International Federation

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Fed4FIRE architecture WP lead
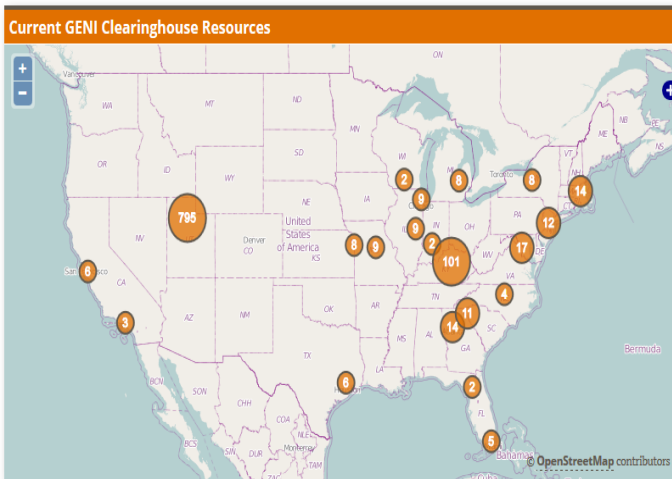
Goal

- Meeting international federation at GEC17 organised by Larry Landweber

'what can my student do now on international testbeds ?'

Testbeds involved

GENI

Fed4FIRE

FIT@BR

Exogeni /UvA

Vnodes /FLARE

Exogeni /Nicta

Progress – current state

Test of control framework

- jFed tool from Fed4FIRE
  - European federation project
  - Used to test and monitor Fed4FIRE
  - with certificate from a Fed4FIRE authority
- Tests
  - AM GetVersion – ListResources
  - Full scenario: create slice / node / ssh login / delete
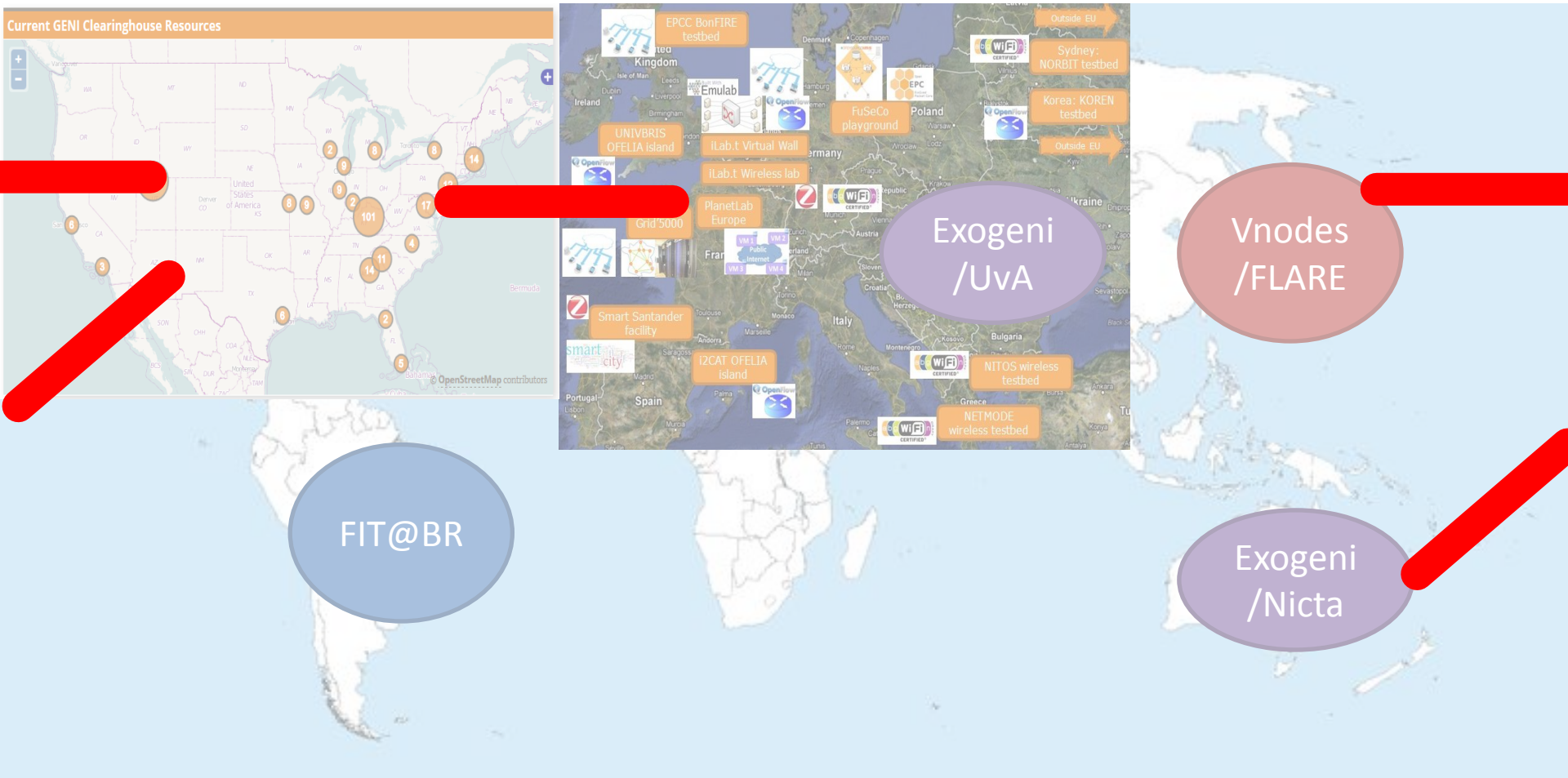
GetVersion/ ListResources

