NirvanaStack

The "Nirvana Stack" is a generic NFV solution stack which was proposed by ATT in 2016 and which consists of 4 key components: OpenStack, OpenDaylight, FD.io/VPP - all of which integrated into a solution stack in OPNFV.

Among the key objectives of this solution stack were enablement of rapid innovation, highly composable architectures, and flexible solution design.

Presentations

Presentations on Nirvana Stack:

- The "Nirvana Stack" (Liza Fung) - Nirvana Day at OpenStack Summit Boston, May 2017
  https://docs.google.com/presentation/d/1nCM0bbRa2B3yH5UR3tFumA0d2ZjtoxB5PGUJUSuugNe4/
- Towards the Nirvana Stack (Lightening talk, OpenStack Summit Boston, May 2017) (Srikanth Vavilapalliand, Andre Fredette)
  https://docs.google.com/presentation/d/14xQAaZnXQEfIgsH_7PoNGOrLzhkizZm7ogYRj8aiXM/
- Towards the Nirvana Stack (Nirvana Day at OpenStack Summit Boston, May 2017) (Francois Lemarchand, Andre Fredette, Frank Brockners)
  https://docs.google.com/presentation/d/14xQAaZnXQEfIgsH_7PoNGOrLzhkizZm7ogYRj8aiXM/
- Realization of Nirvana Stack: (Srikanth Vavilapalliand, Frank Brockners), Nirvana Day at OpenStack Summit Boston, May 2017
  https://docs.google.com/presentation/d/1DzBWKPhHZNrnG0a-lmmsjKJNxxAEFbxOeEwAEpZyGNE/
- Solving L3VPN use-cases with the Nirvana Stack: (Paul Carver, Thomas Morin, Frank Brockners), Nirvana Day at OpenStack Summit Boston, May 2017
  https://docs.google.com/presentation/d/1RH-jcbv49aBuzXSJAP8IQW-9OZxG0rEyChXH9811_0/
- Towards Nirvana Stack: The Evolution of OpenDaylight Network Control (Phil Robb, Frank Brockners), OPNFV Summit, Beijing, June 2017
  https://docs.google.com/presentation/d/1qgQmCavVBdwE9k7mU7gHzHJVa6B3sqcivwtd0xLUw/
- Towards Nirvana Stack: OpenDaylight Network Control Solution with FD.io Data plane (Srikanth Vavilapalliand, Andre Fredette, Frank Brockners), OpenDaylight Technical Workstream (TWS), August 7, 2017
  https://docs.google.com/presentation/d/16ixBFqHJTHbhsA0XhAsfou844pDRQL8p388f9N11No8/edit#slide=id.p3

NirvanaStack PoC

Nirvana Stack PoC

In an initial phase of the NirvanaStack PoC the team wanted to demonstrate a modular solution for network control in OpenDaylight which allowed for:

- Flexible and single solution for network control in OpenDaylight
- Flexible set of network services supported
Flexible set of network devices supported

As the initial service, the team implemented the L2/ELAN service. The solution was created as a combination of NetVirt (for service logic) and GroupBasedPolicy (for flexible service/policy rendering to different devices) in OpenDaylight. This resulted in an integrated solution of two components which were formerly competing with each other. For details on the integration see: “Realization of Nirvana Stack” (Srikanth Vavilapalliand, Frank Brockners: https://docs.google.com/presentation/d/1DzBWKPhNZ6nG0a-lmmsjIfKJXnxwAEF6xOeEwAEpZyGNE/)

Key patches for the PoC

- Code for ELAN Service with ODL Integrated Solution
  - NetVirt Enhancements: https://git.opendaylight.org/gerrit/#/c/50259/
  - Genius Enhancements: https://git.opendaylight.org/gerrit/#/c/53632/
- APEX Scenario with ODL Integrated Solution
  - https://gerrit.opnfv.org/gerrit/33433
- GBP interface for remote calls on VPP
  - https://git.opendaylight.org/gerrit/#/c/48962/

PoC Meetings

- The PoC team meets each Wednesday at 7am PT:
  https://bluejeans.com/473194686

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