In-place Upgrades

In-place upgrades from Red Hat OSP16.2 to OSP17.1 are supported starting from Cisco ACI OpenStack Plug-in 5.2(1). The upgrade process is related to, and largely based on the procedures discussed in the FRAMEWORK FOR UPGRADES (16.2 to 17.1) Red Hat guide.

Each procedure discussed in this chapter is mandatory and required for the upgrade. The associated procedure from the FRAMEWORK FOR UPGRADES (16.2 to 17.1) guide is indicated.

Removing Custom ACI Repository

Use this procedure to remove the custom ACI repository.

Procedure

Step 1 Create the following ansible playbook to remove the ACI repo from the current yum repos on overcloud nodes.

```
---
- name: Remove ACI Repo
  hosts: overcloud
  become: yes
  tasks:
    - name: remove_acirepo
      ansible.builtin.file:
        path: /etc/yum.repos.d/ciscoaci.repo
        state: absent
```

Step 2 Run the playbook from the undercloud.

```
ansible-playbook -i ~/inventory.yaml <name of playbook file>
```

Customizing Roles

Use this procedure for customizing roles.

In the *Updating composable services in custom roles_data files* section in the *FRAMEWORK FOR UPGRADES (16.2 to 17.1)* guide, use a custom roles template to add the Cisco composable services. An ansible playbook is provided that modifies the upstream `/usr/share/openstack-tripleo-heat-templates/roles_data.yaml` file to add these roles.

Procedure

Step 1 Copy the `/usr/share/openstack-tripleo-heat-templates/roles_data.yaml` file to a private location.

Example:

```
cp /usr/share/openstack-tripleo-heat-templates/roles_data.yaml
/home/stack/templates/custom_roles_data.yaml
```

Step 2 Edit the local copy of `roles_data.yaml(custom_roles_data.yaml)` to add CiscoAciAIM and CiscoAciLldp service to the controller role and CiscoAciLldp service to the compute role.

a) Under the controller role, add the following lines:

```
- OS::TripleO::Services::CiscoAciAIM
- OS::TripleO::Services::CiscoAciLldp
- OS::TripleO::Services::CiscoAciOpflexAgent
```

b) Under the compute role, add the following line:

```
- OS::TripleO::Services::CiscoAciLldp
- OS::TripleO::Services::CiscoAciOpflexAgent
```

Note
RedHat may also instruct to add/change some roles like `OS::TripleO::Services::NovaLibvirt` for OpenStack upgrade. The above changes are in addition to all other changes that are required for FFU.

An ansible playbook is provided, that modifies the upstream `/usr/share/openstack-tripleo-heat-templates/roles_data.yaml` file to add these roles. You can skip the above step and run the playbook instead using the `sudo ansible-playbook -i ~/inventory.yaml /opt/ciscoaci-tripleo-heat-templates/tools/generate_ciscoaci_role_data.yaml` command.

Building Cisco Containers

Use this procedure for building Cisco containers.

Before proceeding to the *Upgrading a standard overcloud* section of the *FRAMEWORK FOR UPGRADES (16.2 to 17.1)* Red Hat guide , you need to build Cisco-specific containers.

Procedure

Step 1 Delete the earlier Cisco tripleo package from the undercloud, and install the new OSP17.1 RPM.

Example: For installing `tripleo-ciscoaci-17.1-1054.noarch.rpm`, use the following commands:

```
sudo yum remove tripleo-ciscoaci
sudo yum install ./tripleo-ciscoaci-17.1-1054.noarch.rpm
```

Step 2 Log in to an upstream container registry. For example, if you are using the upstream container registry from Red Hat, run the following command:

```
sudo podman login registry.connect.redhat.com
```

Step 3 After logging in to the upstream container registry, run the ACI containers build script for OSP16 using:

```
sudo /opt/ciscoaci-tripleo-heat-templates/tools/build_openstack_aci_containers.py -z
openstack-ciscorpms-repo-17.1-1006.tar.gz --image-tag 17.1 --pull
```

This script creates the `/home/stack/templates/ciscoaci_containers.yaml` file, which provides the mapping for the Cisco-specific or modified upstream services to their container images.

Preparing Upstream Containers

It is mandatory to create the `container-prepare-parameter.yaml` file for Overcloud adoption. For creating the `container-prepare-parameter.yaml` file, you will need multiple strategies listing for pulling containers for different openstack services during the upgrade process.

