

Lean NFV: What, Why, How



Dan Pitt
Senior VP, MEF (retired)
President, Palo Alto Innovation
Advisors



Eugenia Corrales
CEO, Nefeli Networks



Daniele Mancuso
Chief Marketing Solutions &
Business Development Officer
Telecom Italia Sparkle



Mirko Voltolini
Global Head of Network
on Demand
Colt Technology Services

Thanks to

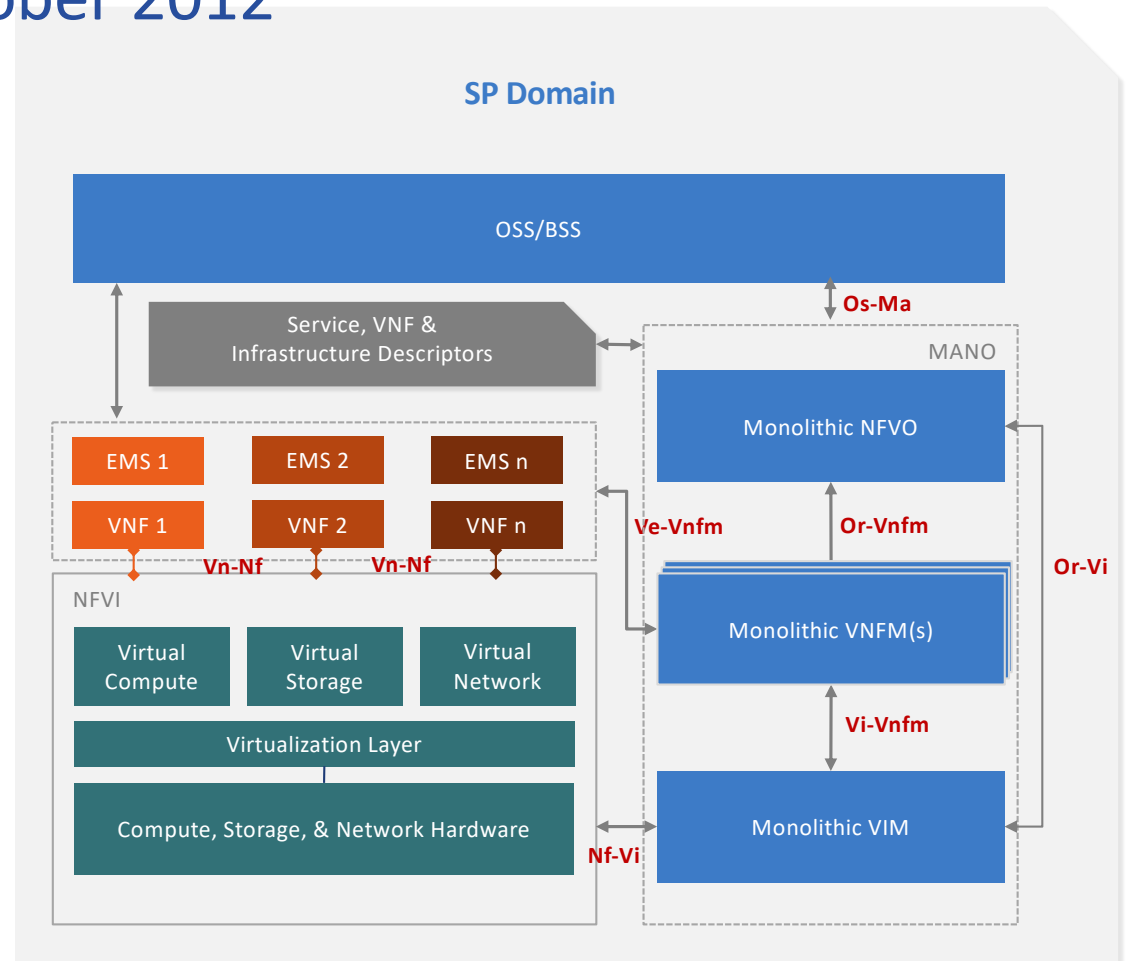


LEANFV

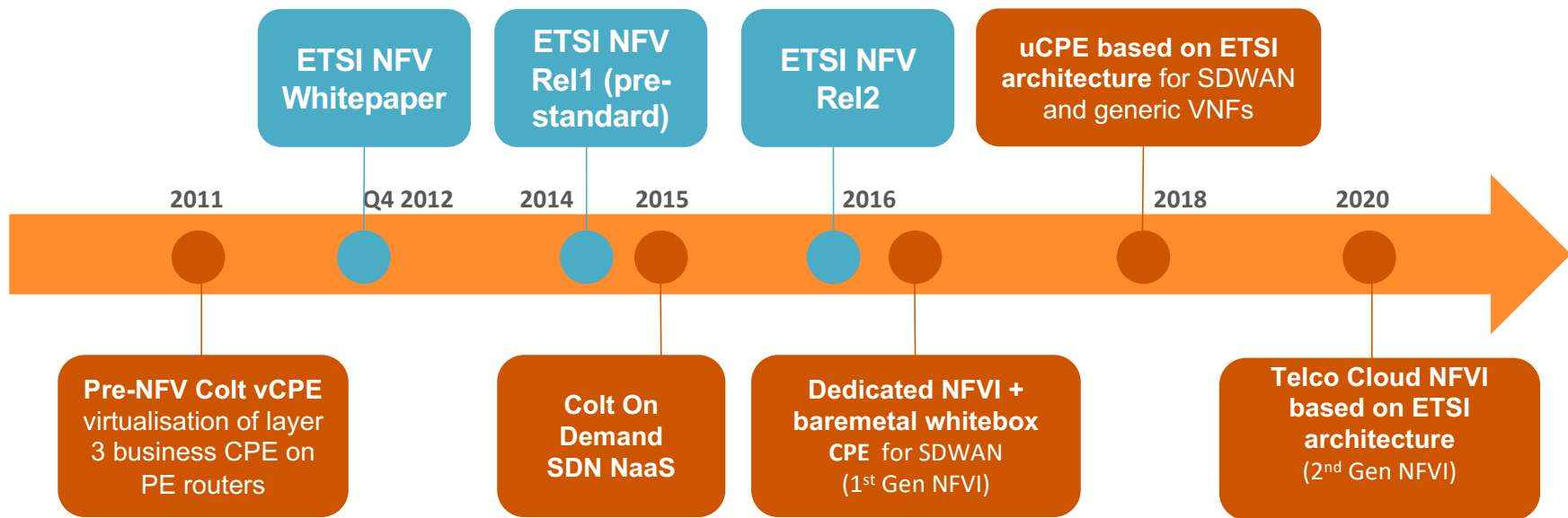


NFV: Launched here in October 2012

- Purpose
 - Virtualize, software-ize telco ops
- Means
 - Create Industry Specification Group (ISG) in European Telecommunication Standards Institute (ETSI)
 - Translate appliance functions into software pieces to run in commodity servers
 - Publish ETSI NFV Architecture
 - Define main components & their I/Fs
 - VNFs (virtual network functions)
