

Windows系列: 2008/2012/2016/2019

- 系统安装

创建系统磁盘40G

```
qemu-img create -f qcow2 Win2008_R2.qcow2 40G
```

```
[root@localhost Win2008_R2]# qemu-img create -f qcow2 Win2008_R2.qcow2 40G
Formatting 'Win2008_R2.qcow2', fmt=qcow2 size=42949672960 encryption=off cluster_size=65536 lazy_refcounts=off
[root@localhost Win2008_R2]#
```

生成xml模板文件

```
<domain type = 'kvm'>
<name>win2008_r2</name> #虚拟机名称
<memory unit='MiB'>4096</memory> #内存
<currentMemory unit='MiB'>4096</currentMemory>
<vcpu current='4'>64</vcpu> #cpu
<os> #x86_64位操作系
  <type arch = 'x86_64' machine = 'pc'>hvm</type>
统
<boot dev = 'cdrom' /> #第一引导CDROM
  <boot dev = 'hd' /> #第二引导磁盘
</os>
<features>
  <acpi/>
  <apic/>
  <pae/>
</features>
<cpu mode='host-passthrough' check='none' />
<clock offset = 'localtime' />
<on_poweroff>destroy</on_poweroff>
<on_reboot>restart</on_reboot>
<on_crash>destroy</on_crash>
<devices>
  <emulator>/usr/libexec/qemu-kvm</emulator>
  <disk type = 'file' device = 'disk'>
    <driver name = 'qemu' type = 'qcow2' />
    <source file = '/home/kvm/template/Win2008_R2/Win2008_R2.qcow2' /> #系统磁
    <target dev = 'vda' bus = 'virtio' /> #虚拟机磁
    盘vda[]总线类型virtio
  </disk>

  <disk type = 'file' device = 'cdrom'>
    <driver name = 'qemu' type = 'raw' />
  <source file =
'/home/kvm/iso/cn_windows_server_2008_r2_standard_enterprise_datacenter_and_w
eb_with_sp1_x64_dvd_617598.iso' /> #系统镜像
    <target dev = 'vdb' bus = 'ide' />
    <readonly />
  </disk>
```

```

    <disk type = 'file' device = 'cdrom'>
    <driver name = 'qemu' type = 'raw' />
    <source file = '/home/kvm/iso/virtio-win-0.1.171.iso' />      #win系统virtio
相关驱动镜像
    <target dev = 'vdc' bus = 'ide' />
    <readonly />
    </disk>

    <interface type = 'bridge'>
    <source bridge = 'br0' />
    <model type='virtio' />
    <filterref filter='template_firewall_out'>                  #网络控制器
    </filterref>
    </interface>

    <interface type = 'bridge'>
    <source bridge = 'br1' />
    <model type='virtio' />
    <filterref filter='template_firewall_in'>                    #网络控制器
    </filterref>
    </interface>
    <channel type='unix'>
        <target type='virtio' name='org.qemu.guest_agent.0' />
    </channel>
    <input type = 'tablet' bus='usb' />
    <input type = 'mouse' bus = 'ps2' />
    <graphics type = 'vnc' port = '-1' autoport='yes' listen='0.0.0.0'
passwd='123456' keymap='en-us' />
</devices>
</domain>

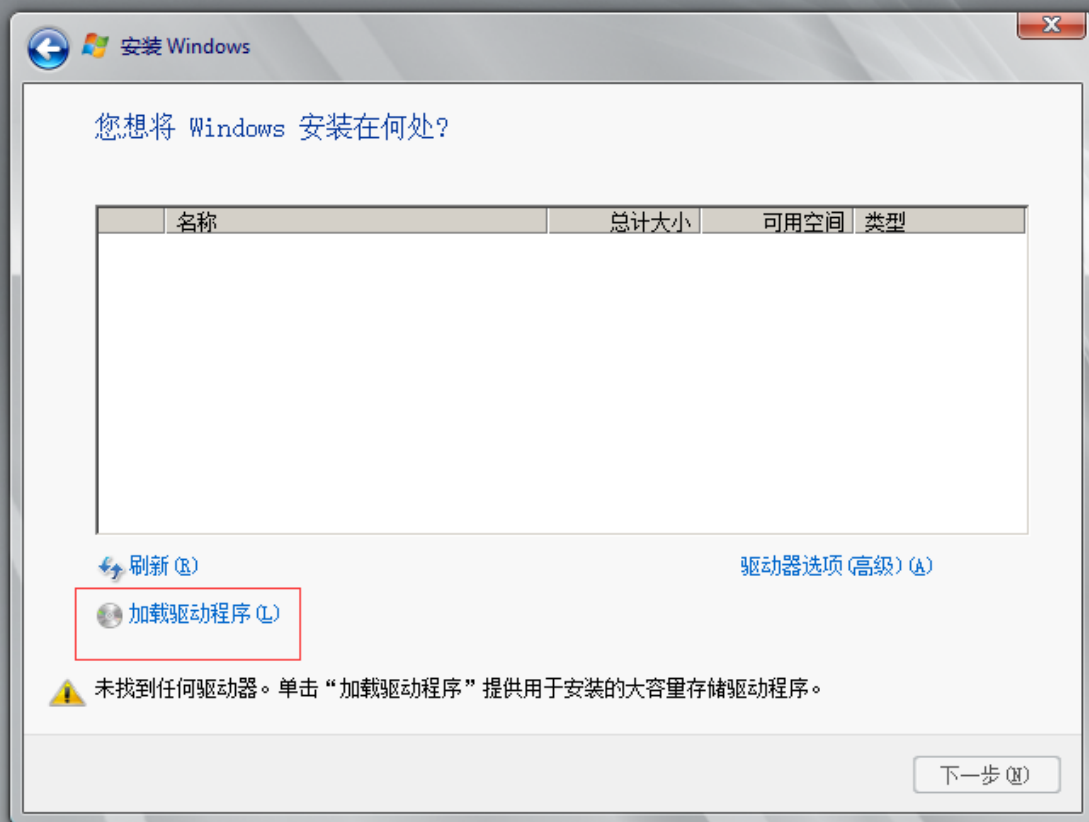
```

