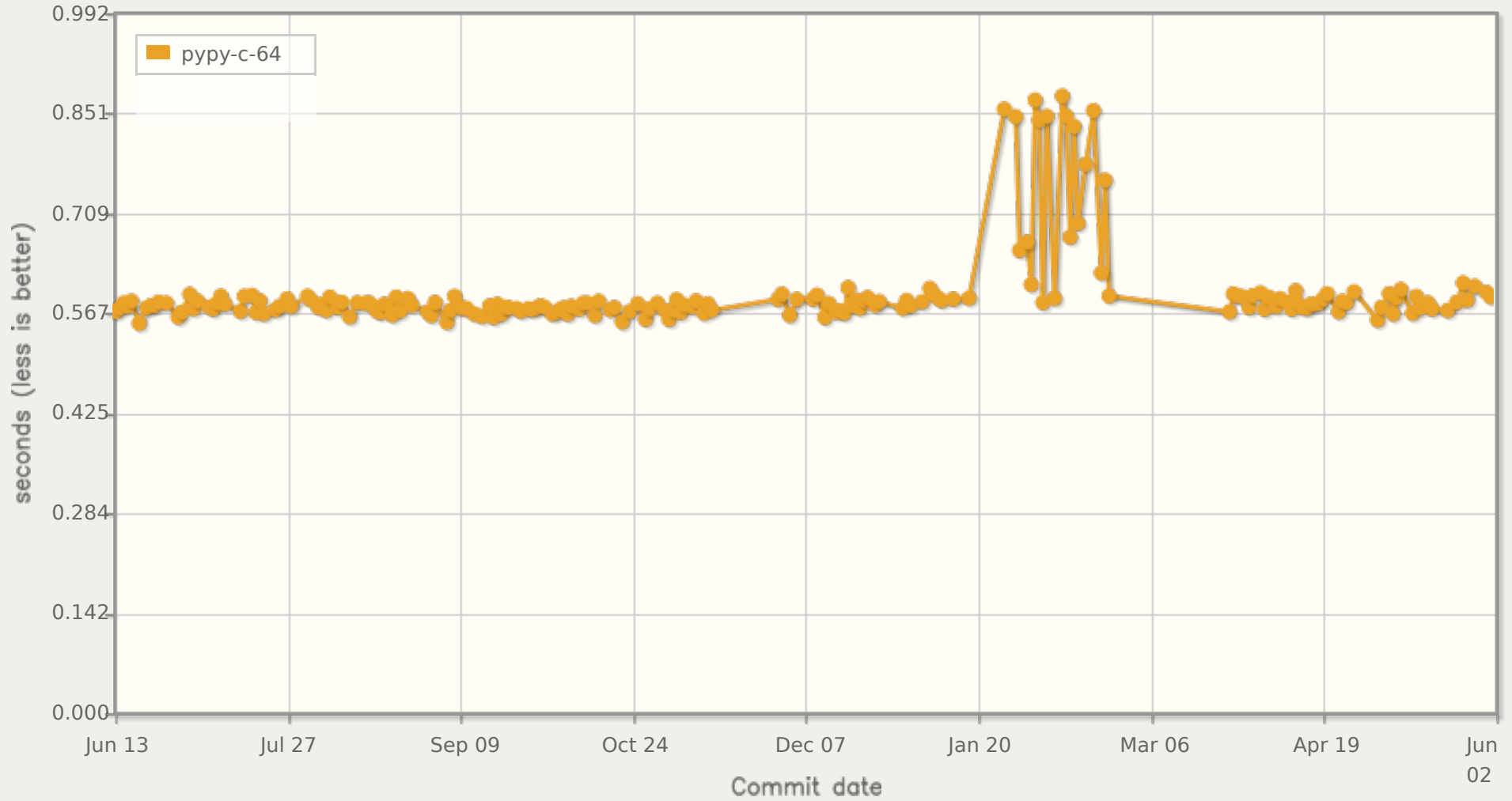
genshi_xml



genshi_xml



genshi_xml



commits

commits

×

benchmarks

commits

×

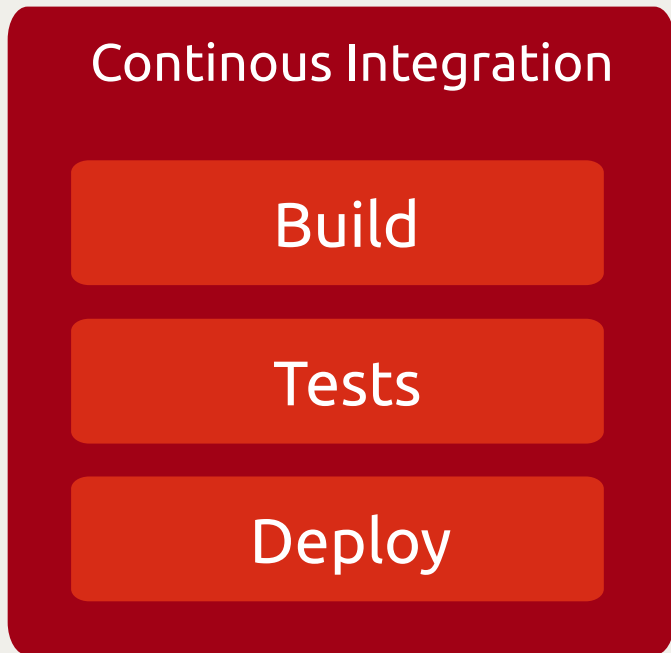
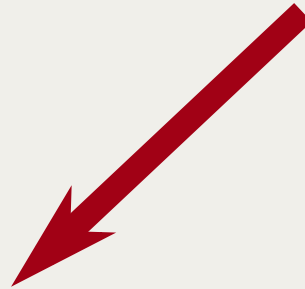
benchmarks

×

environments