Testbed Name	Ping latency (ms)	GetVersion Status	Free Resources
BBN emulab	84.79	ok	0
FIU PGv1	140.39	not ok	not ok
InstaGeni BBN	93.26	ok	0
InstaGeni Clemson	116.2	ok	0
InstaGeni GATech	101.44	ok	0
InstaGeni Illinois	136.32	ok	0
InstaGeni Kettering	127.64	ok	0
InstaGeni MAX	99.21	ok	0
InstaGeni Missouri	159.08	ok	0
InstaGeni NorthWestern	104.6	ok	0
InstaGeni Nysernet	116.99	ok	0
InstaGeni Princeton	84.81	ok	0
InstaGeni SOX Atlanta	101.41	ok	0
InstaGeni Uky	160.18	ok	0
InstaGeni Utah DDC	177.83	ok	0
ION internet2 AM	143.78	ok	not ok
KetteringU emulab	139.97	ok	0
Larc Usp Brazil	253.92	ok	3
LSU CRON	163.3	not ok	not ok
MyEmulab	163.22	ok	0
NYU genirack	93.65	ok	0
Orca BBN SM	93.12	ok	3
Orca Duke SM	110.53	ok	3
Orca ExoSM	115.85	ok	24
Orca FIU SM	147.22	ok	3
Orca NICTA SM	342.2	ok	3
Orca OSF SM	161.66	ok	3
Orca RCI SM	123.1	ok	3
Orca UFL SM	156.8	ok	3

Full slice/sliver/ssh login test

Test Name	Last Test Start Time	Last Test Duration	Last Partial Success	Last Full Success	Time since last Failure	Last Log	History
InstaGeni BBN	2013-10-27 09:11:31	1 minute and 36 seconds	FAILURE	FAILURE		log	history
InstaGeni Clemson	2013-10-27 09:13:07	34 seconds	FAILURE	FAILURE		log	history
InstaGeni GATech	2013-10-27 09:13:41	32 seconds	FAILURE	FAILURE		log	history
InstaGeni Illinois	2013-10-27 09:14:14	2 minutes and 38 seconds	SUCCESS	SUCCESS	13 days and 5 hours	log	history
InstaGeni Kettering	2013-10-27 09:16:52	1 minute and 40 seconds	SUCCESS	SUCCESS	3 days and 5 hours	log	history
InstaGeni MAX	2013-10-27 09:18:32	2 minutes and 40 seconds	SUCCESS	SUCCESS	13 days and 5 hours	log	history
InstaGeni Missouri	2013-10-27 09:21:12	38 seconds	FAILURE	FAILURE		log	history
InstaGeni NorthWestern	2013-10-27 09:21:50	2 minutes and 37 seconds	SUCCESS	SUCCESS	5 days and 5 hours	log	history
InstaGeni NYSERNET	2013-10-27 09:24:27	1 minute and 59 seconds	SUCCESS	SUCCESS	1 day and 17 hours	log	history
InstaGeni Princeton	2013-10-27 09:26:26	2 minutes and 27 seconds	SUCCESS	SUCCESS	(15 days and 17 hours)	log	history
InstaGeni SOXAtlanta	2013-10-27 09:28:53	2 minutes and 22 seconds	SUCCESS	SUCCESS	10 days and 5 hours	log	history
InstaGeni Uky	2013-10-27 09:31:15	2 minutes and 31 seconds	SUCCESS	SUCCESS	5 days and 4 hours	log	history
InstaGeni Utah DDC	2013-10-27 09:33:46	2 minutes and 13 seconds	SUCCESS	SUCCESS	(9 days and 4 hours)	log	history
LARC	2013-10-27 09:...	2 minutes and ... seconds			(15 days and 16 hours)	log	history
ORCA ExoGeni BBN	2013-10-27 09:38:28	1 minute and 14 seconds	SUCCESS	SUCCESS	5 days and 4 hours	log	history
ORCA ExoGeni Duke	2013-10-27 09:40:22	1 minute and 55 seconds	SUCCESS	SUCCESS	5 days and 16 hours	log	history
ORCA ExoGeni ExoSM	2013-10-27 09:42:18	1 minute and ... seconds	SUCCESS	SUCCESS	5 days and 16 hours	log	history
ORCA ExoGeni FIU	2013-10-27 09:43:46	2 minutes and 29 seconds	SUCCESS	SUCCESS	5 days and 15 hours	log	history
ORCA ExoGeni Nicta	2013-10-27 09:46:16	2 minutes and 18 seconds	SUCCESS	SUCCESS	6 days and 4 hours	log	history
ORCA ExoGeni OSF	2013-10-27 09:48:34	1 minute and 25 seconds	SUCCESS	SUCCESS	(3 days and 5 hours)	log	history
ORCA ExoGeni RCI	2013-10-27 09:49:59	2 minutes and 34 seconds	SUCCESS	SUCCESS	5 days and 5 hours	log	history
ORCA ExoGeni UFL	2013-10-27 09:52:33	1 minute and 23 seconds	SUCCESS	SUCCESS	(3 days and 5 hours)	log	history
	2013-10-27	1 minute and 27			5 days and 15		