根据实际情况修改以上配置后定义虚拟机

```
[root@localhost Win2008_R2]# virsh define sys.xml
Domain win2008_r2 defined from sys.xml
```

```
[root@localhost Win2008_R2]# virsh start Win2008_R2
```

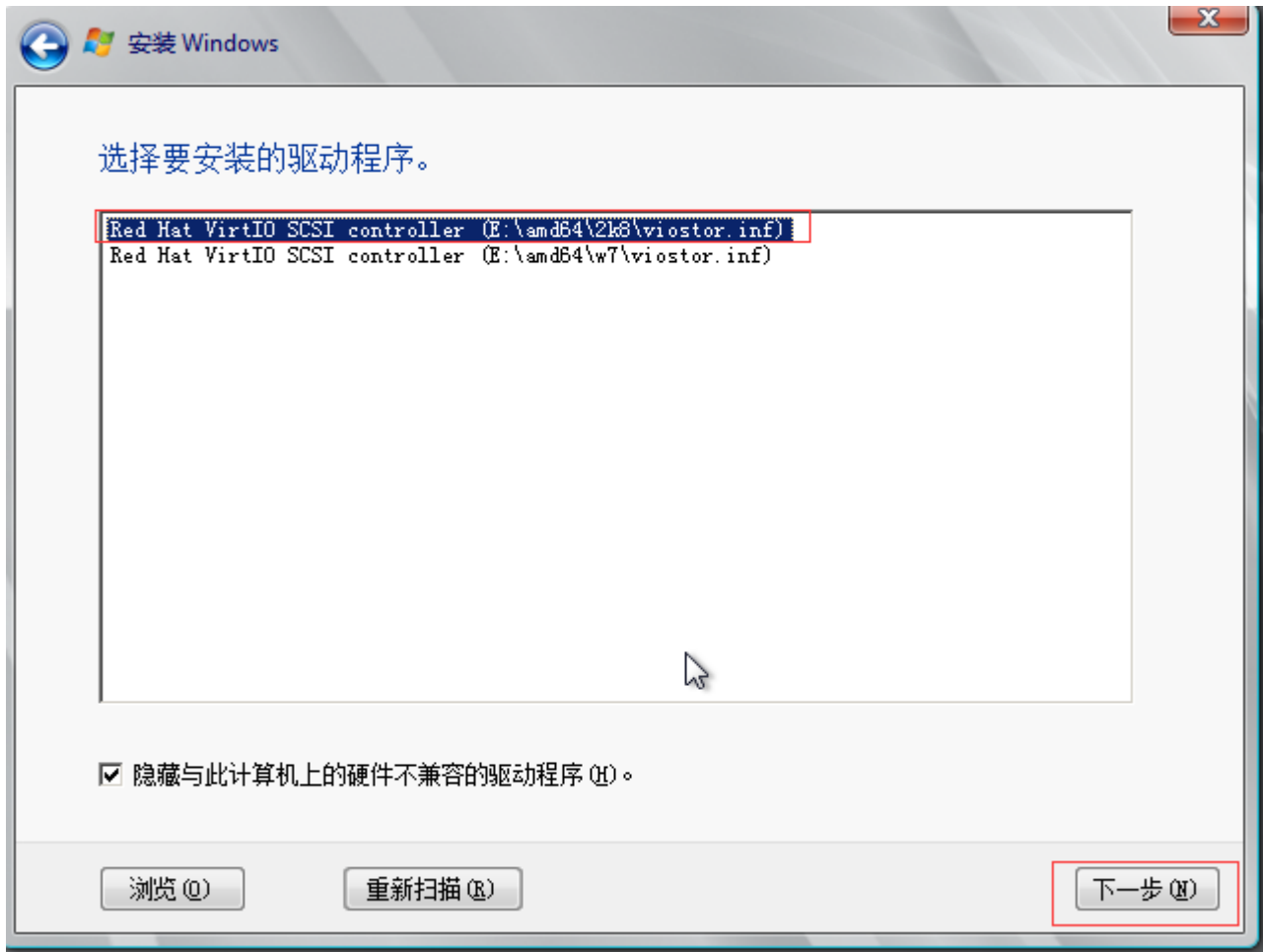
虚拟机开机后进入安装界面



1 收集信息

2 安装 Windows

磁盘驱动安装



部分区为C[]不创建隐藏分区100M[]

安装系统时，进行到安装Windows界面时，不使用图形界面的新建(E)进行分区，直接按快捷键Shift+F10打开CMD命令行，输入以下命令进行分区：

```
>diskpart
#进入diskpart模式，执行以下命令：
>list disk
>select disk 0
>create partition primary
>format fs=ntfs quick
>exit
```

```
C:\ 管理员: X:\windows\system32\cmd.exe - diskpart

X:\Sources>diskpart

Microsoft DiskPart 版本 6.1.7601
Copyright (C) 1999-2008 Microsoft Corporation.
在计算机上: MINWINPC

DISKPART> list disk

  磁盘 ###  状态          大小    可用    Dyn  Gpt
-----
  磁盘 0    联机          40 GB   40 GB

DISKPART> select disk 0

磁盘 0 现在是所选磁盘。

DISKPART> create partition primary

DiskPart 成功地创建了指定分区。

DISKPART> format fs=ntfs quick

100 百分比已完成
```

