Hewlett Packard
Enterprise

Helion OpenStack Carrier Grade 4.0

FOR REGIONS

16.10

Helion Carrier Grade 4.0

Cloud Administration, 16.10

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Introduction to Regions

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Introduction to Regions

An OpenStack *region* is a discrete OpenStack system with its own set of resources and its own set of services. Typically, some services are shared with other OpenStack regions, notably the Keystone service. Other shared services may include Cinder and Glance.

Regions can be categorized into two types:

Primary Region

In a Primary Region, all OpenStack services used by the region run locally. This type of region typically provides shared services to other regions.

Secondary Region

In a Secondary Region, some OpenStack services used by the region run locally, while others run in another region. This type of region makes use of shared services, typically provided by the Primary Region.

Supported Multi-Region Configurations

Helion Carrier Grade 4.0 supports several configurations for regions.

- Helion Carrier Grade 4.0 as Primary and Secondary Regions
  - provides a mechanism for scaling a Helion Carrier Grade 4.0 Cloud beyond the limits of a single Helion Carrier Grade 4.0 Cloud or Region
- Third-Party OpenStack Cloud as Primary Region and Helion Carrier Grade 4.0 as Secondary Region
  - provides a mechanism to extend an existing Third Party OpenStack Cloud with a Helion Carrier Grade 4.0 Cloud, enabling users to incrementally add Helion Carrier Grade 4.0 values such as High Availability and High Performance Networking to an existing cloud solution

NOTE: Helion Carrier Grade 4.0 CPE configurations are not supported as Primary or Secondary Regions.

Primary Region

The Primary Region can be either a Helion Carrier Grade 4.0 Cloud or a Third Party OpenStack Cloud. In either case, the primary region shares one or more OpenStack services with the Secondary Region(s).

For a Helion Carrier Grade 4.0 Primary Region, the following shared services are provided:

- Keystone (identity) service
- Cinder (block storage) service
- Glance (image) service

The Primary Region's Keystone service must be configured with a tenant, users, services, and service endpoints for both the Primary Region services and the Secondary Region services.

Secondary Region

The Secondary Region system provides regional controller and compute resources, coordinated by the Primary Region.

The Secondary Region includes all OpenStack Services supported by the particular OpenStack Cloud, except for those services that the Primary Region is sharing with this Secondary Region.

The local services of the Secondary Region must be configured to obtain authenticated tokens and service endpoint URLs from the Primary Region Keystone service. The Primary Region's Keystone service requires a tenant, users, services, and service endpoints for all services running in both regions.

NOTE: There are no edit/delete protections on the Keystone entities that are created for the Secondary Region, as there are for those in the Primary Region. It is critical that these are not modified or deleted by the user.

Network Requirements for Multi-Region Configurations

There are specific network requirements for multi-region configurations.

- All regions should have their own (isolated) untagged network for network-booting nodes. In the case of Helion Carrier Grade 4.0, this would be the pxeboot network.
- All regions MUST share the OpenStack management network.
  - In the case of Helion Carrier Grade 4.0, when using a pxeboot network, the management network must be a VLAN-tagged network on the same logical interface as the pxeboot network.
- If Cinder and Glance are shared services, then all regions MUST share the OpenStack storage network; in the case of Helion Carrier Grade 4.0, this is the infrastructure network.
- The following networks may or may not be shared, depending on deployment preference:
  - OAM Network
  - BMC Network
- The 'data' networks MUST NOT be shared across regions as Neutron is NOT a Shared Service so Provider Networks and Tenant Networks are independently managed by each region's Neutron Service.

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Overview for Multiple Region Helion Carrier Grade 4.0 Cloud

Installing a multiple region Helion Carrier Grade 4.0 deployment involves installing a Primary Region Helion Carrier Grade 4.0 and one or more Secondary Region Titanium Servers.

Installing Helion Carrier Grade 4.0 as the Primary Region

The installation of Helion Carrier Grade 4.0 as the Primary Region is the same as a standard installation.

Prerequisites

The system must meet the requirements given in Network Requirements for Multi-Region Configurations on page 3.

