Advanced Automation in ONAP via Closed Loop

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The Network Revolution

NETWORK TRANSFORMATION

CLOUD TECHNOLOGIES

SOFTWARE DEFINED NETWORKING

5G NETWORKS

END-TO-END SECURITY

OPPORTUNITIES AND CHALLENGES

RAPID INNOVATION

PLATFORM DRIVEN

HIGHLY DYNAMIC NETWORKS

HIGH TRAFFIC VOLUME

THE LINUX FOUNDATION

ONAP
Advanced Automation

• Automation is key to operating modern networks

Reacting to events  Scaling capacity  Fault management  E2E security  Cost savings
Agenda

• Introduction

• What is ONAP?

• ONAP closed loop operations

• Closed loop components

• Demo
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What is ONAP?

Unified platform for PNF/VNF orchestration

Advanced automation

Policy-enabled users customize platform without development

Model-driven speeds up development

Rapid innovation new services, automation, intelligence
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ONAP Closed Loop

• Repeatable pattern of operations

• Platform for machine learning and data analytics microservices

• Using data insights and policies to determine corrective actions
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Policy Engine
Creating New Policies
Configuration Policy

- DCAE periodically pulls configuration policies from Policy Engine

- Configuration policies are executed by DCAE microservices

- Microservices fire events when configuration policies are violated

- Events reach Policy Engine via Message Router
Operational Policy

• Enforced by SO or Controllers as part of closed loop
DCAE Platform
DCAE Platform

Service Components:
- VES
- SNMP
- Trap
- Mapp er
- PRH
- TCA
- Holmes
- Missing
- IB
- PNDA
- App
- Policy
- DMAAP
- MR

Collection Tier:
- VFC
- Multi
- VNF
- Cloud
- PNF

Platform Components:
- CBS
- DH
- PH
- SCH
- Inv
- CM
- PG

Components:
- Non-DCAE ONAP components
- DCAE components
- DCAE stretch goal components

DCAE
Application Controller
Application Controller

- Built on top of OpenDaylight
- Model-based lifecycle management of VNFs
Directed Graph Builder (continued)

```
<execute plugin='org.onap.appc.adapter.rest.RestAdapter' method='commonPut'>
   <parameter name='org.onap.appc.instance.URI' value='\$org.onap.appc.configURL'/>;
   <parameter name='org.onap.appc.instance.requestBody' value='\$org.onap.appc.configJson'/>
   <parameter name='org.onap.appc.instance.headers' value='{"Content-type": "application/json"}'>
   <parameter name='org.onap.appc.instance.haveHeader' value='true'/>
</execute>
```
Service Orchestrator
Service Orchestrator

• Reusable service that executes process workflows

• Primary task: end-to-end service instance provisioning activities
  - Instantiation
  - Release
  - Migration

• Executes BPEL service recipes

• During orchestration can invoke *adapters* based on the resources in the recipe
  - Platform
  - Network
  - Application
SO Architecture
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vCPE Use Case
Thank you!