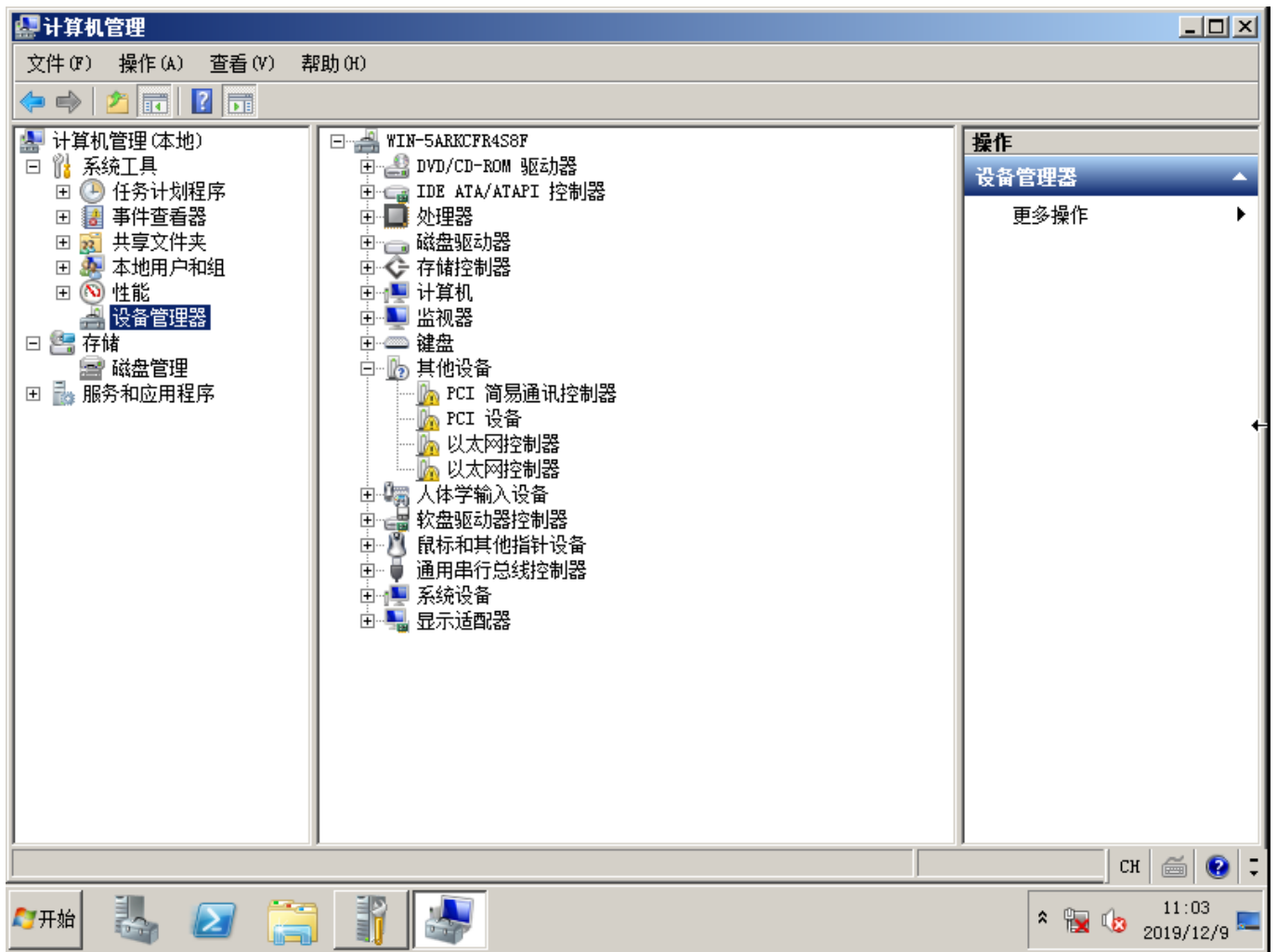
关闭CMD命令行窗口，点击刷新(R)就会看到磁盘 0已经格式化完成了，然后点击下一步(N)进行系统安装,这样就可以避免100M隐藏分区了。



