

Aggregate Developers' Topics GEC 16 Salt Lake City, Utah

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www.geni.net

- **Status Updates**
 - AM API
 - RSpecs
 - Omni
 - Uniform Experimenter Environment
 - Coding Sprint
- **Stitching – Tom Lehman, MAX**
 - Progress Report
 - Implementation Issues
 - Discussion
- **Secure Tool Authorization – Rob Ricci, Utah**

- GENI Aggregate Manager API version 3 fully supported by PlanetLab, Omni



- AM API version 3 implementation nearly complete at ProtoGENI / InstaGENI



- AM API version 3 implementation planned at Orca/ExoGENI, FOAM, and MAX



- Flack does not yet support AM API v3

http://groups.geni.net/geni/wiki/GAPI_AM_API_V3

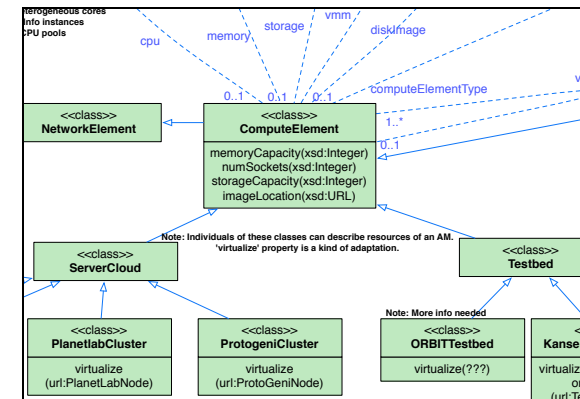
- Update() was adopted, Aggregates may implement in v3
- Other small changes also adopted, may be implemented in v3
- No date set yet for closing this version – GEC17?

[http://groups.geni.net/geni/wiki/GAPI AM API DRAFT](http://groups.geni.net/geni/wiki/GAPI_AM_API_DRAFT)

- GENI v3 RSpec format adopted at GEC10
- No changes to base in a long time – extensions!
- Various RSpec extensions have been added & used to support stitching, shared VLANs, OpenFlow, post boot scripts, Flack, etc.
- There are 6 extensions on geni.net. Use them!
 - www.geni.net/resources/rspec/ext/

[openflow/](#)
[opstate/](#)
[postBootScript/](#)
[preserve/](#)
[shared-vlan/](#)
[user/](#)

- Implement the compute ontology?
 - <http://groups.geni.net/geni/wiki/GEC11RSpec>
- Refactor to better support non-compute and non-wired-link aggregates?
- Refactor so schema enforces field structures?



- Omni/gcf 2.2.1 just released
 - Omni-configure supports the GENI Portal
 - Fewer required options to talk to FOAM
 - Support for CreateImage at ProtoGENI/InstaGENI
 - Usability improvements
- Omni/gcf 2.3 is in testing
 - Stitching!

Update to the latest Omni/gcf!

- Aggregates are different by design
 - Different resources and features
 - Document the features so tools can highlight them
- Aggregate types have some ‘gratuitous’ implementation differences
 - Unnecessary differences that make the experimenter experience needlessly complicated
 - Experimenters should not have to know about these
 - Minimize these!
 - Document these so tools can hide them

- Example differences to smooth over:
 - Sharing Disk Images
 - Standard packages of tools
 - Standard information available to scripts
- Thursday 1:30 session – come discuss!
- Goals:
 - Lower the GENI learning curve
 - Document Aggregate features for Solicitation 4 tool developers

- Thursday 2:30pm
- Working session on topics raised during the GEC
 - Uniform Experimenter Environment
 - AM API concerns
 - RSpecs
 - Stitching
 - Tool and Service Authorization & Authentication
 - Others?

- GENI Dynamic VLAN Network Stitching lets experimenters create custom layer 2 topologies
- Architecture adopted at GEC10
- Implementation rolling out now
 - Thanks to Xi Yang, Jon Duerig, Tom Lehman, others
- Today: Progress Report, Issues & Next Steps

GENI Stitching live tonight at Demo Night!

Available in Omni 2.3 soon!

- Authorizing tools with Speaks As is insecure, misleading, and easy
 - Speaks For is better, but currently not possible
- How does an experimenter authorize a Service running in a Slice?
- **Simplify authentication & authorization for new tools and services**