 - NFVI (infrastructure components)
 - MANO (management & orchestration)
 - NFVO
 - VNFM
 - VIM



Colt journey with NFV adoption



4 Challenges with NFV so far

colt

ETSI MANO stack defines multiple separate components – SDN controller, Openstack VIM, NFV Orchestration, VNF Managers

Operational complexity

Lack of VNF standards for on-boarding and lifecycle management

Lack of standards

Slow ramp up of internal NetDevOps skillsets, tight external labour market

Lack of internal skillsets

Development cycle time still measured in months, not weeks., limited innovation

Long development cycle time



EDGE capabilities

- EUMED: Catania, Milan, Athens, Frankfurt, London
- Americas: Secaucus, Miami, Sao Paulo
- Asia: Singapore



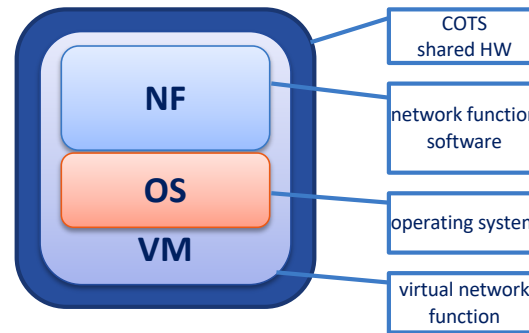
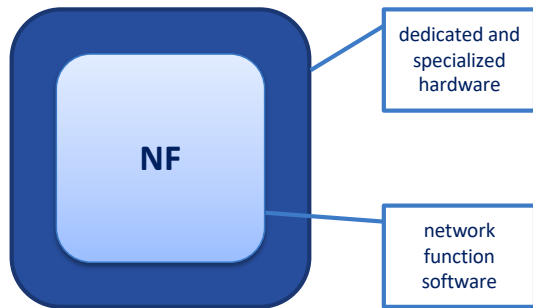
ETSI NFVi