Cisco ACI neutron plugin provides the neutron-api, horizon and heat containers and it is necessary to make sure that these containers are excluded from all pull strategies, so the upgrade process does not pull the upstream versions of these containers. Ensure these containers are excluded from all pull strategies in the `container-prepare-parameter.yaml` file. Here is an example of the file:

```
parameter_defaults:
  ContainerImageRegistryCredentials:
    registry.redhat.io:
      mcohen2@cisco.com: 'XXXXXXXX'
  ContainerImagePrepare:
  - tag_from_label: '{version}-{release}'
    set:
      namespace: registry.redhat.io/rhosp-rhel9
      name_prefix: openstack-
      name_suffix: ''
      tag: '17.1'
      rhel_containers: false
      neutron_driver: ovn
      ceph_namespace: registry.redhat.io/rhceph
      ceph_image: rhceph-6-rhel9
      ceph_tag: latest
      ceph_prometheus_namespace: registry.redhat.io/openshift4
      ceph_prometheus_image: ose-prometheus
      ceph_prometheus_tag: v4.6
      ceph_alertmanager_namespace: registry.redhat.io/openshift4
```

```
    ceph_alertmanager_image: ose-prometheus-alertmanager
    ceph_alertmanager_tag: v4.6
    ceph_node_exporter_namespace: registry.redhat.io/openshift4
    ceph_node_exporter_image: ose-prometheus-node-exporter
    ceph_node_exporter_tag: v4.6
    ceph_grafana_namespace: registry.redhat.io/rhceph
    ceph_grafana_image: rhceph-6-dashboard-rhel9
    ceph_grafana_tag: latest
  push_destination: true
MultiRhelRoleContainerImagePrepare: &id001
- tag_from_label: '{version}-{release}'
  set:
    namespace: registry.redhat.io/rhosp-rhel9
    name_prefix: openstack-
    name_suffix: ''
    tag: '17.1'
    rhel_containers: false
    neutron_driver: ovn
    ceph_namespace: registry.redhat.io/rhceph
    ceph_image: rhceph-6-rhel9
    ceph_tag: latest
    ceph_prometheus_namespace: registry.redhat.io/openshift4
    ceph_prometheus_image: ose-prometheus
    ceph_prometheus_tag: v4.6
    ceph_alertmanager_namespace: registry.redhat.io/openshift4
    ceph_alertmanager_image: ose-prometheus-alertmanager
    ceph_alertmanager_tag: v4.6
    ceph_node_exporter_namespace: registry.redhat.io/openshift4
    ceph_node_exporter_image: ose-prometheus-node-exporter
    ceph_node_exporter_tag: v4.6
    ceph_grafana_namespace: registry.redhat.io/rhceph
    ceph_grafana_image: rhceph-6-dashboard-rhel9
    ceph_grafana_tag: latest
  push_destination: true
  excludes:
  - collectd
  - nova-libvirt
  - horizon
  - heat-engine
  - neutron-server
- tag_from_label: '{version}-{release}'
  set:
    namespace: registry.redhat.io/rhosp-rhel8
    name_prefix: openstack-
    name_suffix: ''
    tag: '17.1'
    rhel_containers: false
    neutron_driver: ovn
    ceph_namespace: registry.redhat.io/rhceph
    ceph_image: rhceph-6-rhel9
    ceph_tag: latest
    ceph_prometheus_namespace: registry.redhat.io/openshift4
    ceph_prometheus_image: ose-prometheus
    ceph_prometheus_tag: v4.6
    ceph_alertmanager_namespace: registry.redhat.io/openshift4
    ceph_alertmanager_image: ose-prometheus-alertmanager
    ceph_alertmanager_tag: v4.6
    ceph_node_exporter_namespace: registry.redhat.io/openshift4
    ceph_node_exporter_image: ose-prometheus-node-exporter
    ceph_node_exporter_tag: v4.6
    ceph_grafana_namespace: registry.redhat.io/rhceph
    ceph_grafana_image: rhceph-6-dashboard-rhel9
    ceph_grafana_tag: latest
  push_destination: true
```

```
    includes:
    - collectd
    - nova-libvirt
  ComputeContainerImagePrepare: *id001
  ControllerContainerImagePrepare: *id001
```

Cisco ACI containers are compatible with both UBI8 and UBI9 and the same version can be deployed in multi-RHELenvironment(s).