Repository



Continuous Integration

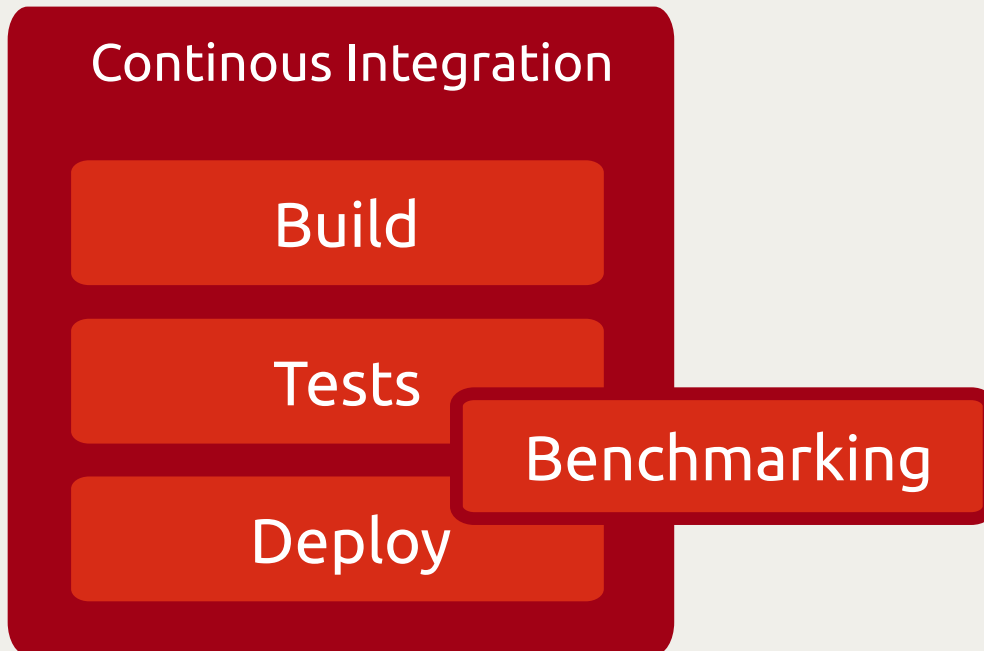
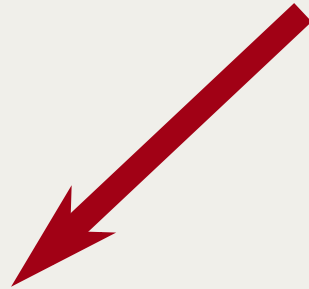
Build

Tests

Deploy

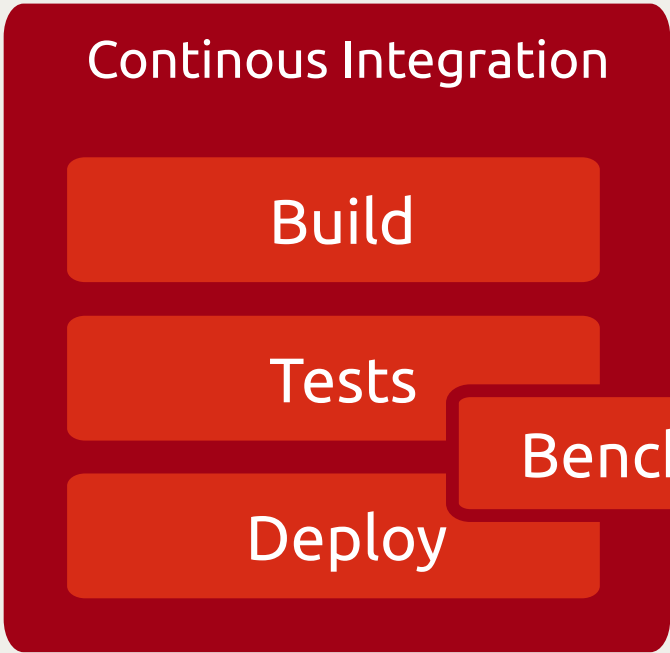
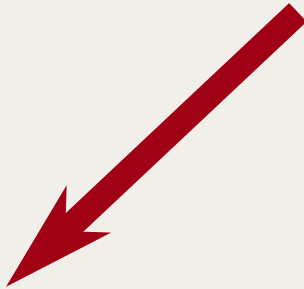