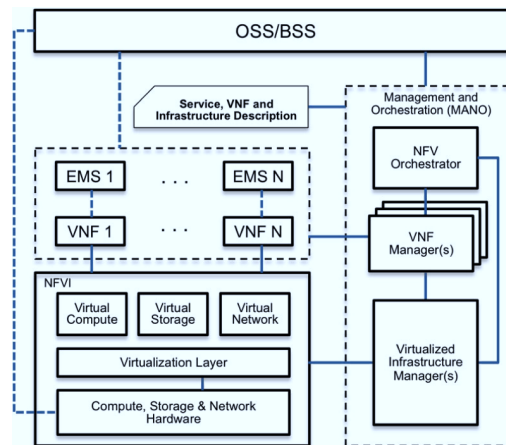
HCI IaaS

 **SPARKLE**
THE WORLD'S COMMUNICATION PLATFORM

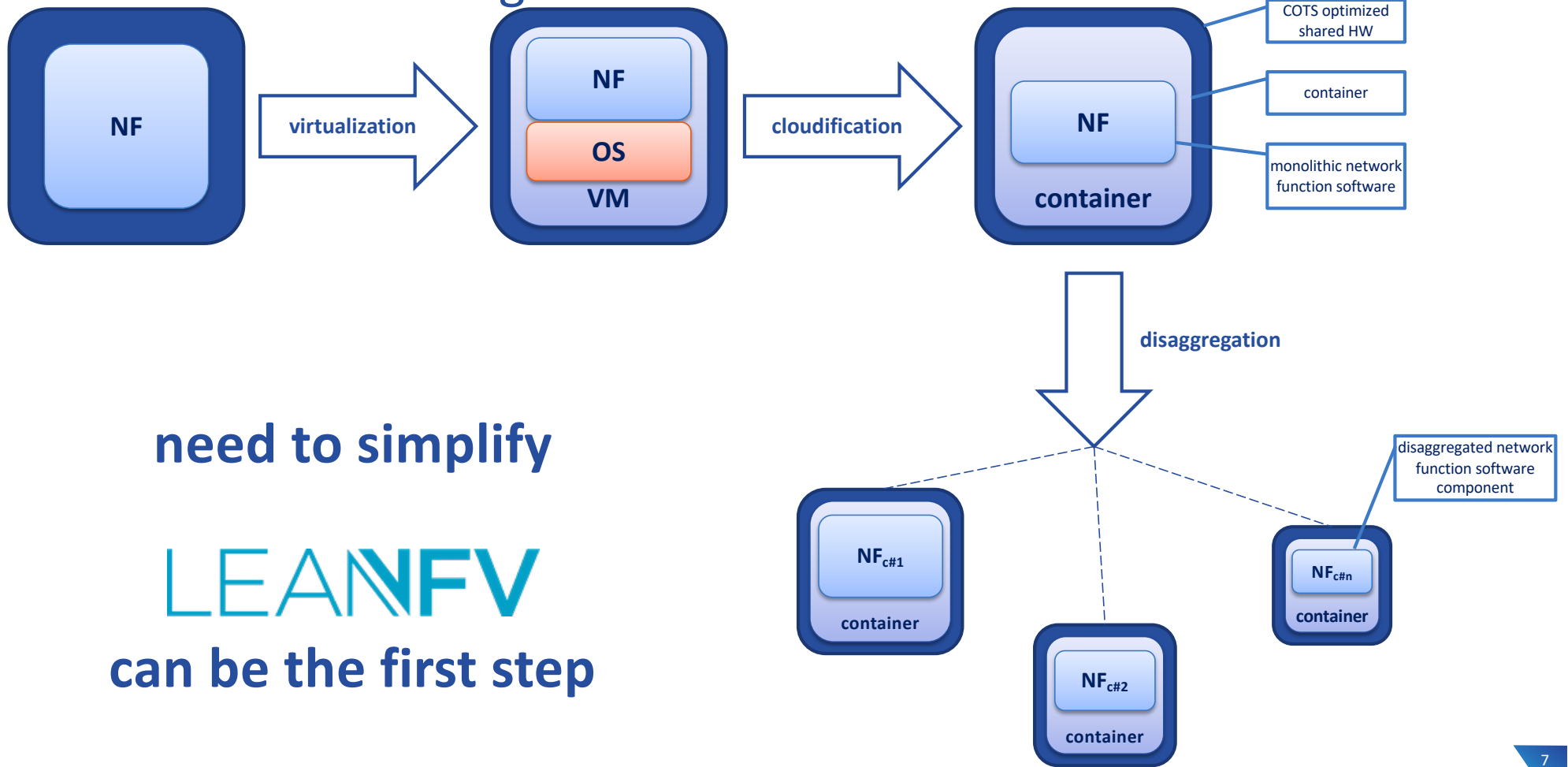
where we are...