Procedure

Install Helion Carrier Grade 4.0.

Refer to the Helion Carrier Grade 4.0 installation guide that pertains to your system, either *Helion Carrier Grade 4.0 Installation for Systems with Controller Storage* or *Helion Carrier Grade 4.0 Installation for Systems with*

Dedicated Storage. Install Helion Carrier Grade 4.0 in accordance with those instructions when using it as the Primary Region.

Installing Helion Carrier Grade 4.0 as the Secondary Region

Installation of Helion Carrier Grade 4.0 as a Secondary Region is the same regardless of whether the Primary Region is Helion Carrier Grade 4.0 or OpenStack Cloud.

Installaton of Helion Carrier Grade 4.0 as a Secondary Region uses a **config_region** script which is analogous to the **config_controller** script used for initial installation, except with extended functionality required for setting up service sharing with the Primary Region.

The **config_region** script only supports file input for system configuration data; again, this is like the configuration file that is supported by the **config_controller** script.

The region config file uses key-value pairs in standard INI format. It can be created manually or you can use the Titanium **config_gui** provided with the SDK to create the file.

The contents of the file are used as input to the **config_region** script, which is used to configure the first controller on the Helion Carrier Grade 4.0 Secondary Region. For more information, refer to Configuring Controller-0 for a Helion Carrier Grade 4.0 Secondary Region on page 12 and the remaining sections in *Installing the Helion Carrier Grade 4.0 Secondary Region Software*. Also, see the example **config_region** file in Example config_region INI File on page 25.

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Overview for Multiple Region Mixed Cloud

. Installing a multiple region mixed third-party OpenStack Cloud and Helion Carrier Grade 4.0 involves installing a Primary Region third-party OpenStack Cloud and a Secondary Region Helion Carrier Grade 4.0.

Installing Third-Party OpenStack Cloud as Primary Region

A third-party OpenStack Cloud as the Primary Region with Helion Carrier Grade 4.0 as the Secondary Region is one of two regions configuration options.

Install the Third Party OpenStack Cloud following the documentation provided with the Third Party OpenStack Cloud. Note that the installation must meet the requirements given in Network Requirements for Multi-Region Configurations on page 3.

The third-party OpenStack Primary Region's Keystone service must be configured with a tenant, users, services, and service endpoints (public, internal, and admin URLs) for both the third-party OS Primary Region services and each of the Helion Carrier Grade 4.0 Secondary Region services.

The Helion Carrier Grade 4.0 secondary region auto-provisions the Third Party Primary Region's Keystone through the **config_region** script and the INI-formatted region config file. For details on data filling the region config file (which includes the Helion Carrier Grade 4.0 Secondary Region's

service access and endpoint data to be configured in the Primary Region), refer to the **REGION_CONFIG_DATA.xslx** spreadsheet, available in The REGION_CONFIG_DATA Spreadsheet on page 19.

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Preparing for Software Installation

Before installing the Helion Carrier Grade 4.0 Secondary Region software, you must prepare the required networks.

The network must meet the requirements given in Network Requirements for Multi-Region Configurations on page 3.

Preparing the region_config File

This file is required during Helion Carrier Grade 4.0 region configuration.

Installaton of Helion Carrier Grade 4.0 as a Secondary Region uses a **config_region** script which is analogous to the **config_controller** script used for initial installation, except with extended functionality required for setting up services sharing with the Primary Region.

The **config_region** script only supports file input for system configuration data; again, this is like the configuration file that is supported by the **config_controller** script.

The region config file uses key-value pairs in standard INI format. It can be created manually or you can use the Titanium **config_gui** provided with the SDK to create it. The contents of the file are used as input to the **config_region** script, which is used to configure the first controller on the Helion Carrier Grade 4.0 Secondary Region.

A 'write-enabled' mode exists in the region configure file, called CREATE In [REGION_2_SERVICES]. When CREATE is set to Y, the expected endpoints, services tenant, services, and users will be created if they are not already present in the shared keystone.

When CREATE is set to Y, password fields in the REGION_2_SERVICES section are optional; when not present a random password will be generated where necessary.