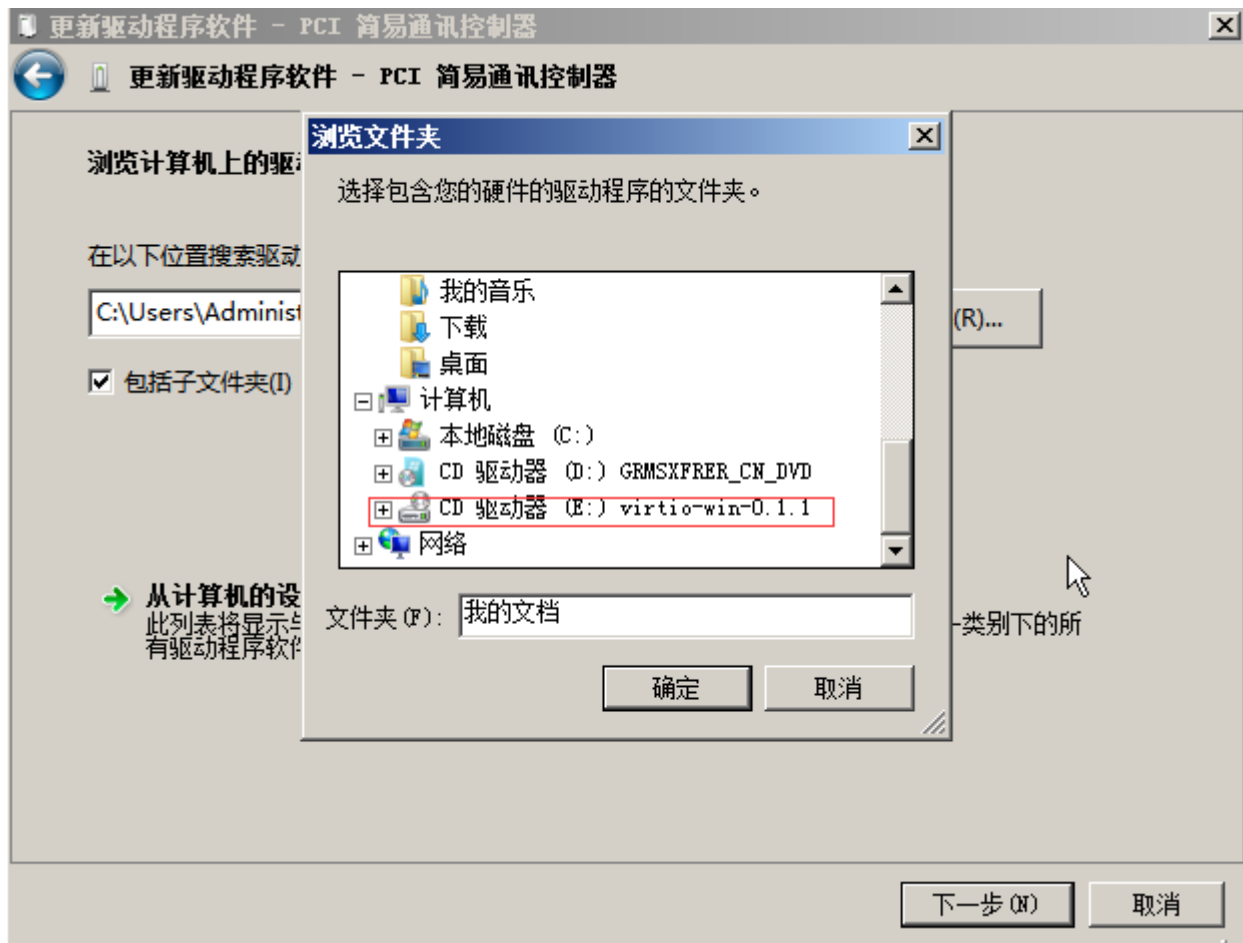
系统安装完成后关机，将cdrom boot引导关闭，否则会又进入系统安装。

- 系统优化

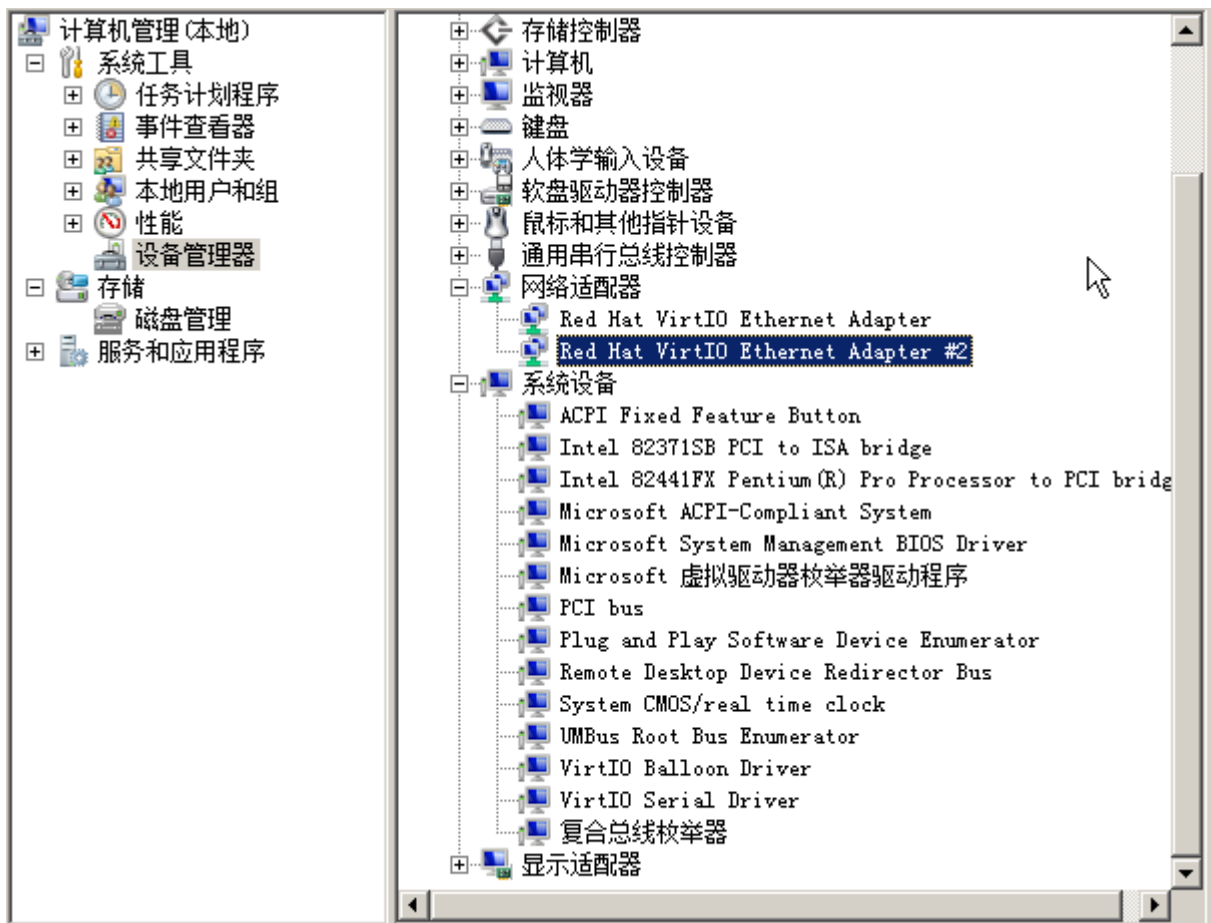
Win-管理工具-》计算机管理-》设备管理-》其他设备



