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云计算

KVM

管理工具

virsh

通过libvirt API管理Hypervisor,node,domain,实现多数功能调用.

```
/etc/libvirt/libvirt.conf

uri_aliases = [
    "work=qemu+ssh://root@192.168.1.105/system",
]
```

```
list
domname 2
vcpucount 2
dommemstat 2

version
nodeinfo
uri
hostname

qemu-monitor-command 2 --hmp "info kvm"
qemu-monitor-command 2 --hmp info kvm
```

```
iface-list
```

```
iface-mac br0
net-info default
net-uuid default
```

```
pool-info default
vol-list default
vol-info --pool default Z_work.qcow2
vol-path --pool default Z_work.qcow2
vol-name /var/lib/libvirt/images/Z_work.qcow2
```

virt-manage

- 生命周期管理,高级功能
- 实时性能监控,图形化统计显示
- 图形化支持导航
- 内置VNC
- 支持远程管理

```
virt-manage
virt-viewer
```

其它

虚拟机工具

```
yum install libguestfs-tools

virt-top
virt-df /var/lib/libvirt/images/centos7.0.qcow2
virt-ls /var/lib/libvirt/images/centos7.0.qcow2 /
virt-copy-out /var/lib/libvirt/images/centos7.0.qcow2 /etc/passwd /tmp
virt-copy-out -d centos7.0 /etc/passwd /tmp
virt-filesystems -d centos7.0
```

清理镜像

```
virt-sysprep --list-operations
virt-sysprep --operations pacct-log,pam-data,crash-data,bash-history,ssh-hostkeys,
logfiles,udev-persistent-net,tmp-files,dhcp-client-state,tmp-files,puppet-data-lo
g,net-hostname,net-hwaddr -a xfobase.qcow2
```

硬盘启动

```
virt-install \
--name ac260c73 \
--memory 4096 \
--cpu host \
--vcpus 4,maxvcpus=8,sockets=2,cores=1,threads=2 \
--disk /var/lib/libvirt/images/ac260c73.qcow2 \
--location /var/lib/libvirt/images/CentOS-7-x86_64-DVD-1611.iso \
--network bridge=br0 \
--network bridge=br0 \
--os-type linux \
--os-variant rhel7 \
--accelerate \
--boot hd,menu=on \
--graphics none \
--console pty,target_type=serial \
--extra-args 'console=ttyS0,115200n8 serial'
```

克隆虚拟机

```
virt-clone --connect=qemu:///system -o a240c73 -n xfobase -f /var/lib/libvirt/images/xfobase.qcow2

ls -lh /etc/libvirt/qemu/a240c73.xml /etc/libvirt/qemu/xfobase.xml
grep "mac address" /etc/libvirt/qemu/a240c73.xml /etc/libvirt/qemu/xfobase.xml
grep "source file" /etc/libvirt/qemu/a240c73.xml /etc/libvirt/qemu/xfobase.xml
ls -lh /var/lib/libvirt/images/a240c73.qcow2 /var/lib/libvirt/images/xfobase.qcow2
```

镜像快照

```
qemu-img snapshot -l xfobase.qcow2

ll /var/lib/libvirt/images/xfobase.qcow2
qemu-img snapshot -c kz1 /var/lib/libvirt/images/xfobase.qcow2
ll /var/lib/libvirt/images/xfobase.qcow2
```

```
qemu-img snapshot -a kz1 /var/lib/libvirt/images/xfobase.qcow2
qemu-img snapshot -d kz1 /var/lib/libvirt/images/xfobase.qcow2
```

snapshot is the name of the snapshot to create, apply or delete

- a** applies a snapshot (revert disk to saved state)
- c** creates a snapshot
- d** deletes a snapshot
- l** lists all snapshots in the given image

虚拟机快照

```
virsh help snapshot
Snapshot (help keyword 'snapshot'):

snapshot-create          使用 XML 生成快照
snapshot-create-as        使用一组参数生成快照
snapshot-current          获取或者设定当前快照
snapshot-delete           删除域快照
snapshot-dumpxml         为域快照转储 XML
snapshot-edit             编辑快照 XML
snapshot-info             快照信息
snapshot-list             为域列出快照
snapshot-parent           获取快照的上级快照名称
snapshot-revert           将域转换为快照
```

```
snapshot-create-as 21base --name initok --description 1
snapshot-list 21base
snapshot-info 21base initok
```

添加设备

- 网卡

```
virsh attach-interface 虚机名 --type bridge --source br0
virsh attach-interface 虚机名 --type bridge --source br0 --config
```

- 磁盘

```
qemu-img create -f qcow2 /var/lib/libvirt/images/21basea.qcow2 2G
virsh attach-disk 21base /var/lib/libvirt/images/21basea.qcow2 vdb --cache none
```

```
<disk type='block' device='disk'>
  <driver name='qemu' type='raw' cache='none' />
  <source dev='/dev/disk/by-path/ip-9.114.44.160:3260-iscsi-iqn.1986-03.com.ibm:21
45.flex-v7000-9.114.44.11.node1-lun-0' />
  <target dev='vdb' bus='virtio' />
</disk>
```

```
virsh attach-device $domain scsi1.xml --live --persistent
```

连接光盘镜像

```
qemu-monitor-command a260c73 --hmp info block
qemu-monitor-command a260c73 --hmp change drive-ide0-0-0 /var/lib/libvirt/images/C
entOS-7-x86_64-DVD-1611.iso
qemu-monitor-command a260c73 --hmp eject drive-ide0-0-0
```

删除虚拟机

```
undefined 21ctrl --storage /var/lib/libvirt/images/21ctrl.qcow2
```

Console connection

```
/etc/securetty
```

```
ttyS0
```

```
echo "S0:12345:respawn:/sbin/agetty/ ttyS0 115200" >> /etc/inittab
```

```
/etc/grub2.cfg
```

```
linux16 ..... console=ttyS0
```