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Trilinos Framework Update

TUG 2022 Meeting

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CSRI/90, Sandia National Laboratories

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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.
 - New Product Lead role – “Sustainable Software”.
 - 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 Number 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?