Optional services Glance and Cinder are configured to be shared if they are under [SHARED_SERVICES], but not if they are under [REGION_2_SERVICES] (in which case they require password fields if CREATE is not Y).

When CREATE is not present or is set to N, the primary region Keystone needs to be configured manually using OpenStack commands.

For more information on the services that must be provisioned, see Services Requiring Keystone Tenant and User Provisioning on page 10.

For more information on the **region_config** file, see The REGION_CONFIG_DATA Spreadsheet on page 19.

Services Requiring Keystone Tenant and User Provisioning

Some services on the Helion Carrier Grade 4.0 Secondary Region must have a service tenant and user provisioned in the Primary Region.

The services listed below require a service tenant and user configured in Keystone on the Primary Region.

The service names and types are optional parameters in the **region_config** file. Use of different service names or types in the region_config will be rejected. For more information, refer to The REGION_CONFIG_DATA Spreadsheet on page 19.

- ceilometer
- heat
- neutron
- nova
- nfv
- patching
- sysinv

The following services must have configured Keystone endpoints.

The service names and types are optional parameters in the region_config file. Use of different service names or types in the **region_config** will be rejected. For more information, refer to The REGION_CONFIG_DATA Spreadsheet on page 19.

Service Name	Service Type	Description
aodh	alarming	OpenStack Alarming Service

ceilometer	metering	Openstack Metering Service
cinder	volume	Cinder Service
cinderv2	volumev2	Cinder Service v2
heat	orchestration	Openstack Orchestration Service
heat-cfn	cloudformation	Openstack Cloudformation Service
patching	patching	Patching Service
nova	compute	Openstack Compute Service
neutron	network	Neutron Networking Service
glance	image	OpenStack Image Service
sysinv	platform	SysInvService
vim	nfv	Virtual Infrastructure Manager

Installing the Helion Carrier Grade 4.0 Secondary Region Software

You can install the Helion Carrier Grade 4.0 Secondary Region software from the command line of **controller-0**.

Prerequisites

The following items are required for installation:

- the Helion Carrier Grade 4.0 installation software
- a Helion Carrier Grade 4.0 license file
- optionally, a CA-signed digital certificate to support HTTPS access

Before starting the installation, ensure that the Primary Region is provisioned and available.

The following steps are required to install the Helion Carrier Grade 4.0 Secondary Region software:

Procedure

1. Prepare the **region_config** file.
2. Install and configure the first controller.
3. Initialize and configure the second controller.
4. (Optional) Initialize and configure the storage nodes.
5. Initialize and configure the compute nodes.

Configuring Controller-0 for a Helion Carrier Grade 4.0 Secondary Region

You must configure controller-0 for the Secondary Region as detailed in these instructions.

Prerequisites

For **controller-0** configuration, you require the following:

- the Helion Carrier Grade 4.0 installation software
- a Helion Carrier Grade 4.0 license file
- a prepared region_config file
- optionally, a CA-signed digital certificate to support HTTPS access for REST API

Prerequisites

Before installing the ISO image, ensure the following:

- The host meets the hardware requirements for a controller. For more information, see the *Helion Carrier Grade 4.0 Installation Guide: Hardware Requirements*.
- You have terminal-server access to the host, so that you can monitor messages during initialization.
- The PXE boot, management, infrastructure, OAM, and board management networks are planned, set up, and connected. For more information, see Network Requirements for Multi-Region Configurations on page 3.
- All other hosts in the Helion Carrier Grade 4.0 Secondary Region are powered off.
- You have reviewed the Release Notes for any additional information pertaining to installation.

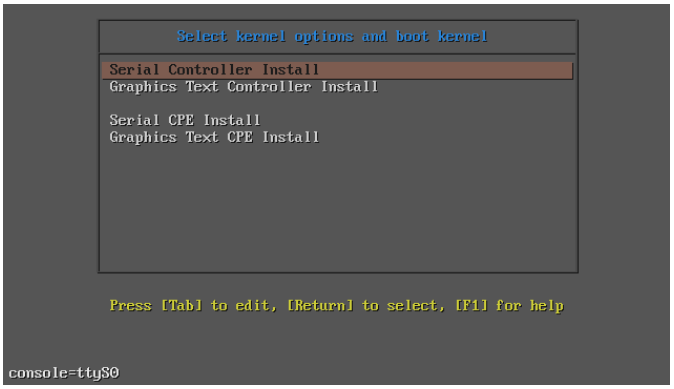
Procedure

1. Prepare a bootable USB flash drive to use for installation.
2. Copy all additional required files to a second USB drive.

