# 04. Nova 服务组件

系统环境准备 CentOS7 + OpenStack Rocky

#### 参考:

https://docs.openstack.org/install-guide/environment.html

https://docs.openstack.org/nova/rocky/install/compute-install-rdo.html

- 5.1.配置域名解析
- 1)配置主机名
- 2) 配置主机名解析
- 5.2.关闭防火墙和 selinux
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- 5.3.配置时间同步

- 1) 在在计算节点配置时间同步服务
- 2)编辑配置文件确认有以下配置
- 3) 重启 chronyd 服务,并配置开机自启动
- 4)设置时区,首次同步时间
- 5.4.配置相关 yum 源
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- 2) 快速修改配置文件(/etc/nova/nova.conf)
- 3) 配置虚拟机的硬件加速
- 4) 启动 nova 相关服务,并配置为开机自启动
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- 5) 检查 nova 各组件的状态

- 5.1. 基本环境准备 (跳过 5.15.25.35.4 步骤)
- 1)配置主机名
- 2) 配置主机名解析

#### vi /etc/host

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127.0.0.1 controller

127.0.0.1 compute

...

#### 5.25.35.4 略

如果计算节点为新主机,需要进行基本实验环境配置,见实验:《1 实验手册 OpenStack 环境准备》因为本实验使用 All-in-One 方式,故不需要基本环境配置。

- 5.5. 安装 nova 计算节点相关软件包
- 1) 计算节点安装 nova 软件包

yum install openstack-nova-compute python-openstackclient openstack-utils -y

2) 快速修改配置文件(/etc/nova/nova.conf)

openstack-config --set /etc/nova/nova.conf DEFAULT my\_ip 127.0.0.1

openstack-config --set /etc/nova/nova.conf DEFAULT use\_neutron True

openstack-config --set /etc/nova/nova.conf DEFAULT firewall\_driver nova.virt.firewall.NoopFirewallDriver

openstack-config --set /etc/nova/nova.conf DEFAULT enabled\_apis osapi\_compute,metadata

openstack-config --set /etc/nova/nova.conf DEFAULT transport\_url rabbit://openstack:openstack@controller

openstack-config --set /etc/nova/nova.conf api auth\_strategy keystone

openstack-config --set /etc/nova/nova.conf keystone\_authtoken auth\_url http://controller:5000/v3

openstack-config --set /etc/nova/nova.conf keystone\_authtoken memcached\_servers controller:11211

openstack-config --set /etc/nova/nova.conf keystone\_authtoken auth\_type password

openstack-config --set /etc/nova/nova.conf keystone\_authtoken project domain name default

```
openstack-config --set /etc/nova/nova.conf keystone authtoken user domain name default
openstack-config --set /etc/nova/nova.conf keystone_authtoken project_name service
openstack-config --set /etc/nova/nova.conf keystone authtoken username nova
openstack-config --set /etc/nova/nova.conf keystone authtoken password nova
openstack-config --set /etc/nova/nova.conf vnc enabled True
openstack-config --set /etc/nova/nova.conf vnc server listen 0.0.0.0
openstack-config --set /etc/nova/nova.conf vnc server proxyclient address '$my ip'
openstack-config --set /etc/nova/nova.conf vnc novncproxy_base_url http://controller:6080/vnc auto.html
openstack-config --set /etc/nova/nova.conf glance api servers http://controller:9292
openstack-config --set /etc/nova/nova.conf oslo concurrency lock path /var/lib/nova/tmp
openstack-config --set /etc/nova/nova.conf placement region name RegionOne
openstack-config --set /etc/nova/nova.conf placement project domain name Default
openstack-config --set /etc/nova/nova.conf placement project name service
openstack-config --set /etc/nova/nova.conf placement auth type password
openstack-config --set /etc/nova/nova.conf placement user domain name Default
openstack-config --set /etc/nova/nova.conf placement auth url http://controller:5000/v3
openstack-config --set /etc/nova/nova.conf placement username placement
openstack-config --set /etc/nova/nova.conf placement password placement
```

服务器组件监听所有的 IP 地址,而代理组件仅仅监听计算节点管理网络接口的 IP 地址。

```
查看生效的配置:
egrep -v "^#|^$" /etc/nova/nova.conf
[root@openstack02 nova]# egrep -v "^#|^$" /etc/nova/nova.conf
[DEFAULT]
enabled_apis = osapi_compute,metadata
transport_url = rabbit://openstack:openstack@controller
my_ip = 192.168.56.126
use_neutron = True
firewall_driver = nova.virt.firewall.NoopFirewallDriver
log_date_format=%Y-%m-%d %H:%M:%S
log_file=nova-compute.log
log_dir=/var/log/nova
[api]
auth_strategy = keystone
[api_database]
```

```
[barbican]
[cache]
[cells]
[cinder]
[compute]
[conductor]
[console]
[consoleauth]
[cors]
[database]
[devices]
[ephemeral_storage_encryption]
[filter_scheduler]
[glance]
api_servers = http://controller:9292
[guestfs]
[healthcheck]
[hyperv]
```

```
[ironic]
[key_manager]
[keystone]
[keystone_authtoken]
auth_url = http://controller:5000/v3
memcached_servers = controller:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = nova
password = nova
[libvirt]
virt_type = qemu
[matchmaker_redis]
[metrics]
[mks]
[neutron]
```

```
[notifications]
[osapi_v21]
[oslo_concurrency]
lock_path = /var/lib/nova/tmp
[oslo_messaging_amqp]
[oslo_messaging_kafka]
[oslo_messaging_notifications]
[oslo_messaging_rabbit]
[oslo_messaging_zmq]
[oslo_middleware]
[oslo_policy]
[pci]
[placement]
region_name = RegionOne
project_domain_name = Default
project_name = service
auth_type = password
user_domain_name = Default
```

```
auth_url = http://controller:5000/v3
username = placement
password = placement
[placement_database]
[powervm]
[profiler]
[quota]
[rdp]
[remote_debug]
[scheduler]
[serial_console]
[service_user]
[spice]
[upgrade_levels]
[vault]
[vendordata_dynamic_auth]
[vmware]
[vnc]
```