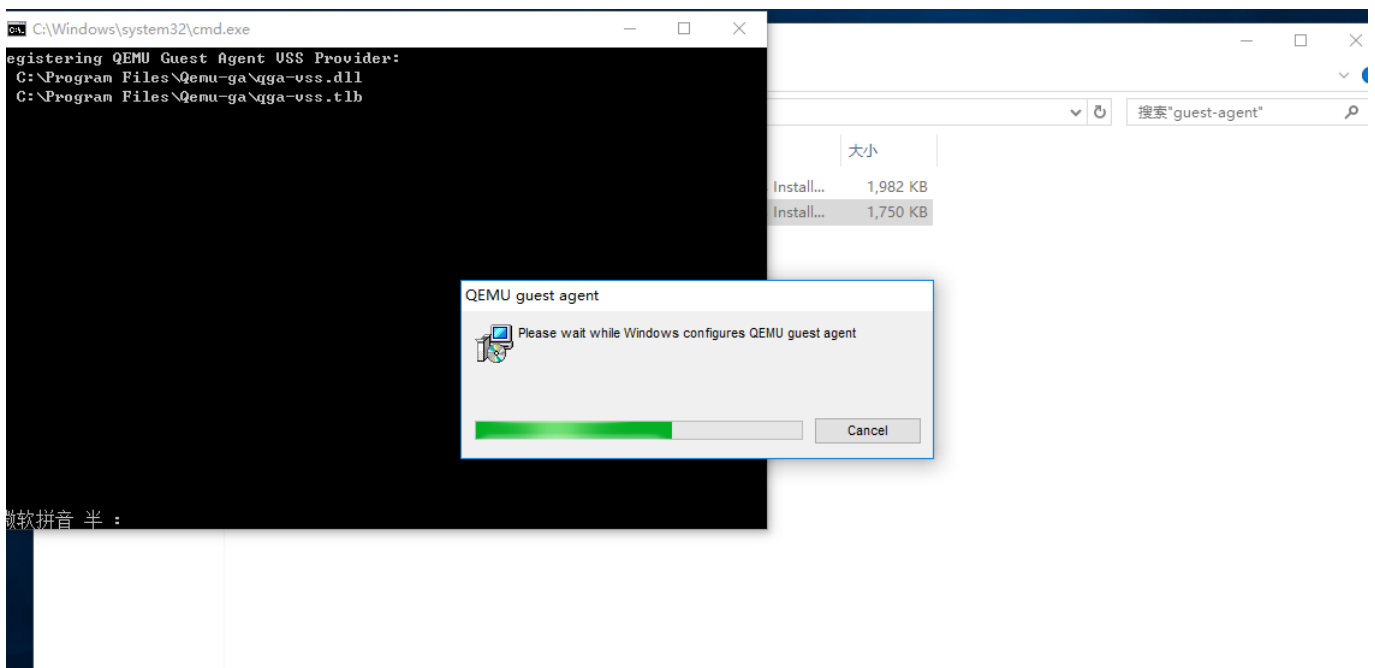
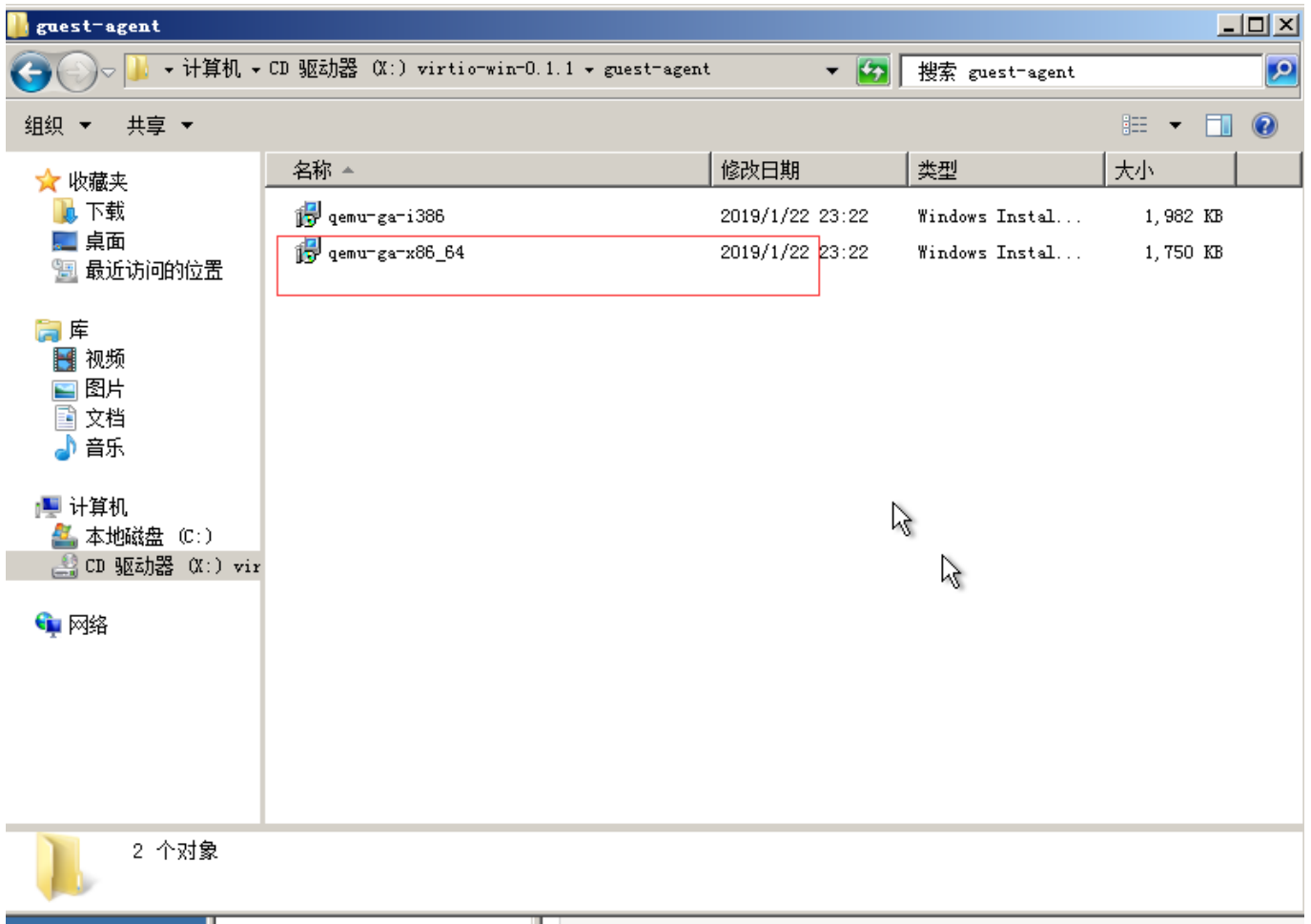
在其他设备列表中将带感叹号设备右键-》更新驱动程序软件-》浏览计算机已查找驱动程序软件-》选择挂载有virtio-win-0.1.1的光驱-》安装。



