Configuration Policy in OPNFV

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Bryan Sullivan, AT&T

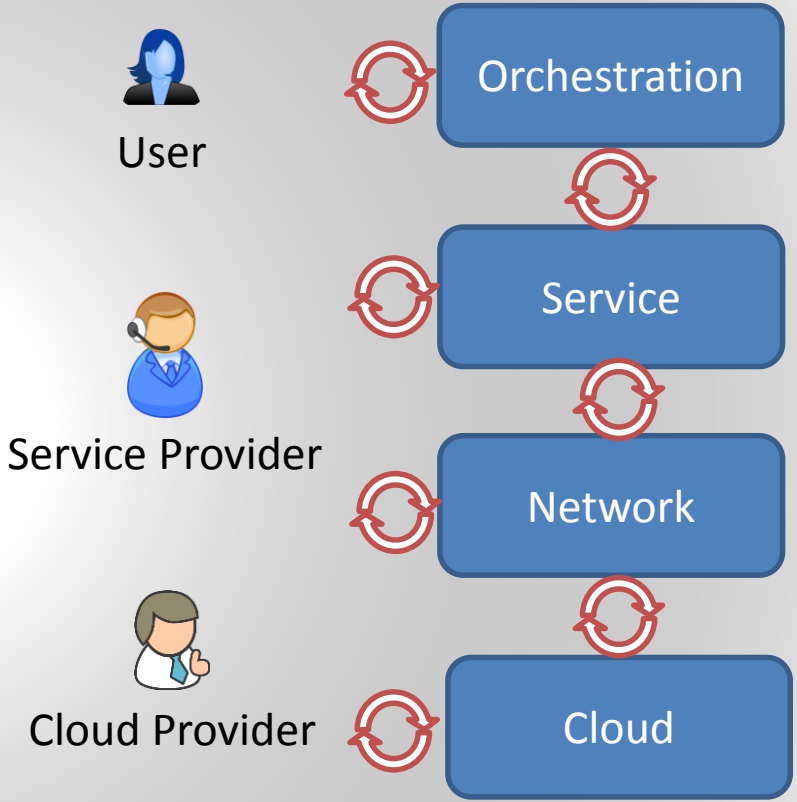
LINUX FOUNDATION
COLLABORATIVE PROJECTS

What is Configuration Policy?

- What I want
  - I, user: a van, wheelchair-accessible, electric powered, GPS, Bluetooth, collision avoidance system
  - I, road provider: keep drivers moving at an optimum safe speed
  - I, public safety: shoulder warning strips, center media barriers
- What I don’t want
  - I, user: someone driving off with my van
  - I, road provider: four-way stops
  - I, public safety: speeding, tractors on the freeway

All Policy is Local

- Policy balances top-down intent with bottom-up state
- Intent is refined and delegated as it gets closer to policy enforcement points
- Intent has to be expressed in terms relevant to the parties
  - User to Service Provider
  - Service Provider to Cloud Provider
  - Cloud Provider to Infrastructure Controller



OPNFV Policy-Related Projects

Project	Focus	High-Level Requirements	Upstream Projects
Copper	VI deployment policies	Ensure resources comply with generic and VNF-specific expectations	Heat, Congress, Monasca, Tacker, Group-Based Policy ODL: Group-Based Policy, Network Intent
Doctor	Fault management and maintenance	Immediate detection of physical resource outage, affected VMs, take remediation actions including Notification	Ceilometer, Nova, Monasca
Availability	Carrier Grade NFV HA scenarios, framework, requirements and schemas	Providing carried-grade high availability for VNFs and the OPNFV platform	Monasca, Ceilometer
Promise	Resource Management	Resource reservation for future use by a VNF, Capacity Management and Notification	YangForge, Blazar

OPNFV Policy-Related Projects

Project	Focus	High-Level Requirements	Upstream Projects
VNFFG	VNF Forwarding Graphs	OpenStack based and OpenFlow compliant VNFFG	Neutron
SFC	Service Function Chaining	ODL SFC project integration	Tacker, Neutron ODL: SFC
Movie	Model Oriented Virtualization Interface	Model-driven architecture for abstraction of NFVI northbound interfaces	
Prediction	Data collection for future failure prediction	Data collector, failure predictor, and failure management module	Ceilometer, Monasca