Repository





Repository



Benchmarking



CodeSpeed



Snailwatch

<https://github.com/IT4Innovations/snailwatch>


```
{
  "benchmark": "linearElasticity3D-steadystate-pressure-PYRAMID13",
  "environment": {
    "commit": "78e429ec0ca15204a8616621c856aed75a08a964",
    "processes": "4",
    "threads": "4"
  },
  "result": {
    "Physics_solver_timing": {
      "type": "time",
      "value": 1.278887
    },
    "Mesh_preprocessing_timing": {
      "type": "time",
      "value": 0.073925
    }
  }
}
```




```
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      "value": 1.278887
    },
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      "type": "time",
      "value": 0.073925
    }
  }
}
```



Range 

Date Last N

06. 10. 2018 06. 11. 2018

X axis 

timestamp

Group by:

Day

Filter

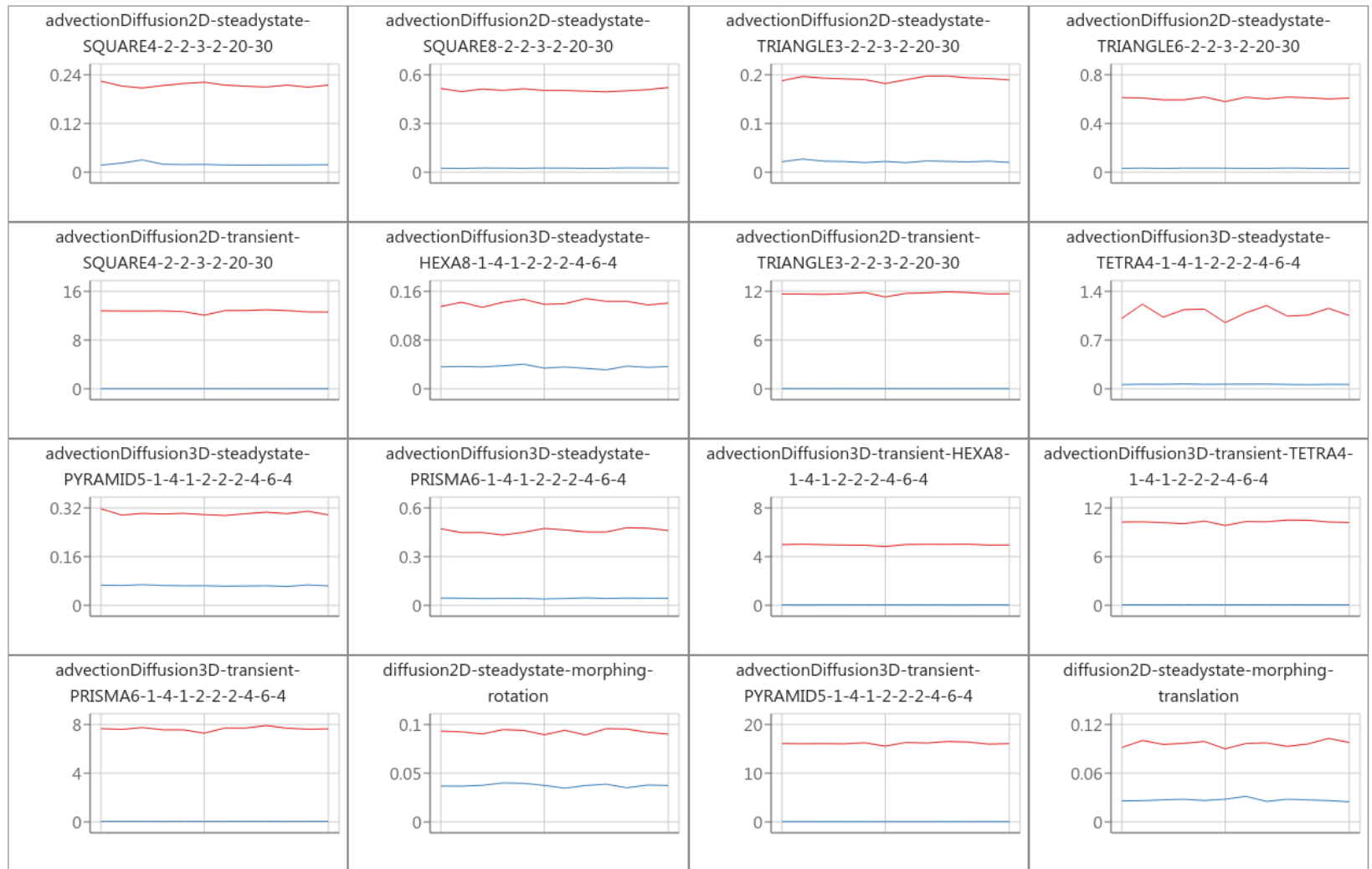
Use regex to filter views

Sort by


Creation time

Hide empty:

