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Trilinos Framework Update

TUG 2022 Meeting

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CSRI/90, Sandia National Laboratories

Changes in Framework over the Past Year

Pull Requests (PRs) and Master Merges (MMs) have been unstable.

- Build/Test platform instabilities with limited redundancies.
  - Working on improving computational resources available for PR/MM build and testing.

- Staff Changes
  - Only one team member remains from a year ago!
  - Lost a lot of expertise!
  - New staff are on the learning curve.
  - Jim Willenbring has changed roles.
    - Is focusing on related Exascale Computing Project (ECP) and xSDK work.
    - Is focusing on developing external testing capabilities for Trilinos.
    - Is moving away from core Framework PR and MM work.
  - Curt Ober is taking on the Framework Product Lead role.

- Sandia Cyber Security is tightening.
  - Loss of ability to post internal test results to externally accessible sites.
  - Working towards re-establishing this (Spring/Summer of 2023)
  - Likely additional security constraints in the future.

Major Framework Tasks for FY2023

- Framework Instabilities (from previous slide)
  - Build/Test platforms
  - Staffing
  - Cyber Security

- Support development for AMD-based platforms (El Capitan)

- Release of Trilinos 14.0 (near future)
  - C++17
  - Kokkos 4.0

- Development of Spack and Container Support
  - See panel discussion on Thursday.

- Archival of Unsupported packages
  - Domi, Komplex, Moertel, Pike, Rythmos, and TriKota
  - Trilinos 15.0?

- Development of Internal/External Testing

- Development of Performance Testing
  - See talk on Thursday morning.

- Build and Test of Trilinos that is representative of Sandia applications.

Trilinos Status

- New Status Table
  - https://github.com/trilinos/Trilinos/wiki

- Daily indication of build/test health
  - PR/MM status
    - Green Check – everything OK.
    - Yellow ! – something wrong but still processing.
    - Red X – Everything broken.

- Tracks number of
  - PRs merged
  - PRs failed
  - MMs merged
  - PRs in the queue (will adjust)
  - Tickets contain current information on the problem.

Trilinos Status Table

NOTE – The metrics in the table below are a snapshot of the Pull Requests state as of 12:00pm (noon) for each row. Links provide the current state of that search, which may differ from the 12:00pm (noon) search.

Date	PR Status	Number of PRs Merged	Number of Failed PRs	Number of PRs Waiting for Build & Test	Total Numbr of Open PRs	MM Status	Number of Successful Master Merges	Ticket #
2022-10-20	✅	5	0	16	67	✅	1	
2022-10-19	✅	2	1	8	66	✅	1	
2022-10-18	✅	4	4	9	65	✅	1	
2022-10-17	✅	1	0	9	65	✅	1	
2022-10-13	✅	1	1	13	65	✅	1	
2022-10-12	✅	6	1	10	63	✅	1	
2022-10-11	✅	3	3	12	67	✅	1	
2022-10-10	✅	1	1	8	67	✅	1	
2022-10-05	⚠️	5	0	11	66	✅	1	TrilFrame-476, PR#11109-Pinned
2022-10-04	✅	2	1	12	66	✅	1	
2022-10-03	✅	0	0	8	64	✅	1	
2022-09-29	⚠️	5	0	5	57	⚠️	0	TrilFrame-463
2022-09-28	⚠️	2	5	6	60	⚠️	0	TrilFrame-463
2022-09-27	⚠️	2	3	10	61	⚠️	0	TRILFRAME-463

Thanks ...

Questions?