For more details, see the *Red Hat 16.2-17.1 FFU Guide*.

OpenStack Upgrade

Upgrade the undercloud as described in the *FRAMEWORK FOR UPGRADES (16.2 TO 17.1) Red Hat guide*. Follow the Overcloud upgrade instructions till Chapter 5, in the above-mentioned guide.

For creating the **`overcloud_upgrade_prepare.sh`** file, ensure to include the following files, which are specific for Cisco ACI integration.

- Custom roles file as stated in the Customizing Roles, on page 2 section.
- Cisco ACI OSP17.1 containers mapping environment file `/home/stack/templates/ciscoaci_containers.yaml`
- Cisco ACI specific configuration environment file `ciscoaci-config.yaml`. Use compatible resources as discussed in the Install Overcloud procedure (step 4).

Following is an example of the `overcloud_upgrade_prepare.sh` file with Cisco specific templates:

```
openstack overcloud upgrade prepare --yes \
  --timeout 460 \
  --templates /usr/share/openstack-tripleo-heat-templates \
  --ntp-server 172.28.184.8 \
  --stack overcloud \
  -r /home/stack/templates/custom_roles_data.yaml \
  -e /home/stack/templates/upgrades-environment.yaml \
  -e /home/stack/templates/ciscoaci_containers.yaml \
  -e /home/stack/templates/ciscoaci-config.yaml \
  -e /home/stack/overcloud-deploy/overcloud/overcloud-network-environment.yaml \
  -e /home/stack/overcloud_adopt/baremetal-deployment.yaml \
  -e /home/stack/overcloud_adopt/generated-networks-deployed.yaml \
  -e /home/stack/overcloud_adopt/generated-vip-deployed.yaml \
  -e
/usr/share/openstack-tripleo-heat-templates/environments/nova-hw-machine-type-upgrade.yaml
 \
  -e /home/stack/skip_rhel_release.yaml \
  -e ~/containers-prepare-parameter.yaml
```

Proceed with the openstack upgrade process as in *FRAMEWORK FOR UPGRADES (16.2 TO 17.1) Red Hat guide.*

OS Upgrade

For an OS upgrade to RHEL-9, follow the instructions for OS upgrade as detailed in the *FRAMEWORK FOR UPGRADES (16.2 TO 17.1) Red Hat guide*. When creating the `overcloud_upgrade_prepare.sh` file for overcloud OS upgrade, ensure to include the ACI specific templates as discussed above.

- Custom roles file
- Cisco ACI OSP17.1 containers mapping environment file
  `/home/stack/templates/ciscoaci_containers.yaml`
- Cisco ACI specific configuration environment file `ciscoaci-config.yaml`
- `container-prepare-parameter.yaml` file

  The preparation of the `container-prepare-parameter.yaml` is similar to the one in the Openstack upgrade process. Ensure to exclude neutron-api, horizon and heat containers from all pull strategies in the `container-prepare-parameter.yaml` file. Here is an example of the file used during LEAPP upgrade:

```
parameter_defaults:
  ContainerImageRegistryCredentials:
    registry.redhat.io:
      mcohen2@cisco.com: 'enter password'
  ContainerImagePrepare:
  - tag_from_label: '{version}-{release}'
    set:
      namespace: registry.redhat.io/rhosp-rhel9
      name_prefix: openstack-
      name_suffix: ''
      tag: '17.1'
      rhel_containers: false
      neutron_driver: ovn
      ceph_namespace: registry.redhat.io/rhceph
      ceph_image: rhceph-6-rhel9
      ceph_tag: latest
      ceph_prometheus_namespace: registry.redhat.io/openshift4
      ceph_prometheus_image: ose-prometheus
      ceph_prometheus_tag: v4.6
      ceph_alertmanager_namespace: registry.redhat.io/openshift4
      ceph_alertmanager_image: ose-prometheus-alertmanager
      ceph_alertmanager_tag: v4.6
      ceph_node_exporter_namespace: registry.redhat.io/openshift4
      ceph_node_exporter_image: ose-prometheus-node-exporter
      ceph_node_exporter_tag: v4.6
      ceph_grafana_namespace: registry.redhat.io/rhceph
      ceph_grafana_image: rhceph-6-dashboard-rhel9
      ceph_grafana_tag: latest
    push_destination: true
    excludes:
    - horizon
    - heat-engine
    - neutron-server
```