Red Hat OpenStack Platform 16.2

Overcloud Parameters

Parameters for customizing the core template collection for a Red Hat OpenStack Platform overcloud

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Abstract

This guide lists common parameters that are used in the deployment of OpenStack using the Orchestration service (heat). This guide is not a comprehensive resource, and not all parameters that are listed can be used in a supported configuration. The following parameters and definitions are extracted from source code, and provided here as reference only.

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Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see our CTO Chris Wright's message.

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CHAPTER 1. OVERCLOUD PARAMETERS

You can modify overcloud features with overcloud parameters. To set a parameter, include the chosen parameter and its value in an environment file under the **parameter_defaults** section and include the environment file with your **openstack overcloud deploy** command.

CHAPTER 2. CORE OVERCLOUD PARAMETERS

You can modify general overcloud configuration with the core overcloud parameters.

Parameter	Description
AddVipsToEtcHosts	Set to true to append per network VIPs to **/etc/hosts** on each node. The default value is **True**.
CloudDomain	The DNS domain used for the hosts. This must match the overcloud_domain_name configured on the undercloud. The default value is **localdomain**.
CloudName	The DNS name of this cloud. The default value is **overcloud.localdomain**.
CloudNameCtlplane	The DNS name of this cloud's control plane endpoint. The default value is **overcloud.ctlplane.localdomain**.
CloudNameInternal	The DNS name of this cloud's internal API endpoint. The default value is **overcloud.internalapi.localdomain**.
CloudNameStorage	The DNS name of this cloud's storage endpoint. For example, *ci-overcloud.storage.tripleo.org*. The default value is **overcloud.storage.localdomain**.
CloudNameStorageManagement	The DNS name of this cloud's storage management endpoint. The default value is **overcloud.storagemgmt.localdomain**.
ControlFixedIPs	Defines a fixed VIP for the Control Plane. Value uses the following format: **[{ip_address:'1.2.3.4'}]**
ControlPlaneSubnet	The name of the undercloud OpenStack Networking (neutron) control plane subnet. The default value is **ctlplane-subnet**.
ControlPlaneSubnetCidr	The subnet CIDR of the control plane network. The parameter is automatically resolved from the **ctlplane** subnet's **cidr** attribute.
DeployIdentifier	Setting this to a unique value will re-run any deployment tasks that perform configuration on a OpenStack Orchestration (heat) **stack-update**.
DeploymentServerBlacklist	List of server hostnames to blocklist from any triggered deployments.

Parameter	Description
EndpointMapOverride	Can be used to override the calcluated EndpointMap.
ExternalVirtualFixedIPs	Control the IP allocation for the ExternalVirtualInterface port. For example, [{*ip_address*:'1.2.3.4'}].
ExtraConfig	Additional hiera configuration to inject into the cluster.
ExtraHostFileEntries	List of extra hosts entries to be appended to /etc/hosts.
GlobalConfigExtraMapData	Map of extra global_config_settings data to set on each node.
HypervisorNeutronPhysicalBridge	An Open vSwitch bridge to create on each hypervisor. This defaults to **br-ex**, which is the same as the control plane nodes. This ensures uniform configuration of the Open vSwitch agent. Typically should not need to be changed. The default value is **br-ex**.
HypervisorNeutronPublicInterface	What interface to add to the **HypervisorNeutronPhysicalBridge**. The default value is **nic1**.
InternalApiVirtualFixedIPs	Control the IP allocation for the InternalApiVirtualInterface port. Value uses the following format: **[{ip_address:'1.2.3.4'}]**
NetworkDeploymentActions	OpenStack Orchestration (heat) action when to apply network configuration changes. The default value is **['CREATE']**.
NeutronControlPlaneID	ID or name for Control Plane ctlplane network. The default value is **ctlplane**.
NeutronPhysicalBridge	An OVS bridge to create for accessing external networks. The default value is **br-ex**.
NeutronPublicInterface	The interface to attach to the external bridge. The default value is **nic1**.
NodeCreateBatchSize	Maximum batch size for creating nodes. It is recommended to not exceed a batch size of 32 nodes. The default value is **30**.

Parameter	Description
NovaAdditionalCell	Whether this is an cell additional to the default cell. The default value is **False**.
NovaLocalMetadataPerCell	Indicates that the nova-metadata API service has been deployed per-cell, so that we can have better performance and data isolation in a multi-cell deployment. Users should consider the use of this configuration depending on how OpenStack Networking (neutron) is setup. If networks span cells, you might need to run nova-metadata API service globally. If your networks are segmented along cell boundaries, then you can run nova-metadata API service per cell. When running nova-metadata API service per cell, you should also configure each OpenStack Networking (neutron) metadata-agent to point to the corresponding nova-metadata API service. The default value is **False**.
OVNDBsVirtualFixedIPs	Control the IP allocation for the virtual IP used by OVN DBs. For example, [{*ip_address*:'1.2.3.4'}].
PublicVirtualFixedIPs	Control the IP allocation for the PublicVirtualInterface port. Value uses the following format: **[{ip_address:'1.2.3.4'}]**
RabbitCookieSalt	Salt for the RabbitMQ cookie. Change to force the randomly generated RabbitMQ cookie to change. The default value is **unset**.
RedisVirtualFixedIPs	Control the IP allocation for the virtual IP used by Redis. Value uses the following format: **[{ip_address:'1.2.3.4'}]**
RootStackName	The name of the stack/plan.
ServerMetadata	Extra properties or metadata passed to OpenStack Compute (nova) for the created nodes in the overcloud. Accessible through the OpenStack Compute (nova) metadata API.
StorageMgmtVirtualFixedIPs	Control the IP allocation for the StorageMgmgVirtualInterface port. Value uses the following format: **[{ip_address:'1.2.3.4'}]**
StorageVirtualFixedIPs	Control the IP allocation for the StorageVirtualInterface port. Value uses the following format: **[{ip_address:'1.2.3.4'}]**

Parameter	Description
UndercloudHostsEntries	List of undercloud hosts entries to be appended to /etc/hosts. The value is populated with the HEAT_HOSTS entries on the undercloud by tripleoclient when running deploy.
UpdateIdentifier	Set to a previously unused value during **stack-update** triggers package update on all nodes.

CHAPTER 3. ROLE-BASED PARAMETERS

You can modify the bevavior of specific overcloud composable roles with overcloud role-based parameters. Substitute **_ROLE_** with the name of the role. For example, for **_ROLE_Count** use **ControllerCount**.

Parameter	Description
_ROLE_AnyErrorsFatal	Sets the **any_errors_fatal** value when running **config-download** Ansible playbooks. The default value is **True**.
_ROLE_ControlPlaneSubnet	Name of the subnet on ctlplane network for this role. The default value is **ctlplane-subnet**.
_ROLE_Count	The number of nodes to deploy in a role. The default value is **1**.
_ROLE_ExtraConfig	Role specific additional hiera configuration to inject into the cluster.
_ROLE_ExtraGroupVars	Optional extra Ansible group vars.
_ROLE_HostnameFormat	Format for node hostnames. Note that **%index%** is translated into the index of the node (e.g 0/1/2) and **%stackname%** is replaced with the stack name (e.g **overcloud**). The default value is **%stackname%-_role_-%index%**.
_ROLE_MaxFailPercentage	Sets the **max_fail_percentage** value when running **config-download** Ansible playbooks. The default value is **0**.
_ROLE_NetworkDeploymentActions	OpenStack Orchestration (heat) action when to apply network configuration changes.
_ROLE_Parameters	Optional Role Specific parameters to be provided to service.
_ROLE_RemovalPolicies	List of resources to be removed from the role's **ResourceGroup** when doing an update that requires removal of specific resources.
_ROLE_RemovalPoliciesMode	How to handle change to RemovalPolicies for *ROLE* ResourceGroup when doing an update. Default mode *append* will append to the existing blocklist and *update* would replace the blocklist. The default value is **append**.

Parameter	Description
_ROLE_SchedulerHints	Optional scheduler hints to pass to OpenStack Compute (nova).
_ROLE_ServiceNetMap	Role specific ServiceNetMap overrides, the map provided will be merged with the global ServiceNetMap when passing the ServiceNetMap to the *ROLE_ServiceChain resource and the _ROLE* resource group. For example: _ROLE_ServiceNetMap: NovaLibvirtNetwork: internal_api_leaf2.
_ROLE_Services	A list of service resources (configured in the OpenStack Orchestration (heat) resource_registry) which represent nested stacks for each service that should get installed on the *ROLE* role.

CHAPTER 4. DEBUG PARAMETERS

These parameters allow you to set debug mode on a per-service basis. The **Debug** parameter acts as a global parameter for all services and the per-service parameters can override the effects of global parameter on individual services.

Parameter	Description
BarbicanDebug	Set to True to enable debugging OpenStack Key Manager (barbican) service.
CinderDebug	Set to True to enable debugging on OpenStack Block Storage (cinder) services.
ConfigDebug	Whether to run configuration management (e.g. Puppet) in debug mode. The default value is **False**.
Debug	Set to True to enable debugging on all services. The default value is **False**.
GlanceDebug	Set to True to enable debugging OpenStack Image Storage (glance) service.
HeatDebug	Set to True to enable debugging OpenStack Orchestration (heat) services.
HorizonDebug	Set to True to enable debugging OpenStack Dashboard (horizon) service.
IronicDebug	Set to True to enable debugging OpenStack Bare Metal (ironic) services.
KeystoneDebug	Set to True to enable debugging OpenStack Identity (keystone) service.
ManilaDebug	Set to True to enable debugging OpenStack Shared File Systems (manila) services.
MemcachedDebug	Set to True to enable debugging Memcached service.
NeutronDebug	Set to True to enable debugging OpenStack Networking (neutron) services.
NovaDebug	Set to True to enable debugging OpenStack Compute (nova) services.
OctaviaDebug	Set to True to enable debugging OpenStack Load Balancing-as-a-Service (octavia) services.

Parameter	Description
SaharaDebug	Set to True to enable debugging OpenStack Clustering (sahara) services.

CHAPTER 5. KERNEL PARAMETERS

You can modify the kernel behaviour with kernel parameters.

Parameter	Description
BridgeNfCallArpTables	Configures sysctl net.bridge.bridge-nf-call-arptables key. The default value is **1**.
BridgeNfCallIp6Tables	Configures sysctl net.bridge.bridge-nf-call-ip6tables key. The default value is **1**.
BridgeNfCallIpTables	Configures sysctl net.bridge.bridge-nf-call-iptables key. The default value is **1**.
ExtraKernelModules	Hash of extra kernel modules to load.
ExtraKernelPackages	List of extra kernel related packages to install.
ExtraSysctlSettings	Hash of extra sysctl settings to apply.
FsAioMaxNumber	The kernel allocates aio memory on demand, and this number limits the number of parallel aio requests; the only drawback of a larger limit is that a malicious guest could issue parallel requests to cause the kernel to set aside memory. Set this number at least as large as 128 * (number of virtual disks on the host) Libvirt uses a default of 1M requests to allow 8k disks, with at most 64M of kernel memory if all disks hit an aio request at the same time. The default value is **0**.
InotifyIntancesMax	Configures sysctl fs.inotify.max_user_instances key. The default value is **1024**.
KernelDisableIPv6	Configures sysctl net.ipv6.{default/all}.disable_ipv6 keys. The default value is **0**.
KernelIpForward	Configures net.ipv4.ip_forward key. The default value is **1**.
KernelIpNonLocalBind	Configures net.ipv{4,6}.ip_nonlocal_bind key. The default value is **1**.
KernelPidMax	Configures sysctl kernel.pid_max key. The default value is **1048576**.

Parameter	Description
NeighbourGcThreshold1	Configures sysctl net.ipv4.neigh.default.gc_thresh1 value. This is the minimum number of entries to keep in the ARP cache. The garbage collector will not run if there are fewer than this number of entries in the cache. The default value is **1024**.
NeighbourGcThreshold2	Configures sysctl net.ipv4.neigh.default.gc_thresh2 value. This is the soft maximum number of entries to keep in the ARP cache. The garbage collector will allow the number of entries to exceed this for 5 seconds before collection will be performed. The default value is **2048**.
NeighbourGcThreshold3	Configures sysctl net.ipv4.neigh.default.gc_thresh3 value. This is the hard maximum number of entries to keep in the ARP cache. The garbage collector will always run if there are more than this number of entries in the cache. The default value is **4096**.

CHAPTER 6. BARE METAL (IRONIC) PARAMETERS

You can modify the ironic service with bare metal parameters.

