VNF Benchmark-as-a-Service (VBaaS): A Teaser

(draft-rorosz-nfvrg-vbaas-00.txt)

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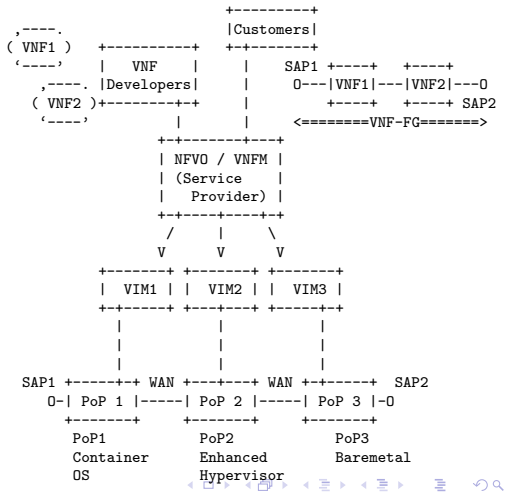
VNF Benchmarking

- Different NFVI PoP/host may perform differently
- VNF development and NFVI upgrades are independent
- Orchestration needs to know how much resources (e.g., cpu, memory, storage) to allocate for given target KPI values (e.g., throughput, latency).



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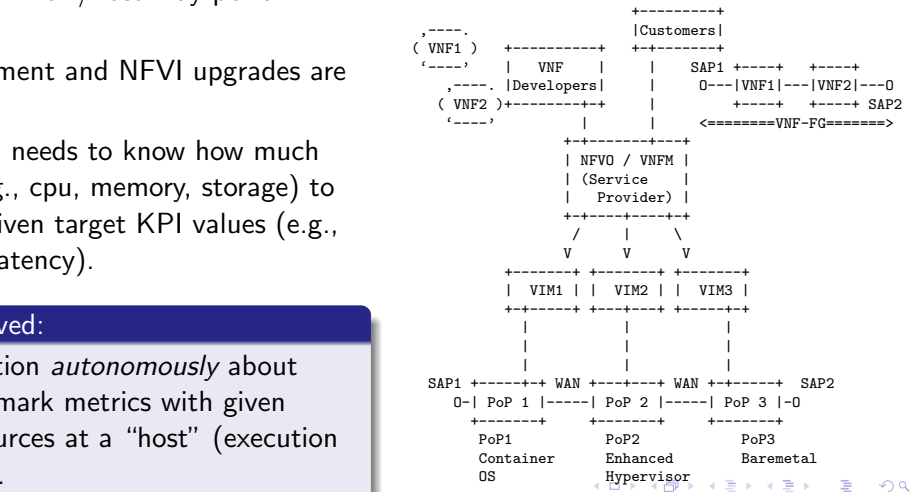
Problem to be solved:

- Gain information *autonomously* about VNFs' benchmark metrics with given reserved resources at a "host" (execution environment).



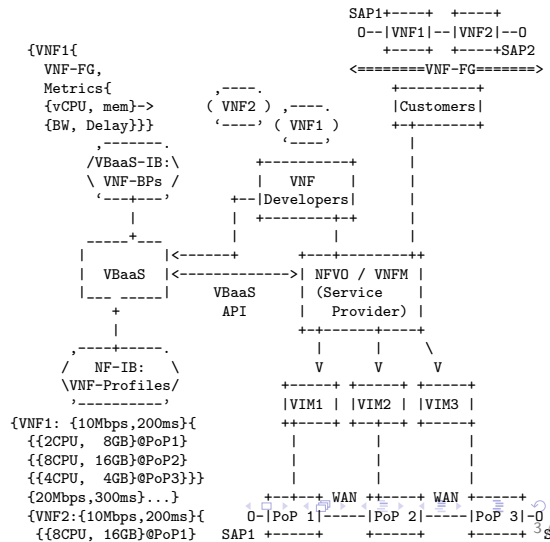
Highlights

Components

- VBaaS service function
- VBaaS Information Base for VNF Benchmark Profiles
  - structural
  - functional: manager, monitors and agents

Work-flows

- for ETSI NFVO and VIMs
- for recursive orchestration



Summary

VNF Benchmarking as a Service (VBaaS) aims at

- defining complementary functional components to ETSI NFV and other approaches;
- defining interfaces to the VBaaS service;
- defining possible VBaaS work-flows.

