目 录

1   安装 ironic

```
1    git clone http://git.trystack.cn/openstack/ironic /root/ironic
2
3    source ./venv/bin/activate
4    cd ironic
5    pip install -r requirements.txt
6    python setup.py install
7
8    apt-get install pkg-config
9    apt-get install libvirt-dev
10   pip install virtualbmc
11   apt-get install ipmitool
12
13   pip install python-ironicclient
```

2   配置 ironic

```
1    # 配置 ironic 服务
2    # ================
3
4    # configure_ironic_dirs
5    sudo install -d -o root /etc/ironic root /root/venv/data/ironic /var/lib/ironic
         /root/venv/data/ironic/tftpboot /root/venv/data/ironic/tftpboot/
         pxelinux.cfg
6    sudo chown -R root:libvirtd /root/venv/data/ironic/tftpboot
7    sudo install -d -o root -g libvirtd /root/venv/data/ironic/httpboot
8
9    apt-get install ipxe
10   apt-get install ipxe-qemu
11   cp /usr/lib/ipxe/undionly.kpxe /root/venv/data/ironic/tftpboot
12   install -d -o root /root/LOGFILE/ironic-bm-logs/deploy_logs
13
14   # configure_ironic
15   cp /root/ironic/etc/ironic/ironic.conf.sample /etc/ironic/ironic.conf
16   iniset /etc/ironic/ironic.conf DEFAULT debug True
17   inicomment /etc/ironic/ironic.conf DEFAULT log_file
18   iniset /etc/ironic/ironic.conf database connection 'mysql://root:htYun@2014@hty
         -mysql/ironic?charset=utf8'
19   iniset /etc/ironic/ironic.conf DEFAULT state_path /var/lib/ironic
20   iniset /etc/ironic/ironic.conf DEFAULT use_syslog False
21   iniset /etc/ironic/ironic.conf DEFAULT host ironic
22   iniset /etc/ironic/ironic.conf agent deploy_logs_collect always
23   iniset /etc/ironic/ironic.conf agent deploy_logs_storage_backend local
24   iniset /etc/ironic/ironic.conf agent deploy_logs_local_path /root/LOGFILE/
         ironic-bm-logs/deploy_logs
25
26   # configure_ironic_conductor
27   # ============================
28
```

```
29     iniset /etc/ironic/ironic.conf keystone region_name regionOne
30
31     # configure_auth_for neutron
32     iniset /etc/ironic/ironic.conf neutron auth_type password
33     iniset /etc/ironic/ironic.conf neutron auth_url http://hty-keystone/
           identity_admin
34     iniset /etc/ironic/ironic.conf neutron username ironic
35     iniset /etc/ironic/ironic.conf neutron password ironic_pass@2014
36     iniset /etc/ironic/ironic.conf neutron project_name service
37     iniset /etc/ironic/ironic.conf neutron user_domain_id default
38     iniset /etc/ironic/ironic.conf neutron project_domain_id default
39     # iniset /etc/ironic/ironic.conf neutron cafile /root/data/ca-bundle.pem
40
41     # configure_auth_for swift
42     iniset /etc/ironic/ironic.conf swift auth_type password
43     iniset /etc/ironic/ironic.conf swift auth_url http://hty-keystone/
           identity_admin
44     iniset /etc/ironic/ironic.conf swift username ironic
45     iniset /etc/ironic/ironic.conf swift password ironic_pass@2014
46     iniset /etc/ironic/ironic.conf swift project_name service
47     iniset /etc/ironic/ironic.conf swift user_domain_id default
48     iniset /etc/ironic/ironic.conf swift project_domain_id default
49     # iniset /etc/ironic/ironic.conf swift cafile /root/data/ca-bundle.pem
50
51     # configure_auth_for glance
52     iniset /etc/ironic/ironic.conf glance auth_type password
53     iniset /etc/ironic/ironic.conf glance auth_url http://hty-keystone/
           identity_admin
54     iniset /etc/ironic/ironic.conf glance username ironic
55     iniset /etc/ironic/ironic.conf glance password ironic_pass@2014
56     iniset /etc/ironic/ironic.conf glance project_name service
57     iniset /etc/ironic/ironic.conf glance user_domain_id default
58     iniset /etc/ironic/ironic.conf glance project_domain_id default
59     # iniset /etc/ironic/ironic.conf glance cafile /root/data/ca-bundle.pem
60
61     # configure_auth_for inspector
62     iniset /etc/ironic/ironic.conf inspector auth_type password
63     iniset /etc/ironic/ironic.conf inspector auth_url http://hty-keystone/