- performance?
- HW certification
- HW acceleration
- VIM/OS interdependencies
- high availability?
- cumbersome SW updates



...where we'd like to go



need to simplify

LEANFV

can be the first step

Why use Lean NFV?



Can support management of new services such as SASE and WAN Edge

Minimizes the necessary integration between components



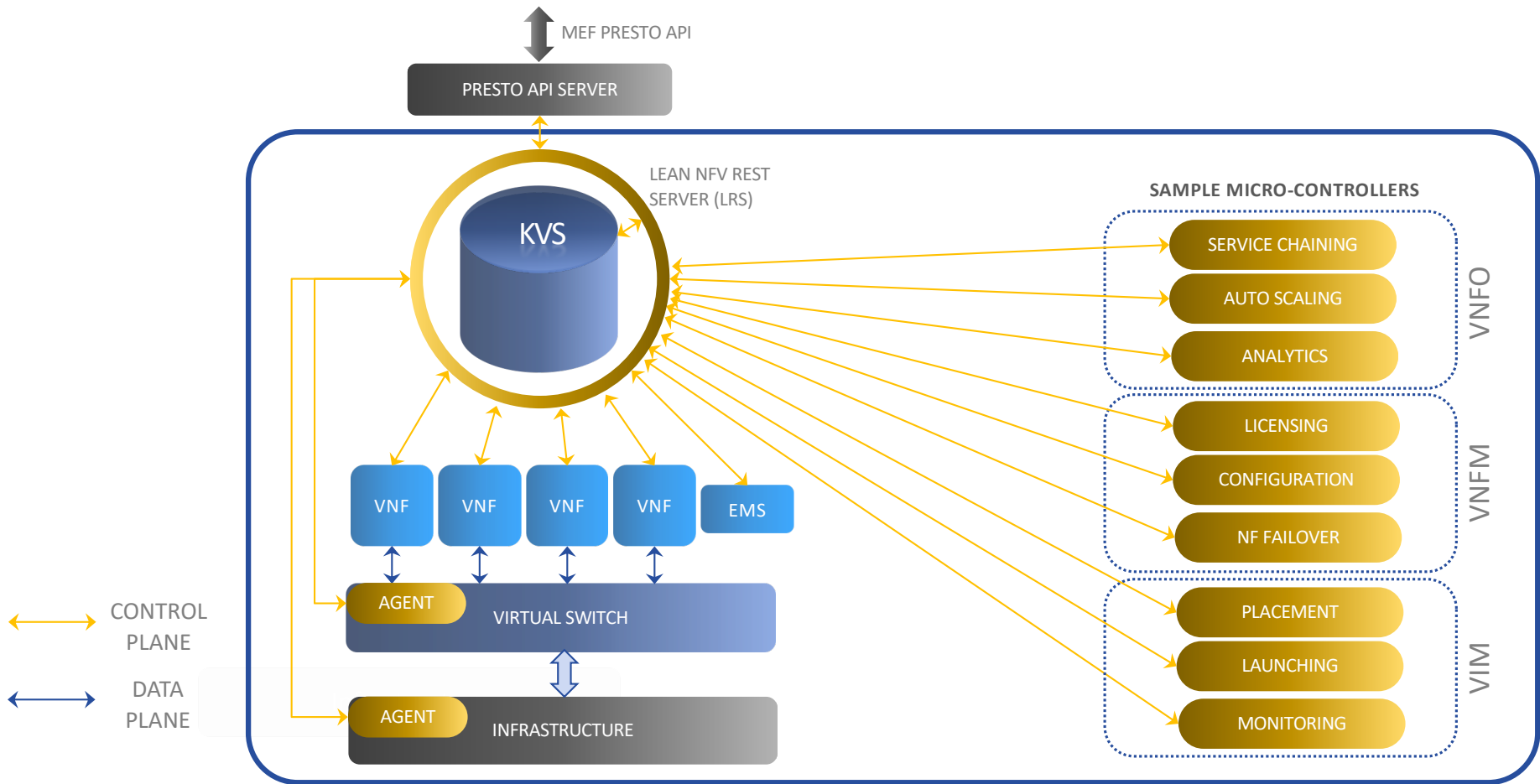
Is resource efficient

Allows for incremental adoption



Is future-proof

Lean NFV Sample Architecture



What is *LEAN* about Lean NFV?

