



CREST: Computing Resources Evolution Strategy

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CSAID Roadmap Meeting

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CREST

- CREST: Computing Resources Evolution STrategy
- Provide access to exascale-size resources for our experiments either on-site or off-site for the 2030s
- Goals Overview
 - Document guiding principles and strategy
 - Iterate with community
 - FCRSG process defines inputs to facility size and needed services
 - User stories define how the facility is intended to be used and operated
 - Living document - updated yearly

Schedule and Chapter Editor Charge

- Schedule
 - CY23Q1-CY23Q2: Write initial version of strategy document
 - Use only CSAID input to simplify the process
 - CY23Q3-CY23Q4: Initiate community iteration process
 - Introduce user story concept
 - CY24Q1: Update strategy
- Chapter Editor Charge
 - Produce initial outline of chapter and list needed input information
 - Organize discussions and fact-finding meetings
 - Maintain interdependencies with other chapters
 - At a later stage, gather stories for a chapter topic from stories catalog

Chapters

- 10-year facility size planning → Lisa Goodenough
- Overview of current facility
 - Facility machine rooms → Adam Walters
 - Facility Capabilities (size, deployment, infrastructure software, etc.)
 - Processing → Farrukh Khan
 - Storage → Rafael Rocha
 - Networking → Phil Demar
 - User-facing facilities → Burt Holzman
 - Cybersecurity → Mine Altunay
 - Databases → Steve White
 - Monitoring → Kevin Retzke
 - Other Services
- Hardware evolution outlook → Dave Fagan
- Facility Room Evolution → Adam Walters
- Strategy
 - Processing → Farrukh Khan
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 - Other Services

Guiding Principles

- Document guiding principles that we (SCSS) commit to – Examples:
 - Implementation-independent strategy
 - Design the facility for the future, have intermediate steps for 2025 and 2030
 - Document priorities (examples, not ordered)
 - Serve the use cases of the Fermilab user community
 - Reduce number of systems providing the same service (commonality principle)
 - Optimize cost to provide all services (both hardware and effort)
 - Optimize environmental footprint
 - Optimize reuse of services for multiple experiments/users
 - Principles
 - Provide isolation of experiments/users both in security and performance
 - Incremental/scalable approach
 - MetricsTrack unit cost of services folding in hardware and effort aspects
 - ...

User stories

- 2nd stage is collecting user community input
- FCRSG asks for a comprehensive picture of user needs – sometimes difficult for smaller experiments to provide
- Collect user stories:
 - Story describing single activity that a user would like to perform on SCSS facilities – written in the language of the user
 - SCSS expert is paired with user to translate story into language suitable for facility planning (also helps to understand what the user actually wants to do ...)
- Create a catalog of user stories and use as input to update the strategy

Suggestion from FCRSG

- (International) Advisory Panel
 - Get advice and feedback early on in the process
 - Several people have volunteered
- Close connection with CERN
 - CERN is going through a similar exercise
 - We can exchange ideas and planning status

Meetings, meetings, meetings ...

- Bi-Weekly editor meeting
 - Monday's at 1 PM central
 - Starting March 6th
 - <https://indico.fnal.gov/event/58709/>
- Slack channel: #crest
- Listserv: crest@fnal.gov
- Files in Teams: <https://fermicloud.sharepoint.com/:f:/s/FNALO365-CSAID/Eq4m60NfEp1Esg282jV857EBMIICH0HzvDhg8Pq0hR4spg?e=RxbbZW>