Grid overview







Range 


Date Last N

06. 10. 2018 06. 11. 2018

X axis 

timestamp 


Group by:

Day 

Filter

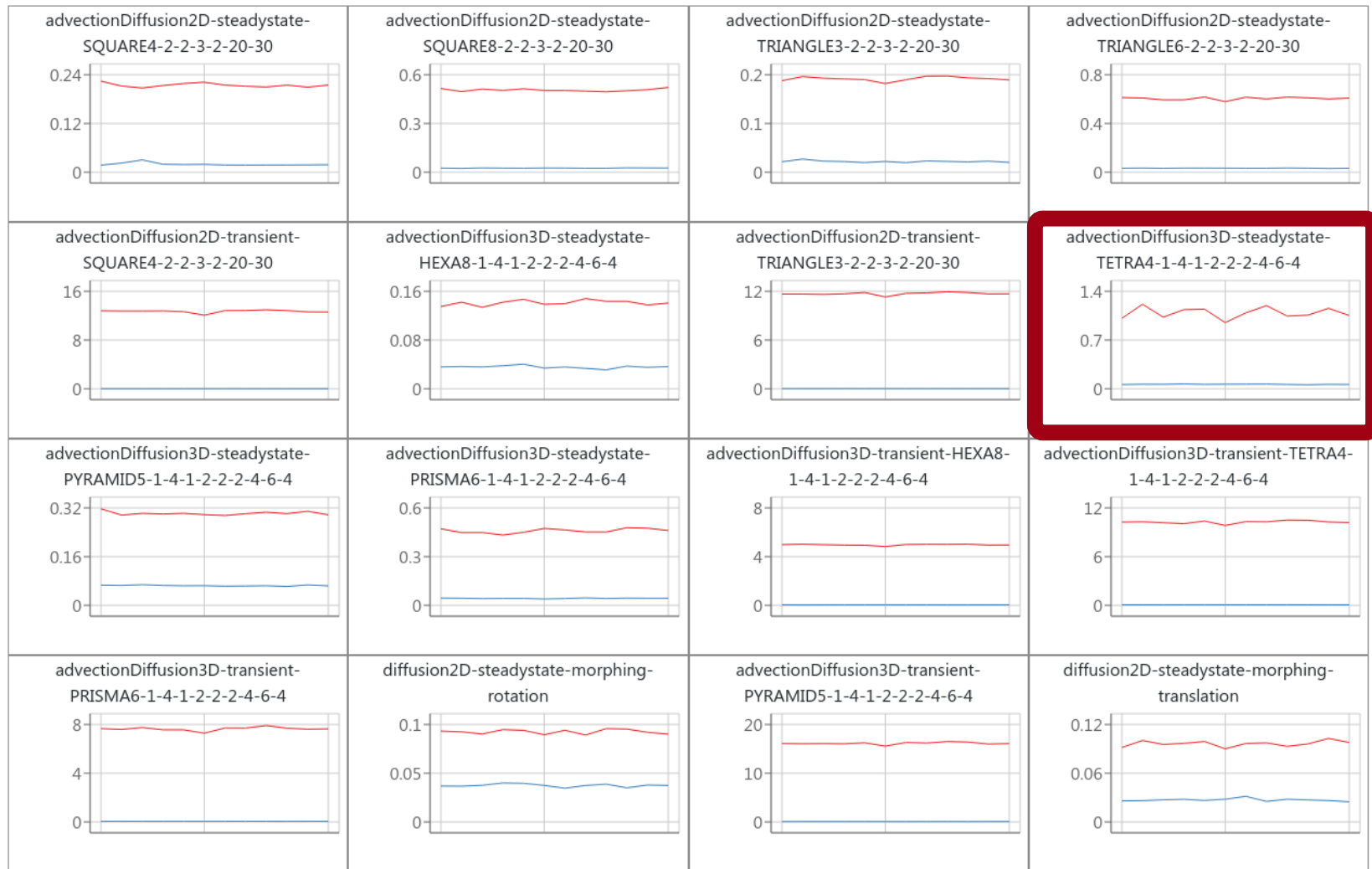
Use regex to filter views

Sort by

Creation time 

Hide empty:

Grid overview





Range ?