- ✓ Minimal integration between components
- ✓ Minimal or no operational metrics obtained from network functions
- ✓ Minimal management overhead

Initial Objectives for the MEF Project

- Documented API specifications – LRS (Lean NFV REST Services)
- Documented definitions for initial key space
- Documented API specifications - northbound Presto
- Proposal for minimal functionality of management blocks

Nefeli Tapestry addresses the Challenges of the Network Edge

Nefeli runs the network functions the enterprise wants

from brand name to opensource to cloud native

Nefeli has advanced automation

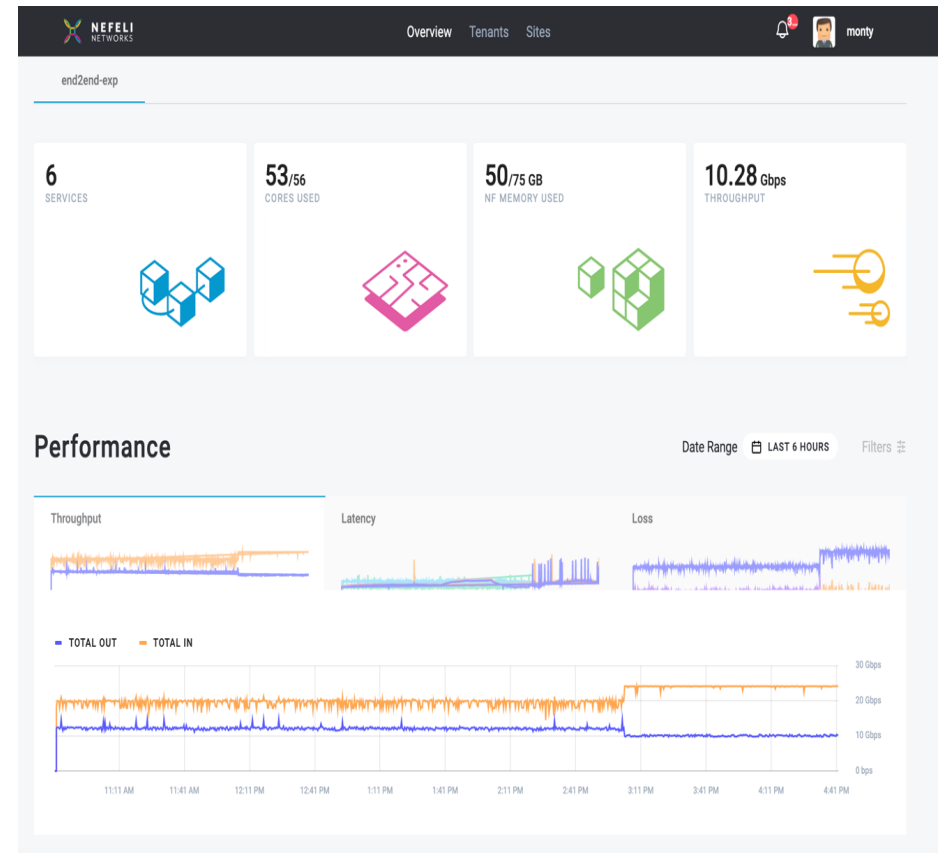
Providing end-to-end policy, security and visibility

