Meeting Notes Feb. 13, 2014

WG-SDN call notes 2/13/2014
Attending:
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Russ Clark <Russ.Clark@gatech.edu>
Joe J Mambretti <j-mambretti@northwestern.edu>
Sorry, DaveP had to leave call for the same reason JohnM
Agenda items:
1) Agenda Bash
2) Joe Mambretti and Russ Clark on GENI-software-defined exchange point work
3) Dan: HPC and SDN workshop impressions
What does SDN exchange point mean for GENI?
Joe M: GENI is a "distributed instrument for network science"
SDX aims to allow GENI to interconnect with other such (generally SDN-based) instruments. E.g., to interconnect with the european FIRE (Future Internet Research Environment).
This community is somewhat unique in that it is collaborative between separate domains (e.g., STARLight and SoX), which is not generally the case with carriers.
Russ Clark hopes to find interesting commercial applications
1. Joe and Russ have GENI-funded projects - will showcase during GEC19
2. GENI: control frameworks interact with each other and manage/control platforms, no one NOC management, SDN for programmability, exchange of capabilities (?) between domains (and control framework domains?), apply SDN to IXPs (Russ Clark's GENI project, may have commercial implications), additional APIs for AM's to enable more sharing done for peering capabilities
Current SDN is single domain
When there are multiple domains with cooperation, services may span multiple domains
Provision a service/request a resource: signaling made possible on multiple domains
There is still research on this topic.
3. Experimenters:
4. Interface with other research testbed environments: SDN exchange points to enable connectivity/federation with international testbeds
5. Interface with other production networks/world:
Broadband/wireless in campuses, distributed applications like video needs expansion from campuses towards community networks: SDN exchange points will help
Traffic engineering in addition to BGP peering in SDX (observed by Chris Small)
Exchange with multiple layers
Deniz: how to make SDX available to experimenters? (tricky question)
Researchers should not bring down the exchange point.
One of the interesting things we are seeing that SDN that exchanges may help with is being able to make a better-operating division between production and experimental connections that are sharing the same resources. If you can do this effectively, you can give researchers more flexibilty to try new things without affecting production.
Peering with other networks, peer with itself, (researchers may propose new approaches to BGP), what are the primitives to enable such an exchange point to be powerful in tying things together with various entities (international, community, testbeds, commercial)
Eg, How to think beyond BGP? Eg, how to do routing in a content-based (non-IP) internet of the future?
Verizon is 6 months into a project to deliver digital media via SDN. Have expressed interest in an SDX.
Russ Clark on implementation: focus on ISP model, SDN-capable switch in an IXP, richer policy expression than BGP, OF switch with a pyretic controller, application-specific policy definition instead of dest-IP only, the language to express this, co-lo Atlanta
e.g. cloud outsourcing (no control over which AS'es are traversed) - can you have rules inserted to pick a path? Inter-SDX language/protocol TBD
Richer control set not needing (as many) legal contracts.