http://monitor.ilabt.iminds.be

L2 links that can be stitched

Test dataplane: L2 stitching

- iMinds connected directly to ION (1 VLAN)

Uniform Clearinghouse APIs

Specification and prototype: GPO, Utah, Ofelia, iMinds

Registry API

Total duration 13.28s from Fri Oct 25 22:47:20 CEST 2013

- ✓ setUp
- ✓ lookupMemberAuthoritiesNoFilter
- ✓ lookupTrustRoots
- ✓ lookupAggregatesNoFilter
- ✓ lookupSliceAuthoritiesNoFilter
- ✓ getVersion
- ✓ lookupMAForUrns
- ✓ lookupMemberAuthoritiesWithMatchNoFilter
- ✗ lookupAMForUrns
- ✓ lookupSAForUrns
- ✓ lookupSliceAuthoritiesWithMatchNoFilter
- ✓ lookupAggregatesWithMatchNoFilter
- ✓ lookupMemberAuthoritiesWithFilter
- ✓ lookupSliceAuthoritiesWithFilter
- ✓ lookupAggregatesWithFilter

Member Auth API

Total duration 19.683s from Fri Oct 25 22:46:19 CEST 2013

- ✓ setUp
- ✓ getVersion
- ✓ getTestUserCredential
- ✓ retrieveCredentialSomehow
- ✓ lookupPrivateMemberInfoEmptyFilter
- ✓ lookupPrivateMemberInfoNoFilter
- ✓ lookupIdentifyingMemberInfoNoFilter
- ✓ lookupIdentifyingMemberInfoEmptyFilter
- ✓ lookupPublicMemberInfoEmptyFilter
- ✓ lookupPublicMemberInfoNoFilter
- ✓ lookupPublicMemberInfoFiltered
- ✓ lookupIdentifyingMemberInfoFiltered
- ✓ createKey
- ✓ lookupKeysNoFilter
- ✓ updateKey

Slice Auth API

Total duration 24.366s from Fri Oct 25 22:46:45 CEST 2013

- ✓ setUp
- ✓ getVersion
- ✓ getTestUserCredential
- ✓ getTestUserInfo
- ✓ retrieveCredentialSomehow
- ✓ createProject
- ✓ lookupProjectsByUrnNoFilter
- ✓ lookupProjectsByNameNoFilter
- ✓ createSlice
- ✓ updateProject
- ✓ getSliceCredentials
- ✓ lookupSlicesNoFilter
- ✓ lookupProjectsNoFilterAfterUpdate
- ✓ lookupProjectMembers
- ✓ updateSlice

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Next steps

- **AM API**: stable and interoperable
  - Minor details to be solved in a Common API
- **APIs for authorities** (members, slices) and for getting list of authorities
  - Not standard or not present (e.g. you can not get a single list of AMs in GENI)
  - Uniform Clearinghouse APIs can solve this (previous slide)
- **Resource description**
  - ongoing EU-GENI effort to see if ontologies can improve this
- **Stitching**:
  - getting more stable implementations in tools
  - Dynamic control by Autobahn on Geant network in Europe ?
- **Tools that are easier to use**

Next GEC 19

- **Japan vnode/flare** also fully interoperable ?
  - shown demo at this GEC of interoperability protogeni-vnode control framework (AM)
- **Ofelia and Brazil** (open-flow testbeds)
  - deploying Ofelia framework (AM + clearinghouse) ?
- Deploying a **federation clearinghouse** with the new APIs ?
- Update statistics on continuous **monitoring**
- **Tool** improvements ?

Thanks to all people who helped in setting up this working group
and
joining the phone confs at strange hours