Nefeli runs in any environment

from cloud to DC to branch

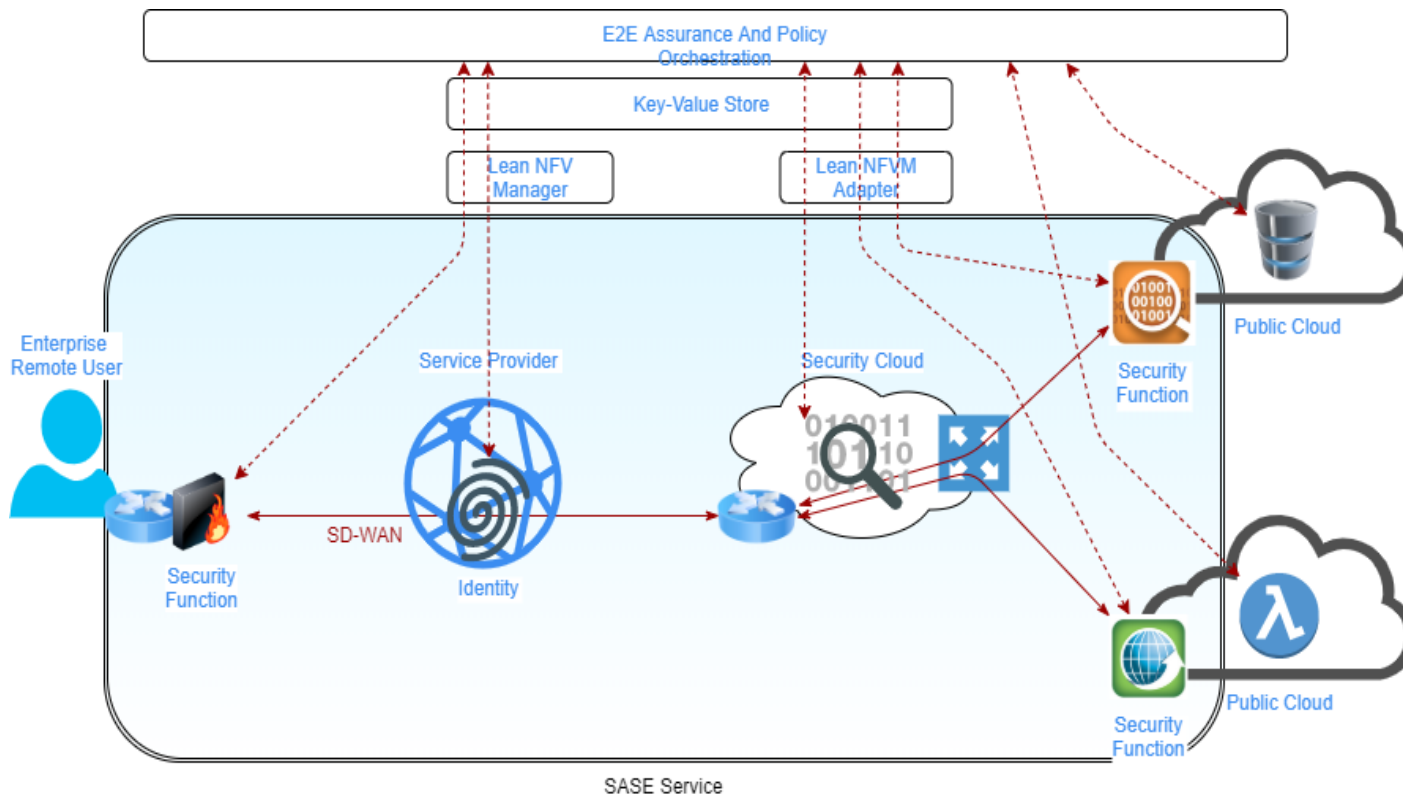
Nefeli is based on an open architecture

is easy to deploy and operate



...what we're doing

Orchestrated SASE service based on Lean NFV – MEF 3.0 Proof of Concept



- amartus
- NEFELI NETWORKS
- SPARKLE
- SASE VNF vendor

Colt approach with Lean NFV



- Lean NFV technology selected as the enabling platform for On Demand NFV
- Ongoing production pilot with Nefeli for Internet Access On Demand initial use case
- Production deployment planned for 2021
- Extension of the functionality to other VNFs (Multi-Cloud On demand. SD-WAN Gateway & SASE platform) in the near future
- Potential extension from the Telco Cloud NFVI use case into uCPE in the long term

Poll/Discussion Questions

Q1. Where do you anticipate deploying VNFs? You may select more than one answer.

- a. In a public cloud
- b. In your central data center
- c. At the provider edge (edge PoP)
- d. On the customer premises

Q2. Where do you get your VNFs? You may select more than one answer.

- a. We write them ourselves
- b. We get them from our main system vendors
- c. We get them from our system integrators
- d. We get them from independent VNF authors

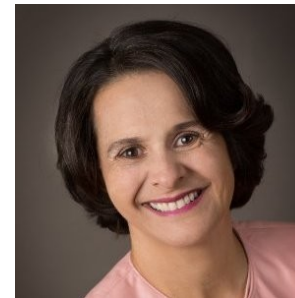
Q3. How long does it typically take you to onboard (integrate and validate) a new VNF?

- a. More than three months
- b. Two to three months
- c. Less than one month

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