

Intelligent Data Movement Service

Shakedown Experiments

Ezra Kissel, Akshay Dorwat
Indiana University

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GEC20 – Experimenter/Developer Roundtable

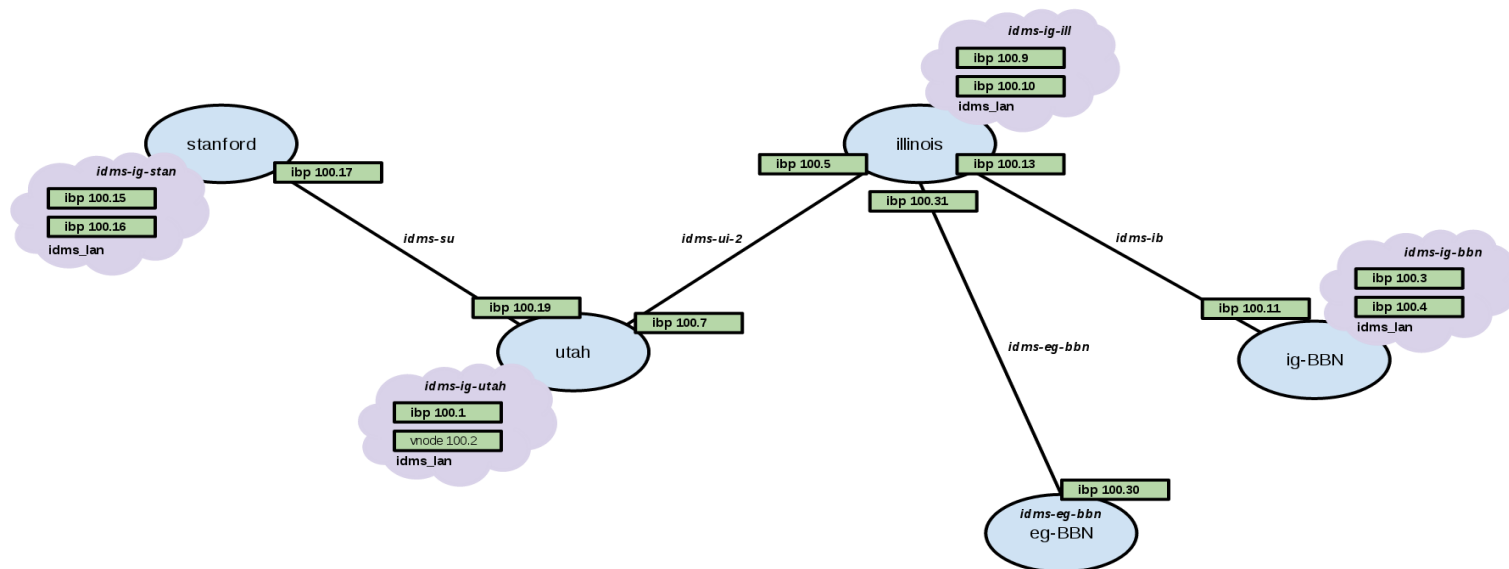


Project overview

- Create a distributed, dynamic data storage and movement service as a long-running GENI experiment
- Distributed across many GENI aggregates, dynamism through responsiveness to experiment measurements
- Use existing, proven services as core components
 - Object store (IBP server)
 - WAN acceleration (Phoebus)
 - Network signaling (XSPd)
 - UNIS and I&M
 - Data Manager Service (new)
- Create appliance images that work across IG/EG aggregates

GEC20 Status

- Stitching together shared vlan “islands”
- Experiment runs in a /16 IP subnet, VMs act as bridges
- DMS tracks resources across IDMS slices
 - Dynamically provisions new resources when needed, renews existing resources
- External experimenter slices can attach to the IDMS experiment and use storage resources
 - RSpec with `idms_lan` link and client tools provided on tutorial page



The good/bad list

- **Stitching**
 - stitcher.py much improved with GCF 2.6
 - Would like to know what hops are available, and expected properties (SCS interface?)
 - Still retries in cases that will almost always fail without user intervention
 - include/exclude hops works, but behavior when >1 stitched link in rspec?
 - Would like an easy way to build circuits to arbitrary endpoints, not necessarily advertised within GENI
- **Shared vlan POA (PG)**
 - Finding the right nodes to bind to is difficult without supporting lib
 - Error messages can be confusing (e.g., “slice credential not provided” when doing POA at an AM with no sliver)
 - Works reliably once the right combination of steps is followed (can help update the ShareALan HowTo)

The good/bad list (cont.)

- IG/EG interaction
 - Custom images and EG->IG conversion works with some effort
 - Would like to see IG->EG process (should be coming soon)
 - Any hope of a common metadata server and client tools for image configuration?
 - Stitching IG-EG limited to EG BBN, use the OF mesoscale?
 - Other data plane options?
- Main observation: ~80% time spent trying to get GENI to do what we want
 - Probably good for shakedown experiments
 - Not so good for quickly evaluating an idea on a non-trivial topology

End

- Contact:
 - ezkissel@indiana.edu
 - adorwat@indiana.edu
- Project Wiki Page
 - <http://groups.geni.net/geni/wiki/sol4/IDMS>
- Thanks to our colleagues at UTK and ACCRE for their use and support of the IBP components in IDMS
- Thanks to the GPO and the GENI community