SDWAN POC: The road to Digital Transformation Using ONAP

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Outline

• High-level view (Eric)
• POC details (Chaker)
Open source and collaboration example

This presentation outlines the growing importance of the opensource in the Telecommunications Industry it will also:

- show the transition to the world of opensource and what is needed for open source to be successful.

- focus on automation and the value of ONAP project as the common platform of carrier network automation and digitalized operation.

- cover the innovation and cooperation of Orange and Huawei to enhance the features, architecture and capabilities of ONAP platform to design and deploy SDWAN.
The road to digital world using open source
Open source Community

• Why Open source
  - Open source is key for new On-Demand Network
  - Collaboration – Vendors and Service Providers
  - Normalizes the technical discussions
  - One common, and in most cases, a well-understood technical concept
  - Supports common needs/requirements from Operators and Vendors
  - Provides a forum for discussing similar ideas and receive immediate/quick feedback
  - Different backgrounds provides different viewpoints
  - Healthier discuss
  - Everyone is working towards a common goal
Networking open source stack

Orchestration

SDN/NFV

Cloud Computing

Infrastructure

ONAP: Open Network Automation Platform
OPNFV: Open Platform for NFV

PaaS Platform as a Service
IaaS Infrastructure as a Service

deployed in Orange
Why a service provider involved in open source?

• Not be a consumer

• Impact on the requirements

• Participate to the solution

• Tests/feedbacks
SDWAN POC
POC objectives

Use ONAP Beijing release to:

- **deploy and configure SD Wan solution core components** in a telco operator environment (cloud based, integration into existing management networks…)
- **set up end points (vCPEs)**

• Objectives:
  - To evaluate ONAP capabilities and to better appreciate requested skills for designing and managing projects
  - To assess the conditions of a packaging covering both ONAP and SD Wan solution
Orange Uses POCs and Use cases to demonstrate the functionalities of ONAP

Orange cloud

ONAP (SDC, SO, SDNC…)

Core SDWAN infrastructure

SDWAN Manager

ZTP server

DNS server

DHCP server

ONAP

Customer Site

SDWAN vCPE

Internet like Network

MPLS like Network

Customer Site

SDWAN vCPE

Internet like Network

ONAP Core SDWAN infrastructure
ONAP SD-WAN Integrated Architecture

**Design state**

1. SDC
   - Resource On-boarding
   - Service model design

**Running state**

2. UUI/VID
   - Deployment and Configuration

3. SDWAN Manager
   - Deploy SDWAN Manager

4. Certification/final configuration
   - Restful API

5. VPN Template configuration

- MPLS
- Internet
- Customer Site
- Orange Cloud
- Customer Site
- ZTP server
- vSmart
- vManage
- DNS server
- DHCP server
- vBond
- BPMN
- SDN-C
- APP-C
- SO
- DG
ONAP SD-WAN Integrated Architecture

Design state

SDC

• Resource On-boarding
• Service model design

A&AI

Deployment and Configuration

SO

BPMN

APP-C

SDN-C

DG

Restful API

Running state

Running state

Certification /final configuration

MPLS

Internet

Customer Site

SDWAN Manager

VPN Template configuration

NTP server

DNS server

DHCP server

Certification

Deploy SDWAN Manager.

Orange Cloud

1

2

3

4

5

UUI/VID

Resource Onboarding
ONAP SD-WAN Integrated Architecture

Design state

- SDC

Running state

- Deployment and Configuration
  - UUI/VID
  - A&AI
  - BPMN

Deployment and Configuration

- SO
- APP-C
- SDN-C

Restful API

- DG

Certification
- final configuration

Deploy SDWAN Manager

- Orange Cloud

VPN Template configuration

- SDWAN Manager
  - NTP server
  - DNS server
  - DHCP server

Orange Cloud

- NTP server
- DNS server
- DHCP server

MPLS

Customer Site

- CPE

Internet

- CPE

Customer Site

- CPE

- Resource On-boarding
- Service model design

Resource On-boarding

- Service model design
ONAP SD-WAN Integrated Architecture

**Design state**
- SDC
  - Resource On-boarding
  - Service model design

**Running state**
- Deployment and Configuration
  - SO
  - BPMN
  - APP-C
  - SDN-C
  - DG

- Certification/final configuration
- VPN Template configuration
- Restful API

1. **Deploy SDWAN Manager.**
2. **UI/VID**
3. **Resource On-boarding**
4. **Service model design**
5. **VPN Template configuration**

**Certification/final configuration**
- NTP server
- DNS server
- DHCP server

**VPN Template configuration**
- Internet
- Customer Site
- MPLS
- CPE

**Certification/final configuration**
- SDWAN Manager
- Orange Cloud
- Customer Site
- CPE

**VPN Template configuration**
- Customer Site
- Internet
POC SDWAN – Key Takeaways

• What we proved on full automation: open source value
  - With open source code, there is no blocking point
  - Capability to replay the POC in various environments

• Importance to develop many powerful tests tools to fully automate
  - Avoid manual tasks

• What we discovered with a such POC
  - Still some non-mature components
  - Release management needs more improvements
  - A method to test VNF and its integration in ONAP

• Ways to leverage results within the community
POC SDWAN, Benefits to the community

- Many feedbacks from this PoC to the community:
  - To ease E2E automation
  - Footprint optimization
  - Documentation as code

- Avoid manual tasks to
  - onboard DG
  - duplicate id…

- And some code wrapper for keystone v3
Thank you!
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