Benchmarking VNFs and their Infrastructure

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March 7, 2014

Vision of Network Function Virtualization

- http://www.etsi.org/technologies-clusters/technologies/nfv
- Figure 1
- Some acronyms:
  - VNF
  - NFV: Network Function Virtualization, makes VNFs possible
  - COTS: Common Off-The-Shelf, as in compute HW

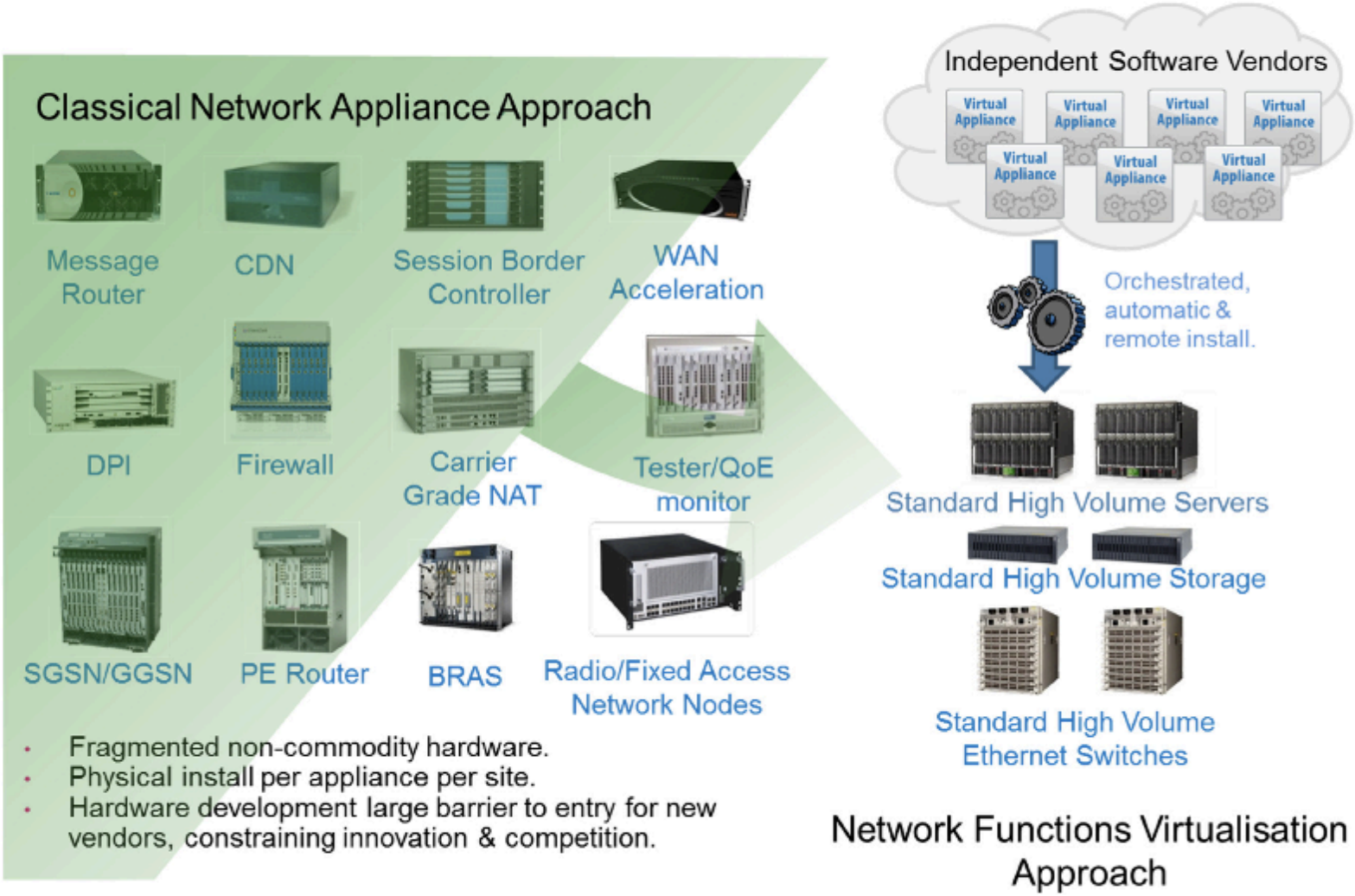

Figure 1: Vision for Network Functions Virtualisation

Enough hand-waving, what's this mean to us?

- New Hardware on the bench:

1. High volume server platforms (COTS, possibly with virtual technology enhancements).
2. Large capacity, and high speed, high reliability storage systems.
3. Network Interface ports specially designed for efficient service of many virtual NICs.
4. High capacity Ethernet Switches.

Test Configuration

- o number of server blades (shelf occupation)
- o CPUs
- o caches
- o storage system
- o I/O

configurations that support the VNF:

- Hypervisor
- o Virtual Machine
- o Infrastructure Virtual Network

the VNF itself:

- specific function being implemented in VNF
- o number of VNF components in the service function chain
- o number of physical interfaces and links transited in the service function chain

characterizing perf at capacity limits may change?

- Charac. Infrastructure support of #? VMs:
  - N when all VM at 100% Util
  - 2*N when all VM at 50% Util ??
- #? VNF profile A, VNF profile B
  - Profiles may include I/O, storage, CPU demands
- Partition VNF performance
  - from single VNF in infinite I/O loop
- System errors occur as transients (longer dur.)
- VM and VNF flux: constant change in population while characterizing performance

Next steps

- This draft provides motivation and lists considerations
- Need to refine Scope, Terms, and Methods