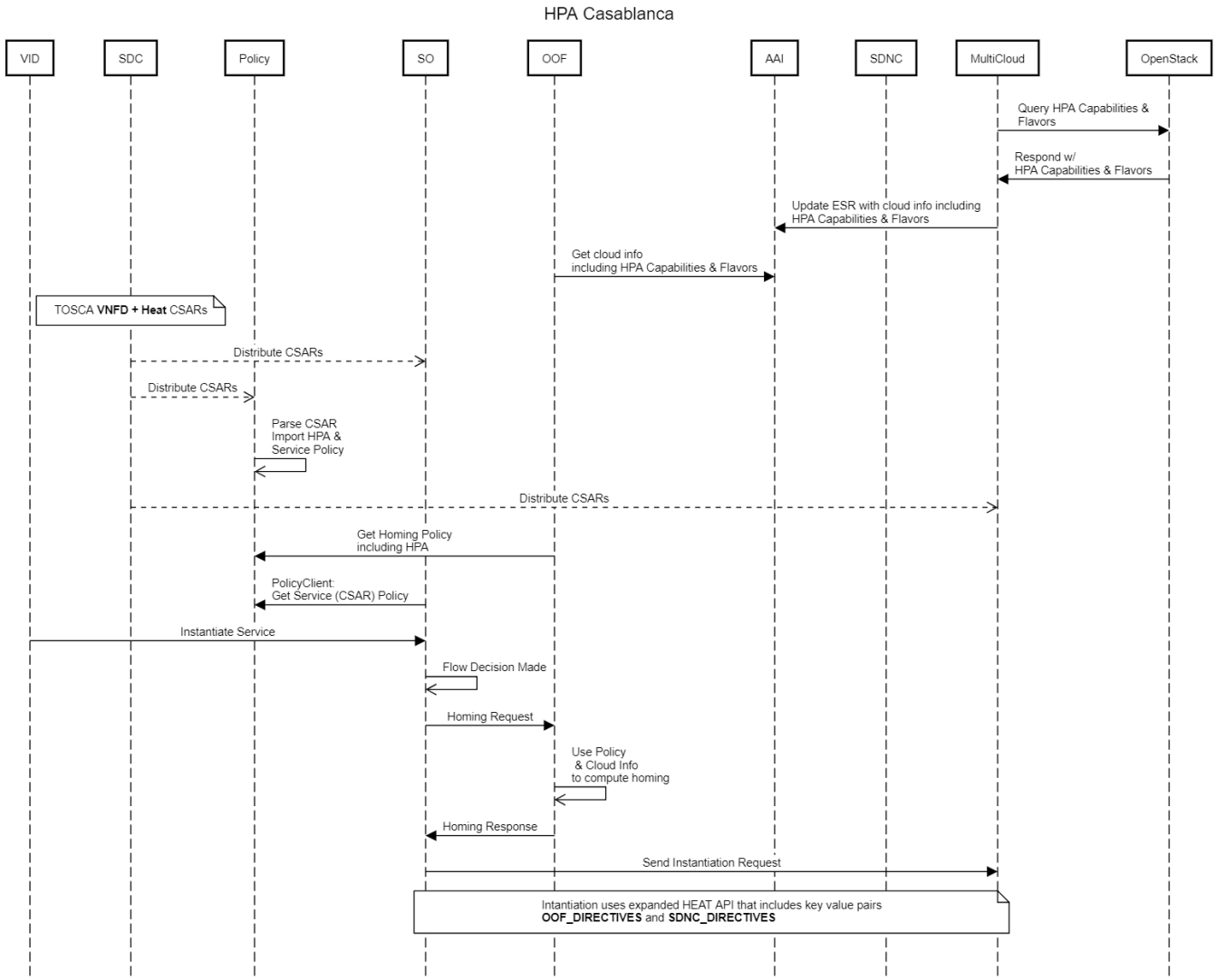
SO Casablanca HPA Design

DRAFT

This is a work in progress. Comments and suggestions gladly accepted. Draft will be removed once this is finalized.

HPA SO External Sequence Flow for Casablanca



HPA SO External API Interaction for Casablanca

Policy

Still Under Discussion: Utilize existing SO generic-rest-adapter. This is a possible interaction with Policy to obtain service specific flow path decision for Service Model.

OOF

Still Under Discussion: Utilize existing SO Homing code. SO will adhere the OOF/SO R2 APIs updated for R3 to fix issues from R2 and include passing on a set of generic key value pairs that could contain such values as flavor_name:HPA2 or SRIOV attributes. These key value pairs will be passed to Multicloud during instantiation as OOF_Directives.