Parameter	Description
AdditionalArchitectures	List of additional architectures to enable.
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
IPAImageURLs	IPA image URLs, the format should be ["http://path/to/kernel", "http://path/to/ramdisk"].
IronicAutomatedClean	Enables or disables automated cleaning. Disabling automated cleaning might result in security problems and deployment failures on rebuilds. Do not set to **False** unless you understand the consequences of disabling this feature. The default value is **True**.
IronicCleaningDiskErase	Type of disk cleaning before and between deployments. **full** for full cleaning. **metadata** to clean only disk metadata (partition table). The default value is **full**.
IronicCleaningNetwork	Name or UUID of the overcloud network used for cleaning bare metal nodes. Set to **provisioning** during the initial deployment (when no networks are created yet) and change to an actual UUID in a post-deployment stack update. The default value is **provisioning**.
IronicConductorGroup	The name of an OpenStack Bare Metal (ironic) Conductor Group.
IronicConfigureSwiftTempUrlKey	Whether to configure Swift temporary URLs for use with the "direct" and "ansible" deploy interfaces. The default value is **True**.
IronicCorsAllowedOrigin	Indicate whether this resource may be shared with the domain received in the request "origin" header.
IronicDefaultBootOption	How to boot the bare metal instances. Set to **local** to use local bootloader (requires grub2 for partition images). Set to **netboot** to make the instances boot from controllers using PXE/iPXE. The default value is **local**.

Parameter	Description
IronicDefaultDeployInterface	Deploy interface implementation to use by default. Leave empty to use the hardware type default.
IronicDefaultInspectInterface	Inspect interface implementation to use by default. Leave empty to use the hardware type default.
IronicDefaultNetworkInterface	Network interface implementation to use by default. Set to **flat** to use one flat provider network. Set to **neutron** to make OpenStack Bare Metal (ironic) interact with the OpenStack Networking (neutron) ML2 driver to enable other network types and certain advanced networking features. Requires **IronicProvisioningNetwork** to be correctly set. The default value is **flat**.
IronicDefaultRescueInterface	Default rescue implementation to use. The "agent" rescue requires a compatible ramdisk to be used. The default value is **agent**.
IronicDefaultResourceClass	Default resource class to use for new nodes.
IronicDeployLogsStorageBackend	Backend to use to store ramdisk logs, either "local" or "swift". The default value is **local**.
IronicDhcpv6StatefulAddressCount	Number of IPv6 addresses to allocate for ports created for provisioning, cleaning, rescue or inspection on DHCPv6-stateful networks. Different stages of the chain-loading process will request addresses with different CLID/IAID. Due to non-identical identifiers multiple addresses must be reserved for the host to ensure each step of the boot process can successfully lease addresses. The default value is **4**.
IronicEnabledBiosInterfaces	Enabled BIOS interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['no-bios']**.
IronicEnabledBootInterfaces	Enabled boot interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['ipxe', 'pxe']**.
IronicEnabledConsoleInterfaces	Enabled console interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['ipmitool-socat', 'no-console']**.

Parameter	Description
IronicEnabledDeployInterfaces	Enabled deploy interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['iscsi', 'direct']**.
IronicEnabledHardwareTypes	Enabled OpenStack Bare Metal (ironic) hardware types. The default value is **['ipmi', 'redfish']**.
IronicEnabledInspectInterfaces	Enabled inspect interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['no-inspect']**.
IronicEnabledManagementInterfaces	Enabled management interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['ipmitool', 'noop', 'redfish']**.
IronicEnabledNetworkInterfaces	Enabled network interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['flat', 'neutron']**.
IronicEnabledPowerInterfaces	Enabled power interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['ipmitool', 'redfish']**.
IronicEnabledRaidInterfaces	Enabled RAID interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['no-raid', 'agent']**.
IronicEnabledRescueInterfaces	Enabled rescue interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['no-rescue', 'agent']**.
IronicEnabledStorageInterfaces	Enabled storage interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['cinder', 'noop']**.
IronicEnabledVendorInterfaces	Enabled vendor interface implementations. Each hardware type must have at least one valid implementation enabled. The default value is **['ipmitool', 'no-vendor']**.

Parameter	Description
IronicEnableStagingDrivers	Whether to enable use of staging drivers. The default value is **False**.
IronicForcePowerStateDuringSync	Whether to force power state during sync. The default value is **True**.
IronicImageDownloadSource	Image delivery method for the "direct" deploy interface. Use "swift" for the Object Storage temporary URLs, use "http" for the local HTTP server (the same as for iPXE). The default value is **swift**.
IronicInspectorCollectors	Comma-separated list of IPA inspection collectors. The default value is **default,logs**.
IronicInspectorDiscoveryDefaultDriver	The default driver to use for newly discovered nodes (requires IronicInspectorEnableNodeDiscovery set to True). This driver is automatically added to enabled_drivers. The default value is **ipmi**.
IronicInspectorEnableNodeDiscovery	Makes ironic-inspector enroll any unknown node that PXE-boots introspection ramdisk in OpenStack Bare Metal (ironic). The default driver to use for new nodes is specified by the IronicInspectorDiscoveryDefaultDriver parameter. Introspection rules can also be used to specify it. The default value is **False**.
IronicInspectorExtraProcessingHooks	Comma-separated list of processing hooks to append to the default list. The default value is **extra_hardware,lldp_basic,local_link_connection**.
IronicInspectorInterface	Network interface on which inspection dnsmasq will listen. The default value is **br-ex**.
IronicInspectorIpRange	Temporary IP range that will be given to nodes during the inspection process. This should not overlap with any range that OpenStack Networking (neutron) DHCP allocates, but it has to be routeable back to **ironic-inspector**. This option has no meaningful defaults, and thus is required.
IronicInspectorIPXEEnabled	Whether to use iPXE for inspection. The default value is **True**.

Parameter	Description
IronicInspectorKernelArgs	Kernel args for the OpenStack Bare Metal (ironic) inspector. The default value is **ipa-inspection-dhcp-all-interfaces=1 ipa-collect-lldp=1 ipa-debug=1**.
IronicInspectorSubnets	Temporary IP ranges that will be given to nodes during the inspection process. These ranges should not overlap with any range that OpenStack Networking (neutron) DHCP provides, but they need to be routeable back to the **ironic-inspector** API. This option has no meaningful defaults and is required.
IronicInspectorUseSwift	Whether to use Swift for storing introspection data. The default value is **True**.
IronicIpVersion	The IP version that will be used for PXE booting. The default value is **4**.
IronicIPXEEnabled	Whether to use iPXE instead of PXE for deployment. The default value is **True**.
IronicIPXEPort	Port to use for serving images when iPXE is used. The default value is **8088**.
IronicIPXETimeout	IPXE timeout in second. Set to 0 for infinite timeout. The default value is **60**.
IronicIPXEUefiSnpOnly	Whether to use SNP (Simple Network Protocol) iPXE EFI, or not. When set to true **ipxe-snponly** EFI is used. The default value is **True**.
IronicPassword	The password for the Bare Metal service and database account.
IronicPowerStateChangeTimeout	Number of seconds to wait for power operations to complete, i.e., so that a baremetal node is in the desired power state. If timed out, the power operation is considered a failure. The default value is **60**.
IronicProvisioningNetwork	Name or UUID of the overcloud network used for provisioning of bare metal nodes if **IronicDefaultNetworkInterface** is set to **neutron**. Set to **provisioning** during the initial deployment (when no networks are created yet) and change to an actual UUID in a post-deployment stack update. The default value is **provisioning**.

Parameter	Description
IronicRescuingNetwork	Name or UUID of the **overcloud** network used for rescuing of bare metal nodes, if IronicDefaultRescueInterface is not set to "no-rescue". The default value of "provisioning" can be left during the initial deployment (when no networks are created yet) and should be changed to an actual UUID in a post-deployment stack update. The default value is **provisioning**.
IronicRpcTransport	The remote procedure call transport between conductor and API processes, such as a messaging broker or JSON RPC.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.

CHAPTER 7. BLOCK STORAGE (CINDER) PARAMETERS

You can modify the cinder service with block storage parameters.

Parameter	Description
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CephClusterFSID	The Ceph cluster FSID. Must be a UUID.
CephClusterName	The Ceph cluster name. The default value is **ceph**.
CephExternalMultiConfig	List of maps describing extra overrides which will be applied when configuring extra external Ceph clusters. If this list is non-empty, **ceph-ansible** will run an extra count(list) times using the same parameters as the first run except each parameter within each map will override the defaults. If the following were used, the second run would configure the overcloud to also use the ceph2 cluster with all the previous parameters except /etc/ceph/ceph2.conf would have a mon_host entry containing the value of external_cluster_mon_ips below, and not the default CephExternalMonHost. Subsequent **ceph-ansible** runs are restricted to just ceph clients. CephExternalMultiConfig may not be used to deploy additional internal Ceph clusters within one OpenStack Orchestration (heat) stack. The map for each list should contain not tripleo-heat-template parameters but **ceph-ansible** parameters. - cluster: *ceph2* fsid: *e2cba068-5f14-4b0f-b047-acf375c0004a* external_cluster_mon_ips: *172.18.0.5,172.18.0.6,172.18.0.7* keys: - name: "client.openstack" caps: mgr: "allow *" mon: "profile rbd" osd: "osd: profile rbd pool=volumes, profile rbd pool=backups, profile rbd pool=vms, profile rbd pool=images" key: "AQCwmeRcAAAAABAA6SQU/bGqFjlfLro5KxrB1Q== " mode: "0600" dashboard_enabled: false.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
CinderApiWsgiTimeout	The number of seconds until a OpenStack Block Storage (cinder) API WSGI connection times out. The default value is **60**.
CinderBackupOptVolumes	List of optional volumes to be mounted.
CinderCronDbPurgeAge	Cron to move deleted instances to another table - Age. The default value is **30**.

Parameter	Description
CinderCronDbPurgeDestination	Cron to move deleted instances to another table - Log destination. The default value is **/var/log/cinder/cinder-rowsflush.log**.
CinderCronDbPurgeHour	Cron to move deleted instances to another table - Hour. The default value is **0**.
CinderCronDbPurgeMaxDelay	Cron to move deleted instances to another table - Max Delay. The default value is **3600**.
CinderCronDbPurgeMinute	Cron to move deleted instances to another table - Minute. The default value is **1**.
CinderCronDbPurgeMonth	Cron to move deleted instances to another table - Month. The default value is *****.
CinderCronDbPurgeMonthday	Cron to move deleted instances to another table - Month Day. The default value is *****.
CinderCronDbPurgeUser	Cron to move deleted instances to another table - User. The default value is **cinder**.
CinderCronDbPurgeWeekday	Cron to move deleted instances to another table - Week Day. The default value is *****.
CinderDefaultVolumeType	The name of the OpenStack Block Storage (cinder) default volume type. The default value is **tripleo**.
CinderEnableDBPurge	Whether to create cron job for purging soft deleted rows in OpenStack Block Storage (cinder) database. The default value is **True**.
CinderEnableIscsiBackend	Whether to enable or not the Iscsi backend for OpenStack Block Storage (cinder). The default value is **True**.
CinderEnableNfsBackend	Whether to enable or not the NFS backend for OpenStack Block Storage (cinder). The default value is **False**.
CinderEnableRbdBackend	Whether to enable or not the Rbd backend for OpenStack Block Storage (cinder). The default value is **False**.

Parameter	Description
CinderEtcdLocalConnect	When running OpenStack Block Storage (cinder) A/A, whether to connect to Etcd via the local IP for the Etcd network. If set to true, the ip on the local node will be used. If set to false, the VIP on the Etcd network will be used instead. Defaults to false. The default value is **False**.
CinderImageConversionNfsOptions	NFS mount options when using an NFS share for the OpenStack Block Storage (cinder) image conversion directory. The default value is **_netdev,bg,intr,context=system_u:object_r:container_file_t:s0**.
CinderImageConversionNfsShare	When set, the NFS share to be used for the OpenStack Block Storage (cinder) image conversion directory.
CinderISCSIAvailabilityZone	The availability zone of the Iscsi OpenStack Block Storage (cinder) backend. When set, it overrides the default CinderStorageAvailabilityZone.
CinderISCSIHelper	The iSCSI helper to use with cinder. The default value is **lioadm**.
CinderISCSIProtocol	Whether to use TCP (*iscsi*) or iSER RDMA (*iser*) for iSCSI. The default value is **iscsi**.
CinderLVMLoopDeviceSize	The size of the loopback file used by the cinder LVM driver. The default value is **10280**.
CinderNasSecureFileOperations	Controls whether security enhanced NFS file operations are enabled. Valid values are *auto*, *true* or *false*. Effective when CinderEnableNfsBackend is true. The default value is **False**.
CinderNasSecureFilePermissions	Controls whether security enhanced NFS file permissions are enabled. Valid values are *auto*, *true* or *false*. Effective when CinderEnableNfsBackend is true. The default value is **False**.
CinderNfsAvailabilityZone	The availability zone of the NFS OpenStack Block Storage (cinder) backend. When set, it overrides the default CinderStorageAvailabilityZone.
CinderNfsMountOptions	Mount options for NFS mounts used by OpenStack Block Storage (cinder) NFS backend. Effective when CinderEnableNfsBackend is true. The default value is **context=system_u:object_r:container_file_t:s0**.