   A license file and a **region_config** file are required during installation and configuration.
3. Power on the host to be configured as **controller-0**.
4. Configure the host BIOS boot sequence to boot from a USB removable storage device.
5. Insert the USB flash drive and boot the host.

   The installer is loaded, and the installer welcome screen appears.

Figure 1: Helion Carrier Grade 4.0 Installer Welcome Screen



6. Select the type of installation and the display device to be used during initialization, and then press **Enter**.

   Serial Controller Install (default)

   Installs the controller function on the host, using the serial port to display messages. You can monitor the port using the terminal server.

   Graphics Text Controller Install

   Installs the controller function on the host, using text mode to display messages. This is a safe option for nodes that do not support graphics mode.

   Serial CPE Install (default)

   Installs controller and compute functions on the host, using the serial port to display messages. You can monitor the port using the terminal server.

   Graphics Text CPE Install

   Installs controller and compute functions on the host, using text mode to display messages. This is a safe option for nodes that do not support graphics mode.

NOTE: The default rootfs device is **/dev/sda**. You can optionally change this (or other parameters) by selecting the installation mode, pressing the **Tab** key, modifying the command that appears, and then pressing **Enter**. A sample command is shown here; the actual parameters vary depending on the system configuration.

```
vmlinux rootwait console=ttyS0, 115200 root=LABEL=oe_iso_boot \
ngpt textinst serial ks=/mnt/install/source/ks.cfg boot_device=sda \
rootfs_device=sda initrd=initrd
```

7. Monitor the initialization until it is complete.

   The installer initializes the target hard drive with the Helion Carrier Grade 4.0 image. When initialization is complete, a reboot is initiated on the host.

8. Immediately remove the USB flash drive from the host to ensure that the host reboots from the hard drive.

CAUTION: If the USB flash drive is still attached when the host reboots, then unless the boot sequence has been configured to prevent it, the host will boot from the USB flash drive again instead of the hard drive.

After a few minutes, the host reboots from the hard drive, briefly displays a GNU GRUB screen, and then boots automatically into the Helion Carrier Grade 4.0 image.

9. Log into the host as **wrsroot**, with password **wrsroot**.

NOTE: Typed responses to password prompts are suppressed and do not appear on the display.

The first time you log in as **wrsroot**, you are required to change your password.

```
Changing password for wrsroot.
(current) UNIX Password:
```

Enter the current password (**wrsroot**).

```
New password:
```

Enter a new password for the **wrsroot** account.

```
Retype new password:
```

Enter the new password again to confirm it.

10. Copy the additional required files to the **controller-0** hard disk.
    Connect the second USB flash drive and mount it, and then copy the license file and the **region_config** file to the controller hard disk. The recommended location is **/home/wrsroot**.

11. Apply any patches that may be needed. For more information, see *Helion Carrier Grade 4.0 Patching and Upgrading Platform Software*.

12. Configure **controller-0** as a Helion Carrier Grade 4.0 Secondary Region controller.

    Execute the following command:

    ```
    $ sudo config_region [region_config_path]
    ```

    where *region_config_path* is the full path to the **region_config** file. The default value is **/home/wrsroot/region_config**.

13. Wait for the Linux prompt to return with no errors.

NOTE: After this step, there are no further region-specific changes.

14. Delete the **region_config** file from the system.

CAUTION: The **region_config** file contains clear-text authentication data. For improved security, delete this file from the system immediately after use.

Postrequisites

To continue the installation and configuration of controller-1, storage nodes, and compute hosts, refer to the Helion Carrier Grade 4.0 installation guide that pertains to your system, either *Helion Carrier Grade 4.0 Installation for Systems with Controller Storage* or *Helion Carrier Grade 4.0 Installation for Systems with Dedicated Storage*.