Acknowledgements

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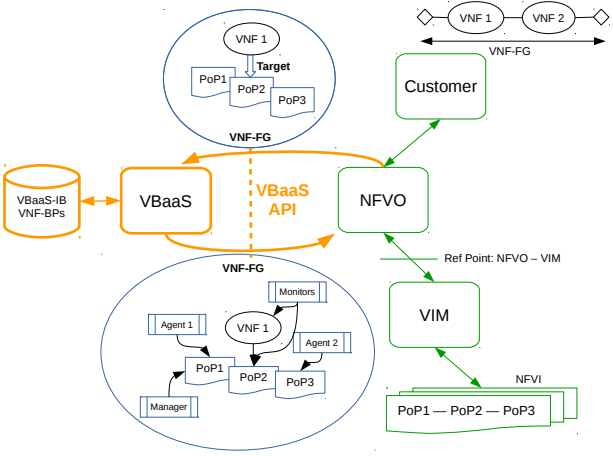
Outline

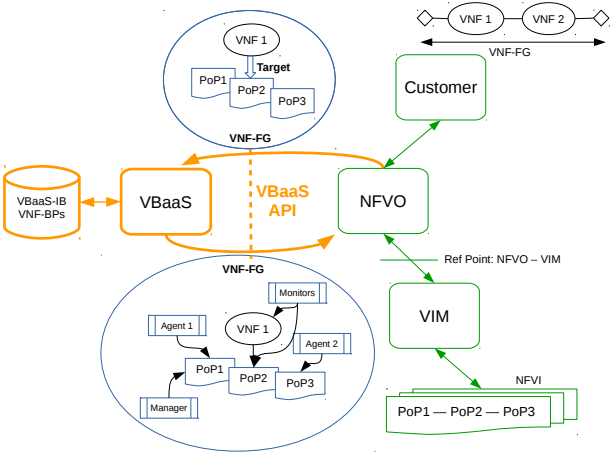
How? VNF Benchmarking as a Service (VBaaS)



How? VNF Benchmarking as a Service (VBaaS)

VBaaS objectives

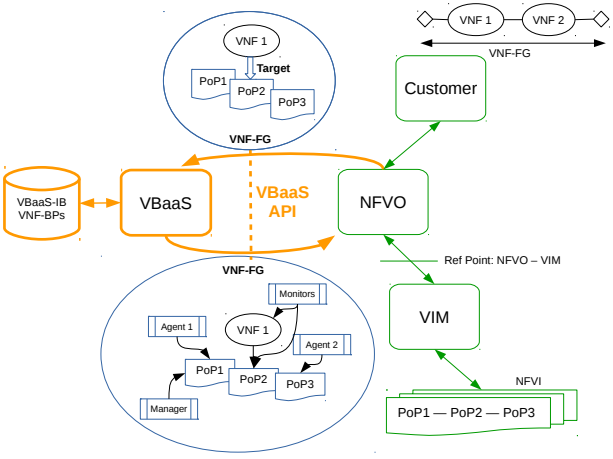
- "Black box" VNF benchmarking, with respect to the
  - NVFO
  - Benchmarking Service



