



VMI-FED

Spiral 2 Year-end Project Review

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- Track 1
 - The VMI component of the project provides instrumentation of virtualized hosts from the perspective of the virtualization layer (e.g., the hypervisor)
 - No requirement that end host users install/configure monitoring tools
 - No reliance on trustworthiness of end hosts for accurate measurements.
- Track 2
 - The FED component of this project is investigating means through which federation into the GENI infrastructure can be encouraged and facilitated.
 - CIOs
 - Users
 - International Ties

Milestone & QSR Status

ID	Milestone	Status	On Time?	On Wiki?	GPO signoff ?
S2.a	VIX Demo: Demonstration of initial VIX (VMI) functionality in lab environment at GEC6	Completed	On Time	Yes	Yes
S2.b	Finalize and post ASSERT Virtualization Resource Analysis Document for review by GENI researchers and personnel. (Promote at GEC7)	Completed	On Time	Yes	Yes
S2.h	Description of Demo for GEC8	Completed: See demo description next to milestone.	On Time	Yes	Yes
S2.c	GEC8 demo (date adjusted to coincide with GEC 8)	Completed: S/w demonstrated to GPO and at PLab cluster meeting.	On Time	Yes	Yes
S2.d	Resource Doc: Finalize and post initial UA resource analysis summary document for review by GENI researchers and personnel.	Completed: Link to document posted on wiki.	On Time	Yes	Yes

Accomplishments 1: Advancing GENI Spiral 2 Goals

- The VMI Component specifically addresses the I&M goals, in that it provides a control-framework agnostic instrumentation platform for virtualized end hosts.
 - In addition, the VMI work related to the I&M goals, we have contributed to the progress of the I&M design (e.g., by participating in the I&M workshop in Chicago)
- FED Component designed a classification schema that provides generality and ease of use to experimenters while at the same time aiding the federation of systems by bringing them a high-level standard language.
 - Generality: Descriptions of resources are extremely flexible while still allowing for similar resources to be grouped together.
 - Ease of use: The purpose of this schema is to bring high-level descriptions into/ alongside RSpec so that users do not actually have to read or understand the RSpec.
 - Federation: This schema is a standard dictionary of terms that provides a high-level language that different clearinghouses can use to describe resources to experimenters and to each other.
 - After designing and testing several iterations, this has emerged as the best method so far. The next step is to document, prototype, and test the schema.

Accomplishments 2: Other Project Accomplishments

- NSF-funded RAVE project, which will provide an opportunity to “GENI-enable” several new server rack deployments around the nation.
- We currently have a working version of the VMI tools suite that includes:
 - Full support for Xen-based virtual machines
 - Partial support for Vserver-based virtual machines
 - Partial support for KVM-based virtual machines
 - Command line and network-based interfaces for the VMI-based I&M tools (including basic pub/sub and on-demand interfaces)
 - A data repository for VMI data
- An analysis of the University of Alaska provided a collection of potential resources for federation.
- A discussion of GENI in several publications and presentations
- Increased CIO buy-in and connections with other CIOs
- Identification of potential for motivating federation.

- I think we need more frequent I&M working meetings (as opposed to the relatively short and large sessions we typically have at each GEC . The small, focused meeting in Chicago accomplished quite a lot, and I think getting people in the room like this for a couple of days between GEC events, and again for a working session at each GEC is necessary until we get the I&M framework hammered out.

- Spiral 2
 - VMI Component
 - Integration of VMI functionality with at least one of the control frameworks, with a demo at GEC 9 (milestone should be aligned with GEC 9)
 - FED Component
 - Finalize and post initial Federation Framework Analysis document for feedback from GENI researchers, personnel and selected potential federation partners. (Promote at GEC9)
- Spiral 3
 - VMI
 - Full support for Vserver and KVM based virtual machines
 - Additional functionality as required by evolving I&M design
 - Integration with I&M platform as design/infrastructure becomes available
 - FED
 - Promote a High level classification schema that can tie into RSpec and be incorporated into software suites in order to assure that control frameworks use a common user-friendly language when describing resources to end users.