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Horizon Web Administration Interface

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Horizon Web Administration Interface

The Helion Carrier Grade 4.0 Horizon web administration interface on any Region's Controller provides menu access to both the Primary and Secondary Regions.

On Helion Carrier Grade 4.0-Primary Horizon, you can select from the Region menu, which lists all Secondary regions.

Switching regions changes the set of endpoints that the Horizon web administration interface uses to communicate with.

Any Helion Carrier Grade 4.0 Horizon deployment in the cloud can control any Helion Carrier Grade 4.0 or pristine Openstack region.

NOTE: Users are redirected to the home page if they are on a Helion Carrier Grade 4.0 specific panel during a switch to a pristine Openstack Cloud.

In a Helion Carrier Grade 4.0-Primary to Helion Carrier Grade 4.0-Secondary configuration, Horizon will still be started in both the Primary and Secondary regions. This means that:

- users can access Helion Carrier Grade 4.0-Primary Horizon via http://*tis_primary_ip_address*
- users can access Helion Carrier Grade 4.0-Secondary Horizon via http://*tis_secondary_ip_address*

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REGION_CONFIG_DATA Reference

The REGION_CONFIG_DATA Spreadsheet 19

The REGION_CONFIG_DATA Spreadsheet

You can use this reference when provisioning the Primary Region to grant access to Secondary Region services.

	Attribute	Value	Comments
STORAGE			
	DATABASE_STORAGE	<Size in GB>	Postgres database size
	BACKUP_STORAGE	<Size in GB>	Must be at least DATABASE_STORAGE + 20
	IMAGE_STORAGE	<Size in GB>	Storage for nova instances launched from glance images
	IMAGE_CONVERSIONS_VOLUME	<Size in GB>	
	CINDER_BACKEND	<string>	lvm/ceph
	CINDER_DEVICE	<string>	
	CINDER_STORAGE	<Size in GB>	

DNS			Optional
	NAMESERVER_1	<IPv4 address>	Reachable through the default GW
	NAMESERVER_2	<IPv4 address>	
	NAMESERVER_3	<IPv4 address>	
NTP			Optional
	NTP_SERVER_1	<IPv4 address> or <FQDN>	Reachable through the default GW
	NTP_SERVER_2	<IPv4 address> or <FQDN>	
		<IPv4 address> or <FQDN>	
LOGICAL_INTERFACE_1			
	LAG_INTERFACE	<Y/N>	
	LAG_MODE	One of 1) 802.3ad (LACP) policy 2) Active-backup policy 3) Balanced XOR policy	Interface for pxebooting can only be LACP
	INTERFACE MTU	<mtu size>	
	INTERFACE_PORTS	<comma separated list of ethernet interfaces>	
….			
LOGICAL_INTERFACE_N			
	LAG_INTERFACE	<Y/N>	
	LAG_MODE	One of 1) 802.3ad (LACP) policy 2) Active-backup policy 3) Balanced XOR policy	Interface for pxebooting can only be LACP
	INTERFACE MTU	<mtu size>	
	INTERFACE_PORTS	<comma separated list of ethernet interfaces>	
MGMT_NETWORK			

	VLAN	<vlan id>	
	IP_START_ADDRESS	<IPv4 address>	1st address floating IP
	IP_END_ADDRESS	<IPv4 address>	
	CIDR	<network/mask>	Subnet
	MULTICAST_CIDR	<network/mask>	
	LOGICAL_INTERFACE	<logical-interface>	Reference LOGICAL_INTERFACE_N instead of using the name
	GATEWAY	<IPv4 address>	Only one of OAM GATEWAY or MGMT GATEWAY can be specified.
	DYNAMIC_ALLOCATION		y/n
INFRA_NETWORK			
	VLAN	<vlan id>	
	IP_START_ADDRESS	<IPv4 address>	
	IP_END_ADDRESS	<IPv4 address>	
	CIDR	<network/mask>	
	LOGICAL_INTERFACE	<logical-interface>	Reference LOGICAL_INTERFACE_N instead of using the name
OAM_NETWORK			
	VLAN	<vlan id>	
	IP_START_ADDRESS	<IPv4 address>	3 contiguous addresses: floating ip, unit 0 ip, unit1 ip
	IP_END_ADDRESS	<IPv4 address>	
	CIDR	<network/mask>	
	MULTICAST_CIDR	<network/mask>	
	GATEWAY	<IPv4 address>	Only one of OAM GATEWAY or MGMT GATEWAY can be specified.
	LOGICAL_INTERFACE	<logical-interface>	Reference LOGICAL_INTERFA