Parameter	Description
CinderNfsServers	NFS servers used by OpenStack Block Storage (cinder) NFS backend. Effective when CinderEnableNfsBackend is true.
CinderNfsSnapshotSupport	Whether to enable support for snapshots in the NFS driver. Effective when CinderEnableNfsBackend is true. The default value is **True**.
CinderPassword	The password for the cinder service and database account.
CinderRbdAvailabilityZone	The availability zone of the RBD OpenStack Block Storage (cinder) backend. When set, it overrides the default CinderStorageAvailabilityZone.
CinderRbdExtraPools	List of extra Ceph pools for use with RBD backends for OpenStack Block Storage (cinder). An extra OpenStack Block Storage (cinder) RBD backend driver is created for each pool in the list. This is in addition to the standard RBD backend driver associated with the CinderRbdPoolName.
CinderRbdFlattenVolumeFromSnapshot	Whether RBD volumes created from a snapshot should be flattened in order to remove a dependency on the snapshot. The default value is **False**.
CinderRbdPoolName	The Ceph pool to use for cinder volumes. The default value is **volumes**.
CinderRpcResponseTimeout	Cinder's RPC response timeout, in seconds. The default value is **60**.
CinderStorageAvailabilityZone	The OpenStack Block Storage (cinder) service's storage availability zone. The default value is **nova**.
CinderVolumeCluster	The cluster name used for deploying the cinder-volume service in an active-active (A/A) configuration. This configuration requires the OpenStack Block Storage (cinder) backend drivers support A/A, and the cinder-volume service not be managed by pacemaker. If these criteria are not met then the cluster name must be left blank.
CinderVolumeOptEnvVars	Hash of optional environment variables.
CinderVolumeOptVolumes	List of optional volumes to be mounted.

Parameter	Description
CinderWorkers	Set the number of workers for the block storage service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node. The default value is equal to the number of vCPU cores on the physical node.
DockerCinderVolumeUlimit	Ulimit for OpenStack Block Storage (cinder) Volume Container. The default value is **['nofile=131072']**.
EnableEtcdInternalTLS	Controls whether etcd and the cinder-volume service use TLS for cinder's lock manager, even when the rest of the internal API network is using TLS. The default value is **False**.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
MultipathdEnable	Whether to enable the multipath daemon. The default value is **False**.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.

CHAPTER 8. CEPH STORAGE PARAMETERS

You can modify your Ceph Storage cluster with Ceph Storage parameters.

Parameter	Description
AllInOneUpgrade	Parameter used for pausing all ceph osds and skip transfer data check during a special case of upgrade called AllInOne. This causes workload outage! The default value is **False**.
CephAnsibleDisksConfig	Disks configuration settings for **ceph-ansible**. The default value is **{'devices': ['/dev/vdb'], 'osd_scenario': 'lvm', 'osd_objectstore': 'bluestore'}**.
CephAnsibleEnvironmentVariables	Mapping of Ansible environment variables to override defaults.
CephAnsibleExtraConfig	Extra vars for the **ceph-ansible** playbook.
CephAnsiblePlaybook	List of paths to the **ceph-ansible** playbooks to execute. If not specified, the playbook will be determined automatically depending on type of operation being performed (deploy/update/upgrade). The default value is **['default']**.
CephAnsiblePlaybookVerbosity	The number of *-v*, *-vv*, etc. passed to ansible-playbook command. The default value is **1**.
CephAnsibleRepo	The repository that should be used to install the right **ceph-ansible** package. This value can be used by tripleo-validations to double check the right **ceph-ansible** version is installed. The default value is **rhceph-4-tools-for-rhel-8-x86_64-rpms**.
CephAnsibleSkipTags	List of **ceph-ansible** tags to skip. The default value is **package-install,with_pkg**.
CephAnsibleWarning	In particular scenarios we want this validation to show the warning but don't fail because the package is installed on the system but repos are disabled. The default value is **True**.
CephCertificateKeySize	Override the private key size used when creating the certificate for this service.

Parameter	Description
CephClientKey	The Ceph client key. Currently only used for external Ceph deployments to create the openstack user keyring. Can be created with: **ceph-authtool --gen-print-key**
CephClusterFSID	The Ceph cluster FSID. Must be a UUID.
CephClusterName	The Ceph cluster name. The default value is **ceph**.
CephConfigOverrides	Extra configuration settings to dump into ceph.conf.
CephDashboardAdminPassword	Admin password for the dashboard component.
CephDashboardAdminRO	Parameter used to set a read-only admin user. The default value is **True**.
CephDashboardAdminUser	Admin user for the dashboard component. The default value is **admin**.
CephEnableDashboard	Parameter used to trigger the dashboard deployment. The default value is **False**.
CephExternalMonHost	List of externally managed Ceph Mon Host IPs. Only used for external Ceph deployments.

Parameter	Description
CephExternalMultiConfig	List of maps describing extra overrides which will be applied when configuring extra external Ceph clusters. If this list is non-empty, **ceph-ansible** will run an extra count(list) times using the same parameters as the first run except each parameter within each map will override the defaults. If the following were used, the second run would configure the overcloud to also use the ceph2 cluster with all the previous parameters except /etc/ceph/ceph2.conf would have a mon_host entry containing the value of external_cluster_mon_ips below, and not the default CephExternalMonHost. Subsequent **ceph-ansible** runs are restricted to just ceph clients. CephExternalMultiConfig may not be used to deploy additional internal Ceph clusters within one OpenStack Orchestration (heat) stack. The map for each list should contain not tripleo-heat-template parameters but **ceph-ansible** parameters. - cluster: *ceph2* fsid: *e2cba068-5f14-4b0f-b047-acf375c0004a* external_cluster_mon_ips: *172.18.0.5,172.18.0.6,172.18.0.7* keys: - name: "client.openstack" caps: mgr: "allow *" mon: "profile rbd" osd: "osd: profile rbd pool=volumes, profile rbd pool=backups, profile rbd pool=vms, profile rbd pool=images" key: "AQCwmeRcAAAAABAA6SQU/bGqFjlfLro5KxrB1Q== " mode: "0600" dashboard_enabled: false.
CephExtraKeys	List of maps describing extra keys which will be created on the deployed Ceph cluster. Uses **ceph-ansible**/library/ceph_key.py ansible module. Each item in the list must be in the following example format - name: "client.glance" caps: mgr: "allow *" mon: "profile rbd" osd: "profile rbd pool=images" key: "AQBRgQ9eAAAAABAAv84zEilJYZPNuJ0Iwn9Ndg== " mode: "0600".
CephGrafanaAdminPassword	Admin password for grafana component.
CephIPv6	Enables Ceph daemons to bind to IPv6 addresses. The default value is **False**.
CephManilaClientKey	The Ceph client key. Can be created with: **ceph-authtool --gen-print-key**
CephMsgrSecureMode	Enable Ceph msgr2 secure mode to enable on-wire encryption between Ceph daemons and also between Ceph clients and daemons. The default value is **False**.

Parameter	Description
CephOsdPercentageMin	The minimum percentage of Ceph OSDs which must be running and in the Ceph cluster, according to ceph osd stat, for the deployment not to fail. Used to catch deployment errors early. Set this value to 0 to disable this check. The default value is **66**.
CephPoolDefaultPgNum	Default placement group size to use for the RBD pools. The default value is **128**.
CephPoolDefaultSize	Default minimum replication for RBD copies. The default value is **3**.
CephPools	Override settings for one of the predefined pools or to create additional ones. Example: **{ "volumes": { "size": 5, "pg_num": 128, "pgp_num": 128 } }**
CephRbdMirrorConfigure	Perform mirror configuration between local and remote pool. The default value is **True**.
CephRbdMirrorCopyAdminKey	Copy the admin key to all nodes. The default value is **False**.
CephRbdMirrorPool	Name of the local pool to mirror to remote cluster.
CephRbdMirrorRemoteCluster	The name given to the remote Ceph cluster from the local cluster. Keys reside in the **/etc/ceph** directory. The default value is **not-ceph**.
CephRbdMirrorRemoteUser	The rbd-mirror daemon needs a user to authenticate with the remote cluster. By default, this key should be available under /etc/ceph/<remote_cluster>.client.<remote_user>.keyring.
CephRgwCertificateKeySize	Override the private key size used when creating the certificate for this service.
CephRgwClientName	The client name for the RADOSGW service." The default value is **radosgw**.
CephRgwKey	The cephx key for the RADOSGW client. Can be created with ceph-authtool --gen-print-key.
CephValidationDelay	Interval (in seconds) in between validation checks. The default value is **30**.
CephValidationRetries	Number of retry attempts for Ceph validation. The default value is **40**.

Parameter	Description
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
CinderBackupBackend	The short name of the OpenStack Block Storage (cinder) Backup backend to use. The default value is **swift**.
CinderBackupRbdPoolName	Pool to use if Block Storage (cinder) Backup is enabled. The default value is **backups**.
CinderEnableRbdBackend	Whether to enable or not the Rbd backend for OpenStack Block Storage (cinder). The default value is **False**.
CinderRbdExtraPools	List of extra Ceph pools for use with RBD backends for OpenStack Block Storage (cinder). An extra OpenStack Block Storage (cinder) RBD backend driver is created for each pool in the list. This is in addition to the standard RBD backend driver associated with the CinderRbdPoolName.
CinderRbdPoolName	Pool to use for Block Storage (cinder) service. The default value is **volumes**.
DeploymentServerBlacklist	List of server hostnames to blocklist from any triggered deployments.
GlanceBackend	The short name of the OpenStack Image Storage (glance) backend to use. Set to **rbd** to use Ceph Storage.` The default value is **swift**.
GlanceRbdPoolName	Pool to use for Image Storage (glance) service. The default value is **images**.
GnocchiBackend	The short name of the OpenStack Telemetry Metrics (gnocchi) backend to use. Should be one of swift, rbd, file or s3. The default value is **swift**.
GnocchiRbdPoolName	Pool to use for Telemetry storage. The default value is **metrics**.
LocalCephAnsibleFetchDirectoryBackup	Filesystem path on undercloud to persist a copy of the data from the **ceph-ansible** fetch directory. Used as an alternative to backing up the fetch_directory in Swift. Path must be writable and readable by the user running ansible from config-download, e.g. the mistral user in the mistral-executor container is able to read/write to /var/lib/mistral/ceph_fetch.

Parameter	Description
ManilaCephFSCephFSAuthId	The CephFS user ID for Shared Filesystem Service (manila). The default value is **manila**.
ManilaCephFSDataPoolName	Pool to use for file share storage. The default value is **manila_data**.
ManilaCephFSDataPoolPGNum	Placement group count for the CephFS data pool for file share storage. The default value is **128**.
ManilaCephFSMetadataPoolName	Pool to use for file share metadata storage. The default value is **manila_metadata**.
ManilaCephFSMetadataPoolPGNum	Placement group count for the CephFS metadata pool for file share storage. The default value is **128**.
ManilaCephFSShareBackendName	Backend name of the CephFS share for file share storage. The default value is **cephfs**.
NodeExporterContainerImage	Ceph NodeExporter container image.
NovaEnableRbdBackend	Whether to enable the Ceph backend for Compute (nova). The default value is **False**.
NovaRbdPoolName	Pool to use for Compute storage. The default value is **vms**.

CHAPTER 9. COMPUTE (NOVA) PARAMETERS

You can modify the nova service with compute parameters.

Parameter	Description
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
ContainerCpusetCpus	Limit the specific CPUs or cores a container can use. The default value is **all**.
ContainerNovaLibvirtPidsLimit	Tune nova_libvirt container PID limit (set to 0 for unlimited) (defaults to 65536). The default value is **65536**.
ContainerNovaLibvirtUlimit	Ulimit for OpenStack Compute (nova) Libvirt Container. The default value is **['nofile=131072', 'nproc=126960']**.
DockerInsecureRegistryAddress	Optional. The IP Address and Port of an insecure docker namespace that will be configured in /etc/sysconfig/docker. The value can be multiple addresses separated by commas.
DockerNovaComputeUlimit	Ulimit for OpenStack Compute (nova) Compute Container. The default value is **['nofile=131072', 'memlock=67108864']**.
DockerNovaMigrationSshdPort	Port that dockerized nova migration target sshd service binds to. The default value is **2022**.
EnableCache	Enable caching with memcached. The default value is **True**.
EnableConfigPurge	Remove configuration that is not generated by the director. Used to avoid configuration remnants after upgrades. The default value is **False**.
EnableInstanceHA	Whether to enable an Instance Ha configurarion or not. This setup requires the Compute role to have the PacemakerRemote service added to it. The default value is **False**.
EnableSQLAlchemyCollectd	Set to true to enable the SQLAlchemy-collectd server plugin. The default value is **False**.