安装完成。



安装guest-agent



安装完成会有两个服务



将服务设为自启动

名称	描述	状态	启动类型	登录为
QEMU Guest Agent	QE...	正在运行	自动	本地系统
QEMU Guest Agent VSS ...	QE...	正在运行	自动	本地系统
Quality Windows Audio V...	优质 ...		手动	本地服务

配置完成在宿主机中执行命令, 出现以下截图即配置完成

`virsh qemu-agent-command Win2008_R2 '{"execute": "guest-info"}'`

```
[root@localhost ~]# virsh qemu-agent-command 7 '{"execute": "guest-info"}'
{"return": {"version": "100.0.0", "supported_commands": [{"enabled": true, "name": "guest-osinfo", "success_response": true}, {"enabled": true, "name": "guest-get-timezone", "success_response": true}, {"enabled": true, "name": "guest-get-users", "success_response": true}, {"enabled": true, "name": "guest-get-host-name", "success_response": true}, {"enabled": true, "name": "guest-exec", "success_response": true}, {"enabled": true, "name": "guest-exec-status", "success_response": true}, {"enabled": true, "name": "guest-get-memory-block-info", "success_response": true}, {"enabled": false, "name": "guest-set-memory-blocks", "success_response": true}, {"enabled": false, "name": "guest-get-memory-blocks", "success_response": true}, {"enabled": true, "name": "guest-get-user-password", "success_response": true}, {"enabled": true, "name": "guest-get-fsinfo", "success_response": true}, {"enabled": false, "name": "guest-set-vopus", "success_response": true}, {"enabled": true, "name": "guest-get-vopus", "success_response": true}, {"enabled": true, "name": "guest-network-get-interfaces", "success_response": true}, {"enabled": false, "name": "guest-suspend-hypervisor", "success_response": false}, {"enabled": true, "name": "guest-suspend-ram", "success_response": false}, {"enabled": true, "name": "guest-suspend-disk", "success_response": false}, {"enabled": true, "name": "guest-fstrim", "success_response": true}, {"enabled": true, "name": "guest-fsfreeze-thaw", "success_response": true}, {"enabled": true, "name": "guest-fsfreeze-freeze-list", "success_response": true}, {"enabled": true, "name": "guest-fsfreeze-freeze", "success_response": true}, {"enabled": true, "name": "guest-fsfreeze-status", "success_response": true}, {"enabled": true, "name": "guest-file-tlsh", "success_response": true}, {"enabled": true, "name": "guest-file-seek", "success_response": true}, {"enabled": true, "name": "guest-file-write", "success_response": true}, {"enabled": true, "name": "guest-file-read", "success_response": true}, {"enabled": true, "name": "guest-file-close", "success_response": true}, {"enabled": true, "name": "guest-file-open", "success_response": true}, {"enabled": true, "name": "guest-shutdown", "success_response": false}, {"enabled": true, "name": "guest-info", "success_response": true}, {"enabled": true, "name": "guest-set-time", "success_response": true}, {"enabled": true, "name": "guest-get-time", "success_response": true}, {"enabled": true, "name": "guest-ping", "success_response": true}, {"enabled": true, "name": "guest-sync", "success_response": true}, {"enabled": true, "name": "guest-sync-delimited", "success_response": true}]}}
```

当Windows系统异常断电后, 再启动系统时会自动进入修复模式, 容易造成服务器无法访问, 可以在CMD命令行中输入以下两行命令取消启动自动进入修复模式:

```
bcdedit /set {default} bootstatuspolicy ignoreallfailures
bcdedit /set {current} recoveryenabled No
```