			CE_N instead of using the name
REGION2_PXEBOOT_NETWORK			
	PXEBOOT_CIDR	<network/mask>	Unique subnet for region 2
SHARED_SERVICES			
	REGION_NAME	<string>	Name of region 1 (e.g. "RegionOne")
	KEYSTONE_ADMINURL	<url>	
	ADMIN_TENANT_NAME	<string>	
	ADMIN_USER_NAME	<string>	
	ADMIN_PASSWORD	<string>	
	KEYSTONE_SERVICE_NAME	<string>	Service name in service catalog (openstack service list).
	KEYSTONE_SERVICE_TYPE	<string>	Service type in service catalog (openstack service list).
	SERVICE_TENANT_NAME	<string>	Tenant name for openstack users (openstack project list).
	CINDER_SERVICE_NAME	<string>	Service name in service catalog (openstack service list).
	CINDER_SERVICE_TYPE	<string>	Service type in service catalog (openstack service list).
	CINDER_V2_SERVICE_NAME	<string>	Service name in service catalog (openstack service list).
	CINDER_V2_SERVICE_TYPE	<string>	Service type in service catalog (openstack service list).

	GLANCE_SERVICE_NAME	<string>	Service name in service catalog (openstack service list).
	GLANCE_SERVICE_TYPE	<string>	Service type in service catalog (openstack service list).
	HORIZON_HOST_REMOTE	<IPv4 address>OAM IP for region one controller.	
REGION_2_SERVICES			
	CREATE	<string>	N/Y. When it is set to Y, config_region creates the shared keystone of users, service tenant, services, and endpoints that required in the primary region. If N, config_region only validate the keystone configuration.
	REGION_NAME	<string>	
	NOVA_USER_NAME	<string>	
	NOVA_PASSWORD	<string>	
	NEUTRON_USER_NAME	<string>	
	NEUTRON_PASSWORD	<string>	
	SYSINV_USER_NAME	<string>	
	SYSINV_PASSWORD	<string>	
	PATCHING_USER_NAME	<string>	
	PATCHING_PASSWORD	<string>	
	HEAT_USER_NAME	<string>	
	HEAT_PASSWORD	<string>	
	HEAT_ADMIN_DOMAIN	<string>	

	HEAT_ADMIN_USER_NAME	<string>	
	HEAT_ADMIN_PASSWORD	<string>	
	CEILOMETER_USER_NAME	<string>	
	CEILOMETER_PASSWORD	<string>	
	NFV_USER_NAME	<string>	
	NFV_PASSWORD	<string>	
	AODH_USER_NAME	<string>	
	AODH_PASSWORD	<string>	
LICENSING			
	LICENSE_FILE_NAME	<string>	Can be filename or full path to file.
SECURITY			
	ENABLE_HTTPS	<Y/N>	Whether to enable HTTPS
	SELF_SIGNED	<Y/N>	Use self signed certificate
	CERTIFICATE_FILE_NAME	<string>	Can be filename or full path to file. Only required if SELF_SIGNED=N.
CERTIFICATE_PASSWORD	<string>	Required if CERTIFICATE_FILE_NAME is password protected.	

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Example CONFIG_REGION INI File

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Example config_region INI File

This example of the **config_region** INI file shows its structure and content.