           identity_admin
64     iniset /etc/ironic/ironic.conf inspector username ironic
65     iniset /etc/ironic/ironic.conf inspector password ironic_pass@2014
66     iniset /etc/ironic/ironic.conf inspector project_name service
67     iniset /etc/ironic/ironic.conf inspector user_domain_id default
68     iniset /etc/ironic/ironic.conf inspector project_domain_id default
69     # iniset /etc/ironic/ironic.conf inspector cafile /root/data/ca-bundle.pem
70
71     # configure_auth_for service_catalog
72     iniset /etc/ironic/ironic.conf service_catalog auth_type password
73     iniset /etc/ironic/ironic.conf service_catalog auth_url http://hty-keystone/
           identity_admin
74     iniset /etc/ironic/ironic.conf service_catalog username ironic
75     iniset /etc/ironic/ironic.conf service_catalog password ironic_pass@2014
76     iniset /etc/ironic/ironic.conf service_catalog project_name service
77     iniset /etc/ironic/ironic.conf service_catalog user_domain_id default
78     iniset /etc/ironic/ironic.conf service_catalog project_domain_id default
79     # iniset /etc/ironic/ironic.conf service_catalog cafile /root/data/ca-
```

```
              bundle.pem
80
81        # configure_ironic_conductor
82        cp /root/ironic/etc/ironic/rootwrap.conf /etc/ironic/rootwrap.conf
83        cp −r /root/ironic/etc/ironic/rootwrap.d /etc/ironic
84
85        tempfile=`mktemp`
86        STACK_USER="ironic"
87        rootwrap_isudoer_cmd="/root/venv/bin/ironic−rootwrap /etc/ironic/rootwrap.conf
              *"
88        echo "$STACK_USER ALL=(root) NOPASSWD: $rootwrap_isudoer_cmd" >$tempfile
89        chmod 0440 $tempfile
90        sudo chown root:root $tempfile
91        sudo mv $tempfile /etc/sudoers.d/ironic−rootwrap
92
93        # set up drivers / hardware types
94        iniset /etc/ironic/ironic.conf DEFAULT enabled_drivers fake, agent_ssh,
              agent_ipmitool, pxe_ssh, pxe_ipmitool
95        iniset /etc/ironic/ironic.conf DEFAULT enabled_hardware_types ipmi
96        iniset /etc/ironic/ironic.conf DEFAULT rootwrap_config /etc/ironic/
              rootwrap.conf
97        iniset /etc/ironic/ironic.conf conductor api_url http://$HOST_IP:6385
98        iniset /etc/ironic/ironic.conf pxe tftp_server $HOST_IP
99        iniset /etc/ironic/ironic.conf pxe tftp_root /root/venv/data/ironic/tftpboot
100       iniset /etc/ironic/ironic.conf pxe tftp_master_path /root/venv/data/ironic/
              tftpboot/master_images
101       iniset /etc/ironic/ironic.conf pxe pxe_append_params 'nofb nomodeset vga=normal
              console=ttyS0 systemd.journald.forward_to_console=yes '
102
103       # Set these options for scenarios in which the agent fetches the image
104       # directly from glance, and don't set them where the image is pushed
105       # over iSCSI.
106       iniset /etc/ironic/ironic.conf glance swift_temp_url_key ironic_pass@2014
107       iniset /etc/ironic/ironic.conf glance swift_endpoint_url http://$HOST_IP:8080
108       iniset /etc/ironic/ironic.conf glance swift_api_version v1
109       tenant_id=$(keystone tenant−list | grep service | awk −F " " '{print $2}')
110       iniset /etc/ironic/ironic.conf glance swift_account AUTH_${tenant_id}
111       iniset /etc/ironic/ironic.conf glance swift_container glance
112       iniset /etc/ironic/ironic.conf glance swift_temp_url_duration 3600
113       iniset /etc/ironic/ironic.conf glance glance_protocol http
114       iniset /etc/ironic/ironic.conf glance glance_host $HOST_IP
115       iniset /etc/ironic/ironic.conf glance glance_port 9292
116
117       # is_deployed_by_agent
118       iniset /etc/ironic/ironic.conf api ramdisk_heartbeat_timeout 30
119
120       # FIXME: this really needs to be tested in the gate. For now, any
121       # test using the agent ramdisk should skip the erase_devices clean
122       # step  because it is too slow to run in the gate.