开启防火墙，防火墙入栈策略添加80端口到例外、开启允许ping□开启允许远程桌面

系统属性设置允许远程连接到此计算机、视觉效果调整为最佳性能、数据执行保护选择仅为基本Windows程序和服务启用DEP

启动和故障恢复：勾选设置显示操作系统列表的时间为5秒、在需要时显示恢复选项的时间为5秒、勾选自动重新启动

组策略：

密码必须符合复杂性要求：设置为已禁用

关机：允许系统在未登录的情况下关闭：设置为已启用

计算机配置->Windows 设置->安全设置->本地策略->安全选项

显示“关闭时间跟踪程序”：设置为已禁用

计算机配置->管理模板->系统

设置系统管理员 administrator 默认登录密码为：123456

关闭IE增强安全功能

关闭ECN功能(仅限2012)□netsh int tcp set global ecn=disable

Internet选项勾选IE磁贴用于打开桌面上的Internet Explorer(仅限2012以上系统)

取消磁盘自检

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Control/Session Manager□在右侧窗口中找到BootExecute键值项并将其数值清空并确定，重新启动电脑即可

安装被控服务

下载vmsta64压缩包地址：<https://download.apayun.com/zkeys/server/vmsta64.zip>

将vmsta64压缩包内的两个文件解压到C:WindowsSystem32目录下，执行vmsta.exe安装被控服务命令□
C:WindowsSystem32VmSta.exe /install

安装补丁

打开Windows Update进行补丁更新，选择所需补丁进行安装
重大系统漏洞及时跟进官网推出的补丁包进行安装

清除日志、关机

删除光驱，只保留一个，光驱挂载有iso的disconnect

系统磁盘文件压缩

```
qemu-img convert -c -O qcow2 /dev/shm/src.qcow2 /home/soft/kvm/dst.qcow2
```

CentOS系列：5/6/7

- 系统安装

系统盘40G[]最小化安装

全部分配给/；不要boot[]swap分区

root密码：123456

创建系统磁盘40G

```
qemu-img create -f qcow2 CentOS_6.8_64.qcow2 40G
```

```
[root@localhost CentOS_6.8_64]# qemu-img create -f qcow2 CentOS_6.8_64.qcow2 40G
Formatting 'CentOS_6.8_64.qcow2', fmt=qcow2 size=42949672960 encryption=off cluster_size=65536 lazy_refcounts=off
[root@localhost CentOS_6.8_64]#
```

生成xml模板文件

```
<domain type = 'kvm'>
<name>CentOS_6.8_64</name> #虚拟机名称
<memory unit='MiB'>4096</memory> #内存
<currentMemory unit='MiB'>4096</currentMemory>
<vcpu current='4'>64</vcpu> #cpu
<os> #x86_64位操作系
  <type arch = 'x86_64' machine = 'pc'>hvm</type>
统
<boot dev = 'cdrom' /> #第一引导CDROM
<boot dev = 'hd' /> #第二引导磁盘
  </os>
<features>
  <acpi/>
  <apic/>
  <pae/>
</features>
<cpu mode='host-passthrough' check='none' />
<clock offset = 'localtime' />
<on_poweroff>destroy</on_poweroff>
<on_reboot>restart</on_reboot>
<on_crash>destroy</on_crash>
<devices>
  <emulator>/usr/libexec/qemu-kvm</emulator>
  <disk type = 'file' device = 'disk'>
    <driver name = 'qemu' type = 'qcow2' />
    <source file = '/home/kvm/template/CentOS_6.8_64/CentOS_6.8_64.qcow2' />#
系统磁盘路径
    <target dev = 'vda' bus = 'virtio' /> #虚拟机磁
盘vda[]总线类型virtio
  </disk>

  <disk type = 'file' device = 'cdrom'>
    <driver name = 'qemu' type = 'raw' />
<source file = '/home/kvm/iso/CentOS-6.8-x86_64-bin-DVD1.iso' /> #系统镜像
    <target dev = 'vdb' bus = 'ide' />
    <readonly />
  </disk>
```

```

<interface type = 'bridge'>
  <source bridge = 'br0' />
  <model type='virtio' />
  <filterref filter='template_firewall_out'>                                     #网络控制器
</filterref>
</interface>

<interface type = 'bridge'>
  <source bridge = 'br1' />
  <model type='virtio' />
  <filterref filter='template_firewall_in'>                                     #网络控制器
</filterref>
</interface>
<channel type='unix'>
  <target type='virtio' name='org.qemu.guest_agent.0' />
</channel>
<input type = 'tablet' bus='usb' />
<input type = 'mouse' bus = 'ps2' />
<graphics type = 'vnc' port = '-1' autoport='yes' listen='0.0.0.0'
passwd='123456' keymap='en-us' />
</devices>
</domain>

```

根据实际情况修改以上配置后定义虚拟机

```

[root@localhost CentOS_6.8_64]# virsh define sys.xml
Domain CentOS_6.8_64 defined from sys.xml

[root@localhost CentOS_6.8_64]# virsh start CentOS_6.8_64
Domain CentOS_6.8_64 started

```

即可进入开始安装界面，系统安装完成后关机，将cdrom boot引导关闭，否则会又进入系统安装。

- 系统配置

更换yum源(根据需要修改)

添加epel源

只保留CentOS-Base.repo[]epel.repo两个文件

升级系统: yum update -y

安装软件:

```

yum install -y bash-completion nscd sysstat vim wget parted ntp nload iftop
lrzsz dmidecode ntpdate screen gcc gcc-c++ openssl-devel openssh-server

```

卸载软件:

```

yum remove exim4 apport lxcfs lxc lsd mdadm

```

安装qemu-gauest-agent

```
yum install qemu-guest-agent
```

```
centos6.5#
```

```
service qemu-ga start && chkconfig qemu-ga on
```

```
centos7.0#
```

```
systemctl start qemu-guest-agent && chkconfig qemu-guest-agent on
```