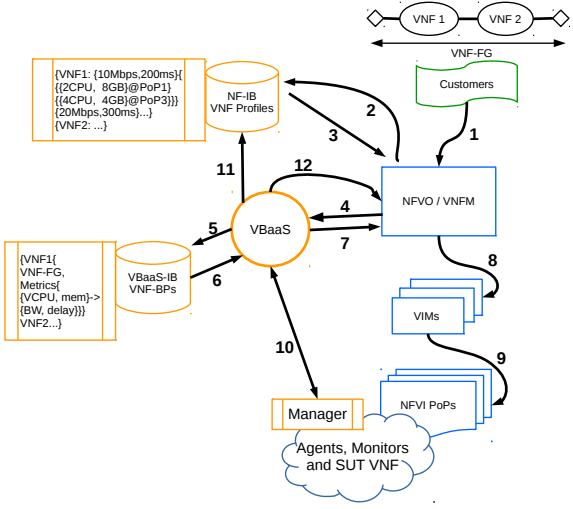
How? VNF Benchmarking as a Service (VBaaS)

VBaaS objectives

- "Black box" VNF benchmarking, with respect to the
  - NVFO
  - Benchmarking Service
- VBaaS uses NFVO (or VIMs) to deploy benchmark measurements
  - e.g., by VNF-FG



VBaaS Process Walk-through



Usage: Benchmarking, Dimensioning and Verification

Benchmarking

To measure VNF's throughput, latency, jitter parameters for given cpu, memory, storage reservation at given VIM.

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To determine cpu, memory, storage reservation parameters for given VNF at given VIM for target throughput, latency, jitter parameters.

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To assess if given throughput, latency, jitter parameters of a VNF is met with given cpu, memory, storage reservation at given VIM.

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Observation

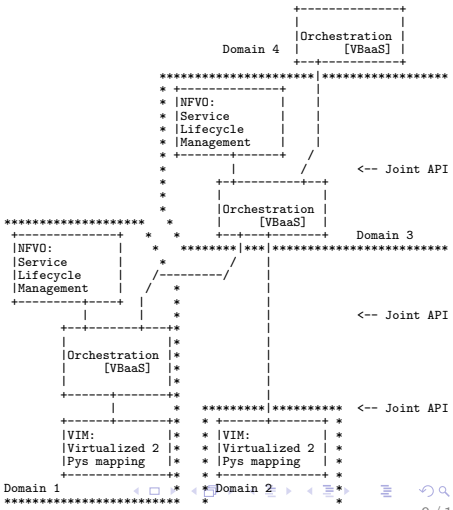
Dimensioning and verification boil down to benchmarking operation(s).

Recursive Orchestration with VBaaS

UNIFYing carrier network and cloud resources

- Recurrent joint software and networking control API[a]

[a] draft-unify-nfvrg-recursive-programming-02



Recursive Orchestration with VBaaS

UNIFYing carrier network and cloud resources

- Recurrent joint software and networking control API[a]
- Flexibility in resource virtualization with Big Switch with Big Software

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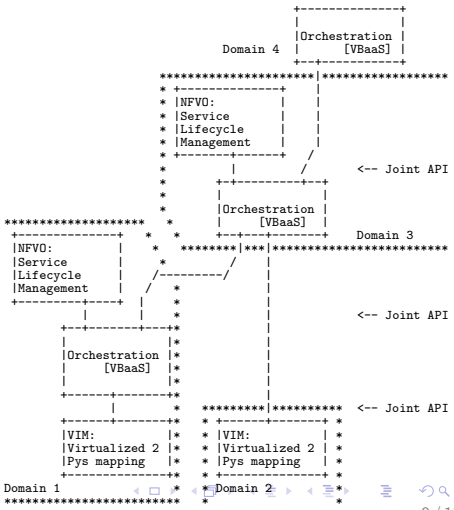