Parameter	Description
ExtractedPlacementEnabled	Set to True when deploying the extracted Placement service. The default value is **False**.
GlanceMultistoreConfig	Dictionary of settings when configuring additional glance backends. The hash key is the backend ID, and the value is a dictionary of parameter values unique to that backend. Multiple rbd backends are allowed, but cinder, file and swift backends are limited to one each. Example: # Default glance store is rbd. GlanceBackend: rbd GlanceStoreDescription: *Default rbd store* # GlanceMultistoreConfig specifies a second rbd backend, plus a cinder # backend. GlanceMultistoreConfig: rbd2_store: GlanceBackend: rbd GlanceStoreDescription: *Second rbd store* CephClusterName: ceph2 # Override CephClientUserName if this cluster uses a different # client name. CephClientUserName: client2 cinder_store: GlanceBackend: cinder GlanceStoreDescription: *OpenStack Block Storage (cinder) store*.
InstanceNameTemplate	Template string to be used to generate instance names. The default value is **instance-%08x**.
InternalTLSNbdCAFile	Specifies the CA cert to use for NBD TLS. The default value is **/etc/ipa/ca.crt**.
InternalTLSQemuCAFile	Specifies the CA cert to use for qemu. The default value is **/etc/ipa/ca.crt**.
InternalTLSVncCAFile	Specifies the CA cert to use for VNC TLS. The default value is **/etc/ipa/ca.crt**.
InternalTLSVncProxyCAFile	Specifies the CA cert to use for VNC TLS. The default value is **/etc/ipa/ca.crt**.
KernelArgs	Kernel Args to apply to the host.
LibvirtCACert	This specifies the CA certificate to use for TLS in libvirt. This file will be symlinked to the default CA path in libvirt, which is /etc/pki/CA/cacert.pem. Note that due to limitations GNU TLS, which is the TLS backend for libvirt, the file must be less than 65K (so we can't use the system's CA bundle). This parameter should be used if the default (which comes from the InternalTLSCAFile parameter) is not desired. The current default reflects TripleO's default CA, which is FreeIPA. It will only be used if internal TLS is enabled.

Parameter	Description
LibvirtCertificateKeySize	Override the private key size used when creating the certificate for this service.
LibvirtEnabledPerfEvents	This is a performance event list which could be used as monitor. For example: **cmt,mbml,mbmt**. Make sure you are using Red Hat Enterprise Linux 7.4 as the base and **libvirt** version is 1.3.3 or above. Also ensure you have enabled the notifications and are using hardware with a CPU that supports the **cmt** flag.
LibvirtLogFilters	Defines a filter to select a different logging level for a given category log outputs, as specified in https://libvirt.org/logging.html . The default value is **1:libvirt 1:qemu 1:conf 1:security 3:event 3:json 3:file 3:object 1:util**.
LibvirtNbdCACert	This specifies the CA certificate to use for NBD TLS. This file will be symlinked to the default CA path, which is /etc/pki/libvirt-nbd/ca-cert.pem. This parameter should be used if the default (which comes from the InternalTLSNbdCAFile parameter) is not desired. The current default reflects TripleO's default CA, which is FreeIPA. It will only be used if internal TLS is enabled.
LibvirtTLSPassword	The password for the libvirt service when TLS is enabled.
LibvirtTLSPriority	Override the compile time default TLS priority string. The default value is **NORMAL:-VERS-SSL3.0:-VERS-TLS-ALL:+VERS-TLS1.2**.
LibvirtVncCACert	This specifies the CA certificate to use for VNC TLS. This file will be symlinked to the default CA path, which is /etc/pki/libvirt-vnc/ca-cert.pem. This parameter should be used if the default (which comes from the InternalTLSVncCAFile parameter) is not desired. The current default reflects TripleO's default CA, which is FreeIPA. It will only be used if internal TLS is enabled.
LibvirtVNCClientCertificateKeySize	Override the private key size used when creating the certificate for this service.
LibvirtVNCServerCertificateKeySize	Override the private key size used when creating the certificate for this service.

Parameter	Description
MemcachedTLS	Set to True to enable TLS on Memcached service. Because not all services support Memcached TLS, during the migration period, Memcached will listen on 2 ports - on the port set with MemcachedPort parameter (above) and on 11211, without TLS. The default value is **False**.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
MigrationSshKey	SSH key for migration. Expects a dictionary with keys *public_key* and *private_key*. Values should be identical to SSH public/private key files. The default value is **{'public_key': '', 'private_key': ''}**.
MigrationSshPort	Target port for migration over ssh. The default value is **2022**.
MultipathdEnable	Whether to enable the multipath daemon. The default value is **False**.
MysqlIPv6	Enable IPv6 in MySQL. The default value is **False**.
NeutronMetadataProxySharedSecret	Shared secret to prevent spoofing.
NeutronPhysnetNUMANodesMapping	Map of phynet name as key and NUMA nodes as value. For example: **NeutronPhysnetNUMANodesMapping: {'foo': [0, 1], 'bar': [1]}** where **foo** and **bar** are physnet names and corresponding values are list of associated **numa_nodes**.
NeutronTunnelNUMANodes	Used to configure NUMA affinity for all tunneled networks.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.
NovaAdditionalCell	Whether this is an cell additional to the default cell. The default value is **False**.
NovaAllowResizeToSameHost	Allow destination machine to match source for resize. The default value is **False**.
NovaApiMaxLimit	Max number of objects returned per API query. The default value is **1000**.

Parameter	Description
NovaAutoDisabling	Max number of consecutive build failures before the nova-compute will disable itself. The default value is **10**.
NovaComputeCpuDedicatedSet	A comma-separated list or range of physical host CPU numbers to which processes for pinned instance CPUs can be scheduled. For example, **NovaComputeCpuDedicatedSet: [4-12,^8,15]** reserves cores from 4-12 and 15, excluding 8. If setting this option, do not set the deprecated **NovaVcpuPinSet** parameter.
NovaComputeCpuSharedSet	If the deprecated **NovaVcpuPinSet** option is not set, then **NovaComputeCpuSharedSet** is set to a comma-separated list or range of physical host CPU numbers used to provide vCPU inventory, determine the host CPUs that unpinned instances can be scheduled to, and determine the host CPUS that instance emulator threads should be offloaded to for instances configured with the share emulator thread policy, **hw:emulator_threads_policy=share**. If the deprecated **NovaVcpuPinSet** is set, then **NovaComputeCpuSharedSet** is set to a list or range of host CPU cores used to determine the host CPUs that instance emulator threads should be offloaded to for instances configured with the share emulator thread policy (hw:emulator_threads_policy=share). In this case, NovaVcpuPinSet is used to provide vCPU inventory and to determine the host CPUs that both pinned and unpinned instances can be scheduled to. For example, **NovaComputeCpuSharedSet: [4-12,^8,15]** reserves cores from 4-12 and 15, excluding 8.
NovaComputeDisableIrqBalance	Whether to disable irqbalance on compute nodes or not. Especially in Realtime Compute role one wants to keep it disabled. The default value is **False**.
NovaComputeEnableKsm	Whether to enable KSM on compute nodes or not. Especially in NFV use case one wants to keep it disabled. The default value is **False**.
NovaComputeLibvirtType	Libvirt domain type. Defaults to *kvm*. The default value is **kvm**.
NovaComputeOptEnvVars	List of optional environment variables.

Parameter	Description
NovaComputeOptVolumes	List of optional volumes.
NovaCPUAllocationRatio	Virtual CPU to physical CPU allocation ratio. The default value is **0.0**.
NovaCronArchiveDeleteAllCells	Archive deleted instances from all cells. The default value is **True**.
NovaCronArchiveDeleteRowsAge	Cron to archive deleted instances - Age. This will define the retention policy when archiving the deleted instances entries in days. 0 means archive data older than today in shadow tables. The default value is **90**. The default value is **90**.
NovaCronArchiveDeleteRowsDestination	Cron to move deleted instances to another table - Log destination. The default value is **/var/log/nova/nova-rowsflush.log**.
NovaCronArchiveDeleteRowsHour	Cron to move deleted instances to another table - Hour. The default value is **0**.
NovaCronArchiveDeleteRowsMaxDelay	Cron to move deleted instances to another table - Max Delay. The default value is **3600**.
NovaCronArchiveDeleteRowsMaxRows	Cron to move deleted instances to another table - Max Rows. The default value is **1000**.
NovaCronArchiveDeleteRowsMinute	Cron to move deleted instances to another table - Minute. The default value is **1**.
NovaCronArchiveDeleteRowsMonth	Cron to move deleted instances to another table - Month. The default value is *****.
NovaCronArchiveDeleteRowsMonthday	Cron to move deleted instances to another table - Month Day. The default value is *****.
NovaCronArchiveDeleteRowsPurge	Purge shadow tables immediately after scheduled archiving. The default value is **False**.
NovaCronArchiveDeleteRowsUntilComplete	Cron to move deleted instances to another table - Until complete. The default value is **True**.
NovaCronArchiveDeleteRowsUser	Cron to move deleted instances to another table - User. The default value is **nova**.

Parameter	Description
NovaCronArchiveDeleteRowsWeekday	Cron to move deleted instances to another table - Week Day. The default value is *****.
NovaCronPurgeShadowTablesAge	Cron to purge shadow tables - Age This will define the retention policy when purging the shadow tables in days. 0 means, purge data older than today in shadow tables. The default value is **14**.
NovaCronPurgeShadowTablesAllCells	Cron to purge shadow tables - All cells. The default value is **True**.
NovaCronPurgeShadowTablesDestination	Cron to purge shadow tables - Log destination. The default value is **/var/log/nova/nova-rowspurge.log**.
NovaCronPurgeShadowTablesHour	Cron to purge shadow tables - Hour. The default value is **5**.
NovaCronPurgeShadowTablesMaxDelay	Cron to purge shadow tables - Max Delay. The default value is **3600**.
NovaCronPurgeShadowTablesMinute	Cron to purge shadow tables - Minute. The default value is **0**.
NovaCronPurgeShadowTablesMonth	Cron to purge shadow tables - Month. The default value is *****.
NovaCronPurgeShadowTablesMonthday	Cron to purge shadow tables - Month Day. The default value is *****.
NovaCronPurgeShadowTablesUser	Cron to purge shadow tables - User. The default value is **nova**.
NovaCronPurgeShadowTablesVerbose	Cron to purge shadow tables - Verbose. The default value is **False**.
NovaCronPurgeShadowTablesWeekday	Cron to purge shadow tables - Week Day. The default value is *****.
NovaCrossAZAttach	Whether instances can attach cinder volumes from a different availability zone. The default value is **True**.
NovaDbSyncTimeout	Timeout for OpenStack Compute (nova) database synchronization in seconds. The default value is **300**.

Parameter	Description
NovaDefaultFloatingPool	Default pool for floating IP addresses. The default value is **public**.
NovaDisableImageDownloadToRbd	Refuse to boot an instance if it would require downloading from glance and uploading to ceph instead of a COW clone. The default value is **False**.
NovaDiskAllocationRatio	Virtual disk to physical disk allocation ratio. The default value is **0.0**.
NovaEnableDBArchive	Whether to create cron job for archiving soft deleted rows in OpenStack Compute (nova) database. The default value is **True**.
NovaEnableDBPurge	Whether to create cron job for purging soft deleted rows in OpenStack Compute (nova) database. The default value is **True**.
NovaEnableNUMALiveMigration	Whether to enable or not the live migration for NUMA topology instances. The default value is **False**.
NovaGlanceEnableRbdDownload	Enable download of OpenStack Image Storage (glance) images directly via RBD. The default value is **False**.
NovaGlanceRbdDownloadMultistoreID	The hash key, which is the backend ID, of the GlanceMultistoreConfig to be used for the role where NovaGlanceEnableRbdDownload is enabled and defaults should be overridden. If CephClientUserName or GlanceRbdPoolName are not set in the GlanceMultistoreConfig, the global values of those parameters will be used.
NovaHWMachineType	Specifies the default machine type for each host architecture. Red Hat recommends setting the default to the lowest RHEL minor release in your environment, for backwards compatibility during live migration. The default value is **x86_64=pc-i440fx-rhel7.6.0,aarch64=virt-rhel7.6.0,ppc64=pseries-rhel7.6.0,ppc64le=pseries-rhel7.6.0**.
NovaImageCacheTTL	Time in seconds that nova compute should continue caching an image once it is no longer used by any instances on the host. The default value is **86400**.
NovaImageTypeExcludeList	List of image formats that should not be advertised as supported by the compute service.

Parameter	Description
NovaLibvirtCPUMode	The libvirt CPU mode to configure. Defaults to *host-model* if virt_type is set to kvm, otherwise defaults to *none*. The default value is **host-model**.
NovaLibvirtCPUModelExtraFlags	This allows specifying granular CPU feature flags when specifying CPU models. Only has effect if cpu_mode is not set to *none*.
NovaLibvirtCPUModels	The named libvirt CPU model (see names listed in /usr/share/libvirt/cpu_map.xml). Only has effect if cpu_mode="custom" and virt_type="kvm|qemu".
NovaLibvirtFileBackedMemory	Available capacity in MiB for file-backed memory. When configured, the **NovaRAMAllocationRatio** and **NovaReservedHostMemory** parameters must be set to 0. The default value is **0**.
NovaLibvirtMaxQueues	Add parameter to configure the libvirt max_queues. The maximum number of virtio queue pairs that can be enabled when creating a multiqueue guest. The number of virtio queues allocated will be the lesser of the CPUs requested by the guest and the max value defined. Default 0 corresponds to not set. The default value is **0**.
NovaLibvirtMemStatsPeriodSeconds	A number of seconds to memory usage statistics period, zero or negative value mean to disable memory usage statistics. The default value is **10**.
NovaLibvirtNumPciePorts	Set **num_pcie_ports** to specify the number of PCIe ports an instance will get. Libvirt allows a custom number of PCIe ports (pcie-root-port controllers) a target instance will get. Some will be used by default, rest will be available for hotplug use. The default value is **16**.
NovaLibvirtOptVolumes	List of optional volumes to be mounted.
NovaLibvirtRxQueueSize	Virtio-net RX queue size. Valid values are 256, 512, 1024. The default value is **512**.
NovaLibvirtTxQueueSize	Virtio-net TX queue size. Valid values are 256, 512, 1024. The default value is **512**.
NovaLibvirtVolumeUseMultipath	Whether to enable or not the multipath connection of the volumes. The default value is **False**.

