Teleconference notes 02-14-2013

WG-SDN teleconference

Attendees:

Bill Owens, NYSERNet
Paul
Chris Small from IU
Matt Wilson, Northwestern University
Michael Van Norman, UCLA (via IP phone over OF-enabled first hop)
(Linksys WRT54Gv4, Raspberry Pi running POX for the controller -- OF for <$75)(wow! cool!)(stock firmware on Linksys?)(no, Pantou)
^^^--this would be a really cool howto as a "get-started-with-of" kind of thing... -- that's sort of why I brought it up (agenda item #4)
Dan Schmiedt, Clemson (um, has raspberry pi waiting on a project sitting on my desk at least)
Brian Parker, Clemson
Michael Lambert, PSC/3ROX
David Crowe, Oregon GigaPOP
Eric Boyd, Internet2
Dale W. Carder, University of Wisconsin, on Centrex!
kevin mayeshiro, University of California, Davis
Joe Lappa PSC/3ROX
Ryan Flaherty, Marist College
Deniz Gurkan, University of Houston

1) Agenda bash
2) Grover graciously agreed to join and give us an update on the testing of Brocade from the perspective of AL2S deployment
3) I have attended the first US Ignite developer's workshop and will give an update on that.
4) Questions this workgroup is interested in answering:
- Quick guide to starting an OpenFlow testbed
- Vendors and updates on OpenFlow implementations
- IETF and ONF standardization status
- ?

And then, we will transfer all of this into our usual I2 wiki site: SDN Collaboration Space

Grover:
what has been done on the testing of Brocade
OESS code: hardware and software perspective
More rigourous
Set of procedures on update of the network: automated software testing
10G and 100G ports
Juniper MX960
Brocade MLXe16
And then share with the community
Also working with Cisco
Vendors are very cooperative
Stable code mostly
OpenFlow 1.3 in the future, currently OpenFlow 1.0
Core forwarding capability very stable
Most failures are future-desirable capabilities rather than current needs of AL2S
Comment on flows got stuck: not an issue for AL2S - not replicated now and layer 2 match is the only important aspect necessary at this time
Bill: actions that are optional - required vs optional in the standard
It is hard to sometimes be more exlicit on what is optional and what is required
Eric: Vendor influence by the community through being educated and aware of what kinds of differences each bring to the optional/required sets
OF standard itself is not very clear
Different interpretations are possible
When experimenters run experiments on this platform - how do we make sure they understand capabilities?
Switch capabilities section would explain things (=optional/required features) supported for each vendor's implementation
Paul: Baseline test medium/expectations - is there such a config for this test?
Independent of the OF - baseline the testbed
OF support on one of L3 or L2 match not both at the same time
OF tests: any customized tests that may be available to the community as open source?
No customized - only https://github.com/InCNTRE/oftest

Many communities are involved in deployment and testing efforts:
NSF CC-NIE participants, GENI, others - not necessarily documented
Resources are constrained in these kinds of tests
I2: multi-vendor in the backbone, Juniper, Cisco, Brocade - to help the community with the testing challenges. More vendors? Please contact I2 if interested in including. NEC, ?
IBM on GENI rack
Scope around testbed networks to be more effective

If there is a backbone with SDN in this community - testing help/support from Grover
GENI rack and I2 will integrate to be able to serve all application developers

Testing environment can be expanded - but, budget and software developer time constraints
AL2S feature - extending testbed resources to include frequently deployed community resources vs the resources on AL2S
How about community contributing to the test procedures financially?

Deniz:
IGNITE notes https://mozillaignite.org/
discussions of ways to abstract the network for programmers' and end users' point of view
-- programmers care about sockets and response time; not MAC addrs, bandwidth
-- invite Eric fropm ESnet for a future wg-SDN call discussion(?)
competition for awards sponsored by us gov
apr 3rd next deadline
requirements: 1Gbps+ BW, run on GENI,
next generation applications to program the network to meet higher layer application needs
or have better visibility into the network
IGNITE web site lists applications that have been awarded to date
main takeaways from the conference?
- presentation from Eric Boyd of Internet2 on what are developers' needs
-- question about FlowVisor design; forwarding tables can only be programmed for best effort forwarding today; Best effort service with overprovisioned bandwdith/paths; developers want repeatable results ION has up to 2G reservable BW, provides repeatable results; but some need more bandwidth; Move ION bandwidth to AL2S even though ingress L3 port; futures: instructions for GENI researchers to request explicit paths for repeatable experiment results
Need for orchestration software with visibility of available resources to service provider; give developer control of quality of service over their own network slice (?)
Transparency in FlowVisor as a nearer term goal

Forwarding rules firewall. Only flow space is allocated. Scheduling/rate limits are not included
Will this become easier in later versions of OpenFlow that (may) address QoS? http://www.openflow.org/wk/index.php/Quality_of_Service

Agenda item #4:
Michael Van Norman: raspi + Linksys
(strongly recommend two things -
TP-LINK WR1043ND (30+ Mbps) instead of Linksys (8 Mbps), and a solid USB power adapter to avoid voltage sag problems with the Pi: https://www.adafruit.com/products/501)
raspberryb.vannorman.com (but that should probably not go in the public notes as I don't always have the unit secured well) sure!
Cisco ONE did not run on rPi - instead POX
Floodlight runs well on rPi
An example setup for this group to experiment with the OF and controllers