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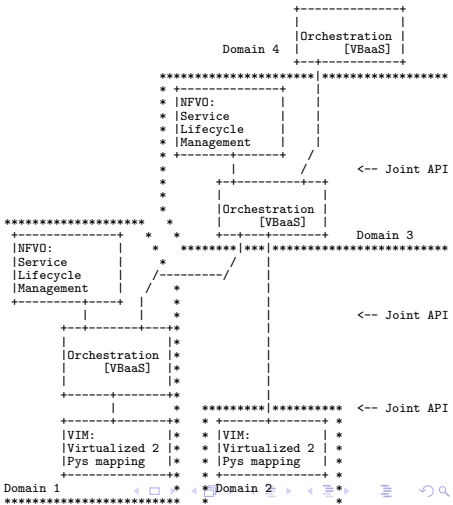
VBaaS

is part of each orchestration component; options:



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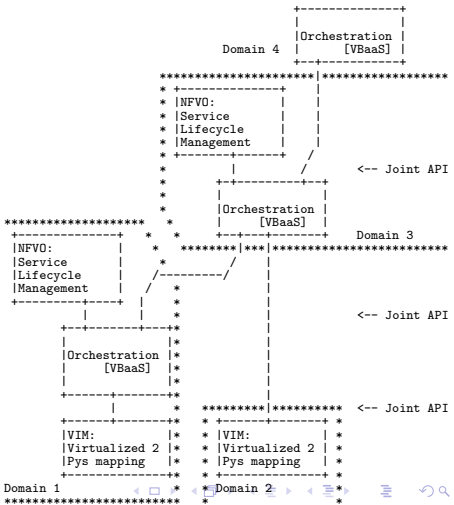

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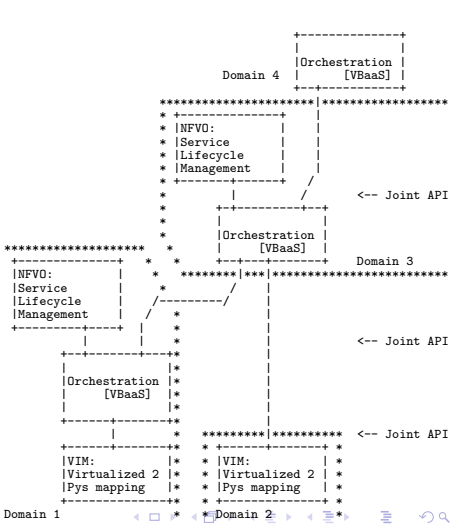
VBaaS

is part of each orchestration component; options:

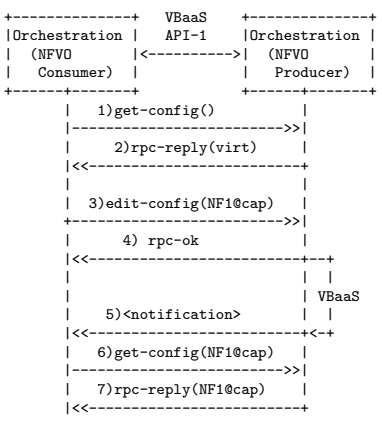
- request VNF profiling from the virtualization provider;
- do it on your own "transparently" over the underlying substrates.



VBaaS Request and Reporting as Capabilities

Capability reporting

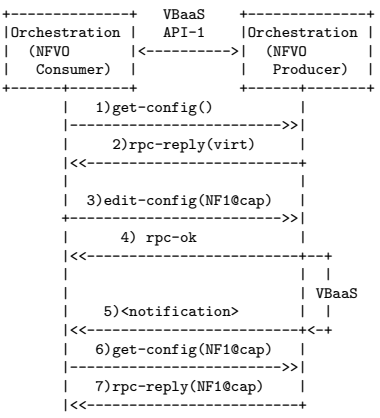
- Based on a virtualization yang model each execution environment can report VNF benchmarking results.



VBaaS Request and Reporting as Capabilities

Capability reporting

- Based on a virtualization yang model each execution environment can report VNF benchmarking results.
- Consumer can request a capability report by defining partial capability entries
  - Providing only performance KPI means a dimensioning request
  - Providing only resource allocation means a benchmarking request
  - Providing both mean verification



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