Parameter	Description
NovaLiveMigrationPermitAutoConverge	Defaults to "True" to slow down the instance CPU until the memory copy process is faster than the instance's memory writes when the migration performance is slow and might not complete. Auto converge will only be used if this flag is set to True and post copy is not permitted or post copy is unavailable due to the version of libvirt and QEMU. The default value is **True**.
NovaLiveMigrationPermitPostCopy	If "True" activates the instance on the destination node before migration is complete, and to set an upper bound on the memory that needs to be transferred. Post copy gets enabled per default if the compute roles is not a realtime role or disabled by this parameter. The default value is **True**.
NovaLiveMigrationWaitForVIFPlug	Whether to wait for **network-vif-plugged** events before starting guest transfer. The default value is **True**.
NovaLocalMetadataPerCell	Indicates that the nova-metadata API service has been deployed per-cell, so that we can have better performance and data isolation in a multi-cell deployment. Users should consider the use of this configuration depending on how OpenStack Networking (neutron) is setup. If networks span cells, you might need to run nova-metadata API service globally. If your networks are segmented along cell boundaries, then you can run nova-metadata API service per cell. When running nova-metadata API service per cell, you should also configure each OpenStack Networking (neutron) metadata-agent to point to the corresponding nova-metadata API service. The default value is **False**.
NovaNfsEnabled	Whether to enable or not the NFS backend for OpenStack Compute (nova). The default value is **False**.
NovaNfsOptions	NFS mount options for nova storage (when NovaNfsEnabled is true). The default value is **context=system_u:object_r:nfs_t:s0**.
NovaNfsShare	NFS share to mount for nova storage (when NovaNfsEnabled is true).

Parameter	Description
NovaNfsVersion	NFS version used for nova storage (when NovaNfsEnabled is true). Since NFSv3 does not support full locking a NFSv4 version need to be used. To not break current installations the default is the previous hard coded version 4. The default value is **4**.
NovaOVSBridge	Name of integration bridge used by Open vSwitch. The default value is **br-int**.
NovaOVSDBConnection	OVS DB connection string to used by OpenStack Compute (nova).
NovaPassword	The password for the OpenStack Compute (nova) service and database account.
NovaPCIPassthrough	YAML list of PCI passthrough whitelist parameters.
NovaPMEMMappings	PMEM namespace mappings as backend for vPMEM feature. This parameter sets Nova's **pmem_namespaces** configuration options. PMEM namespaces needs to be create manually or with conjunction with **NovaPMEMNamespaces** parameter. Requires format: $LABEL:$NSNAME[|$NSNAME] [,$LABEL:$NSNAME[\|$NSNAME]].
NovaPMEMNamespaces	Creates PMEM namespaces on the host server using **ndctl** tool through Ansible. Requires format: $SIZE:$NSNAME[,$SIZE:$NSNAME...]. $SIZE supports the suffixes "k" or "K" for KiB, "m" or "M" for MiB, "g" or "G" for GiB and "t" or "T" for TiB. NOTE: This requires properly configured NVDIMM regions and enough space for requested namespaces.
NovaRAMAllocationRatio	Virtual RAM to physical RAM allocation ratio. The default value is **1.0**.
NovaReservedHostMemory	Reserved RAM for host processes. The default value is **4096**.
NovaReservedHugePages	A list of valid key=value which reflect NUMA node ID, page size (Default unit is KiB) and number of pages to be reserved. Example - NovaReservedHugePages: ["node:0,size:2048,count:64","node:1,size:1GB,count:1"] will reserve on NUMA node 0 64 pages of 2MiB and on NUMA node 1 1 page of 1GiB.

Parameter	Description
NovaResumeGuestsShutdownTimeout	Number of seconds we're willing to wait for a guest to shut down. If this is 0, then there is no time out (use with caution, as guests might not respond to a shutdown request). The default value is 300 seconds (5 minutes). The default value is **300**.
NovaResumeGuestsStateOnHostBoot	Whether to start running instance on compute host reboot. The default value is **False**.
NovaSchedulerAvailableFilters	List of available filters for OpenStack Compute (nova) to use to filter nodes.
NovaSchedulerDefaultFilters	An array of filters OpenStack Compute (nova) uses to filter a node. OpenStack Compute applies these filters in the order they are listed. Place your most restrictive filters first to make the filtering process more efficient.
NovaSchedulerDiscoverHostsInCellsInterval	This value controls how often (in seconds) the scheduler should attempt to discover new hosts that have been added to cells. The default value of -1 disables the periodic task completely. It is recommended to set this parameter for deployments using OpenStack Bare Metal (ironic). The default value is **-1**.
NovaSchedulerEnableIsolatedAggregateFiltering	This setting allows the scheduler to restrict hosts in aggregates based on matching required traits in the aggregate metadata and the instance flavor/image. If an aggregate is configured with a property with key trait:$TRAIT_NAME and value required, the instance flavor extra_specs and/or image metadata must also contain trait:$TRAIT_NAME=required to be eligible to be scheduled to hosts in that aggregate. The default value is **False**.
NovaSchedulerLimitTenantsToPlacementAggregate	This value allows to have tenant isolation with placement. It ensures hosts in tenant-isolated host aggregate and availability zones will only be available to specific set of tenants. The default value is **False**.
NovaSchedulerMaxAttempts	Maximum number of attempts the scheduler will make when deploying the instance. You should keep it greater or equal to the number of bare metal nodes you expect to deploy at once to work around potential race conditions when scheduling. The default value is **3**.

Parameter	Description
NovaSchedulerPlacementAggregateRequiredForTenants	This setting, when **NovaSchedulerLimitTenantsToPlacementAggregate** is true, controls whether or not a tenant with no aggregate affinity will be allowed to schedule to any available node. If aggregates are used to limit some tenants but not all, then this should be False. If all tenants should be confined via aggregate, then this should be True. The default value is **False**.
NovaSchedulerQueryImageType	This setting causes the scheduler to ask placement only for compute hosts that support the disk_format of the image used in the request. The default value is **True**.
NovaSchedulerQueryPlacementForAvailabilityZone	This setting allows the scheduler to look up a host aggregate with metadata key of availability zone set to the value provided by incoming request, and request result from placement be limited to that aggregate. The default value is **False**.
NovaSchedulerWorkers	Number of workers for OpenStack Compute (nova) Scheduler services. The default value is **0**.
NovaStatedirOwnershipSkip	List of paths relative to nova_statedir to ignore when recursively setting the ownership and selinux context. The default value is **['triliovault-mounts']**.
NovaSyncPowerStateInterval	Interval to sync power states between the database and the hypervisor. Set to -1 to disable. Setting this to 0 will run at the default rate. The default value is **0**.
NovaVcpuPinSet	(Deprecated) A list or range of physical CPU cores to reserve for virtual machine processes. For example, **NovaVcpuPinSet: [4-12,^8]** reserves cores from 4-12 excluding 8. This parameter has been deprecated. Use **NovaComputeCpuDedicatedSet** and **NovaComputeCpuSharedSet** instead.
NovaVNCCertificateKeySize	Override the private key size used when creating the certificate for this service.
NovaVNCProxySSLCiphers	OpenSSL cipher preference string that specifies what ciphers to allow for TLS connections from clients. See the man page for the OpenSSL *ciphers* command for details of the cipher preference string format and allowed values.

Parameter	Description
NovaVNCProxySSLMinimumVersion	Minimum allowed SSL/TLS protocol version. Valid values are *default*, *tlsv1_1*, *tlsv1_2*, and *tlsv1_3*. A value of *default* will use the underlying system OpenSSL defaults. The default value is **default**.
NovaWorkers	Number of workers for the Compute's Conductor service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node. The default value is **0**.
OvsDpdkSocketMemory	Sets the amount of hugepage memory to assign per NUMA node. It is recommended to use the socket closest to the PCIe slot used for the desired DPDK NIC. The format should be in "<socket 0 mem>, <socket 1 mem>, <socket n mem>", where the value is specified in MB. For example: "1024,0".
PlacementAPIInterface	Endpoint interface to be used for the placement API. The default value is **internal**.
PlacementPassword	The password for the Placement service and database account.
QemuCACert	This specifies the CA certificate to use for qemu. This file will be symlinked to the default CA path, which is /etc/pki/qemu/ca-cert.pem. This parameter should be used if the default (which comes from the InternalTLSQemuCAFile parameter) is not desired. The current default reflects TripleO's default CA, which is FreeIPA. It will only be used if internal TLS is enabled.
QemuClientCertificateKeySize	Override the private key size used when creating the certificate for this service.
QemuDefaultTLSVerify	Whether to enable or disable TLS client certificate verification. Enabling this option will reject any client who does not have a certificate signed by the CA in /etc/pki/qemu/ca-cert.pem. The default value is **False**.
QemuMemoryBackingDir	Directory used for memoryBacking source if configured as file. NOTE: big files will be stored here.

Parameter	Description
QemuServerCertificateKeySize	Override the private key size used when creating the certificate for this service.
StackUpdateType	Type of update, to differentiate between UPGRADE and UPDATE cases when StackAction is UPDATE (both are the same stack action).
UpgradeLevelNovaCompute	OpenStack Compute upgrade level.
UseTLSTransportForNbd	If set to true and if EnableInternalTLS is enabled, it will enable TLS transport for libvirt NBD and configure the relevant keys for libvirt. The default value is **True**.
UseTLSTransportForVnc	If set to true and if EnableInternalTLS is enabled, it will enable TLS transport for libvirt VNC and configure the relevant keys for libvirt. The default value is **True**.
VerifyGlanceSignatures	Whether to verify image signatures. The default value is **False**.
VhostuserSocketGroup	The vhost-user socket directory group name. Defaults to *qemu*. When vhostuser mode is *dpdkvhostuserclient* (which is the default mode), the vhost socket is created by qemu. The default value is **qemu**.

CHAPTER 10. DASHBOARD (HORIZON) PARAMETERS

You can modify the horizon service with dashboard parameters.

Parameter	Description
HorizonAllowedHosts	A list of IP/Hostname for the server OpenStack Dashboard (horizon) is running on. Used for header checks. The default value is *.
HorizonCustomizationModule	OpenStack Dashboard (horizon) has a global overrides mechanism available to perform customizations.
HorizonHelpURL	On top of dashboard there is a Help button. This button could be used to re-direct user to vendor documentation or dedicated help portal. The default value is **https://access.redhat.com/documentation/en-us/red_hat_openstack_platform**.
HorizonPasswordValidator	Regex for password validation.
HorizonPasswordValidatorHelp	Help text for password validation.
HorizonSecret	Secret key for the webserver.
HorizonSecureCookies	Set CSRF_COOKIE_SECURE / SESSION_COOKIE_SECURE in OpenStack Dashboard (horizon). The default value is **False**.
HorizonVhostExtraParams	Extra parameters for OpenStack Dashboard (horizon) vhost configuration. The default value is **{'add_listen': True, 'priority': 10, 'access_log_format': '%a %l %u %t \\"%r\\" %>s %b \\"%{}{Referer}i\\" \\"%{}{User-Agent}i\\"', 'options': ['FollowSymLinks', 'MultiViews']}**.
MemcachedIPv6	Enable IPv6 features in Memcached. The default value is **False**.
TimeZone	The timezone to be set on the overcloud. The default value is **UTC**.
WebSSOChoices	Specifies the list of SSO authentication choices to present. Each item is a list of an SSO choice identifier and a display message. The default value is **[['OIDC', 'OpenID Connect']]**.

Parameter	Description
WebSSOEnable	Enable support for Web Single Sign-On. The default value is **False**.
WebSSOIDPMapping	Specifies a mapping from SSO authentication choice to identity provider and protocol. The identity provider and protocol names must match the resources defined in keystone. The default value is **{'OIDC': ['myidp', 'openid']}**.
WebSSOInitialChoice	The initial authentication choice to select by default. The default value is **OIDC**.

CHAPTER 11. IDENTITY (KEYSTONE) PARAMETERS

You can modify the keystone service with identity parameters.

