

CIT Virtual Server HOW-TO  
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This is a brief HOW-TO install, boot, shutdown, and use a virtual system on the CIT network. Tasks are listed first. The commands and their options are described in the second part of the document. Frequently asked questions are at the end.

## **Task HOW-TO**

To create a new virtual disk to create a new system or to add to an existing system

1. On the server, run `qemu-new-image`

To boot from the CDROM drive, and install the base system

2. On the server, run `qemu-feisty-install`.
3. Build ssh tunnel from the desktop machine to the server machine.
4. Use VNC viewer on the desktop machine to connect to the virtual console.
5. Use the virtual console to do the base install of ubuntu. Continue until the system says it is rebooting.
6. On the server, run `qemu-stop`.

To boot from the hard drive

1. Make sure that the system is not already running.
2. On the server, run `qemu-run`.

To connect to a running system's virtual console

1. Build the ssh tunnel from the desktop machine to the server machine.
2. Use VNC viewer on the desktop machine to connect to the virtual console.
3. Use the virtual console to log into the virtual console.

To connect to alternate virtual consoles through VNC

1. Use Alt-F1    Alt-F6 to change virtual consoles.
2. If you are using an ubuntu GNOME desktop, then Alt-F? is bound to some desktop feature that you probably don't use. Go to System->Preferences->Keyboard Shortcuts. Find the Alt-F? short cut and change the short cut sequence to something else.

To list the running systems

1. On the server, run `qemu-list`
2. Or, on the server, run `qemu-report | grep your_user_name`

To shutdown a running system

1. Log into the running system .
2. Issue the `reboot` command.
3. Wait 1-2 minutes for the system to shutdown.
4. On the server, run `qemu-stop`

To destroy an existing system

1. Be sure that the system is shutdown.
2. On the server, run `qemu-remove`.

To change the amount of memory used by a system

1. Be sure that the system is shutdown.
2. On the server, run `qemu-set-memory`.
3. Restart the system.

To add a second disk to an existing system

1. Be sure that the system is shutdown.
2. On the server, run `qemu-new-image`.
3. On the server, run `qemu-add-disk`.
4. Restart the system.

## Command Documentation

- Login to the host server.
  - ◆ On Unix hosts, use ssh to connect to server host.
  - ◆ On Windows hosts, use putty, or other ssh client to connect to server host.
- Create image file, (Installing a virtual hard drive)  
`/qemu/bin/qemu-new-image image-name size`  
image-name is the unique system name.  
size is an integer number of gigabytes to use for the disk image.
- Boot installation system, (Power on with boot from installation CDROM)  
`/qemu/bin/qemu-feisty-install image-number \`  
`image-name mem-size mac-address`  
image-number is a unique system number.  
image-name is the unique system name.  
mem-size is the size of the memory for the system in megabytes.  
mac-address is the unique MAC address for the system.
- Run installed system (Power on, with boot from virtual hard drive)  
`/qemu/bin/qemu-run image-name`  
image-name is the unique system name.
- Stop running system (Power off virtual machine)
  - a) Login to running system and shut it down.
  - b) `/qemu/bin/qemu-stop image-name`  
image-name is the unique system name.
- Connect to the image using ssh-tunnel and vnc to the image-number.
  - a) `ssh -Lport:localhost:port host-name`  
port is 5900 + the image-number.  
host-name is the name of the virtualization host system.
  - b) `xvncviewer :vncport`  
vncport is the image-number
  - c) From Windows, create the ssh tunnel following the same rules, then use the vnc client to connect, using the same port number. In putty, the Source port is the same as the first port above, and Destination is the same as localhost:port above. Be sure to Add .
- To remove a system. This means delete the disk image file, it will not be available to run any more.  
`/qemu/bin/qemu-remove image-name`  
image-name is the unique system name.
- To list running systems  
`/qemu/bin/qemu-list`

## Frequently Asked Questions

- Q: My virtual machine appears to have hung. Can it be restarted?  
A: Yes, it can be restarted. Use the `qemu-stop` command. But, before you do that, are you sure it is hung? Does your host ping, or can you connect with `ssh`? Can you connect to the virtual console with VNC? In VNC, can you change virtual consoles to get another login?
- Q: I accidentally used the same MAC address twice. How can I change the MAC address of one system?  
A: Shutdown the system in question. Edit the `/qemu/init.d/qemu-user-host` file that corresponds to your username and the image name of your host. Change the MAC address to the correct value. Restart the system.
- Q: I accidentally used the same system number twice. How can I change the system number of one system?  
A: Shutdown the system in question. Edit the `/qemu/init.d/qemu-user-host` file that corresponds to your username and the image name of your host. Change the `NUM` variable to the correct value. Restart the system.