

GENI MAX Project Status Report

Period: October 1 - November 5, 2010

The reporting period covers a shorter time period than normal, due to the shift in report schedules for Spiral 3. The previous Quarterly Report covered the time period July 1 - September 30, 2010, and is available on the GENI Wiki. For Spiral 3, Project Status Reports are due after each GEC. Therefore this report covers the time period October 1 - November 5, 2010.

I. Major accomplishments

A. Milestones achieved

The milestone due during this reporting period is listed below:

MAX.S3.a: Demonstration and outreach at GEC9 (Due 11/5)

- Demonstrate MAX Aggregate Manager design, functions, and user interface. This will include a demonstration of how users can submit a request for a "GENI experiment topology" to the MAX GENI AM using a PlanetLab SFA based RSpec. The "GENI experiment topology" should include PlanetLab slices and dynamically provisioned network paths across the MAX network. This demonstration should also present the plans for transition of the current deployment to an operational GENI Aggregate.
- This event should also be utilized for outreach to users with a focus on identification of users for the MAX Aggregate.

Status:

We completed this milestone via our demonstration at GEC9. This demonstration showed how the PlanetLab SFI/SFA can be used to submit requests to the Mid-Atlantic Crossroads (MAX) GENI Aggregate Manager (AM) for the purpose of dynamic instantiation of an experiment topology. The dynamically instantiated topologies were constructed from a diverse set of resources including PlanetLab slices, dynamically provisioned network paths across the MAX network, and dynamically provisioned network paths across ProtoGENI. Details on this demo and the associated MAX AM Functionality are available here:

<http://geni.maxgigapop.net/twiki/bin/view/GENI/Publications> ==> GEC9

This includes slides, the Demonstration Poster, and QuickTime movies of the provisioning steps required by a user to access these MAX AM services.

We also took advantage of the GEC9 to conduct outreach and coordination with users for the MAX GENI Substrate. This included planning sessions and discussions with the following groups:

ERM Project, Columbia University, Lightwave Research Laboratory
GpENI Project, University of Nebraska Lincoln
SPP Project, Washington University, St Louis, MO

We plan to follow up with these users to as part of future GENI experimentation activities.

B. Deliverables made

During this reporting period we completed the deployment and testing of the latest MAX Aggregate Manager release. This included the MAX AM Plug-In for the PlanetLab SFI/SFA. This allows a user to use the standard PlanetLab SFI/SFA API to request GENI Experiment Topology instantiation. Details on the MAX AM SFI/SFA Plug-In are available here:

- <http://geni.maxgigapop.net/twiki/bin/view/GENI/AggMgrSFA>

Details regarding the general MAX Aggregate Manager implementation, user API, and example provisioning cases are available at the project web site here:

- <http://geni.maxgigapop.net/twiki/bin/view/GENI/Software>

II Description of work performed during last quarter

A. Activities and findings

As a result of our work with the integration of the MAX Aggregate Manager into the PlanetLab SFI/SFA and multi-aggregate provisioning experiments, we have increased our knowledge with respect to network stitching in GENI. We presented our initial findings at the GEC9 Control Framework Working Group. That presentation is available here:

- <http://groups.geni.net/geni/wiki/Gec9ControlFrameworkAgenda> ==> Stitching, Tom Lehman

We have future milestones and deliverables on this topic, and will be expanding on the concepts presented here as part of these activities.

B. Project participants

Tom Lehman (USC/ISI)
Xi Yang (USC/ISI)
Abdella Battou (MAX)
Balasubramania Pillai (MAX)

C. Publications (individual and organizational)

We do not have any GENI publications during this time period.

D. Outreach activities

We are continuing to reach out to potential GENI users as part of our collaborations with other GENI community members as described in our milestone status above and collaborations section below.

E. Collaborations

GpENI, UNL: We have had extensive collaborations with the GpENI project. In particular we have been working with the University of Nebraska Lincoln (UNL) to build GENI Experiment topologies which span our Aggregates. This has involved interconnection of our substrates across ProtoGENI and Internet ION network infrastructures. We expect that this collaboration will continue to expand in the future.

SPP Project, (Washington University, St Louis, MO): We have worked with the SPP team to establish accounts for them to allow access to the MAX Aggregate Manager. This has included working with them on the details of using the PlanetLab SFI/SFA to requests MAX AM services. Only initial work has been completed so far, but we anticipate additional collaborations in the future. The MAX AM is connected to the ProtoGENI (and SPP nodes) at 10 Gbps, so this provides an good opportunity for high bandwidth testing between MAX PlanetLab nodes and SPP nodes.

JGN2, CoreLab: We have had initial discussion and conducted initial testing with the JGN2 and CoreLab (Japan Research Network and PlanetLab deployment) team. We have plans to build GENI Experiment topologies which will include resources from MAX AM and JGN2/CoreLab as part of future activities.

F. Other Contributions

none.