Scaling Use Case Extension

Overview

One of the primary advantages of a virtualized cloud infrastructure is the ability to maximize resource utilization. In a PNF environment, resource allocation is relatively static and therefore enough capacity needs to be available for peak loads. This leads to many inefficiencies during normal operating times. In the software controlled environment of virtualized resources, ONAP can allocate resources to a VNF as they are needed. Scaling is the process utilized by ONAP to change the amount of resources allocated to a VNF

Casablanca Goals

1. **Auto Scale Out** - Provide a Closed Loop Response to high demand within a VNF. **COMMITTED**
   a. Primary impacts will be: Policy, CLAMP, SDC, SO
2. **Enhancements to Manual Scale Out (from Beijing Release)** **COMMITTED**
   a. Healthcheck fix - ()
   b. ConfigScaleOut() - Controller should attain configuration information from AAI instead of SO (APPC, SDNC, SO)
   c. SDNC Resource Assignment - IP Address of new instance needs to be added to AAI (SDNC)
   d. SDNC needs to import all Beijing capability (SDNC)
3. **Controller Type -** In Beijing, the operator had to manually select the controller type (SDNC or APPC) within VID. The controller type should be part of the VNF model and not a run time option. ONAP components should be able to look within the VNF model to determine which controller to use for a particular VNF. Primary impacts: SDC, Modeling, VID
4. **Homing and Capacity**- When new instances are requested ONAP should do a check to determine placement and license availability. This feature was descoped in Beijing. Primary impacts will be: SO, OOF, SDNC and SDC
5. **Future Release**
   a. **Scale In (Auto and Manual)** - This feature will complete the scaling capabilities for VNFs and will requirem a command to drain and move traffic from an existing instanceso that it can be removed from the pool of active instances. Primary impacts should be: AOOC, SDNC, SO, Policy, CLAMP, VID, SDC
   b. **TOSCA Capabilities** - Manual Scale Out in Beijing only allowed scaling of HEAT based VNFs. As the TOSCA model becomes more mature within ONAP we will need to enable scaling for TOSCA based VNFs

Business Requirement

Dynamic scaling gives an operator the tools it needs to maximize efficiency of the resources dedicated to the cloud. ONAP's control environment allows it to assign resources where they are most needed and reallocate them when they are needed by different VNF. This allows the cloud environment to achieve a much higher resource utilization level than the old data centers it is replacing.

Participating Companies

AT&T

Scope

Casablanca will focus on Auto Scale Out. If possible we may attempt to complete Scale In also. Manual Scale Out was completed in Beijing.

Scaling Use Case Presentations

Running Scale Out Use Case for Casablanca

Casablanca Scaling Presentation

Use Case Subcommittee meeting April 23, 2018

TSC Meeting May 10, 2018

Scaling Use Case Team Meetings

For Casablanca we will be using both the weekly Scaling call as well as the weekly Closed Loop call to progress the Scaling Use Case.

Meeting Logistics

Weekly Scaling Meeting

Day: Tuesday

Time: UTC 1300 / China 2100 / Eastern 0900 / Pacific 0600

URL: https://zoom.us/j/457158496

Weekly Closed Loop Subcommittee Meeting

Day: Wednesday

Time: UTC 1400 / China 2200 / Eastern 1000 / Pacific 0700

URL: https://zoom.us/j/872748904

Meeting Minutes

Impacts

The Auto Scale Out Use Case for Casablanca will have impacts on the following projects: Policy, CLAMP, SO, OOF, APPC, SDNC, SDC, and VID

Please see the Impacts page for a more detailed list of requirements in each project.

Project Commitments

Project	PTL	Commitment	Notes
AAI	James Forsyth	**COMMITTED**	
APPC	Randa Maher	**COMMITTED**	No commitment for Controller_Type since the requirements are still unknown

CLAMP	Gervais-Martial Ngueko	COMMITTED	Risks: 1. "VF_Module_ID" to be confirmed as input for operational Policy 2. API and content for new policy interaction to create new top of Operational Policy (Guard Policy) might end up more costly than anticipated
Modeling	Hui Deng	NA	No Requirements at this time
OOF	Sarat Puthen pura	PARTIAL	Can only support R2 functionality
Policy	Pamela Dragosh	COMMITTED	Add Risks from Pam
SDC	Michael Lando	NA	No Requirements at this time
SDNC	Dan Timoney	COMMITTED	
SO	Seshu Kumar Mudiganti	COMMITTED	
VID	Ofir Sonsino	COMMITTED	