Network Slicing and NFVRG

[Updates From IETF 98]

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Outline

- Activities and next steps of NFVRG

- Motivation and progress on the formation of the Network Slicing Working Group

- There are some recent efforts to exploit the benefits of microservices in NFV:
  - At IETF 98, a new approach was presented:
    - Edge Computing IoT Microservices.

- A new I-D re-takes the work on the definition of a reference architecture for NFV:
  - The latest proposal (actually a new version of an old I-D):
    - Adds support for "multidomain".
    - Updates the interfaces they have defined previously.

- News from the "Open Source MANO" (OSM):
  - It is supported by a wide set of partners.
  - It is using "juju" to deploy the VNFs underneath.
  - R2 will probably be able to interoperate with public clouds.
  - As it is based on OpenStack, it is compatible with OPNFV.

NFVRG: Current Activities (II)

- Updates and next steps on the gap analysis:
  - It is fundamental for the evolution of the NFVRG but:
    - A strong and important voice is against it...

- A practical application of NFV was presented: The SHINE project (Secure Hybrid In Network caching Environment) [1]:
  - Proposes a mechanism for satellite communications that achieves E2E using a combination of multicast and unicast. It might be better to use ICN, as it makes sense for the qualities of a satellite environment.

- The need of standardization efforts on Network Slicing was defended (by A. Galis):
  - Here a slice is defined as a union of subsets of resources, VNFs, and services.

[1] slides-98-nfvrg-sessb-11-network-coding-in-the-shine-esa-project-00.pdf
https://www.ietf.org/proceedings/98/slides/slides-98-nfvrg-sessb-11-network-coding-in-the-shine-esa-project-00.pdf

- Change in NFVRG meeting structure…

- Will be shortened.

- Each will be focused on a particular issue:
  - ~3 presentations on such issue.
  - In-depth discussions.

- There will be (short) time for I-D updates:
  - Discussion SHOULD be on the mailing list.

- Topics of interest:
  - Re-architecting functions:
    - New architectural and design patterns: Containerization, *-lessness, *-plane separation, etc.
    - SDN integration.
    - Programmability.
  - New management frameworks:
    - New OAM mechanisms: Configuration control, hybrid descriptors, etc.
    - Lightweight MANO proposals.
  - Guarantee of key features (e.g. low latency and resource isolation):
    - New hardware acceleration schemes.
    - Offloading functions to dataplane elements.
    - Other related approaches...
  - Measurement and benchmarking.

Re-Introducing Network Slicing

- History and next steps:
  - Network Slicing was presented at IETF 97:
  - At IETF 98 we defended the need to standardize the concept.
  - At IETF 99 we will form the BoF with a set of I-Ds…

- Other standardization groups already have incorporated slicing into their standards:
  - NS in 3GPP claims to have the "good" definition and architecture:
    - It has an incomplete definition and mismatch to some definitions from operators and carriers.
    - But it can be a good starting point for the IETF reference architecture and protocol (interfaces).

- Updates on the reference architecture (by China Mobile):
  - Does not differentiate between resources consumed by VNO and ASP.
    - Operators prefer to define and rule the final services, using VNO and ASP just to commercialize them, avoiding them to get "value added".
    - Pure InPs (e.g. carriers) together with VNOs will get value added services so that both InPs and VNOs will benefit and compete with current operators.

Q & A

Thanks for Your Attention

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