VirtualBMC (vbmc)

: <https://x-vps.com/blog/?p=16>

VBMC   TripleO   IPMI

instack   TripleO   Ironic   pxe_ssh   IPMI
.

. Centos 7.2   Triplemetal   TripleO
documentation   .   Mitaka   Newton
.

VM
(openstack undercloud install).   (overcloud-full, ironic-python-agent   )
.   "   "   instackenv.json   Ironic
.

(-libvirt   "   "   )
VirtualBMC   .

VirtualBMC   pip install   . yum   pip   .
git   .

```
$ sudo yum install python-pip -y
...
$ sudo pip install virtualbmc
```

)   'libvirt-devel'   .

```
$ sudo yum install -y gcc python-devel libvirt-devel
```

iptables   .   yum
.

```
$ sudo yum install firewalld
$ sudo systemctl enable firewalld
$ sudo systemctl start firewalld
```

IP (192.168.122.1)   instack VM

. IPMI   623   .   ipmitool
.   -p   . IP
VM   (IP 192.168.122.1).

vbmc   VM   vbmc
.   5
(baremetalbrbm_0..4)   .   .

baremetalbrbm_0   IPMI   623   . baremetalbrbm_1   624 baremetalbrbm_2
625 baremetalbrbm_3   626 baremetalbrbm_4   627

.

```
$ sudo firewall-cmd --permanent --zone=public --add-port=623-627/udp
$ sudo firewall-cmd --reload
```

("   ") vbmc   .

```
$ sudo vbmc list
+--------------+--------+---------+------+
| Domain name | Status | Address | Port |
+--------------+--------+---------+------+
+--------------+--------+---------+------+
$ sudo vbmc add baremetalbrbm_0 --username root --password calvin --port 623
$ sudo vbmc add baremetalbrbm_1 --username root --password calvin --port 624
$ sudo vbmc add baremetalbrbm_2 --username root --password calvin --port 625
$ sudo vbmc add baremetalbrbm_3 --username root --password calvin --port 626
$ sudo vbmc add baremetalbrbm_4 --username root --password calvin --port 627
$ sudo vbmc list
+-----------------+--------+---------+------+
|   Domain name   | Status | Address | Port |
+-----------------+--------+---------+------+
| baremetalbrbm_0 |  down  |   ::    | 623  |
| baremetalbrbm_1 |  down  |   ::    | 624  |
| baremetalbrbm_2 |  down  |   ::    | 625  |
| baremetalbrbm_3 |  down  |   ::    | 626  |
| baremetalbrbm_4 |  down  |   ::    | 627  |
+-----------------+--------+---------+------+
```

!   .   .

```
$ for i in {0..4};do sudo vbmc start baremetalbrbm_${i};done
2016-12-06 13:36:40,806.806 685 INFO VirtualBMC [-] Virtual BMC for domain
baremetalbrbm_0 started
2016-12-06 13:36:41,034.034 694 INFO VirtualBMC [-] Virtual BMC for domain
baremetalbrbm_1 started
```

```
2016-12-06 13:36:41,251.251 703 INFO VirtualBMC [-] Virtual BMC for domain
baremetalbrbm_2 started
2016-12-06 13:36:41,467.467 712 INFO VirtualBMC [-] Virtual BMC for domain
baremetalbrbm_3 started
2016-12-06 13:36:41,684.684 721 INFO VirtualBMC [-] Virtual BMC for domain
baremetalbrbm_4 started
```

:

```
$ sudo vbmc list
+-----------------+---------+---------+------+
|   Domain name   | Status  | Address | Port |
+-----------------+---------+---------+------+
| baremetalbrbm_0 | running |   ::    | 623  |
| baremetalbrbm_1 | running |   ::    | 624  |
| baremetalbrbm_2 | running |   ::    | 625  |
| baremetalbrbm_3 | running |   ::    | 626  |
| baremetalbrbm_4 | running |   ::    | 627  |
+-----------------+---------+---------+------+

$ sudo lsof -Pni:623-627
COMMAND PID USER   FD   TYPE   DEVICE SIZE/OFF NODE NAME
vbmc    685 root    3u  IPv6 4622045      0t0  UDP *:623
vbmc    694 root    3u  IPv6 4622046      0t0  UDP *:624
vbmc    703 root    3u  IPv6 4622047      0t0  UDP *:625
vbmc    712 root    3u  IPv6 4625461      0t0  UDP *:626
vbmc    721 root    3u  IPv6 4616064      0t0  UDP *:627
```

Instack VM

instack vm   ipmitool   .

```
[stack@instack ~]$ ipmitool -I lanplus -U root -P calvin -H 192.168.122.1
power status    # defaults to 623
Chassis Power is off
[stack@instack ~]$ ipmitool -I lanplus -U root -P calvin -H 192.168.122.1
power status -p 627
Chassis Power is off
```

instack.json   ("name": "bm [0-4]"   UUID   /
)

```
{
  "nodes": [
    {
      "mac": [
        "00:3f:f7:9f:2e:eb"
```

```
    ],
    "name": "bm0",
    "cpu": "2",
    "memory": "8192",
    "disk": "42",
    "arch": "x86_64",
    "pm_user": "root",
    "pm_addr": "192.168.122.1",
    "pm_password": "calvin",
    "pm_type": "pxe_ipmitool"
  },
  {
    "mac": [
      "00:1e:c1:2c:e0:35"
    ],
    "name": "bm1",
    "cpu": "2",
    "memory": "8192",
    "disk": "42",
    "arch": "x86_64",
    "pm_user": "root",
    "pm_addr": "192.168.122.1",
    "pm_password": "calvin",
    "pm_type": "pxe_ipmitool"
  },
  {
    "mac": [
      "00:56:34:66:7a:fc"
    ],
    "name": "bm2",
    "cpu": "2",
    "memory": "8192",
    "disk": "42",
    "arch": "x86_64",
    "pm_user": "root",
    "pm_addr": "192.168.122.1",
    "pm_password": "calvin",
    "pm_type": "pxe_ipmitool"
  },
  {
    "mac": [
      "00:8a:c5:c7:22:46"
    ],
    "name": "bm3",
    "cpu": "2",
    "memory": "8192",
    "disk": "42",
    "arch": "x86_64",
    "pm_user": "root",
```

```
      "pm_addr": "192.168.122.1",
      "pm_password": "calvin",
      "pm_type": "pxe_ipmitool"
    },
    {
      "mac": [
        "00:a3:bd:79:54:b6"
      ],
      "name": "bm4",
      "cpu": "2",
      "memory": "8192",
      "disk": "42",
      "arch": "x86_64",
      "pm_user": "root",
      "pm_addr": "192.168.122.1",
      "pm_password": "calvin",
      "pm_type": "pxe_ipmitool"
    }
  ]
}
```

instackenv.json (openstack baremetal import instackenv.json)   .

          ,   —   .
           instackenv.json   "pm_port"   .   Ironic
                            .

```
$ ironic node-update bm1 add driver_info/ipmi_port=624
$ ironic node-update bm2 add driver_info/ipmi_port=625
$ ironic node-update bm3 add driver_info/ipmi_port=626
$ ironic node-update bm4 add driver_info/ipmi_port=627
```

            bm0   (IPMI   623
).   !   .

Ironic   IP   (192.168.122.1)
                                                             .   VirtualBMC
    "   "   .   IP
                        .

        :   pxe_ssh   virtualbmc   pxe_ipmi
:

https://blueprints.launchpad.net/tripleo/+spec/switch-to-virtualbmc