SciCloud - Working with customized images

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This document provides the details of using SciCloud resources, creating customized images and working with existing images.

1. Follow the SciCloud Manual V 1.3 This should give the basics for working with SciCloud and Eucalyptus systems in general.

2. To ease the development of new images, we have created euca base images for CentOs and Ubuntu. These images already have euca2ools installed on them.
   a. emi-5B4F0E30 centos.euca/image.manifest.xml
      i. This is a valid centos image.
   b. emi-5F660E51 ubuntu.euca/image.manifest.xml
      i. This is a valid Ubuntu Linux image.

3. Preparing customized images from euca base images
   a. Start an instance from the respective image
   b. ssh to the instance
   c. Update your instance i.e. install any interesting software. (* Remember that you will lose all your data if the instance gets shutdown)
   d. Copy your .euca folder to the /mnt of the instance
      bash-3.2$ scp -i keyname.private -r ../.euca root@172.17.36.214:/mnt
   e. Prepare the eucalyptus environment.
      bash-3.2$ source eucarc
      Ensure that you have bash shell. Take care of this especially with centos images.
   f. Now to bundle your instance
      i. For bunding centos image
         euca-bundle-vol --cert {EC2_CERT} --privatekey {EC2_PRIVATE_KEY} --user 000202048240 --ec2cert {EUCALYPTUS_CERT} --no-inherit --kernel eki-D25F1B09 --ramdisk eri-CCFB1AEB -d /mnt/tmp -s 1024
ii. For bundling Ubuntu image

euca-bundle-vol --cert ${EC2_CERT} --privatekey ${EC2_PRIVATE_KEY} --user 000202048240 --ec2cert ${EUCALYPTUS_CERT} --no-inherit --kernel eki-A5BE1720 --ramdisk eri-8EB116F1 -d /mnt/tmp -s 1024

Do not forget the -d parameter, as the image is copied to the folder and generally it is huge (around 1 GB)

Define -s parameter. Or else the system tries to copy 10 GB of the data to the new image root file system. This is default value. Generally this is heavy in terms of our configuration.

While uploading your current image to the SciCloud, remember that only your root (/) filesystem will be copied by default. So your data in the /mnt is lost. To some extent this is useful as you do not want to share your private keys with everybody who uses the image later.

g. Now upload the bundle to the SciCloud

bash-3.2$ euca-upload-bundle -b bucketName -m image.manifest.xml

Follow the naming conventions described in 4 for the bucketName.

h. Register your image with Eucalyptus

bash-3.2$ euca-register bucketName/image.manifest.xml

i. Now you can create instances from your modified image.

4. Naming conventions for the images

a. We have named the euca base images as “$OS.euca”

b. The project is further divided for the time being into following domains. $Project follows the name of the domain

   i. Scientific computing - scicloud

   ii. Mobile Enterprise - mobile

   iii. Enterprise computing - enter

   iv. Others - other

c. So the name of your customized image becomes “$OS.euca-$Project-$YourTrial”

d. The naming conventions are followed just to distinguish the images easily.

5. Descriptions of other customized images. This list will be regularly updated.

a. emi-080F11CA - ubuntu.euca-scicloud/image.manifest.xml
This image has support for all the basic software for the scientific computing.

Anyhow it has to clear several problems from ubuntu.euca - I need to carry them backward somehow. I will address this a little later.

Here are some steps that were followed. Will update this broken writing in the next version. I think the message is carried.

a. `locale-gen en_US.UTF8`
   to get rid of locale warning

b. `/etc/hosts`
   add "ubuntu" to the end of 127.0.0.1 line
   run "ifconfig lo up"

   `/etc/rc.local`
   add "ifconfig lo up"

c. for MPI install libopenmpi...-dev, an ...openmpi...-bin

d. scipy
   add "universe" to /etc/apt/sources.list
   apt-get update

e. mpi4py
   install python-dev and zlib1g-dev
   add """"import sys
   
   sys.path.insert(0, "/usr/local/lib/python2.6/site-packages"
   
   ""
   to /usr/lib/python2.6/sitecustomize.py

b. `emi-173011AF - ubuntu.euca-scicloud-DOUG/image.manifest.xml`

This image is an extension of the 5 (a) and it also has support for the DOUG

More details about DOUG are available at [http://www.dougdevel.org/](http://www.dougdevel.org/)