

FIRE – GENI SDX 1.0

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GENI Federation

FIRE Federation

Leveraging Protogeni as SDX

We have developed a prototype of a FIRE-GENI SDX (software defined exchange) based on the Protogeni/Emulab testbed software.

What we needed:

- VLAN connections
- VLAN translation
- SDN functionality
- AM API
- Bandwidth management

Protogeni/emulab does solve 3 of these out of the box, and we developed the VLAN translation and SDN functionality as shown below. If an RSpec comes in with VLAN translation needs or with an openflow controller attached to the link, we swap in an extra node which has this functionality, e.g. based on openflow or later on by click software router.



Example setup and stitching nightly testing





antening	account	10:29:58	seconds	3000133	30000233	10g
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-15 20:18:22	5 minutes and 39 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-16 11:00:37	12 minutes and 32 seconds	FAILURE	FAILURE	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-16 21:05:57	19 minutes and 19 seconds	FAILURE		log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-17 10:28:34	6 minutes and 11 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-17 20:21:09	9 seconds	FAILURE		log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-18 10:12:50	9 seconds	FAILURE		log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-18 20:25:14	7 minutes and 6 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-19 10:29:23	6 minutes and 47 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-19 20:21:27	6 minutes and 18 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-20 10:29:08	6 minutes and 43 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-20 20:30:29	7 minutes and 49 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-21 10:29:11	7 minutes and 45 seconds	SUCCESS	SUCCESS	log
stitching	Stitching vwall2 - Utah geniracks with virtual wall account	2014-05-21 20:28:13	6 minutes and 48 seconds	SUCCESS	SUCCESS	log

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