验证是否安装并配置成功，在宿主机中执行

```
virsh qemu-agent-command CentOS_6.8_64 '{"execute":"guest-info"}'
```

```
[root@localhost ~]# virsh qemu-agent-command CentOS_6.8_64 '{"execute":"guest-info"}'
{"return":{"version":"0.12.1","supported_commands":[{"enabled":true,"name":"guest-set-user-password"}, {"enabled":true,"name":"guest-set-vcpus"}, {"enabled":true,"name":"guest-get-vcpus"}, {"enabled":true,"name":"guest-network-get-interfaces"}, {"enabled":true,"name":"guest-suspend-hybrid"}, {"enabled":true,"name":"guest-suspend-ran"}, {"enabled":true,"name":"guest-suspend-disk"}, {"enabled":true,"name":"guest-fstrim"}, {"enabled":true,"name":"guest-xfreeze-thaw"}, {"enabled":true,"name":"guest-xfreeze-freeze"}, {"enabled":true,"name":"guest-xfreeze-status"}, {"enabled":false,"name":"guest-file-flush"}, {"enabled":false,"name":"guest-file-peek"}, {"enabled":false,"name":"guest-file-write"}, {"enabled":false,"name":"guest-file-read"}, {"enabled":false,"name":"guest-file-close"}, {"enabled":false,"name":"guest-file-open"}, {"enabled":true,"name":"guest-shutdown"}, {"enabled":true,"name":"guest-info"}, {"enabled":true,"name":"guest-set-time"}, {"enabled":true,"name":"guest-get-time"}, {"enabled":true,"name":"guest-ping"}, {"enabled":true,"name":"guest-sync"}, {"enabled":true,"name":"guest-sync-delimited"}]}}
```

关闭selinux[]

```
vim /etc/sysconfig/selinux
SELINUX=disabled
```

关闭UTC时钟:

```
vim /etc/sysconfig/clock
UTC=false
```

配置sshd[]添加两条参数:

```
vim /etc/ssh/sshd_config
UseDNS no
AddressFamily inet
```

修改内核配置文件，添加以下参数:

```
vim /etc/sysctl.conf
vm.swappiness = 0
net.ipv4.neigh.default.gc_stale_time=120
net.ipv4.conf.all.rp_filter=0
net.ipv4.conf.default.rp_filter=0
net.ipv4.conf.default.arp_announce = 2
net.ipv4.conf.lo.arp_announce=2
net.ipv4.conf.all.arp_announce=2
net.ipv4.tcp_max_tw_buckets = 5000
net.ipv4.tcp_syncookies = 1
net.ipv4.tcp_max_syn_backlog = 1024
net.ipv4.tcp_synack_retries = 2
net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1
net.ipv6.conf.lo.disable_ipv6 = 1
```

服务优化:

关闭开机自启服务[]iptables[]ip6tables[]NetworkManager[]postfix

```
chkconfig iptables off
```

添加开机自启服务 ntpd

```
chkconfig ntpd on
```

编辑/etc/rc.local添加以下参数(CentOS5/6 需要,CentOS7 不需要添加):

```
vim /etc/rc.local  
>/etc/udev/rules.d/70-persistent-net.rules
```

编辑/etc/fstab修改/目录挂载点为/dev/sda1

```
vim /etc/fstab  
/dev/sda1 / ext4 defaults 1 1
```

安装自动化脚本

将autovm.sh和install.sh脚本拷贝到同一目录下执行sh install.sh即可

脚本下载地址: https://download.apayun.com/zkeys/server/linux_auto.zip

执行后, 查看/etc/rc.local指向的实际文件是否有执行权限, 没有的需要添加上: 如下图所示/etc/rc.local的真实文件路径为/etc/rc.d/rc.local那么就需要将/etc/rc.d/rc.local文件添加上可执行权限。

```
chmod +x /etc/rc.d/rc.local
```

```
[root@bYMBStest ~]# ll /etc/rc.local  
lrwxrwxrwx. 1 root root 13 Sep 14 2017 /etc/rc.local -> rc.d/rc.local  
[root@bYMBStest ~]# ll /etc/rc.d/rc.local  
-rwxr-xr-x 1 root root 701 Sep 27 10:59 /etc/rc.d/rc.local  
[root@bYMBStest ~]#
```

清理网卡配置参数

系统网卡配置文件请删除UUID和HWADDR参数, 否则会导致自动化配置时重新生成新的网卡配置文件 (例如: 原外网网卡文件为eth0存在UUID和HWADDR参数时, 会重新生成eth2文件来表示外网网卡配置文件, 原eth0文件配置不修改)

```
[root@localhost network-scripts]# cat ifcfg-eth0  
NAME=eth0  
DEVICE=eth0  
ONBOOT=yes  
TYPE=Ethernet  
BOOTPROTO=static  
PEERDNS=no  
[root@localhost network-scripts]# cat ifcfg-eth1  
NAME=eth1  
DEVICE=eth1  
ONBOOT=yes  
TYPE=Ethernet  
BOOTPROTO=static  
PEERDNS=no  
[root@localhost network-scripts]# _
```

清除日志、关机

```
cd /var/log  
>btmp ;>dmesg;>messages ;>lastlog;>secure ;>wtmp
```

```
rm -f /etc/udev/rules.d/70-persistent-net.rules  
history -c && history -w && poweroff
```

磁盘文件压缩

```
qemu-img convert -c -O qcow2 /dev/shm/src.qcow2 /home/soft/kvm/dst.qcow2
```