Date Last N

06. 10. 2018 06. 11. 2018

X axis ?

timestamp

Group by:

Day

View list ?

Use regex to filter views

- advectionDiffusion3D-stead
- ystate-TETRA4-1-4-1-2-2-2-4-6-4
- advectionDiffusion2D-stead
- ystate-SQUARE4-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-SQUARE8-2-2-3-2-20

Create view

Settings ?

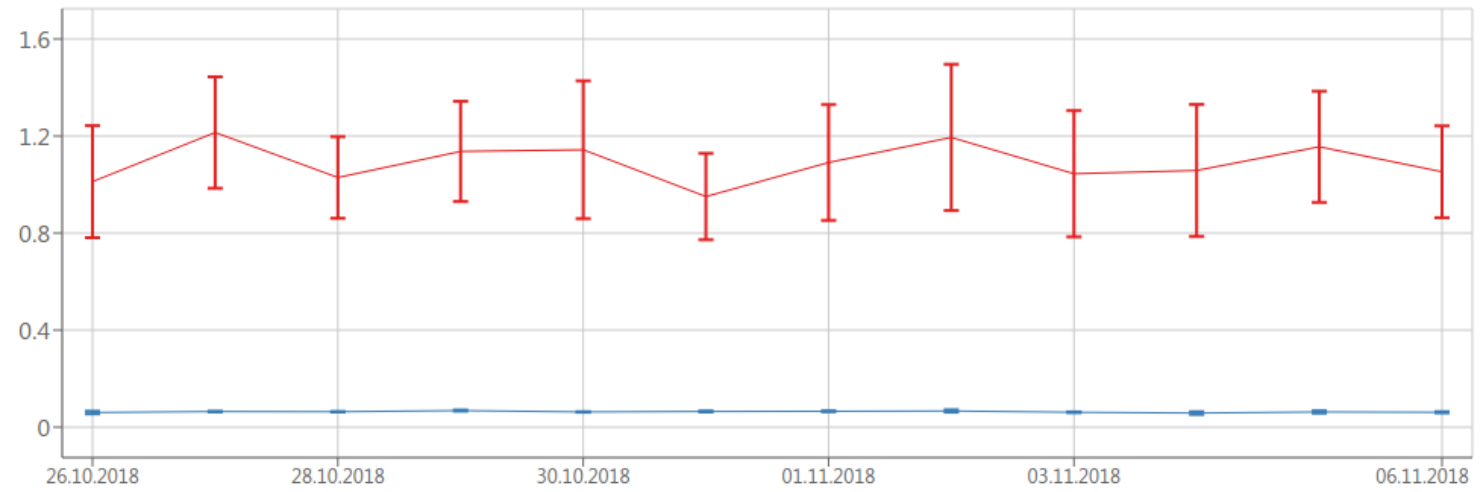
Show points:

Show lines:

Show trend:

Show error bars:

Line chart



- advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Physics_solver_timing-Total)
- advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Mesh_preprocessing_timing-Total)



Range ?

Date Last N

06. 10. 2018 06. 11. 2018

X axis ?

timestamp

Group by:

Day

View list ?

Use regex to filter views

- advectionDiffusion3D-stead
- ystate-TETRA4-1-4-1-2-2-2-4-6-4
- advectionDiffusion2D-stead
- ystate-SQUARE4-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-SQUARE8-2-2-3-2-20

--

Create view

Settings ?

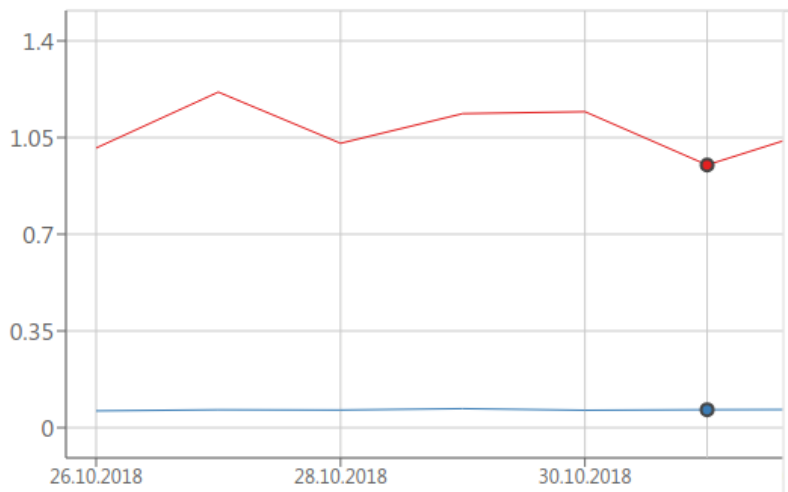
Show points:

Show lines:

Show trend:

Show error bars:

Line chart



timestamp	
31.10.2018	
advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Physics_solver_timing-Total)	
Average	0.95
Std. dev.	0.18
Measurements	2
Timestamp	31. 10. 2018 01:02:12 - 01:08:50
advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Mesh_preprocessing_timing-Total)	
Average	0.06
Std. dev.	0.00
Measurements	2
Timestamp	31. 10. 2018 01:02:12 - 01:08:50



Range ?