123       iniset /etc/ironic/ironic.conf deploy erase_devices_priority 0
124
125       # IRONIC_IPXE_ENABLED
126       iniset /etc/ironic/ironic.conf pxe ipxe_enabled True
127       iniset /etc/ironic/ironic.conf pxe pxe_config_template '$pybasedir/drivers/
              modules/ipxe_config.template'
128       iniset /etc/ironic/ironic.conf pxe pxe_bootfile_name undionly.kpxe
```

```
129    iniset /etc/ironic/ironic.conf pxe uefi_pxe_config_template '$pybasedir/drivers
           /modules/ipxe_config.template'
130    iniset /etc/ironic/ironic.conf pxe uefi_pxe_bootfile_name ipxe.efi
131    iniset /etc/ironic/ironic.conf deploy http_root /root/venv/data/ironic/httpboot
132    iniset /etc/ironic/ironic.conf deploy http_url http://$HOST_IP:3928
133    iniset /etc/ironic/ironic.conf neutron port_setup_delay 15
134    iniset /etc/ironic/ironic.conf dhcp dhcp_provider neutron
135    iniset /etc/ironic/ironic.conf deploy default_boot_option netboot
136
137
138    # configure_ironic_api
139    # ====================
140
141    # configure_auth_token_middleware
142    iniset /etc/ironic/ironic.conf DEFAULT auth_strategy keystone
143    iniset /etc/ironic/ironic.conf keystone_authtoken auth_type password
144    iniset /etc/ironic/ironic.conf keystone_authtoken auth_url http://$HOST_IP/
           identity_admin
145    iniset /etc/ironic/ironic.conf keystone_authtoken username ironic
146    iniset /etc/ironic/ironic.conf keystone_authtoken password ironic_pass@2014
147    iniset /etc/ironic/ironic.conf keystone_authtoken user_domain_name Default
148    iniset /etc/ironic/ironic.conf keystone_authtoken project_name service
149    iniset /etc/ironic/ironic.conf keystone_authtoken project_domain_name Default
150    iniset /etc/ironic/ironic.conf keystone_authtoken auth_uri http://$HOST_IP/
           identity
151    # iniset /etc/ironic/ironic.conf keystone_authtoken cafile /root/data/ca-
           bundle.pem
152    iniset /etc/ironic/ironic.conf keystone_authtoken signing_dir /var/cache/ironic
           /api
153    iniset /etc/ironic/ironic.conf keystone_authtoken memcached_servers $HOST_IP
           :11211
154    iniset /etc/ironic/ironic.conf oslo_policy policy_file /etc/ironic/policy.json
155
156    # iniset_rpc_backend
157    iniset /etc/ironic/ironic.conf DEFAULT rpc_backend rabbit
158    iniset /etc/ironic/ironic.conf DEFAULT rabbit_host hty-mq
159    iniset /etc/ironic/ironic.conf DEFAULT rabbit_password htYun@2014
160    # iniset /etc/ironic/ironic.conf DEFAULT transport_url rabbit://stackrabbit:
           ironic_pass@2014@$HOST_IP:5672/
161
162    # configure_ironic_api
163    iniset /etc/ironic/ironic.conf api port 6385
164    iniset /etc/ironic/ironic.conf conductor automated_clean True
165    cp -p /root/ironic/etc/ironic/policy.json /etc/ironic/policy.json
166
167    # setup_colorized_logging
168    iniset /etc/ironic/ironic.conf DEFAULT logging_context_format_string "%(asctime
           )s.%(msecs)03d %(color)s%(levelname)s %(name)s [%(request_id)s %(
           project_name)s %(user_name)s%(color)s] %(instance)s%(color)s%(message)s"
169    iniset /etc/ironic/ironic.conf DEFAULT logging_default_format_string "%(asctime
           )s.%(msecs)03d %(color)s%(levelname)s %(name)s [-%(color)s] %(instance)s%(
           color)s%(message)s"
170    iniset /etc/ironic/ironic.conf DEFAULT logging_exception_prefix "%(color)s%(
