RedHat Openstack 16.1 Installation

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NIC Config

controller.yaml

```
heat_template_version: rocky
description: >
  Software Config to drive os-net-config to configure multiple interfaces
for the Controller role.
parameters:
  ControlPlaneIp:
    default: ''
    description: IP address/subnet on the ctlplane network
    type: string
  ControlPlaneSubnetCidr:
    default: ''
    description: >
      The subnet CIDR of the control plane network. (The parameter is
      automatically resolved from the ctlplane subnet's cidr attribute.)
    type: string
  ControlPlaneDefaultRoute:
    default: ''
    description: The default route of the control plane network. (The
parameter
      is automatically resolved from the ctlplane subnet's gateway_ip
attribute.)
    type: string
  ControlPlaneStaticRoutes:
    default: []
    description: >
      Routes for the ctlplane network traffic.
      JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
      Unless the default is changed, the parameter is automatically resolved
      from the subnet host_routes attribute.
    type: json
  ControlPlaneMtu:
    default: 1500
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
network.
      (The parameter is automatically resolved from the ctlplane network's
mtu attribute.)
    type: number

  StorageIpSubnet:
    default: ''
```

```
      description: IP address/subnet on the storage network
      type: string
  StorageNetworkVlanID:
      default: 30
      description: Vlan ID for the storage network traffic.
      type: number
  StorageMtu:
      default: 1500
      description: The maximum transmission unit (MTU) size(in bytes) that is
        guaranteed to pass through the data path of the segments in the
        Storage network.
      type: number
  StorageInterfaceRoutes:
      default: []
      description: >
        Routes for the storage network traffic.
        JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
        Unless the default is changed, the parameter is automatically resolved
        from the subnet host_routes attribute.
      type: json
  StorageMgmtIpSubnet:
      default: ''
      description: IP address/subnet on the storage_mgmt network
      type: string
  StorageMgmtNetworkVlanID:
      default: 40
      description: Vlan ID for the storage_mgmt network traffic.
      type: number
  StorageMgmtMtu:
      default: 1500
      description: The maximum transmission unit (MTU) size(in bytes) that is
        guaranteed to pass through the data path of the segments in the
        StorageMgmt network.
      type: number
  StorageMgmtInterfaceRoutes:
      default: []
      description: >
        Routes for the storage_mgmt network traffic.
        JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
        Unless the default is changed, the parameter is automatically resolved
        from the subnet host_routes attribute.
      type: json
  InternalApiIpSubnet:
      default: ''
      description: IP address/subnet on the internal_api network
      type: string
  InternalApiNetworkVlanID:
      default: 20
      description: Vlan ID for the internal_api network traffic.
      type: number
```

```
InternalApiMtu:
  default: 1500
  description: The maximum transmission unit (MTU) size(in bytes) that is
    guaranteed to pass through the data path of the segments in the
    InternalApi network.
  type: number
InternalApiInterfaceRoutes:
  default: []
  description: >
    Routes for the internal_api network traffic.
    JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
    Unless the default is changed, the parameter is automatically resolved
    from the subnet host_routes attribute.
  type: json
TenantIpSubnet:
  default: ''
  description: IP address/subnet on the tenant network
  type: string
TenantNetworkVlanID:
  default: 50
  description: Vlan ID for the tenant network traffic.
  type: number
TenantMtu:
  default: 1500
  description: The maximum transmission unit (MTU) size(in bytes) that is
    guaranteed to pass through the data path of the segments in the
    Tenant network.
  type: number
TenantInterfaceRoutes:
  default: []
  description: >
    Routes for the tenant network traffic.
    JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
    Unless the default is changed, the parameter is automatically resolved
    from the subnet host_routes attribute.
  type: json
ExternalIpSubnet:
  default: ''
  description: IP address/subnet on the external network
  type: string
ExternalNetworkVlanID:
  default: 10
  description: Vlan ID for the external network traffic.
  type: number
ExternalMtu:
  default: 1500
  description: The maximum transmission unit (MTU) size(in bytes) that is
    guaranteed to pass through the data path of the segments in the
    External network.
  type: number
ExternalInterfaceDefaultRoute:
```

```
      default: ''
      description: default route for the external network
      type: string
  ExternalInterfaceRoutes:
      default: []
      description: >
        Routes for the external network traffic.
        JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
        Unless the default is changed, the parameter is automatically resolved
        from the subnet host_routes attribute.
      type: json

  DnsServers: # Override this via parameter_defaults
      default: []
      description: >
        DNS servers to use for the Overcloud (2 max for some implementations).