Date Last N

06. 10. 2018 06. 11. 2018

X axis ?

timestamp ▼

Group by:

Day ▼

View list ?

Use regex to filter views

- advectionDiffusion3D-stead
- ystate-TETRA4-1-4-1-2-2-2-4-6-4
- advectionDiffusion2D-stead
- ystate-SQUARE4-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-SQUARE8-2-2-3-2-20
-

[Create view](#)

Settings ?

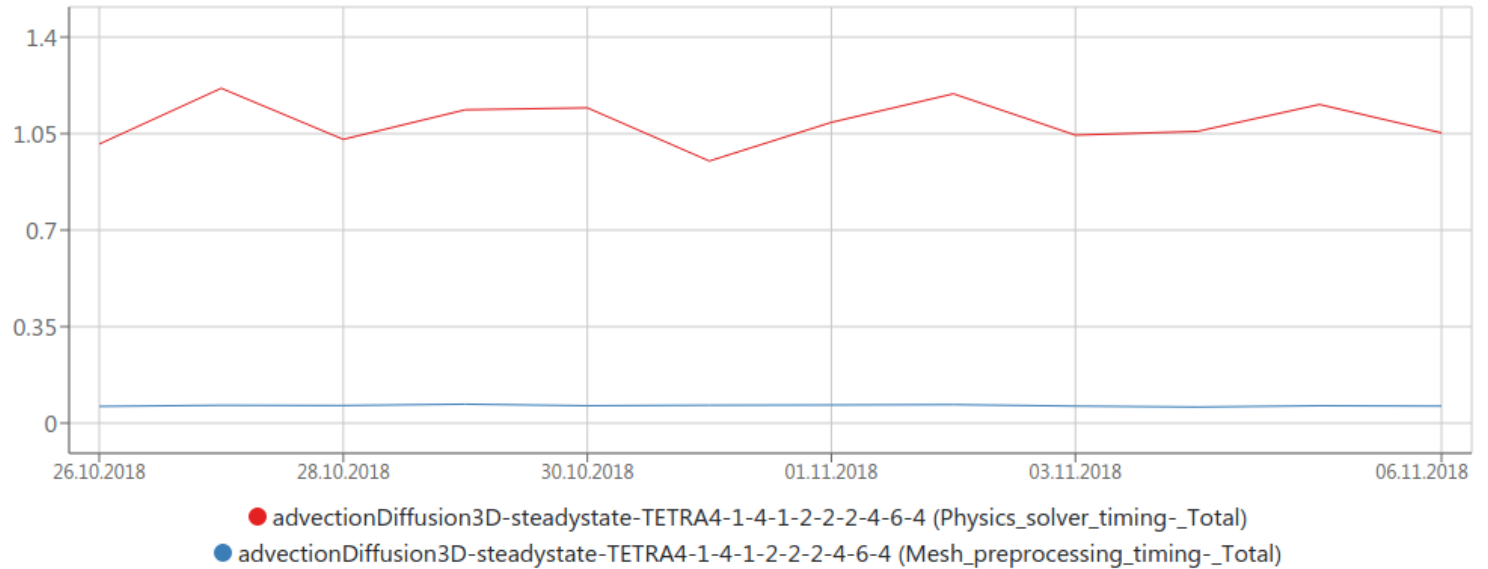
Show points:

Show lines:

Show trend:

Show error bars:

Line chart



Selected measurements ✕

Benchmark	Date
▼ advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4	31. 10. 2018 01:02:12

```

{
  "id": "5bd8ff14a6192600057ec2a9",
  "benchmark": "advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4",
  "timestamp": "31. 10. 2018 01:02:12",
  "environment": {
    "commit": "78e429ec0ca15204a8616621c856aed75a08a964",
    "processes": "4",
    "threads": "4"
  },
  "result": {

```



Range ?

Date Last N

06. 10. 2018 06. 11. 2018

X axis ?

timestamp

Group by:

Day

View list ?

Use regex to filter views

- advectionDiffusion3D-stead
- ystate-TETRA4-1-4-1-2-2-2-4-6-4
- advectionDiffusion2D-stead
- ystate-SQUARE4-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-SQUARE8-2-2-3-2-20
-

Create view

Settings ?