[STORAGE]

BACKUP_STORAGE = 60

DATABASE_STORAGE = 20

[REGION2_PXEBOOT_NETWORK]

PXEBOOT_CIDR = 192.168.204.0/24

[MGMT_NETWORK]

VLAN = 100

CIDR = 192.168.144.0/24

MULTICAST_CIDR=239.1.1.0/28

IP_START_ADDRESS=192.168.144.103

IP_END_ADDRESS=192.168.144.200

DYNAMIC_ALLOCATION = Y

LOGICAL_INTERFACE = LOGICAL_INTERFACE_1

[LOGICAL_INTERFACE_1]

LAG_INTERFACE = N

INTERFACE_MTU = 1500

INTERFACE_PORTS = enp4s0f1

[INFRA_NETWORK]

CIDR = 192.168.244.0/24

IP_START_ADDRESS=192.168.244.101

IP_END_ADDRESS=192.168.244.200

DYNAMIC_ALLOCATION = Y

LOGICAL_INTERFACE = LOGICAL_INTERFACE_2

[LOGICAL_INTERFACE_2]

LAG_INTERFACE = Y

LAG_MODE = 2

INTERFACE_MTU = 9216

INTERFACE_PORTS = ens787f1,ens787f2

[OAM_NETWORK]

CIDR = 128.224.150.0/23

MULTICAST_CIDR=239.1.1.0/28

GATEWAY = 128.224.150.1

IP_FLOATING_ADDRESS = 128.224.151.227

IP_UNIT_0_ADDRESS = 128.224.150.69

IP_UNIT_1_ADDRESS = 128.224.150.70

LOGICAL_INTERFACE = LOGICAL_INTERFACE_3

[LOGICAL_INTERFACE_3]

LAG_INTERFACE = N

INTERFACE_MTU = 1500

INTERFACE_PORTS = enp4s0f0

[DNS]

NAMESERVER_1 = 8.8.8.8

NAMESERVER_2 = 8.8.4.4

[NTP]

NTP_SERVER_1 = 0.pool.ntp.org

NTP_SERVER_2 = 1.pool.ntp.org

NTP_SERVER_3 = 2.pool.ntp.org

[LICENSING]

```
LICENSE_FILE_NAME = /home/wrsroot/license.lic

[SECURITY]
ENABLE_HTTPS = N

[SHARED_SERVICES]
REGION_NAME=RegionOne
ADMIN_TENANT_NAME=admin
ADMIN_USER_NAME=admin
ADMIN_PASSWORD=admin
KEYSTONE_ADMINURL=http://192.168.144.2:35357/v3
KEYSTONE_SERVICE_NAME=keystone
KEYSTONE_SERVICE_TYPE=identity
SERVICE_TENANT_NAME=RegionTwo
GLANCE_SERVICE_NAME=glance
GLANCE_SERVICE_TYPE=image
CINDER_SERVICE_NAME=cinder
CINDER_SERVICE_TYPE=volume
CINDER_V2_SERVICE_NAME=cinderv2
CINDER_V2_SERVICE_TYPE=volumev2

[REGION_2_SERVICES]
CREATE=Y REGION_NAME=RegionTwo
CINDER_USER_NAME=cinderTWO
CINDER_PASSWORD=passwordTWO
GLANCE_USER_NAME=glanceTWO
GLANCE_PASSWORD=passwordTWO
NOVA_USER_NAME=novaTWO
NOVA_PASSWORD=passwordTWO
NEUTRON_USER_NAME=neutronTWO
NEUTRON_PASSWORD=passwordTWO
SYSINV_USER_NAME=sysinvTWO
SYSINV_PASSWORD=passwordTWO
PATCHING_USER_NAME=patchingTWO
PATCHING_PASSWORD=passwordTWO
HEAT_USER_NAME=heatTWO
HEAT_PASSWORD=passwordTWO
HEAT_ADMIN_DOMAIN=heat
```

HEAT_ADMIN_USER_NAME=heat_stack_adminTWO

HEAT_ADMIN_PASSWORD=passwordTWO

CEILOMETER_USER_NAME=ceilometerTWO

CEILOMETER_PASSWORD=passwordTWO

NFV_USER_NAME=vimTWO

NFV_PASSWORD=passwordTWO

AODH_USER_NAME=aodhTWO

AODH_PASSWORD=passwordTWO

[VERSION]

RELEASE = 16.10