SDO + Open Source
When TMF APIs Meet ONAP

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The need

- ONAP R1 came with several specific API definitions and design rules
- **Problem**: integration with existing BSS/OSS systems
  - time to develop all those adaptations
  - extra cost for each existing system
  - no roadmap space
- **Solution**: provide standardized API to ONAP
Bringing standardization to ONAP

- ONAP brings the software
- Standardization helps for interoperability

“Bringing together standards and opensource contributions is THE way forward!” said Thierry Souche, Orange Global CIO.
External API - NBI positioning
Why TM Forum OpenAPI?

- MEF POC (end 2017) : a first implementation
- Open source specification (Apache 2.0)
- Leverage industry-recognized APIs to enable ONAP introduction with existing BSS
- A motivated team
Not only “Paper Spec” but Code for real!

- NBI was designed & coded with ♥ by Orange under PTL Andy Mayer (AT&T) leadership
- Feedbacks & tests were provided by the TMF/ONAP/MEF communities (special mention to Amdocs team for testing, Huawei for design support and Infosys to use it in TMF catalysts)
- 8 people involved operationally for design, code, testing, integration – not full time – effort started in January’18
- 11 K lines of code

git clone https://gerrit.onap.org/r/externalapi/nbi
NBI scope

• Service Catalog (find & get)
• Service Ordering (including Service Instantiation) (create, find and get)
• Service Inventory (find & get)

Key point: no change, no impact on existing ONAP Projects!
Typical use-cases

• Service Order to add/delete one or several service Instances
• Service Order with dependencies between services
• Service Order with service parameters (bandwidth, VLANId, Route Target…)
• Order follow up: acknowledged, in Progress, Completed
Technical choices

- Java 8 web application built over Spring Framework.
- Spring Boot 1.5.10 dependencies, standalone application with embedded Tomcat server.
- Embedded both MongoDB and MariaDB local instance.
- Maven dependency management tool
Lesson’s Learnings

• Introduction strategy was good
  • no change, no impact on existing ONAP Components

• Coding is not enough
  • Understanding the ONAP project lifecycle
  • Understanding ONAP toolings
  • Integration test with other components is difficult
  • Documentation need to be improved also
Casablanca

- Add TMF-based notification (HUB/EVENT) for Service Order
- Tackle service modification UC though serviceOrder (minimum)
- Expose NBI API to ONAP MicroServiceBus
- Improve Service Order API to manage E2E service provisioning
- Integrate NBI in a complete E2E use case (CCVPN)
**DEMO**

- My Laptop ➔ Orange NFV portal WebServer ➔ Service Catalog (TMF633), Service Inventory (TMF638), Service Order (TMF641) ➔ ExternalAPI - NBI ➔ SDC, AAI, SO ➔ other onap components ➔ Tenant for VNFs

- TMF APIs ➔

- Orange OpenLab ➔ https://wiki.onap.org/display/DW/Orange+OpenLab ➔ openstack ➔ Tenant for VNFs
• Get service from catalog
• Pick one and ‘order’ it
• Check in the inventory for instantiated service
• Delete this service instance
Thank you

Visit our booths during ONS
- OpenLab on LFN booth
- NBI/TMF API for ONAP on Orange booth

Other presentations during ONS
26/9 13:50: Lightning Talk: Artificial Intelligence the Next Digital Wave for Telcos - Jamil Chawki, Orange
26/9 14:30 Accelerate the VNF Integration - Jehanne SAVI, Orange
27/9: 11h15 LFN Xcommunities Testing - Morgan Richomme & Cedric Ollivier, Orange
27/9 14:30: Be Active in Networking Open Source when you are a Service Provider - Eric Debeau & Morgan Richomme, Orange
27/9 16:05: SDO + Open Source: When TMF APIs Meet ONAP - René Robert & Matthieu Geerebaert