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RedHat Openstack 16.1 Installation

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)
```

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