Parameter	Description
AdminEmail	The email for the OpenStack Identity (keystone) admin account. The default value is **admin@example.com**.
AdminToken	The OpenStack Identity (keystone) secret and database password.
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
EnableCache	Enable caching with memcached. The default value is **True**.
EnablePublicTLS	Whether to enable TLS on the public interface or not. The default value is **True**.
KeystoneAuthMethods	A list of methods used for authentication.
KeystoneChangePasswordUponFirstUse	Enabling this option requires users to change their password when the user is created, or upon administrative reset.
KeystoneCorsAllowedOrigin	Indicate whether this resource may be shared with the domain received in the request "origin" header.
KeystoneCredential0	The first OpenStack Identity (keystone) credential key. Must be a valid key.
KeystoneCredential1	The second OpenStack Identity (keystone) credential key. Must be a valid key.
KeystoneDisableUserAccountDaysInactive	The maximum number of days a user can go without authenticating before being considered "inactive" and automatically disabled (locked).
KeystoneEnableMember	Create the *member* role, useful for undercloud deployment. The default value is **False**.
KeystoneFederationEnable	Enable support for federated authentication. The default value is **False**.

Parameter	Description
KeystoneFernetKeys	Mapping containing OpenStack Identity (keystone) fernet keys and their paths.
KeystoneFernetMaxActiveKeys	The maximum active keys in the OpenStack Identity (keystone) fernet key repository. The default value is **5**.
KeystoneLDAPBackendConfigs	Hash containing the configurations for the LDAP backends configured in keystone.
KeystoneLDAPDomainEnable	Trigger to call ldap_backend puppet keystone define. The default value is **False**.
KeystoneLockoutDuration	The number of seconds a user account will be locked when the maximum number of failed authentication attempts (as specified by KeystoneLockoutFailureAttempts) is exceeded.
KeystoneLockoutFailureAttempts	The maximum number of times that a user can fail to authenticate before the user account is locked for the number of seconds specified by KeystoneLockoutDuration.
KeystoneMinimumPasswordAge	The number of days that a password must be used before the user can change it. This prevents users from changing their passwords immediately in order to wipe out their password history and reuse an old password.
KeystoneNotificationDriver	Comma-separated list of Oslo notification drivers used by OpenStack Identity (keystone).
KeystoneNotificationFormat	The OpenStack Identity (keystone) notification format. The default value is **basic**.
KeystoneNotificationTopics	OpenStack Identity (keystone) notification topics to enable.
KeystoneOpenIdcClientId	The client ID to use when handshaking with your OpenID Connect provider.
KeystoneOpenIdcClientSecret	The client secret to use when handshaking with your OpenID Connect provider.
KeystoneOpenIdcCryptoPassphrase	Passphrase to use when encrypting data for OpenID Connect handshake. The default value is **openstack**.

Parameter	Description
KeystoneOpenIdcEnable	Enable support for OpenIDC federation. The default value is **False**.
KeystoneOpenIdcEnableOAuth	Enable OAuth 2.0 integration. The default value is **False**.
KeystoneOpenIdcIdpName	The name associated with the IdP in OpenStack Identity (keystone).
KeystoneOpenIdcIntrospectionEndpoint	OAuth 2.0 introspection endpoint for mod_auth_openidc.
KeystoneOpenIdcProviderMetadataUrl	The url that points to your OpenID Connect provider metadata.
KeystoneOpenIdcRemoteIdAttribute	Attribute to be used to obtain the entity ID of the Identity Provider from the environment. The default value is **HTTP_OIDC_ISS**.
KeystoneOpenIdcResponseType	Response type to be expected from the OpenID Connect provider. The default value is **id_token**.
KeystonePasswordExpiresDays	The number of days for which a password will be considered valid before requiring it to be changed.
KeystonePasswordRegex	The regular expression used to validate password strength requirements.
KeystonePasswordRegexDescription	Describe your password regular expression here in language for humans.
KeystoneSSLCertificate	OpenStack Identity (keystone) certificate for verifying token validity.
KeystoneSSLCertificateKey	OpenStack Identity (keystone) key for signing tokens.
KeystoneTokenProvider	The OpenStack Identity (keystone) token format. The default value is **fernet**.
KeystoneTrustedDashboards	A list of dashboard URLs trusted for single sign-on.
KeystoneUniqueLastPasswordCount	This controls the number of previous user password iterations to keep in history, in order to enforce that newly created passwords are unique.

Parameter	Description
KeystoneWorkers	Set the number of workers for the OpenStack Identity (keystone) service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node. The default value is equal to the number of vCPU cores on the physical node.
ManageKeystoneFernetKeys	Whether director should manage the OpenStack Identity (keystone) fernet keys or not. If set to True, the fernet keys will get the values from the saved keys repository in OpenStack Workflow (mistral) from the **KeystoneFernetKeys** variable. If set to false, only the stack creation initializes the keys, but subsequent updates will not touch them. The default value is **True**.
MemcachedTLS	Set to True to enable TLS on Memcached service. Because not all services support Memcached TLS, during the migration period, Memcached will listen on 2 ports - on the port set with MemcachedPort parameter (above) and on 11211, without TLS. The default value is **False**.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.
PublicSSLCertificateAutogenerated	Whether the public SSL certificate was autogenerated or not. The default value is **False**.
PublicTLSCAFile	Specifies the default CA cert to use if TLS is used for services in the public network.
SSLCertificate	The content of the SSL certificate (without Key) in PEM format.
TokenExpiration	Set a token expiration time in seconds. The default value is **3600**.

CHAPTER 12. IMAGE STORAGE (GLANCE) PARAMETERS

You can modify the glance service with image service parameters.

Parameter	Description
CephClusterName	The Ceph cluster name. The default value is **ceph**.
GlanceApiOptVolumes	List of optional volumes to be mounted.
GlanceBackend	The short name of the OpenStack Image Storage (glance) backend to use. Should be one of swift, rbd, cinder, or file. The default value is **swift**.
GlanceBackendID	The default backend's identifier. The default value is **default_backend**.
GlanceCacheEnabled	Enable OpenStack Image Storage (glance) Image Cache. The default value is **False**.
GlanceCinderMountPointBase	The mount point base when glance is using cinder as store and cinder backend is NFS. This mount point is where the NFS volume is mounted on the glance node. The default value is **/var/lib/glance/mnt**.
GlanceDiskFormats	List of allowed disk formats in Glance; all formats are allowed when left unset.
GlanceEnabledImportMethods	List of enabled Image Import Methods. Valid values in the list are *glance-direct* and *web-download*. The default value is **web-download**.
GlanceIgnoreUserRoles	List of user roles to be ignored for injecting image metadata properties. The default value is **admin**.
GlanceImageCacheDir	Base directory that the Image Cache uses. The default value is **/var/lib/glance/image-cache**.
GlanceImageCacheMaxSize	The upper limit on cache size, in bytes, after which the cache-pruner cleans up the image cache. The default value is **10737418240**.
GlanceImageCacheStallTime	The amount of time, in seconds, to let an image remain in the cache without being accessed. The default value is **86400**.
GlanceImageConversionOutputFormat	Desired output format for image conversion plugin. The default value is **raw**.

Parameter	Description
GlanceImageImportPlugins	List of enabled Image Import Plugins. Valid values in the list are *image_conversion*, *inject_metadata*, *no_op*. The default value is **['no_op']**.
GlanceImageMemberQuota	Maximum number of image members per image. Negative values evaluate to unlimited. The default value is **128**.
GlanceImagePrefetcherInterval	The interval in seconds to run periodic job cache_images. The default value is **300**.
GlanceInjectMetadataProperties	Metadata properties to be injected in image.
GlanceLogFile	The filepath of the file to use for logging messages from OpenStack Image Storage (glance).
GlanceMultistoreConfig	Dictionary of settings when configuring additional glance backends. The hash key is the backend ID, and the value is a dictionary of parameter values unique to that backend. Multiple rbd backends are allowed, but cinder, file and swift backends are limited to one each. Example: # Default glance store is rbd. GlanceBackend: rbd GlanceStoreDescription: *Default rbd store* # GlanceMultistoreConfig specifies a second rbd backend, plus a cinder # backend. GlanceMultistoreConfig: rbd2_store: GlanceBackend: rbd GlanceStoreDescription: *Second rbd store* CephClusterName: ceph2 # Override CephClientUserName if this cluster uses a different # client name. CephClientUserName: client2 cinder_store: GlanceBackend: cinder GlanceStoreDescription: *OpenStack Block Storage (cinder) store*.
GlanceNetappNfsEnabled	When using **GlanceBackend: file**, Netapp mounts NFS share for image storage. The default value is **False**.
GlanceNfsEnabled	When using **GlanceBackend: file**, mount NFS share for image storage. The default value is **False**.
GlanceNfsOptions	NFS mount options for image storage when **GlanceNfsEnabled** is true. The default value is **_netdev,bg,intr,context=system_u:object_r:svirt_sandbox_file_t:s0**.
GlanceNfsShare	NFS share to mount for image storage when **GlanceNfsEnabled** is true.

Parameter	Description
GlanceNodeStagingUri	URI that specifies the staging location to use when importing images. The default value is **file:///var/lib/glance/staging**.
GlanceNotifierStrategy	Strategy to use for OpenStack Image Storage (glance) notification queue. The default value is **noop**.
GlancePassword	The password for the image storage service and database account.
GlanceShowMultipleLocations	Whether to show multiple image locations e.g for copy-on-write support on RBD or Netapp backends. Potential security risk, see glance.conf for more information. The default value is **False**.
GlanceSparseUploadEnabled	When using GlanceBackend *file* and *rbd* to enable or not sparse upload. The default value is **False**.
GlanceStagingNfsOptions	NFS mount options for NFS image import staging. The default value is **_netdev,bg,intr,context=system_u:object_r:svirt_sandbox_file_t:s0**.
GlanceStagingNfsShare	NFS share to mount for image import staging.
GlanceStoreDescription	User facing description for the OpenStack Image Storage (glance) backend. The default value is **Default glance store backend.**.
GlanceWorkers	Set the number of workers for the image storage service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
MultipathdEnable	Whether to enable the multipath daemon. The default value is **False**.
NetappShareLocation	Netapp share to mount for image storage (when GlanceNetappNfsEnabled is true).

Parameter	Description
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.

CHAPTER 13. KEY MANAGER (BARBICAN) PARAMETERS

You can modify the barbican service with key manager parameters.

Parameter	Description
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
ATOSVars	Hash of atos-hsm role variables used to install ATOS client software.
BarbicanDogtagStoreGlobalDefault	Whether this plugin is the global default plugin. The default value is **False**.
BarbicanDogtagStoreHost	Hostname of the Dogtag server.
BarbicanDogtagStoreNSSPassword	Password for the NSS DB.
BarbicanDogtagStorePEMPath	Path for the PEM file used to authenticate requests. The default value is **/etc/barbican/kra_admin_cert.pem**.
BarbicanDogtagStorePort	Port for the Dogtag server. The default value is **8443**.
BarbicanKmipStoreGlobalDefault	Whether this plugin is the global default plugin. The default value is **False**.
BarbicanKmipStoreHost	Host for KMIP device.
BarbicanKmipStorePassword	Password to connect to KMIP device.
BarbicanKmipStorePort	Port for KMIP device.
BarbicanKmipStoreUsername	Username to connect to KMIP device.
BarbicanPassword	The password for the OpenStack Key Manager (barbican) service account.
BarbicanPkcs11AlwaysSetCkaSensitive	Always set CKA_SENSITIVE=CK_TRUE. The default value is **True**.
BarbicanPkcs11CryptoAESGCMGenerateIV	Generate IVs for CKM_AES_GCM encryption mechanism. The default value is **True**.
BarbicanPkcs11CryptoATOSEnabled	Enable ATOS for PKCS11. The default value is **False**.
BarbicanPkcs11CryptoEnabled	Enable PKCS11. The default value is **False**.

Parameter	Description
BarbicanPkcs11CryptoEncryptionMechanism	Cryptoki Mechanism used for encryption. The default value is **CKM_AES_CBC**.
BarbicanPkcs11CryptoGlobalDefault	Whether this plugin is the global default plugin. The default value is **False**.
BarbicanPkcs11CryptoHMACKeygenMechanism	Cryptoki Mechanism used to generate Master HMAC Key. The default value is **CKM_AES_KEY_GEN**.
BarbicanPkcs11CryptoHMACKeyType	Cryptoki Key Type for Master HMAC key. The default value is **CKK_AES**.
BarbicanPkcs11CryptoHMACLabel	Label for the HMAC key.
BarbicanPkcs11CryptoLibraryPath	Path to vendor PKCS11 library.
BarbicanPkcs11CryptoLogin	Password (PIN) to login to PKCS#11 session.
BarbicanPkcs11CryptoLunasaEnabled	Enable Luna SA HSM for PKCS11. The default value is **False**.
BarbicanPkcs11CryptoMKEKLabel	Label for Master KEK.
BarbicanPkcs11CryptoMKEKLength	Length of Master KEK in bytes. The default value is **256**.
BarbicanPkcs11CryptoOsLockingOk	Set CKF_OS_LOCKING_OK flag when initializing the client library. The default value is **False**.
BarbicanPkcs11CryptoRewrapKeys	Cryptoki Mechanism used to generate Master HMAC Key. The default value is **False**.
BarbicanPkcs11CryptoSlotId	Slot Id for the PKCS#11 token to be used. The default value is **0**.
BarbicanPkcs11CryptoThalesEnabled	Enable Thales for PKCS11. The default value is **False**.
BarbicanPkcs11CryptoTokenLabel	(DEPRECATED) Use BarbicanPkcs11CryptoTokenLabels instead.
BarbicanPkcs11CryptoTokenLabels	List of comma separated labels for the tokens to be used. This is typically a single label, but some devices may require more than one label for Load Balancing and High Availability configurations.
BarbicanPkcs11CryptoTokenSerialNumber	Serial number for PKCS#11 token to be used.

