

SYS-350 Milestone 10 - OpenStack and Windows

💡 Any virtualization product will fail the test if it doesn't support Windows. In this milestone we will generate a new Windows Server GUI image and then deploy it as an instance on OpenStack

You need to install the KVM based Virtual Machine Manager on your OpenStack server. You could also do this on a separate system and transfer your images over but we do have a highly provisioned Ubuntu Server that you are running OpenStack on.

```
sudo apt install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils  
virtinst virt-manager  
sudo systemctl is-active libvirtd
```

Add yourself to the libvirt group

make sure to logout and log back in again so that your current user has the appropriate group permissions to use KVM. Your user should be a member of the libvirt.
(sudo virt-manager will open the KVM Virtual Machine Manager)

Deliverable 1. Provide a screenshot showing your running KVM. If you have an error here, look at the hint above.

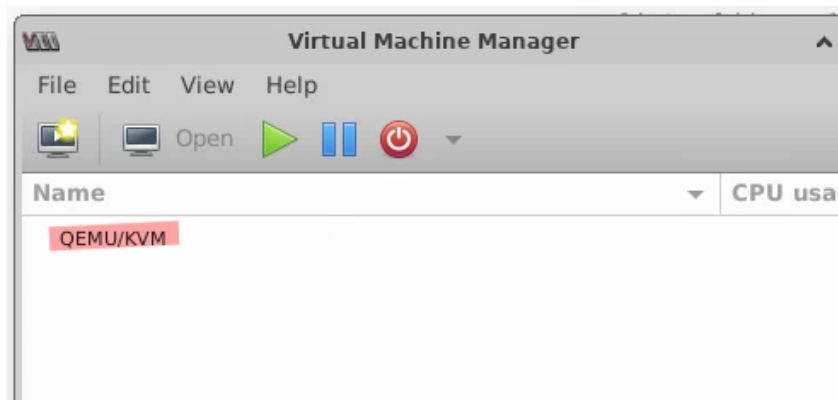


Image Creation

Take a look at the following references but read through the characteristics below:

- <https://yooniks9.medium.com/openstack-create-windows-server-2016-2019-image-iso-29d9ec877a3b>
- <https://yooniks9.medium.com/openstack-create-windows-server-2016-2019-image-vmdk-part-ii-d4f24c880632>

Download the following VirtIO Drivers to your Ubuntu server:

<https://fedorapeople.org/groups/virt/virtio-win/direct-downloads/stable-virtio/virtio-win.iso>

Download Windows Server ISO from our class file server:

<http://192.168.7.240/isos/> OR <http://192.168.7.240/isos/>

Build a new Windows Base Image with the following characteristics.

- 2 CPUs
- 4096MB of RAM
- Use the Raw Format
- Your disk should be 20-25 GiB. If you get this wrong, you will be repeating this step.
- Make sure to change SATA Disk Bus to VirtIO
- The documentation has you add a second disk, this is optional
- **Include a SATA CDROM device that points to your Server 2019 GUI ISO**
- **Add another SATA CDROM device that points to virtio-win.iso** from the reference
 - note, you can copy isos to /var/lib/libvirt/images and the virtual machine manager will have access to them.
- Make sure your NICs model is set to virtio
- Boot the system (remember it has two drives) to the installer iso. You will need the virtio cdrom to install network and storage drivers
- using sconfig
 - set time to est
 - update the os fully (optional, as it takes forever)
 - set updates to manual
- Follow the instructions on firewall rules and powershell execution policy
- install the virtio-win drivers (64 bit)
- install the virtio guest tools
- Instal Chrome (this is to get around the unusable internet explorer)
- Install CloudBase Init
 - (https://cloudbase.it/downloads/CloudbaseInitSetup_Stable_x64.msi)

Image Import

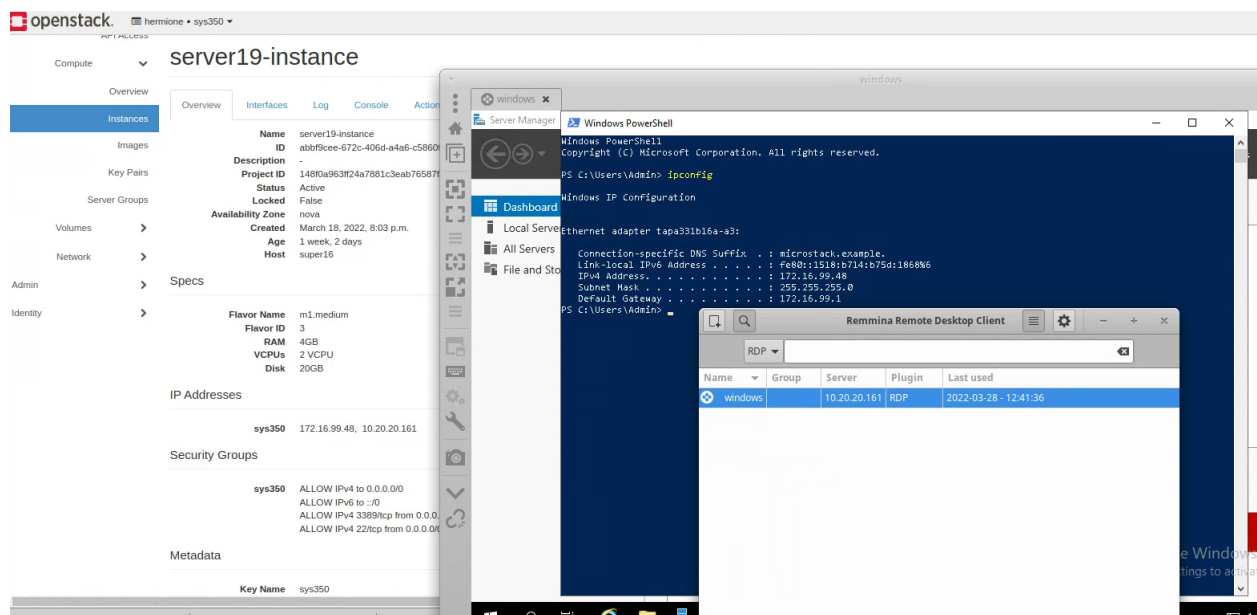
- Copy the server 2019 image you created from /var/lib/libvirt/images to somewhere else to use in the import process
- Import the image without a volume into OpenStack (GUI works)
 - Flavor m1.medium

- Add it to your sec350 network, it should have a floating IP as well
- Add it to a security group that allows both 3389 and 22/tcp (we did this in Milestone 9)
- Get the instance Admin password. Note this is fundamentally broken at the command line. The modified code snippet successfully decrypt's the instance's admin password. There is also an option to get the password from the GUI but that will require some modifications to your configuration files. Feel free to investigate and let me know if it works.

```
nova --insecure get-password "server19-instance" 2>/dev/null | base64 -d | openssl rsautl -decrypt -inkey keys/sys350.pem
```

Deliverable 2. Provide a screenshot similar to the one below that shows:

- Instance details with
- security groups, the two ip addresses
- A remmina session to your instance
- and the remmina connections ip address.



Deliverable 3. Tech Journal. Document what you did within your environment to generate and import the image and spawn the windows instance. Reflect on how this image preparation and deployment compared to a similar one you did on vSphere.