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Trinity Usage Model

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Trinity Usage Model: What and Why

- The Trinity Usage Model (TUM) is our “contract” with the users regarding the state of the system; it describes the system, operational policies, and best practices for using the production system.
- As a tri-lab ASC ATS platform, the architecture, policies and operations will differ from those of local laboratory (CTS) platforms.
- The TUM was presented to tri-lab users via Roadshows, and user input was solicited.
- Once published in its final form, the TUM document is not intended to be a living document; changes will not be made unless significant changes to the system occur. Up-to-date detailed documentation is maintained on the ACES web.

Trinity Usage Model: What and Why

- The TUM was developed with input from multiple ACES cross-site teams, including system architecture, programming environments, file systems, networking, visualization, data management, application readiness, and user support.
- It was developed ***on behalf of*** the end users, to ensure that the production system provides what is required to get their work accomplished.
- Two-thirds of users interact with the system remotely, which must be as convenient and seamless as possible.
- The Usage Model provides a framework to follow through future system maintenance and upgrades to ensure consistency and continued usability.

Developing the Usage Model

- Usage Models were developed for tri-lab Capability Computing platforms starting with Purple.
- The Usage Model for the Capability Computing Cielo platform was fairly straightforward; the only major system change after initial installation was a file system replacement, necessitating a revised Usage Model.
- Developing a Usage Model for the ATS-1 platform was more complicated and less straightforward.
- ATS platforms incorporate cutting-edge hardware, software, and tools, sometimes developed over an extended period of time.
- The TUM also incorporates lessons learned from the Cielo Usage Model

Developing the Usage Model for Trinity

Several stages of system modifications/updates and several Usage Model drafts were required as significant system changes occurred.

- Spring 2015: Initial Usage Model draft developed
- August 2015: Roadshows (Phase 1 Haswell)
- June through fall 2015: Move to Rhine/Redwood programming environment (pre-release)
- Late 2016-early 2017: Phase 2 KNL integration and testing
- May 2017: Roadshows (Phase 2 KNL)
- July 2017: Phase 1 and 2 system merge; change to SLURM scheduling

The TUM document remained in draft form through these phases, but was still useful as user and operational guidance.

Using the Trinity Usage Model

The TUM is intended to be used differently depending on the reader, and includes introductory guidance on recommended sections according to interest.

- The curious
- Prospective and active users
- Computing Campaign management
- Application development and porting
- Operations team members: system integration, operations and application support
- ACES Support team members

Usage Model Table of Contents

- User Support (consolidated user support and web pages)
- System Overview (Hardware, System Software)
- System Governance & Policies (including Computing Campaigns)
- Operational Configuration
  - File Systems and Storage
  - Tri-lab Classified Data Transfer
  - User Environment
  - Programming Environment
  - Visualization
  - Tools for Operations
- Trinity Best Practices
- User Activities
- Application Development Platforms

TUM through the life of Trinity

- **ACES supporters** familiar with the TUM should remain engaged with operational teams on a regular basis, to serve as advocates for local and remote users of the platform and the application development platforms.
- **Operational personnel** should consider using the TUM as a guide through future system maintenance and upgrades to ensure a consistent and usable platform is available for users.

Usage Model Finalization

The Trinity Usage Model report documenting the full Trinity production platform now being formally published.

An extensive checklist based on Usage Model criteria has been developed and will be provided with status codes as evidence of system readiness.


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