OOF-SO Interaction in R2

OOF/HAS API Specifications

Addition of oofDirectives as part of

`"assignmentInfo"`

to R2 (doesn't change api):

```
                    {
                    "key":"oofDirectives",
                    "value":{
                       "directives":[
                          {
                             "vnfc_directives":[
                                {
                                   "vnfc_id":"<ID of VNFC>",
                                   "directives":[
                                      {
                                         "directive_name":"<Name of directive,example flavor_directive>",
                                         "attributes":[
                                            {
                                               "attribute_name":"<name of attribute, such as flavor label>",
                                               "attribute_value":"<value such as cloud specific flavor>"
                                            }
                                         ]
                                      },
                                      {
                                         "directive_name":"<Name of directive,example vnic-info>",
                                         "attributes":[
                                            {
                                               "attribute_name":"<name of attribute, such as vnic-type>",
                                               "attribute_value":"<value such as direct/normal>"
                                            },
                                            {
                                               "attribute_name":"<name of attribute, such as provider netweork>",
                                               "attribute_value":"<value such as physnet>"
                                            }
                                         ]
                                      }
                                   ]
                                }
                             ]
                          },
                          {
                             "vnf_directives":{
                                "directives":[
                                   {
                                      "directive_name":"<Name of directive>",
                                      "attributes":[
                                         {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value>"
                                         }
                                      ]
                                   },
                                   {
                                      "directive_name":"<Name of directive>",
                                      "attributes":[
                                         {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value >"
                                         },
                                         {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value >"
                                         }
                                      ]
                                   }
                                ]
                             }
                          }
                       ]
                    }
                 }
```

OOF Homing Response:

```
{
   "transactionId":"xxx-xxx-xxxx",
   "requestId":"yyy-yyy-yyyy",
   "requestStatus":"completed",
   "statusMessage":"",
   "solutions":{
      "placementSolutions":[
         [
            {
               "resourceModuleName":"vGMuxInfra",
               "serviceResourceId":"someResourceId",
```

```
            "solution":{
               "identifierType":"serviceInstanceId",
               "identifiers":[
                  "gjhd-098-fhd-987"
               ]
            },
            "assignmentInfo":[
               {
                  "key":"cloudOwner",
                  "value":"amazon"
               },
               {
                  "key":"vnfHostName",
                  "value":"ahr344gh"
               },
               {
                  "key":"isRehome",
                  "value":"False"
               },
               {
                  "key":"cloudRegionId",
                  "value":"1ac71fb8-ad43-4e16-9459-c3f372b8236d"
               }
            ]
         },
         {
            "resourceModuleName":"vG",
            "serviceResourceId":"someResourceId",
            "solution":{
               "identifierType":"cloudRegionId",
               "cloudOwner":"amazon",
               "identifiers":[
                  "gjhd-098-fhd-987"
               ]
            },
            "assignmentInfo":[
               {
                  "key":"cloudOwner",
                  "value":"amazon"
               },
               {
                  "key":"cloudRegionId",
                  "value":"1ac71fb8-ad43-4e16-9459-c3f372b8236d"
               },
               {
                  "key":"oofDirectives",
                  "value":{
                     "directives":[
                        {
                           "vnfc_directives":[
                              {
                                 "vnfc_id":"<ID of VNFC>",
                                 "directives":[
                                    {
                                       "directive_name":"<Name of directive,example flavor_directive>",
                                       "attributes":[
                                          {
                                             "attribute_name":"<name of attribute, such as flavor label>",
                                             "attribute_value":"<value such as cloud specific flavor>"
                                          }
                                       ]
                                    },
                                    {
                                       "directive_name":"<Name of directive,example vnic-info>",
                                       "attributes":[
                                          {
                                             "attribute_name":"<name of attribute, such as vnic-type>",
                                             "attribute_value":"<value such as direct/normal>"
                                          },
                                          {
                                             "attribute_name":"<name of attribute, such as provider
```

```
netweork>",
                                                "attribute_value":"<value such as physnet>"
                                            }
                                        ]
                                    }
                                ]
                            }
                        ]
                    },
                    {
                        "vnf_directives":{
                            "directives":[
                                {
                                    "directive_name":"<Name of directive>",
                                    "attributes":[
                                        {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value>"
                                        }
                                    ]
                                },
                                {
                                    "directive_name":"<Name of directive>",
                                    "attributes":[
                                        {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value >"
                                        },
                                        {
                                            "attribute_name":"<name of attribute>",
                                            "attribute_value":"<value >"
                                        }
                                    ]
                                }
                            ]
                        }
                    }
                ]
            }
        }
    ]
  }
}
```

MultiCloud

Still Under Discussion: Utilize existing so-opendstack-adapter and extend, or clone to so-multicloud-adapater and extend. Use Multicloud OpenStack Proxy API and extend HEAT API payload with **generic-vnf-id, vf-module-id, oof_directives, sdnc_directives and template_type**.