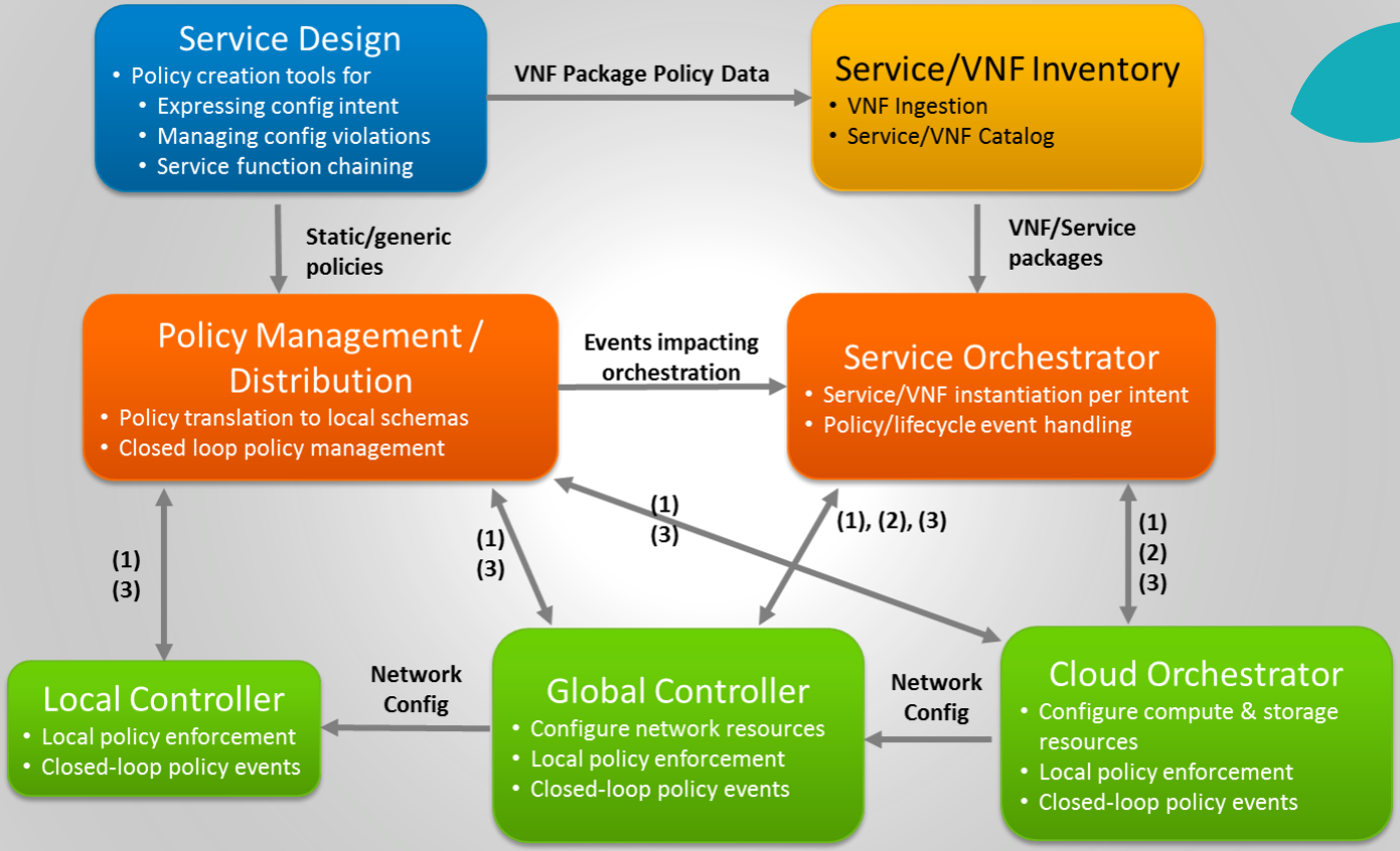
Copper – What is it?

Copper cable. Picture by Giovanni Dall'Orto.

Copper project Architectural Aspects/Goals

- Two main focuses: VNF-service specific and generic configuration requirements, both static (e.g. as deployed) and dynamic (e.g. in response to lifecycle events)
- Policy distribution directly to VIMs and through VNF/service orchestration
- Policies are applied statically/locally, or thru *tight* closed-loop systems if needed
- Policies are localized as they are distributed/delegated
- Generic and VNF/service-related events may be handled by distinct closed-loop systems
- Policy-related event reporting may be administered or invoked via subscription
- "open-loop" systems support audits, manual intervention, policy optimization

End-to-End Architectural Concept



(1) Localized policies
(2) VNF lifecycle-related events
(3) Policy-related events

What's happening in the project?

- Design document in development (use cases, architecture, requirements)
- Developing upstream project install scripts, starting with Congress
  - With goal to include Congress in the Brahmaputra release
  - For inclusion in OPNFV install scripts or as a post-install customization
  - Using Fuel, Foreman, Triple-O, Juju, …
- Establishing lab environments for upstream project assessment per Copper use cases and development/testing
- Developing use cases and related tests for upstream projects included in the Brahmaputra release, e.g. Heat

Come join us!

- If you are interested in open source solutions for NFVI policy management
- If you want to help set goals for these projects, whatever your role
- If you are involved in a related project and want to promote synergy with it
- If you just want to learn more and get actively engaged in whatever way
- …
- Things will move much faster with your help!

https://wiki.opnfv.org/copper