Parameter	Description
BarbicanSimpleCryptoGlobalDefault	Whether this plugin is the global default plugin. The default value is **False**.
BarbicanSimpleCryptoKek	KEK used to encrypt secrets.
BarbicanWorkers	Set the number of workers for barbican::wsgi::apache. The default value is **%{::processorcount}**.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
LunasaClientIPNetwork	(Optional) When set OpenStack Key Manager (barbican) nodes will be registered with the HSMs using the IP from this network instead of the FQDN.
LunasaVars	Hash of lunasa-hsm role variables used to install Lunasa client software.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.
ThalesHSMNetworkName	The network that the HSM is listening on. The default value is **internal_api**.
ThalesVars	Hash of thales-hsm role variables used to install Thales client software.

CHAPTER 14. LOAD BALANCER (OCTAVIA) PARAMETERS

Parameter	Description
OctaviaAdminLogFacility	The syslog "LOG_LOCAL" facility to use for the administrative log messages. The default value is **1**.
OctaviaAdminLogTargets	List of syslog endpoints, host:port comma separated list, to receive administrative log messages.
OctaviaAmphoraExpiryAge	The interval in seconds after which an unused Amphora will be considered expired and cleaned up. If left to 0, the configuration will not be set and the system will use the service defaults. The default value is **0**.
OctaviaAmphoraSshKeyFile	Public key file path. User will be able to SSH into amphorae with the provided key. User may, in most cases, also elevate to root from user *centos* (CentOS), *ubuntu* (Ubuntu) or *cloud-user* (RHEL) (depends on how amphora image was created). Logging in to amphorae provides a convenient way to e.g. debug load balancing services.
OctaviaAmphoraSshKeyName	SSH key name. The default value is **octavia-ssh-key**.
OctaviaAntiAffinity	Flag to indicate if anti-affinity feature is turned on. The default value is **True**.
OctaviaCaCert	OpenStack Load Balancing-as-a-Service (octavia) CA certificate data. If provided, this will create or update a file on the host with the path provided in OctaviaCaCertFile with the certificate data.
OctaviaCaKey	The private key for the certificate provided in OctaviaCaCert. If provided, this will create or update a file on the host with the path provided in OctaviaCaKeyFile with the key data.
OctaviaCaKeyPassphrase	CA private key passphrase.
OctaviaClientCert	OpenStack Load Balancing-as-a-Service (octavia) client certificate data. If provided, this will create or update a file on the host with the path provided in OctaviaClientCertFile with the certificate data.
OctaviaConnectionLogging	When false, tenant connection flows will not be logged. The default value is **True**.

Parameter	Description
OctaviaDisableLocalLogStorage	When true, logs will not be stored on the amphora filesystem. This includes all kernel, system, and security logs. The default value is **False**.
OctaviaEnableDriverAgent	Set to false if the driver agent needs to be disabled for some reason. The default value is **True**.
OctaviaFlavorId	OpenStack Compute (nova) flavor ID to be used when creating the nova flavor for amphora. The default value is **65**.
OctaviaForwardAllLogs	When true, all log messages from the amphora will be forwarded to the administrative log endponts, including non-load balancing related logs. The default value is **False**.
OctaviaGenerateCerts	Enable internal generation of certificates for secure communication with amphorae for isolated private clouds or systems where security is not a concern. Otherwise, use OctaviaCaCert, OctaviaCaKey, OctaviaCaKeyPassphrase, OctaviaClientCert and OctaviaServerCertsKeyPassphrase to configure OpenStack Load Balancing-as-a-Service (octavia). The default value is **False**.
OctaviaLoadBalancerTopology	Load balancer topology configuration.
OctaviaLogOffload	When true, log messages from the amphora will be forwarded to the administrative log endponts and will be stored with the controller logs. The default value is **False**.
OctaviaTenantLogFacility	The syslog "LOG_LOCAL" facility to use for the tenant traffic flow log messages. The default value is **0**.
OctaviaTenantLogTargets	List of syslog endpoints, host:port comma separated list, to receive tenant traffic flow log messages.
OctaviaTimeoutClientData	Frontend client inactivity timeout. The default value is **50000**.
OctaviaTimeoutMemberData	Backend member inactivity timeout. The default value is **50000**.

CHAPTER 15. MESSAGING PARAMETERS

You can modify the message queue service with messaging parameters.

Parameter	Description
RpcCertificateKeySize	Override the private key size used when creating the certificate for this service.
RpcPassword	The password for messaging backend.
RpcPort	The network port for messaging backend. The default value is **5672**.
RpcUserName	The username for messaging backend. The default value is **guest**.
RpcUseSSL	Messaging client subscriber parameter to specify an SSL connection to the messaging host. The default value is **False**.

CHAPTER 16. NETWORKING (NEUTRON) PARAMETERS

You can modify the neutron service with networking parameters.

Parameter	Description
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
ContainerOvnCertificateKeySize	Override the private key size used when creating the certificate for this service.
DhcpAgentNotification	Enables DHCP agent notifications. The default value is **False**.
DockerAdditionalSockets	Additional domain sockets for the docker daemon to bind to (useful for mounting into containers that launch other containers). The default value is **['/var/lib/openstack/docker.sock']**.
DockerInsecureRegistryAddress	Optional. The IP Address and Port of an insecure docker namespace that will be configured in /etc/sysconfig/docker. The value can be multiple addresses separated by commas.
EnableVLANTransparency	If True, then allow plugins that support it to create VLAN transparent networks. The default value is **False**.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
NeutronAgentDownTime	Seconds to regard the agent as down; should be at least twice NeutronGlobalReportInterval, to be sure the agent is down for good. The default value is **600**.
NeutronAllowL3AgentFailover	Allow automatic l3-agent failover. The default value is **True**.
NeutronApiOptEnvVars	Hash of optional environment variables.
NeutronApiOptVolumes	List of optional volumes to be mounted.

Parameter	Description
NeutronBridgeMappings	The logical to physical bridge mappings to use. The default (**datacentre:br-ex**) maps **br-ex** (the external bridge on hosts) to a physical name **datacentre**, which provider networks can use (for example, the default floating network). If changing this, either use different post-install network scripts or be sure to keep **datacentre** as a mapping network name. The default value is **datacentre:br-ex**.
NeutronCertificateKeySize	Override the private key size used when creating the certificate for this service.
NeutronCorePlugin	The core plugin for networking. The value should be the entrypoint to be loaded from **neutron.core_plugins** namespace. The default value is **ml2**.
NeutronDBSyncExtraParams	String of extra command line parameters to append to the **neutron-db-manage upgrade head** command.
NeutronDefaultAvailabilityZones	Comma-separated list of default network availability zones to be used by OpenStack Networking (neutron) if its resource is created without availability zone hints. If not set, no AZs will be configured for OpenStack Networking (neutron) network services.
NeutronDhcpAgentsPerNetwork	The number of DHCP agents to schedule per network. The default value is **0**.
NeutronDhcpLoadType	Additional to the availability zones aware network scheduler. The default value is **networks**.
NeutronDnsDomain	Domain to use for building the hostnames. The default value is **openstacklocal**.
NeutronEnableDVR	Enable Distributed Virtual Router.
NeutronEnableIgmpSnooping	Enable IGMP Snooping. The default value is **False**.
NeutronFirewallDriver	Firewall driver for realizing OpenStack Networking (neutron) security group function. The default value is **iptables_hybrid**.
NeutronFlatNetworks	Sets the flat network name to configure in plugins. The default value is **datacentre**.

Parameter	Description
NeutronGeneveMaxHeaderSize	Geneve encapsulation header size. The default value is **38**.
NeutronGlobalPhysnetMtu	MTU of the underlying physical network. OpenStack Networking (neutron) uses this value to calculate MTU for all virtual network components. For flat and VLAN networks, OpenStack Networking uses this value without modification. For overlay networks such as VXLAN, OpenStack Networking automatically subtracts the overlay protocol overhead from this value. The default value is **0**.
NeutronGlobalReportInterval	Seconds between nodes reporting state to server; should be less than NeutronAgentDownTime, best if it is half or less than NeutronAgentDownTime. The default value is **300**.
NeutronMechanismDrivers	The mechanism drivers for the OpenStack Networking (neutron) tenant network. The default value is **ovn**.
NeutronMetadataProxySharedSecret	Shared secret to prevent spoofing.
NeutronMetadataWorkers	Sets the number of worker processes for the OpenStack Networking (neutron) OVN metadata agent. The default value results in the configuration being left unset and a system-dependent default will be chosen (usually the number of processors). Please note that this can result in a large number of processes and memory consumption on systems with a large core count. On such systems it is recommended that a non-default value be selected that matches the load requirements.
NeutronML2PhysicalNetworkMtus	A list of mappings of physical networks to MTU values. The format of the mapping is **<physnet>:<mtu val>**. This mapping allows you to specify a physical network MTU value that differs from the default **segment_mtu** value in ML2 plugin and overwrites values from **global_physnet_mtu** for the selected network.
NeutronNetworkSchedulerDriver	The network schedule driver to use for availability zones. The default value is **neutron.scheduler.dhcp_agent_scheduler.AZAwareWeightScheduler**.

Parameter	Description
NeutronNetworkType	The tenant network type for OpenStack Networking (neutron). The default value is **geneve**. If you change this value, make sure the new value matches the parameter **OVNEncapType**. For example, if you want to use VXLAN instead of Geneve in an ML2/OVN environment, ensure that both **NeutronNetworkType** and **OVNEncapType** are set to **vxlan**.
NeutronNetworkVLANRanges	The OpenStack Networking (neutron) ML2 and Open vSwitch VLAN mapping range to support. Defaults to permitting any VLAN on the **datacentre** physical network (See **NeutronBridgeMappings**). The default value is **datacentre:1:1000**.
NeutronOverlayIPVersion	IP version used for all overlay network endpoints. The default value is **4**.
NeutronOVNLoggingBurstLimit	Maximum number of packets per rate_limit. The default value is **25**.
NeutronOVNLoggingLocalOutputLogBase	Output logfile path on agent side, default syslog file.
NeutronOVNLoggingRateLimit	Maximum number of packets logging per second. The default value is **100**.
NeutronOvsIntegrationBridge	Name of Open vSwitch bridge to use.
NeutronOvsVnicTypeBlacklist	Comma-separated list of VNIC types for which support in OpenStack Networking (neutron) is administratively prohibited by the OVS mechanism driver.
NeutronPassword	The password for the OpenStack Networking (neutron) service and database account.
NeutronPluginExtensions	Comma-separated list of enabled extension plugins. The default value is **qos,port_security,dns**.
NeutronPluginMl2PuppetTags	Puppet resource tag names that are used to generate configuration files with puppet. The default value is **neutron_plugin_ml2**.
NeutronPortQuota	Number of ports allowed per tenant, and minus means unlimited. The default value is **500**.

Parameter	Description
NeutronRouterSchedulerDriver	The router schedule driver to use for availability zones. The default value is **neutron.scheduler.l3_agent_scheduler.AZLeastRoutersScheduler**.
NeutronRpcWorkers	Sets the number of RPC workers for the OpenStack Networking (neutron) service. If not specified, it'll take the value of NeutronWorkers and if this is not specified either, the default value results in the configuration being left unset and a system-dependent default will be chosen (usually 1).
NeutronServicePlugins	Comma-separated list of service plugin entrypoints. The default value is **qos,ovn-router,trunk,segments,port_forwarding,log**.
NeutronSriovVnicTypeBlacklist	Comma-separated list of VNIC types for which support in OpenStack Networking (neutron) is administratively prohibited by the SR-IOV mechanism driver.
NeutronTunnelIdRanges	Comma-separated list of <tun_min>:<tun_max> tuples enumerating ranges of GRE tunnel IDs that are available for tenant network allocation. The default value is **['1:4094']**.
NeutronTypeDrivers	Comma-separated list of network type driver entrypoints to be loaded. The default value is **geneve,vxlan,vlan,flat**.
NeutronVhostuserSocketDir	The vhost-user socket directory for OVS.
NeutronVniRanges	Comma-separated list of <vni_min>:<vni_max> tuples enumerating ranges of VXLAN VNI IDs that are available for tenant network allocation. The default value is **['1:65536']**.
NeutronWorkers	Sets the number of API and RPC workers for the OpenStack Networking service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.