           asctime)s.%(msecs)03d TRACE %(name)s %(instance)s"
171
172    ipxe_apache_conf=/etc/apache2/sites-available/ipxe-ironic.conf
```

```
173      sudo  cp  / root / ironic / devstack / files / apache−ipxe−ironic.template  / etc / apache2 /
              sites−available / ipxe−ironic.conf
174      sudo  sed  −e  '
175  s|%PUBLICPORT%|3928|g;
176  s|%HTTPROOT%|/ root / venv / data / i r o n i c / httpboot |g;
177  '  −i  $ipxe_apache_conf
178      sudo  a2ensite  ipxe−ironic
179      service  apache2  stop
180      service  apache2  start
181
182      #  create_ironic_accounts
183      #  ========================
184
185  cat  >>   / etc / hosts  <<  EOF
186  127 . 0 . 0 . 1  hty−ironic
187  EOF
188
189      ADMIN_PASSWORD=ironic_pass@2014
190      ironic_api_url=http :// hty−ironic :6385
191
192      #  创 建 i r o n i c 用 户
193      keystone  user−create  −−name  ironic  −−tenant  service  −−pass  $ADMIN_PASSWORD
194      keystone  user−role−add  −−user  ironic  −−role  admin  −−tenant  service
195
196      #  创 建 i r o n i c 角 色
197      keystone  role−create  −−name  ironic
198      keystone  user−role−add  −−user  nova  −−role  ironic  −−tenant  service
199
200      #  创 建 network 这 个 service
201      keystone  service−create  −−name  ironic  −−type  baremetal  −−description  ” Ironic
              Service ”
202      keystone  endpoint−create  −−service  ironic  −−publicurl  $ironic_api_url  −−
              adminurl  $ironic_api_url  −−internalurl  $ironic_api_url  −−region  regionOne
203
204      #  创 建 i r o n i c 的 数 据 库
205      mysql  −uroot  −phtYun@2014  −h127.0.0.1  −e  'DROP DATABASE IF EXISTS  i r o n i c ; '
206      mysql  −uroot  −phtYun@2014  −h127.0.0.1  −e  'CREATE DATABASE  ironic  CHARACTER SET
              utf8 ; '
207
208      #  同 步 数 据 库
209      / root / venv / bin / ironic−dbsync  −−config−file =/etc / ironic / ironic.conf
```

3   开启 ironic

```
1      #  开 启 i r o n i c 服 务
2      #  ====================
3
4      #  开 启 i r o n i c−api 服 务
5      screen  −S  stack  −X  screen  −t  ir−api
6      screen  −S  stack  −p  ir−api  −X  logfile  / root /LOGFILE/ ir−api.log
7      screen  −S  stack  −p  ir−api  −X  log  on
8      touch  / root /LOGFILE/ ir−api.log
```

```
 9      # bash −c 'cd '\''/root/LOGFILE'\'' && ln −sf '\''ir−api.log'\'' ir−api.log'
10      screen −S stack −p ir−api −X stuff '/root/venv/bin/ironic−api −−config−file=/
            etc/ironic/ironic.conf & echo $! >/root/venv/pid/ir−api.pid; fg || echo "ir
            −api failed to start. Exit code: $?" | tee "/root/venv/pid/ir−api.failure"^
            M'
11
12      # 开启 ironic−conductor 服务
13      screen −S stack −X screen −t ir−cond
14      screen −S stack −p ir−cond −X logfile /root/LOGFILE/ir−cond.log
15      screen −S stack −p ir−cond −X log on
16      touch /root/LOGFILE/ir−cond.log
17      # bash −c 'cd '\''/root/LOGFILE'\'' && ln −sf '\''ir−cond.log'\'' ir−cond.log'
18      screen −S stack −p ir−cond −X stuff '/root/venv/bin/ironic−conductor −−config−
            file=/etc/ironic/ironic.conf & echo $! >/root/venv/pid/ir−cond.pid; fg ||
            echo "ir−cond failed to start. Exit code: $?" | tee "/root/venv/pid/ir−
            cond.failure"^M'
19
20      # restart_apache_server
21      sudo service apache2 stop
22      sudo service apache2 start
```