API URI **http://{msb IP}:{msb port}/api/multicloud /v1/{cloud-owner}/{cloud-region-id}/infra_workload**

REQUEST BODY
(========== parameters below template type are valid for request with “template_type”:“heat” ==========)

```
{
   "generic-vnf-id":"<generic-vnf-id>",
   "vf-module-id":"<vf-module-id>",
   "oof_directives":{
      "directives":[
         {
            "vnfc_directives":[
               {
                  "vnfc_id":"<ID of VNFC>",
                  "directives":[
```

```
                    {
                       "directive_name":"<Name of directive,example flavor_directive>",
                       "attributes":[
                          {
                             "attribute_name":"<name of attribute, such as flavor label>",
                             "attribute_value":"<value such as cloud specific flavor>"
                          }
                       ]
                    },
                    {
                       "directive_name":"<Name of directive,example vnic-info>",
                       "attributes":[
                          {
                             "attribute_name":"<name of attribute, such as vnic-type>",
                             "attribute_value":"<value such as direct/normal>"
                          },
                          {
                             "attribute_name":"<name of attribute, such as provider netweork>",
                             "attribute_value":"<value such as physnet>"
                          }
                       ]
                    }
                 ]
              }
           ]
        },
        {
           "vnf_directives":{
              "directives":[
                 {
                    "directive_name":"<Name of directive>",
                    "attributes":[
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value>"
                       }
                    ]
                 },
                 {
                    "directive_name":"<Name of directive>",
                    "attributes":[
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value >"
                       },
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value >"
                       }
                    ]
                 }
              ]
           }
        }
     ]
  },
  "sdnc_directives":{
     "directives":[
        {
           "vnfc_directives":[
              {
                 "vnfc_id":"<ID of VNFC>",
                 "directives":[
                    {
                       "directive_name":"<Name of directive,example flavor_directive>",
                       "attributes":[
                          {
                             "attribute_name":"<name of attribute, such as flavor label>",
                             "attribute_value":"<value such as cloud specific flavor>"
                          }
                       ]
```

```
                    },
                    {
                       "directive_name":"<Name of directive,example vnic-info>",
                       "attributes":[
                          {
                             "attribute_name":"<name of attribute, such as vnic-type>",
                             "attribute_value":"<value such as direct/normal>"
                          },
                          {
                             "attribute_name":"<name of attribute, such as provider netweork>",
                             "attribute_value":"<value such as physnet>"
                          }
                       ]
                    }
                 ]
              }
           ]
        },
        {
           "vnf_directives":{
              "directives":[
                 {
                    "directive_name":"<Name of directive>",
                    "attributes":[
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value>"
                       }
                    ]
                 },
                 {
                    "directive_name":"<Name of directive>",
                    "attributes":[
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value >"
                       },
                       {
                          "attribute_name":"<name of attribute>",
                          "attribute_value":"<value >"
                       }
                    ]
                 }
              ]
           }
        }
     ]
   },
   "template_type":"<heat/tosca/etc.>",





   "files":{

   },
   "disable_rollback":true,
   "parameters":{
      "flavor":"m1.heat"
   },
   "stack_name":"teststack",
   "template":"\nheat_template_version: 2013-05-23\ndescription: Simple template to test heat
commands\nparameters:\n  flavor: {default: m1.tiny, type: string}\nresources:\n  hello_world:\n    type: OS::
Nova::Server\n    properties:\n      key_name: heat_key\n      flavor: {get_param: flavor}\n      image:
40be8d1a-3eb9-40de-8abd-43237517384f\n      user_data: |\n        #!/bin/bash -xv\n        echo \"hello world\"
> /root/hello-world.txt",
   "timeout_mins":60
}
```

HPA SO Casablanca Stories

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
SO-743	Ensure support for SRIOV NICs - Testing efforts		Jul 24, 2018	Feb 06, 2019		Unassigned	None		CLOSED	Done
SO-744	Enable use of Multicloud OpenStack Endpoint Proxy to Instantiate VNFs		Jul 24, 2018	Sep 21, 2018		Unassigned	None		CLOSED	Done
SO-745	Support homing through OOF for vFW, vDNS, vCPE Infra		Jul 24, 2018	Jul 10, 2019		Unassigned	None		CLOSED	Done
SO-746	Enable Multicloud flavor modification removing SO flavor modifications		Jul 24, 2018	Sep 21, 2018		Unassigned	None		CLOSED	Done
SO-747	POC - Enable SO use of Multicloud Generic VNF Instantiation API		Jul 24, 2018	Feb 06, 2019		Unassigned	None		CLOSED	Done

5 issues