OpenNF WARF Presentation

Overview

- WARF Accelerator funded three CS students through 2015-06 towards development + commercialization of the OpenNF technology.
- OpenNF is a research project started in 2012 and has filed two patents under WARF (one issued, one pending).
- We provide critical mechanisms to the SDN+NFV landscape and provide a high calibre solution to problems that are rapidly becoming evident.

Project Status

- We defined four milestones that Accelerator funding would support:
    - Chain Move
    - Serialization Performance
    - High Availability
    - GUI

Milestone #1: Chain Move

- Technical procedure: needed a way to redirect network traffic through a series of in-network devices.

Milestone #2: Serialization Performance

- The mechanism we were using to exchange data between systems was slow.
- We implemented a Goolge tool called protobuf which allows us to wrap up our data much more quickly. This was probably the most straightforward, since our friends at Google have released free software tools (protobuf) that dramatically improved our system performance.

Milestone #3: High Availability

- We've designed our software to handle failures by falling back to a hot standby backup.
- The big challenge is making sure the hot standby is consistent with the instance that fails.
- We've got an operational model for this, but it only works on our network and under very specific test cases.
- Needs a lot more testing + refinement.

Milestone #4: GUI

- We've integrated OpenNF with OpenStack, a major cloud computing platform, and integrated a basic user interface for monitoring middleboxes
- There is more work to be done here, but we're not sure exactly what it is. It really depends on where we see OpenNF evolving in next couple years.

Market + Ecosystem

- NFV is a $2B market, projected to grow to $12B in the next 3-4 years.
- Lots of vendors providing NFV solutions (Cisco, Juniper, F5, etc.)
- OpenNF is not actually a vendor; we see ourselves partnering with existing vendors to improve their solutions
- Service providers are only just starting to use NFV at the capacities which lead to the problems that OpenNF solves.
    - So basically the industry is just starting to realize the value of OpenNF.

Commercialization

- Nokia MarketLink
- NFV World Congress

gBETA

- We were one of the teams selected for Gener8tor's gBETA Spring Cohort.
- Spent 7 weeks in an intensive bootcamp developing a business model and pitching to investors.
- Ultimately we felt that the business model gBETA pushed was not appropriate for us, although it was still a great learning experience.

Maturity & Next Steps

- We have completed the milestones set out by the Accelerator program, however the software only works on our network under very specific test cases.
- We need something on the order of 1 human-year to get this production ready.

- Commercialization: Your ideas regarding how to get the technology out to the marketplace. Who are the most likely first adopters? Are you considering starting your own business?
- Maturity: How mature will the technology be once the project is complete, will it be ready to commercialize? If not, what will be needed?
- Ecosystem status: What does the general ecosystem for your technology look like today and in the near future? Where does your technology fit into the ecosystem?

Questions for Scott:

- How much do the people attending know about OpenNF's technology, and how much do they care? Should I bother explaining what NFV is?