- **DistributedComputeHCI** - A DCN node with Ceph, Cinder, and Glance.
- **DistributedComputeHCIScaleOut** - A DCN node with Ceph, Cinder, and HAProxy for Glance.

Implementing an External Red Hat Ceph Storage Cluster

RHOSP overcloud installations have an undercloud node, which is referred to as the `Director` node in *Figure 13.1*. `TripleO` installs overcloud from the `Director` node. The default orchestration templates for `TripleO` services are in the `/usr/share/openstack-tripleo-heat-templates` directory on the undercloud. When deploying OpenStack integrated with Ceph, the undercloud node becomes the Ansible controller and cluster administration host.

Note

The following narrative provides a limited view of `TripleO` cloud deployment resources. Your organization's deployment will require further design effort, because every production overcloud has unique storage needs.

Because the default orchestration files are continuously being enhanced, you must not modify default template files in their original location. Instead, create a directory to store your custom environment files and parameter overrides. The following `ceph-ansible-external.yaml` environment file instructs `TripleO` to use the `ceph-ansible` client role to access a preexisting, external Ceph cluster. To override the default settings in this file, use a custom parameter file.

```
[stack@director ceph-ansible]$ cat ceph-ansible-external.yaml
 resource_registry:
  OS::TripleO::Services::CephExternal: ../../deployment/ceph-ansible/ceph-
external.yaml

parameter_defaults:
  # NOTE: These example parameters are required when using CephExternal
  #CephClusterFSID: '4b5c8c0a-ff60-454b-a1b4-9747aa737d19'
  #CephClientKey: 'AQDLOh1VgEp6FRAAFzT7Zw+Y9V6JJExQAsRnRQ=='
  #CephExternalMonHost: '172.16.1.7, 172.16.1.8'

  # the following parameters enable Ceph backends for Cinder, Glance, Gnocchi and
 Nova
  NovaEnableRbdBackend: true
  CinderEnableRbdBackend: true
  CinderBackupBackend: ceph
  GlanceBackend: rbd
  # Uncomment below if enabling legacy telemetry
  # GnocchiBackend: rbd
  # If the Ceph pools which host VMs, Volumes and Images do not match these
  # names OR the client keyring to use is not called 'openstack',  edit the
  # following as needed.
  NovaRbdPoolName: vms
  CinderRbdPoolName: volumes
  CinderBackupRbdPoolName: backups
  GlanceRbdPoolName: images
  # Uncomment below if enabling legacy telemetry
  # GnocchiRbdPoolName: metrics
  CephClientUserName: openstack
```