enabled = True

server\_listen = 0.0.0.0

server\_proxyclient\_address = 192.168.56.126

novncproxy\_base\_url = http://controller:6080/vnc\_auto.html

[workarounds]

[wsgi]

[xenserver]

[xvp]

[zvm]

### 3) 配置虚拟机的硬件加速

首先确定您的计算节点是否支持虚拟机的硬件加速。

egrep -c '(vmx|svm)'/proc/cpuinfo

如果返回位 0,表示计算节点不支持硬件加速,需要配置 libvirt 使用 QEMU 方式管理虚拟机,使用以下命令:

openstack-config --set /etc/nova/nova.conf libvirt virt\_type qemu

4) 启动 nova 相关服务,并配置为开机自启动

systemctl start libvirtd.service openstack-nova-compute.service

systemctl status libvirtd.service openstack-nova-compute.service

systemctl enable libvirtd.service openstack-nova-compute.service

systemctl list-unit-files |grep libvirtd.service

systemctl list-unit-files |grep openstack-nova-compute.service

5)将计算节点增加到 cell 数据库

以下命令在控制节点操作:

source admin-openrc

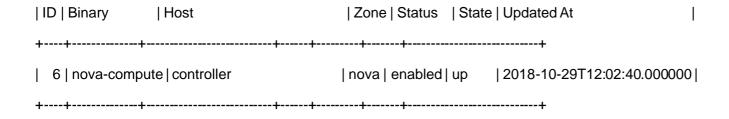
检查确认数据库有新的计算节点

openstack compute service list --service nova-compute

[root@openstack01 tools]# openstack compute service list --service nova-compute

openstack compute service list

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手动将新的计算节点添加到 openstack 集群

su -s /bin/sh -c "nova-manage cell\_v2 discover\_hosts --verbose" nova

[root@openstack01 tools]# su -s /bin/sh -c "nova-manage cell\_v2 discover\_hosts --verbose" nova Found 2 cell mappings.

Skipping cell0 since it does not contain hosts.

Getting computes from cell 'cell1': c078477e-cb43-40c9-ad8b-a9fde183747d

Found 0 unmapped computes in cell: c078477e-cb43-40c9-ad8b-a9fde183747d

设置新创建节点自动注册的任务

[scheduler]

discover\_hosts\_in\_cells\_interval = 300

计算节点安装完毕

#### 5.6.在控制节点进行验证

参考: https://docs.openstack.org/nova/rocky/install/compute-install-rdo.html

1)应用管理员环境变量脚本

source admin-openrc

2) 列表查看安装的 nova 服务组件

验证是否成功注册

openstack compute service list

[root@openstack01 tools]# openstack compute service list

3) 在身份认证服务中列出 API 端点以验证其连接性

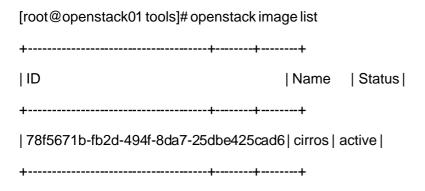
#### openstack catalog list

l		I		
glance	image	RegionOne		
1	1	admin: http://controller:9292		
1	1	RegionOne		1
1	1	internal: http://controller:9292	I	
1		RegionOne		I
1	1	public: http://controller:9292	1	
I	1	1		1
nova	compute	RegionOne		1
1	1	internal: http://controller:8774/v2.1	1	
1	I	RegionOne		
1	1	admin: http://controller:8774/v2.1	I	
1	1	RegionOne		1
1	I	public: http://controller:8774/v2.1	1	
1	I	1		I
placemer	nt   placement	RegionOne		1
1	I	public: http://controller:8778	1	
I	I	RegionOne		



4) 在镜像服务中列出已有镜像已检查镜像服务的连接性

#### openstack image list



5) 检查 nova 各组件的状态

检查 placement API 和 cell 服务是否正常

## nova-status upgrade check

[root@openstack01 tools]# nova	a-status upgrade check
++	
Upgrade Check Results	I
++	
Check: Cells v2	1
Result: Success	I
Details: None	I
++	
Check: Placement API	1
Result: Success	I
Details: None	1
++	
Check: Resource Providers	I
Result: Success	I
Details: None	1

++	
Check: Ironic Flavor Migration	
Result: Success	1
Details: None	
++	
Check: API Service Version	
Result: Success	1
Details: None	
++	
Check: Request Spec Migration	1
Result: Success	
Details: None	
++	
Check: Console Auths	1
Result: Success	1
Details: None	1
+	

nova 计算节点安装完毕并添加到 openstack 集群中。

实验扩展:可尝试 Clone 多个虚拟机,添加多个计算节点