Parameter	Description
OVNAvailabilityZone	The az options to configure in ovs db. eg. [*az-0*, *az-1*, *az-2*].
OVNCMSOptions	The CMS options to configure in ovs db.
OVNControllerImageUpdateTimeout	During update, how long we wait for the container image to be updated, in seconds. The default value is **600**.
OVNControllerUpdateTimeout	During update, how long we wait for the container to be updated, in seconds. The default value is **600**.
OVNDbConnectionTimeout	Timeout in seconds for the OVSDB connection transaction. The default value is **180**.
OVNDnsServers	List of servers to use as as dns forwarders.
OVNEnableHaproxyDockerWrapper	Generate a wrapper script so that haproxy is launched in a separate container. The default value is **True**.
OVNEncapType	Type of encapsulation used in OVN. Type of encapsulation used in OVN. It can be **geneve** or **vxlan**. The default value is **geneve**. If you change this value, make sure the new value is also listed in the parameter **NeutronNetworkType**. For example, if you want to use VXLAN instead of Geneve in an ML2/OVN environment, ensure that both **NeutronNetworkType** and **OVNEncapType** are set to **vxlan**.
OVNIntegrationBridge	Name of the OVS bridge to use as integration bridge by OVN Controller. The default value is **br-int**.
OvnMetadataCertificateKeySize	Override the private key size used when creating the certificate for this service.
OVNMetadataEnabled	Whether Metadata Service has to be enabled. The default value is **True**.
OVNNeutronSyncMode	The synchronization mode of OVN with OpenStack Networking (neutron) DB. The default value is **log**.
OVNNorthboundServerPort	Port of the OVN Northbound DB server. The default value is **6641**.

Parameter	Description
OVNOfctrlWaitBeforeClear	Sets the time ovn-controller will wait on startup before clearing all openflow rules and installing the new ones, in ms. The default value is **8000**.
OVNOpenflowProbeInterval	The inactivity probe interval of the OpenFlow connection to the OpenvSwitch integration bridge, in seconds. The default value is **60**.
OVNOvsdbProbeInterval	Probe interval in ms for the OVSDB session. The default value is **60000**.
OVNQosDriver	OVN notification driver for OpenStack Networking (neutron) QOS service plugin. The default value is **ovn-qos**.
OVNRemoteProbeInterval	Probe interval in ms. The default value is **60000**.
OVNSouthboundServerPort	Port of the OVN Southbound DB server. The default value is **6642**.
OVNVifType	Type of VIF to be used for ports. The default value is **ovs**.
OvsHwOffload	Enable OVS Hardware Offload. This feature supported from OVS 2.8.0. The default value is **False**.
TenantNetPhysnetMtu	MTU of the underlying physical network. OpenStack Networking (neutron) uses this value to calculate MTU for all virtual network components. For flat and VLAN networks, OpenStack Networking (neutron) uses this value without modification. For overlay networks such as VXLAN, OpenStack Networking (neutron) automatically subtracts the overlay protocol overhead from this value. (The mtu setting of the Tenant network in network_data.yaml control's this parameter.). The default value is **1500**.

CHAPTER 17. OBJECT STORAGE (SWIFT) PARAMETERS

You can modify the swift service with object storage parameters.

Parameter	Description
MemcachedTLS	Set to True to enable TLS on Memcached service. Because not all services support Memcached TLS, during the migration period, Memcached will listen on 2 ports - on the port set with MemcachedPort parameter (above) and on 11211, without TLS. The default value is **False**.
SwiftAccountWorkers	Number of workers for Swift account service. The default value is **0**.
SwiftCeilometerIgnoreProjects	Comma-seperated list of project names to ignore. The default value is **['service']**.
SwiftCeilometerPipelineEnabled	Set to **False** to disable the object storage proxy ceilometer pipeline. The default value is **False**.
SwiftContainerSharderEnabled	Set to True to enable Swift container sharder service. The default value is **False**.
SwiftContainerWorkers	Number of workers for Swift account service. The default value is **0**.
SwiftCorsAllowedOrigin	Indicate whether this resource may be shared with the domain received in the request "origin" header.
SwiftEncryptionEnabled	Set to True to enable data-at-rest encryption in Swift. The default value is **False**.
SwiftHashSuffix	A random string to be used as a salt when hashing to determine mappings in the ring.
SwiftMinPartHours	The minimum time (in hours) before a partition in a ring can be moved following a rebalance. The default value is **1**.
SwiftMountCheck	Check if the devices are mounted to prevent accidentally writing to the root device. The default value is **False**.
SwiftObjectWorkers	Number of workers for Swift account service. The default value is **0**.
SwiftPartPower	Partition power to use when building object storage rings. The default value is **10**.

Parameter	Description
SwiftPassword	The password for the object storage service account.
SwiftProxyNodeTimeout	Timeout for requests going from **swift-proxy** to account, container, and object services. The default value is **60**.
SwiftRawDisks	Additional raw devices to use for the object storage backend. For example: **{sdb: {}}**
SwiftReplicas	Number of replicas to use in the object storage rings. The default value is **3**.
SwiftRingBuild	Whether to manage object storage rings or not. The default value is **True**.
SwiftRingGetTempurl	A temporary Swift URL to download rings from.
SwiftRingPutTempurl	A temporary Swift URL to upload rings to.
SwiftUseLocalDir	Use a local directory for object storage services when building rings. The default value is **True**.
SwiftWorkers	Number of workers for object storage service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node. The default value is **0**.

CHAPTER 18. ORCHESTRATION (HEAT) PARAMETERS

You can modify the heat service with orchestration parameters.

Parameter	Description
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
EnableCache	Enable caching with memcached. The default value is **True**.
HeatApiOptEnvVars	Hash of optional environment variables.
HeatApiOptVolumes	List of optional volumes to be mounted.
HeatAuthEncryptionKey	Auth encryption key for heat-engine.
HeatConfigureDelegatedRoles	Create delegated roles. The default value is **False**.
HeatConvergenceEngine	Enables the heat engine with the convergence architecture. The default value is **True**.
HeatCorsAllowedOrigin	Indicate whether this resource may be shared with the domain received in the request "origin" header.
HeatCronPurgeDeletedAge	Cron to purge database entries marked as deleted and older than $age - Age. The default value is **30**.
HeatCronPurgeDeletedAgeType	Cron to purge database entries marked as deleted and older than $age - Age type. The default value is **days**.
HeatCronPurgeDeletedDestination	Cron to purge database entries marked as deleted and older than $age - Log destination. The default value is **/dev/null**.
HeatCronPurgeDeletedEnsure	Cron to purge database entries marked as deleted and older than $age - Ensure. The default value is **present**.
HeatCronPurgeDeletedHour	Cron to purge database entries marked as deleted and older than $age - Hour. The default value is **0**.

Parameter	Description
HeatCronPurgeDeletedMaxDelay	Cron to purge database entries marked as deleted and older than $age - Max Delay. The default value is **3600**.
HeatCronPurgeDeletedMinute	Cron to purge database entries marked as deleted and older than $age - Minute. The default value is **1**.
HeatCronPurgeDeletedMonth	Cron to purge database entries marked as deleted and older than $age - Month. The default value is *.
HeatCronPurgeDeletedMonthday	Cron to purge database entries marked as deleted and older than $age - Month Day. The default value is *.
HeatCronPurgeDeletedUser	Cron to purge database entries marked as deleted and older than $age - User. The default value is **heat**.
HeatCronPurgeDeletedWeekday	Cron to purge database entries marked as deleted and older than $age - Week Day. The default value is *.
HeatEnableDBPurge	Whether to create cron job for purging soft deleted rows in the OpenStack Orchestration (heat) database. The default value is **True**.
HeatEngineOptEnvVars	Hash of optional environment variables.
HeatEngineOptVolumes	List of optional volumes to be mounted.
HeatEnginePluginDirs	An array of directories to search for plug-ins.
HeatMaxJsonBodySize	Maximum raw byte size of the OpenStack Orchestration (heat) API JSON request body. The default value is **4194304**.
HeatMaxNestedStackDepth	Maximum number of nested stack depth. The default value is **6**.
HeatMaxResourcesPerStack	Maximum resources allowed per top-level stack. -1 stands for unlimited. The default value is **1000**.
HeatPassword	The password for the Orchestration service and database account.
HeatReauthenticationAuthMethod	Allow reauthentication on token expiry, such that long-running tasks may complete. Note this defeats the expiry of any provided user tokens.

Parameter	Description
HeatStackDomainAdminPassword	The admin password for the OpenStack Orchestration (heat) domain in OpenStack Identity (keystone).
HeatWorkers	Number of workers for OpenStack Orchestration (heat) service. Note that more workers creates a larger number of processes on systems, which results in excess memory consumption. It is recommended to choose a suitable non-default value on systems with high CPU core counts. **0** sets to the OpenStack internal default, which is equal to the number of CPU cores on the node. The default value is **0**.
HeatYaqlLimitIterators	The maximum number of elements in collection yaql expressions can take for its evaluation. The default value is **1000**.
HeatYaqlMemoryQuota	The maximum size of memory in bytes that yaql exrpessions can take for its evaluation. The default value is **100000**.
MemcachedTLS	Set to True to enable TLS on Memcached service. Because not all services support Memcached TLS, during the migration period, Memcached will listen on 2 ports - on the port set with MemcachedPort parameter (above) and on 11211, without TLS. The default value is **False**.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.

CHAPTER 19. SHARED FILE SERVICE (MANILA) PARAMETERS

You can modify the manila service with shared file service parameters.

Parameter	Description
ApacheCertificateKeySize	Override the private key size used when creating the certificate for this service.
CephClusterName	The Ceph cluster name. The default value is **ceph**.
CertificateKeySize	Specifies the private key size used when creating the certificate. The default value is **2048**.
ManilaCephClientUserName	Ceph client username for manila integration. The default value is **manila**.
ManilaCephFSCephFSProtocolHelperType	Protocol type (*CEPHFS* or *NFS*) when cephfs back end is enabled. Set via manila cephfs environment files. The default value is **CEPHFS**.
ManilaEnabledShareProtocols	List of protocols to be allowed for share creation in manila. When not set, the list is inferred via the storage back end/s enabled.
ManilaIPv6	Set to True to enable IPv6 access in manila. The default value is **False**.
ManilaPassword	The password for the shared file service account.
ManilaWorkers	Set the number of workers for manila::wsgi::apache. The default value is equal to the number of vCPU cores on the physical node.
MemcacheUseAdvancedPool	Use the advanced (eventlet safe) memcached client pool. The default value is **True**.
NotificationDriver	Driver or drivers to handle sending notifications. The default value is **noop**.

CHAPTER 20. TIME PARAMETERS

You can modify the time synchronization service with time parameters.

Parameter	Description
ChronyAclRules	Access Control List of NTP clients. By default no clients are permitted. The default value is **['deny all']**.
ChronyGlobalPoolOptions	Default pool options for the configured NTP pools in chrony.conf. If this is specified, NtpIburstEnable, MaxPoll, and MinPoll are ignored.
ChronyGlobalServerOptions	Default server options for the configured NTP servers in chrony.conf. If this is specified, NtpIburstEnable, MaxPoll, and MinPoll are ignored.
EnablePackageInstall	Set to true to enable package installation at deploy time. The default value is **false**.
MaxPoll	Specify maximum poll interval of upstream servers for NTP messages, in seconds to the power of two. Allowed values are 4 to 17. The default value is **10**.
MinPoll	Specify minimum poll interval of upstream servers for NTP messages, in seconds to the power of two. The minimum poll interval defaults to 6 (64 s). Allowed values are 4 to 17. The default value is **6**.
NtpIburstEnable	Specifies whether to enable the iburst option for every NTP peer. If iburst is enabled, when the NTP server is unreachable NTP will send a burst of eight packages instead of one. This is designed to speed up the initial syncrhonization. The default value is **True**.
NtpPool	NTP pool list. Defaults to [], so only NtpServer is used by default.
NtpServer	NTP servers list. The default value is **['0.pool.ntp.org', '1.pool.ntp.org', '2.pool.ntp.org', '3.pool.ntp.org']**.
TimeZone	The timezone to be set on the overcloud. The default value is **UTC**.

CHAPTER 21. UPGRADE PARAMETERS

You can modify the behavior of the upgrade process with upgrade parameters.

Parameter	Description
UpgradeInitCommand	Command or script snippet to run on all overcloud nodes to initialize the upgrade process. For example, a repository switch.
UpgradeInitCommonCommand	Common commands required by the upgrades process. This should not normally be modified by the operator and is set and unset in the major-upgrade-composable-steps.yaml and major-upgrade-converge.yaml environment files.
UpgradeLeappCommandOptions	Additional command line options to append to the Leapp command.
UpgradeLeappDebug	Print debugging output when running Leapp. The default value is **True**.
UpgradeLeappDevelSkip	Skip Leapp checks by setting env variables when running Leapp in development/testing. For example, LEAPP_DEVEL_SKIP_RHSM=1.
UpgradeLeappEnabled	Use Leapp for operating system upgrade. The default value is **False**.
UpgradeLeappPostRebootDelay	Maximum (seconds) to wait for machine to reboot and respond to a test command. The default value is **120**.
UpgradeLeappRebootTimeout	Timeout (seconds) for the OS upgrade phase via Leapp. The default value is **3600**.
UpgradeLeappToInstall	List of packages to install after Leapp upgrade.
UpgradeLeappToRemove	List of packages to remove during Leapp upgrade.