        If not set the nameservers configured in the ctlplane subnet's
        dns_nameservers attribute will be used.
      type: comma_delimited_list
  DnsSearchDomains: # Override this via parameter_defaults
      default: []
      description: A list of DNS search domains to be added (in order) to
resolv.conf.
      type: comma_delimited_list
###############################################################################
resources:
  OsNetConfigImpl:
    type: OS::Heat::SoftwareConfig
    properties:
      group: script
      config:
        str_replace:
          template:
            get_file: ../../scripts/run-os-net-config.sh
          params:
            $network_config:
              network_config:

############## Main Interface [Provision]
              - type: interface
                name: nic1
                mtu:
                  get_param: ControlPlaneMtu
                use_dhcp: false
                dns_servers:
                  get_param: DnsServers
                domain:
                  get_param: DnsSearchDomains
                addresses:
                - ip_netmask:
```

```
                    list_join:
                    - /
                    - - get_param: ControlPlaneIp
                      - get_param: ControlPlaneSubnetCidr
                  routes:
                    list_concat_unique:
                      - get_param: ControlPlaneStaticRoutes


############### Main Interface [VLAN]
              - type: ovs_bridge
                name: br-local
                dns_server:
                  get_param: DnsServers
                use_dhcp: false

                members:
################ Sub Interface
                - type: interface
                  name: nic2
                  mtu:
                    get_attr: [MinViableMtu, value]
                  # force the MAC address of the bridge to this interface
                  primary: true
################ Sub Interface [Storage]
                - type: vlan
                  mtu:
                    get_param: StorageMtu
                  vlan_id:
                    get_param: StorageNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: StorageIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: StorageInterfaceRoutes
################ Sub Interface [StorageMgmt]
                - type: vlan
                  mtu:
                    get_param: StorageMgmtMtu
                  vlan_id:
                    get_param: StorageMgmtNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: StorageMgmtIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: StorageMgmtInterfaceRoutes
################ Sub Interface [InternalApi]
                - type: vlan
                  mtu:
```

```
                    get_param: InternalApiMtu
                  vlan_id:
                    get_param: InternalApiNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: InternalApiIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: InternalApiInterfaceRoutes
################ Sub Interface [Tenant]
                - type: vlan
                  mtu:
                    get_param: TenantMtu
                  vlan_id:
                    get_param: TenantNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: TenantIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: TenantInterfaceRoutes


############## Main Interface [External -      NIC]
              - type: ovs_bridge
                name: bridge_name
                mtu:
                  get_param: ExternalMtu
                dns_servers:
                  get_param: DnsServers
                use_dhcp: false
                addresses:
                - ip_netmask:
                    get_param: ExternalIpSubnet
                routes:
                  list_concat_unique:
                    - get_param: ExternalInterfaceRoutes
                    - - default: true
                        next_hop:
                          get_param: ExternalInterfaceDefaultRoute
                members:
                - type: interface
                  name: nic3
                  mtu:
                    get_param: ExternalMtu
                  use_dhcp: false
                  primary: true


#####################################################################
outputs:
  OS::stack_id:
```

```
      description: The OsNetConfigImpl resource.
      value:
        get_resource: OsNetConfigImpl(undercloud)
```

compute.yaml

```
heat_template_version: rocky
description: >
  Software Config to drive os-net-config to configure multiple interfaces
for the Compute role.
parameters:
  ControlPlaneIp:
    default: ''
    description: IP address/subnet on the ctlplane network
    type: string
  ControlPlaneSubnetCidr:
    default: ''
    description: >
      The subnet CIDR of the control plane network. (The parameter is
      automatically resolved from the ctlplane subnet's cidr attribute.)
    type: string
  ControlPlaneDefaultRoute:
    default: ''
    description: The default route of the control plane network. (The
parameter
      is automatically resolved from the ctlplane subnet's gateway_ip
attribute.)
    type: string
  ControlPlaneStaticRoutes:
    default: []
    description: >
      Routes for the ctlplane network traffic.
      JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
      Unless the default is changed, the parameter is automatically resolved
      from the subnet host_routes attribute.
    type: json
  ControlPlaneMtu:
    default: 1500
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
network.
      (The parameter is automatically resolved from the ctlplane network's
mtu attribute.)
    type: number

  StorageIpSubnet:
    default: ''
    description: IP address/subnet on the storage network
    type: string
```

```
  StorageNetworkVlanID:
    default: 30
    description: Vlan ID for the storage network traffic.
    type: number
  StorageMtu:
    default: 1500
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
      Storage network.
    type: number
  StorageInterfaceRoutes:
    default: []
    description: >
      Routes for the storage network traffic.
      JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
      Unless the default is changed, the parameter is automatically resolved
      from the subnet host_routes attribute.
    type: json
  InternalApiIpSubnet:
    default: ''
    description: IP address/subnet on the internal_api network
    type: string
  InternalApiNetworkVlanID:
    default: 20
    description: Vlan ID for the internal_api network traffic.
    type: number
  InternalApiMtu:
    default: 1500
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
      InternalApi network.
    type: number
  InternalApiInterfaceRoutes:
    default: []
    description: >
      Routes for the internal_api network traffic.
      JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
      Unless the default is changed, the parameter is automatically resolved
      from the subnet host_routes attribute.
    type: json
  TenantIpSubnet:
    default: ''
    description: IP address/subnet on the tenant network
    type: string
  TenantNetworkVlanID:
    default: 50
    description: Vlan ID for the tenant network traffic.
    type: number
  TenantMtu:
    default: 1500
```

```
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
      Tenant network.
    type: number
  TenantInterfaceRoutes:
    default: []
    description: >
      Routes for the tenant network traffic.
      JSON route e.g. [{'destination':'10.0.0.0/16', 'nexthop':'10.0.0.1'}]
      Unless the default is changed, the parameter is automatically resolved
      from the subnet host_routes attribute.
    type: json

  ExternalMtu:
    default: 1500
    description: The maximum transmission unit (MTU) size(in bytes) that is
      guaranteed to pass through the data path of the segments in the
      External network.
    type: number

  DnsServers: # Override this via parameter_defaults
    default: []
    description: >
      DNS servers to use for the Overcloud (2 max for some implementations).
      If not set the nameservers configured in the ctlplane subnet's
      dns_nameservers attribute will be used.
    type: comma_delimited_list
  DnsSearchDomains: # Override this via parameter_defaults
    default: []
    description: A list of DNS search domains to be added (in order) to
resolv.conf.
    type: comma_delimited_list
resources:
  OsNetConfigImpl:
    type: OS::Heat::SoftwareConfig
    properties:
      group: script
      config:
        str_replace:
          template:
            get_file: ../../scripts/run-os-net-config.sh
          params:
            $network_config:
              network_config:

############## Main Interface [Provision]
              - type: interface
                name: nic1
                mtu:
                  get_param: ControlPlaneMtu
                use_dhcp: false
```

```
                        dns_servers:
                          get_param: DnsServers
                        domain:
                          get_param: DnsSearchDomains
                        addresses:
                        - ip_netmask:
                            list_join:
                            - /
                            - - get_param: ControlPlaneIp
                              - get_param: ControlPlaneSubnetCidr
                        routes:
                          list_concat_unique:
                            - get_param: ControlPlaneStaticRoutes
                            - - default: true
                                next_hop:
                                  get_param: ControlPlaneDefaultRoute


############### Main Interface [VLAN]
                  - type: ovs_bridge
                    name: br-local
                    dns_server:
                      get_param: DnsServers
                    use_dhcp: false


                    members:
################# Sub Interface
                    - type: interface
                      name: nic2
                      mtu:
                        get_attr: [MinViableMtu, value]
                      # force the MAC address of the bridge to this interface
                      primary: true
################# Sub Interface [Storage]
                    - type: vlan
                      mtu:
                        get_param: StorageMtu
                      vlan_id:
                        get_param: StorageNetworkVlanID
                      addresses:
                      - ip_netmask:
                          get_param: StorageIpSubnet
                      routes:
                        list_concat_unique:
                          - get_param: StorageInterfaceRoutes
################# Sub Interface [StorageMgmt]
                    - type: vlan
                      mtu:
                        get_param: StorageMgmtMtu
                      vlan_id:
                        get_param: StorageMgmtNetworkVlanID
```

```
                  addresses:
                  - ip_netmask:
                      get_param: StorageMgmtIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: StorageMgmtInterfaceRoutes
################ Sub Interface [InternalApi]
                - type: vlan
                  mtu:
                    get_param: InternalApiMtu
                  vlan_id:
                    get_param: InternalApiNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: InternalApiIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: InternalApiInterfaceRoutes
################ Sub Interface [Tenant]
                - type: vlan
                  mtu:
                    get_param: TenantMtu
                  vlan_id:
                    get_param: TenantNetworkVlanID
                  addresses:
                  - ip_netmask:
                      get_param: TenantIpSubnet
                  routes:
                    list_concat_unique:
                      - get_param: TenantInterfaceRoutes


############## Main Interface [External -      NIC]
              - type: ovs_bridge
                name: bridge_name
                mtu:
                  get_param: ExternalMtu
                dns_servers:
                  get_param: DnsServers
                use_dhcp: false
                addresses:
                - ip_netmask:
                    get_param: ExternalIpSubnet
                routes:
                  list_concat_unique:
                    - get_param: ExternalInterfaceRoutes
                    - - default: true
                        next_hop:
                          get_param: ExternalInterfaceDefaultRoute
                members:
                - type: interface
                  name: nic3
```

```
                mtu:
                   get_param: ExternalMtu
                use_dhcp: false
                primary: true
#########################################################################

outputs:
  OS::stack_id:
    description: The OsNetConfigImpl resource.
    value:
      get_resource: OsNetConfigImpl(undercloud)
```