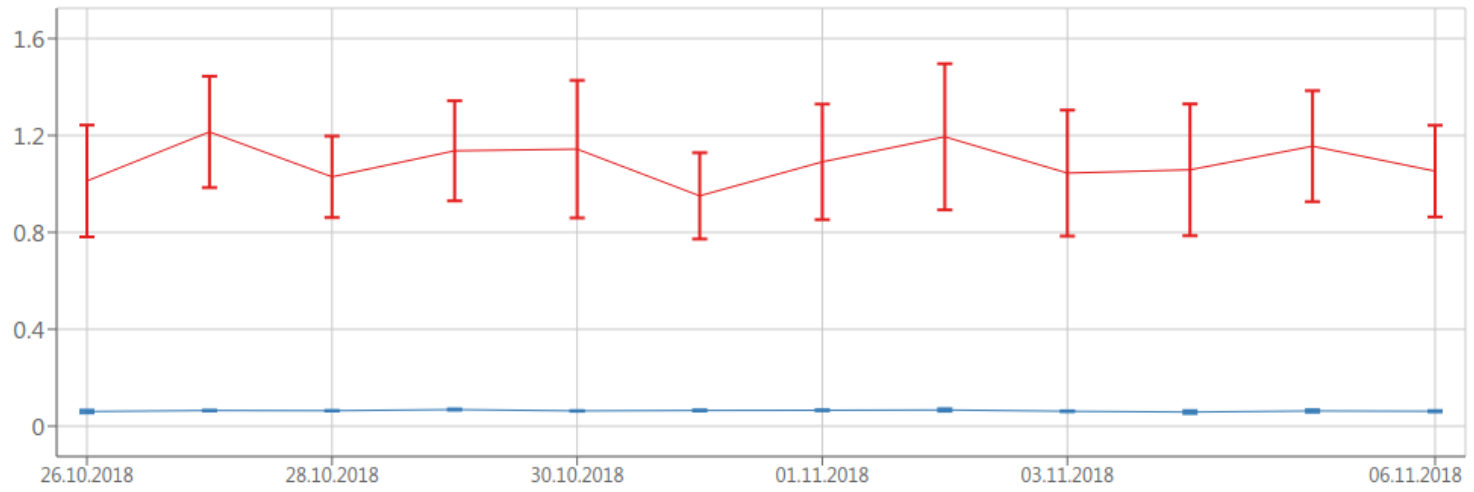
Show points:

Show lines:

Show trend:

Show error bars:

Line chart



- advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Physics_solver_timing-Total)
- advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 (Mesh_preprocessing_timing-Total)

advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4 ×

Filters ?

benchmark == advectionDiffusion3D-steadystate-TETRA4-1-4-1-2-2-2-4-6-4

Add filter

Y axes ?

- Physics_solver_timing-Total
- Mesh_preprocessing_timing-Total

Watch ?

Disabled

Copy Delete



Range

Date Last N

06. 10. 2018 06. 11. 2018

X axis

timestamp

Group by:

Day

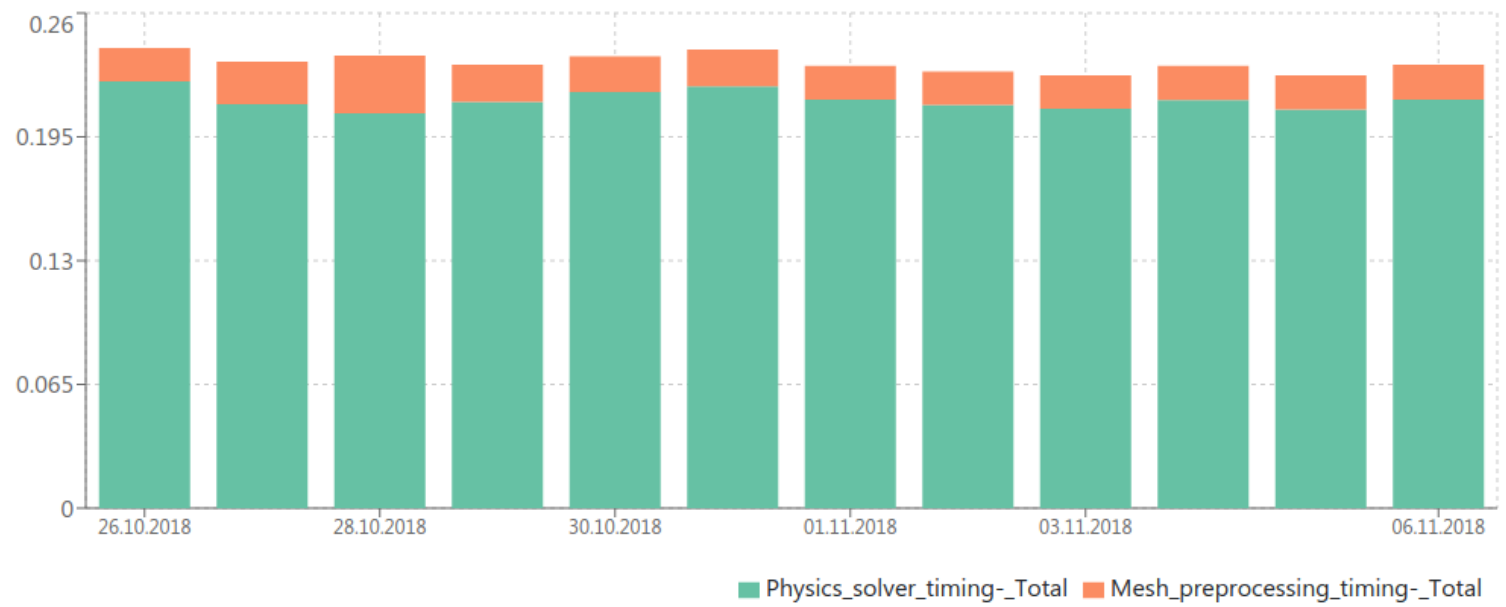
View list

Use regex to filter views

- advectionDiffusion2D-stead
- ystate-SQUARE4-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-SQUARE8-2-2-3-2-20-30
- advectionDiffusion2D-stead
- ystate-TRIANGLE3-2-2-3-2-20-30

Create view

Bar chart





Range ?

Date Last N

06. 10. 2018 06. 11. 2018

Group by ?

timestamp

Group by:

Day

Trends

	View	timestamp ?	Observed ?	Value ?	Change ?	Trend ?	Last upload
▶	advectionDiffusion2D-s...	06.11.2018	Physics_sol...	0.23	2.48 %	0.82 %	06. 11. 2018 01:08:27
▶	advectionDiffusion2D-s...	06.11.2018	Physics_sol...	0.55	2.46 %	1.62 %	06. 11. 2018 01:08:28
▶	advectionDiffusion2D-s...	06.11.2018	Physics_sol...	0.21	-2.57 %	-1.40 %	06. 11. 2018 01:08:29
▶	advectionDiffusion2D-s...	06.11.2018	Physics_sol...	0.64	1.28 %	0.18 %	06. 11. 2018 01:08:30
▶	advectionDiffusion2D-t...	06.11.2018	Physics_sol...	12.62	-0.13 %	-0.51 %	06. 11. 2018 01:08:42
▶	advectionDiffusion2D-t...	06.11.2018	Physics_sol...	11.71	0.11 %	-0.29 %	06. 11. 2018 01:08:55
▶	advectionDiffusion3D-s...	06.11.2018	Physics_sol...	0.18	2.58 %	0.41 %	06. 11. 2018 01:08:55
▶	advectionDiffusion3D-s...	06.11.2018	Physics_sol...	0.50	-2.70 %	-0.95 %	06. 11. 2018 01:08:57
▶	advectionDiffusion3D-s...	06.11.2018	Physics_sol...	0.36	-3.94 %	-1.26 %	06. 11. 2018 01:08:58
▶	advectionDiffusion3D-s...	06.11.2018	Physics_sol...	1.11	-8.55 %	-2.69 %	06. 11. 2018 01:08:56
▶	advectionDiffusion3D-t...	06.11.2018	Physics_sol...	4.99	0.12 %	-0.21 %	06. 11. 2018 01:09:03
▶	advectionDiffusion3D-t...	06.11.2018	Physics_sol...	7.68	0.32 %	-0.23 %	06. 11. 2018 01:09:21
▶	advectionDiffusion3D-t...	06.11.2018	Physics_sol...	16.14	0.65 %	-0.26 %	06. 11. 2018 01:09:38
▶	advectionDiffusion3D-t...	06.11.2018	Physics_sol...	10.25	-0.78 %	-0.78 %	06. 11. 2018 01:09:13
▶	diffusion2D-steadystate...	06.11.2018	Physics_sol...	0.13	-1.78 %	-1.08 %	06. 11. 2018 01:09:39
▶	diffusion2D-steadystate...	06.11.2018	Physics_sol...	0.14	5.87 %	1.83 %	06. 11. 2018 01:09:39
▶	diffusion2D-steadystate...	06.11.2018	Physics_sol...	0.12	-5.05 %	-1.33 %	06. 11. 2018 01:09:39
▶	diffusion2D-steadystate...	06.11.2018	Physics_sol...	0.59	-0.09 %	-0.25 %	06. 11. 2018 01:09:41
▶	diffusion2D-steadystate...	06.11.2018	Physics_sol...	0.72	0.64 %	0.97 %	06. 11. 2018 01:09:40

Snailwatch

<https://github.com/IT4Innovations/snailwatch>