What's the Impact of Virtualization to ALTO?
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Introduction

- NFV: Network Function Virtualization
  - Operation
    - *leverages standard IT virtualization technology to consolidate many network equipment types onto industry standard high volume servers, switches and storage*
  - *Advantages*
    - *Decoupling software from hardware*
    - *Flexible network function deployment*
    - *Dynamic operation*
  - *Architecture*
    - *NFV Management and Orchestration (NFV M&O)*
    - *VNF, virtual network function*
    - *NFVI, NFV-Infrastructure*

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                    |  NFV M&O  |
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  |    VNF    |-----------------------|   VNFI    |
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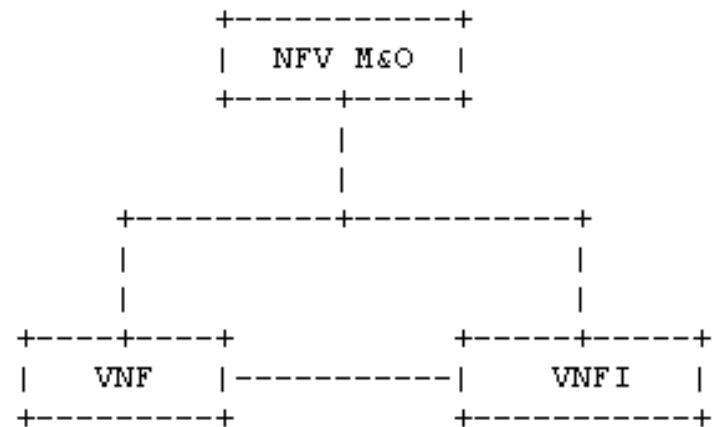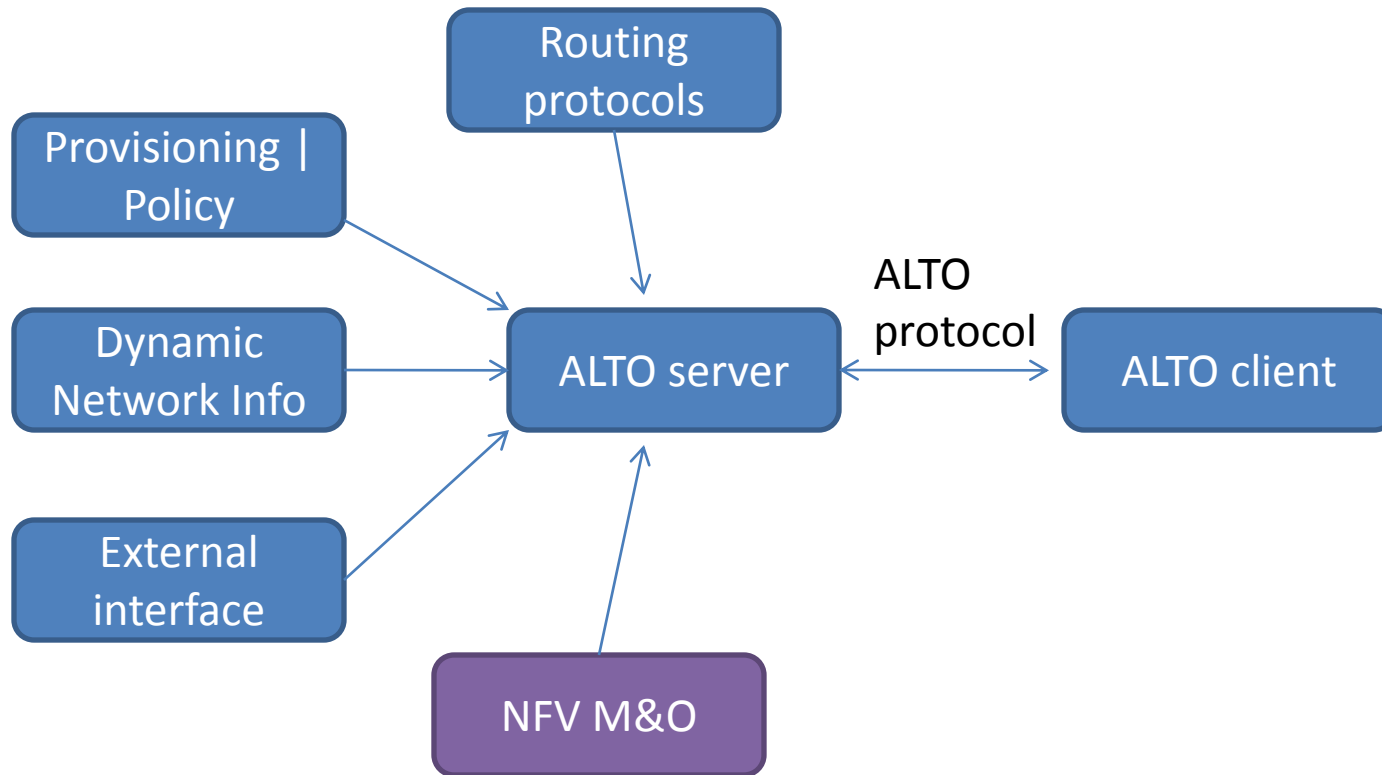
Figure 1: NFV Architecture in Brief

NFV and ALTO

- ALTO: Application Layer Traffic Optimization
  - *provide guidance to applications that have to select one or several hosts from a set of candidates capable of providing a desired resource.*

- NFV M&O as a Dynamic Network Info provider to ALTO

Impact of Virtualized Endpoints to ALTO Selection

Performance	Performance degrade given the same physical resource
Portability	mobility and network location of the service points
Elasticity	The ALTO discovery and selection process will be impact to reflect such dynamic information.
Resilience	The NFV M&O will manage the metrics such as packet loss rate, latency, delay variation of flows, maximum time to detect and recover from faults
Energy efficient	NFV could potentially deliver up to 50% energy saving compared with
Service assurance	High availability (99.999%) is still challenging for VNFs
Endpoint Cost	vNF tries to lower Capex

Next Step

- Comments are welcome

- Interested partners are welcome

- Thanks for you attention