Control Loop Development in ONAP

Workshop on E2E Network Slicing and Closed Loop Automation - ONAP/ETSI ZSM
8th December 2020
ONAP Architecture

**Design-Time**
- VNF Validation
- VNF SDK
- Service Design & Creation (SDC)
  - Service/xNF Design
  - xNF Onboarding
  - Workflow Designer
  - Controller Design Studio
  - DCAE Design Studio

**Run-Time**
- Portal
- O&M Dashboard (VID)
- Use-Case UI
- External APIs
- CLI
- Interfaces

- Control Loop Automation (CLAMP)
- Policy Framework
- Service Orchestration (SO)
- Active & Available Inventory (AAI)
- External System Register (ESR)

**Manage ONAP**
- ONAP Operations Manager (OOM)

**Shared Services**
- AuthN/AuthZ (AAF)
- Optimization (OOF)
- Logging
- Audit (POMBA)
- Multi-Site State (MUSIC)
- Others...

**External Systems**
- Third Party Controllers
- sVNFM
- EMS

**Network Function Layer**
- VNFS

**Hypervisor / OS Layer**
- OpenStack
- Commercial VIM
- Kubernetes
- Public Cloud

**Managed Environment**
- Private Edge Cloud
- MPLS
- Private DC Cloud
- IP
- Public Cloud
The ONAP Approach to Control Loops

SDC → CLAMP
DCAE → Policy → Controllers

Managed Domain
• Coordinates the projects involved in implementation of Control Loop for the use cases in each release

• https://wiki.onap.org/display/DW/Control+Loop+Subcommittee

• Working Functional Requirements
  • https://wiki.onap.org/display/DW/Control+Loop+Sub+Committee+Working+Requirements+and+Future+Roadmap
We need to think about **Control Loop** information
- Control Loops as first class citizens in ONAP
- Management of Control Loops at **design time** and **run time**
- Control loop participants need to use **common** knowledge
Catalogues: Native TOSCA in Long Term

SDC  DCAE-MOD

Control Loop Design Catalogue
TOSCA Artifacts

Design Time

CLAMP

Control Loop Run Time Catalogue
TOSCA Artifacts

DCAE  Policy  Controllers

Managed Domain
Deployment of Control Loops in Long Term

- Control Loop Design
- Control Loop Definition
  - Control Loop Descriptor (TOSCA)
  - Control Loop Artifacts & Metadata
- CLAMP
- Control Loop Component Micro Services
- CL Metadata
- Existing Services
Supervision of Control Loops in Long Term

Control Loop Execution Flow
Control Loop Monitoring
TOSCA Based CL Instantiation, Deployment, Monitoring in Long Term