

# EUCALYPTUS Configuration



## Supported Linux platforms

- Ubuntu, RHEL, Centos, and Debian
- We use UEC ([Ubuntu Enterprise Cloud](#)) available with Ubuntu 10.04.4 server OS
- Other option is
  - Manually install all the components
  - Recommended for experts
  -

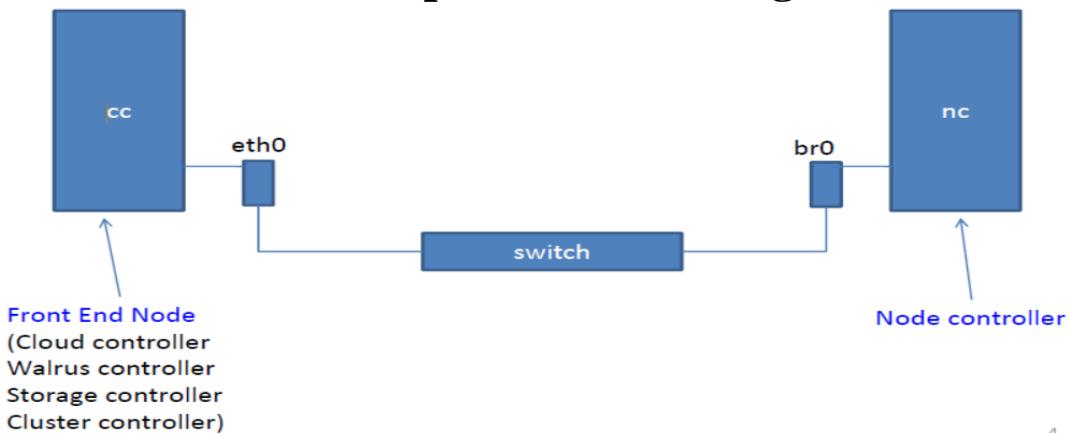


## A typical cloud Setup

- 1 Cloud controller server, each server has
  - Cloud controller
  - Walrus
- Many Cluster controllers, each server has
  - Cluster controller
  - Storage controller
- Many node controllers under each Cluster Controller
  - Each node controller is one physical machine
  -



## We use minimal setup(Network Configuration)





## Cloud Setup

- Eucalyptus network
  - We will be using the default network configuration of “Managed-NoVLAN”
- “Managed-NoVLAN”
  - provides **dynamic IP assignment** for VMs and
  - allows us to control **ingress** traffic by building iptables profiles known as **security groups**.
  - Another mode of network configuration known as “**Managed**” mode provides the additional feature of **VM network isolation**.
- Main configuration file
  - Eucalyptus configuration is stored in `/etc/eucalyptus/eucalyptus.conf`
  - Configuration can be changed after installation. You need to restart service using following command:`/etc/init.d/(service-name) restart`



## Setup inside Type-2 hypervisor (e.g., Oracle VirtualBox or VMware Player)

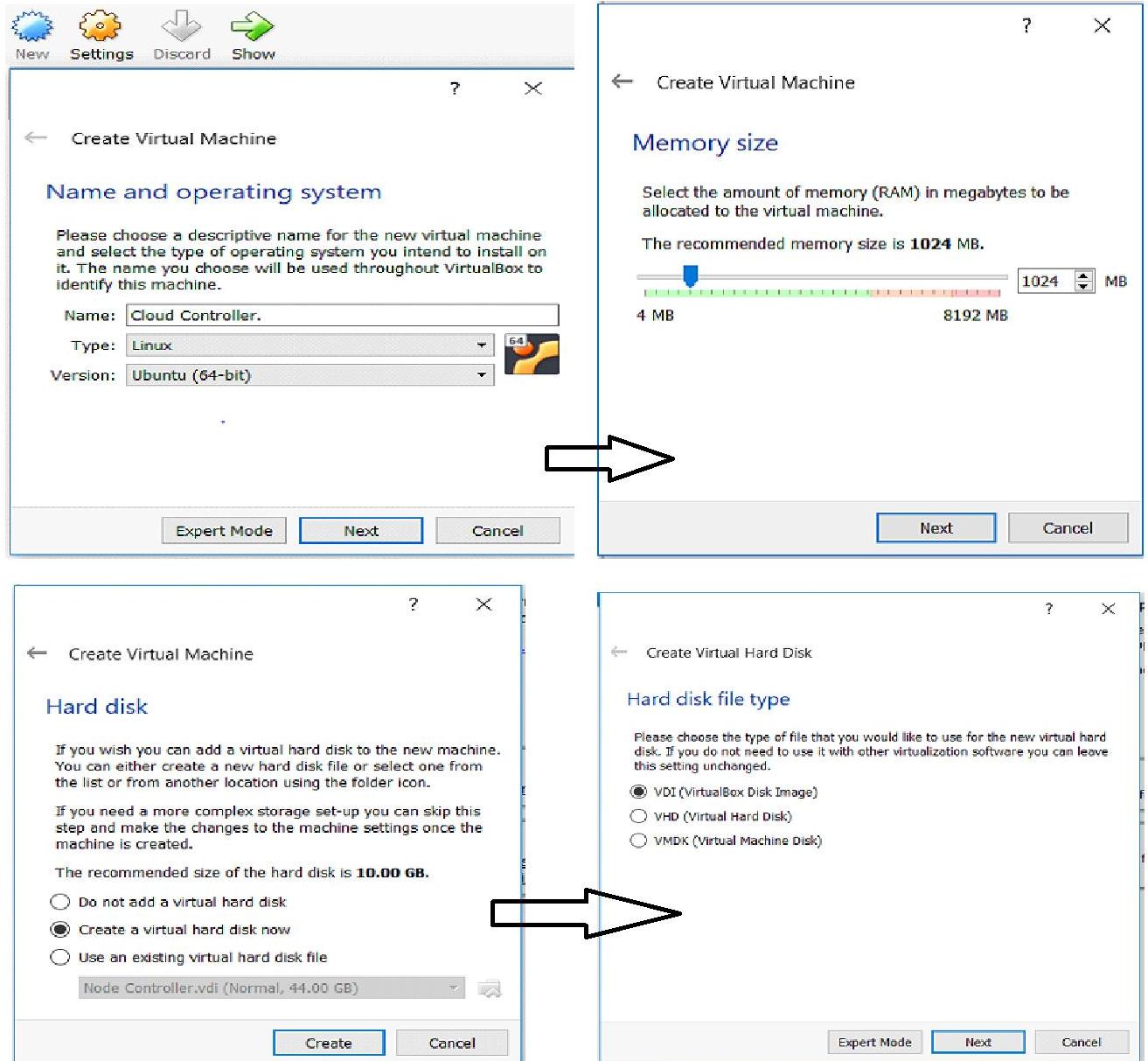
- Server 1 (Cloud controller or frontend)
  - 15 GB Hard disk
  - Min. 512MB RAM
  - Host only network adapter
  - Intel VT is not required
- Server 2 (Node controller)
  - 20 GB Hard disk
  - Min 1.5GB RAM
  - Host only network adapter
  - Intel VT is required

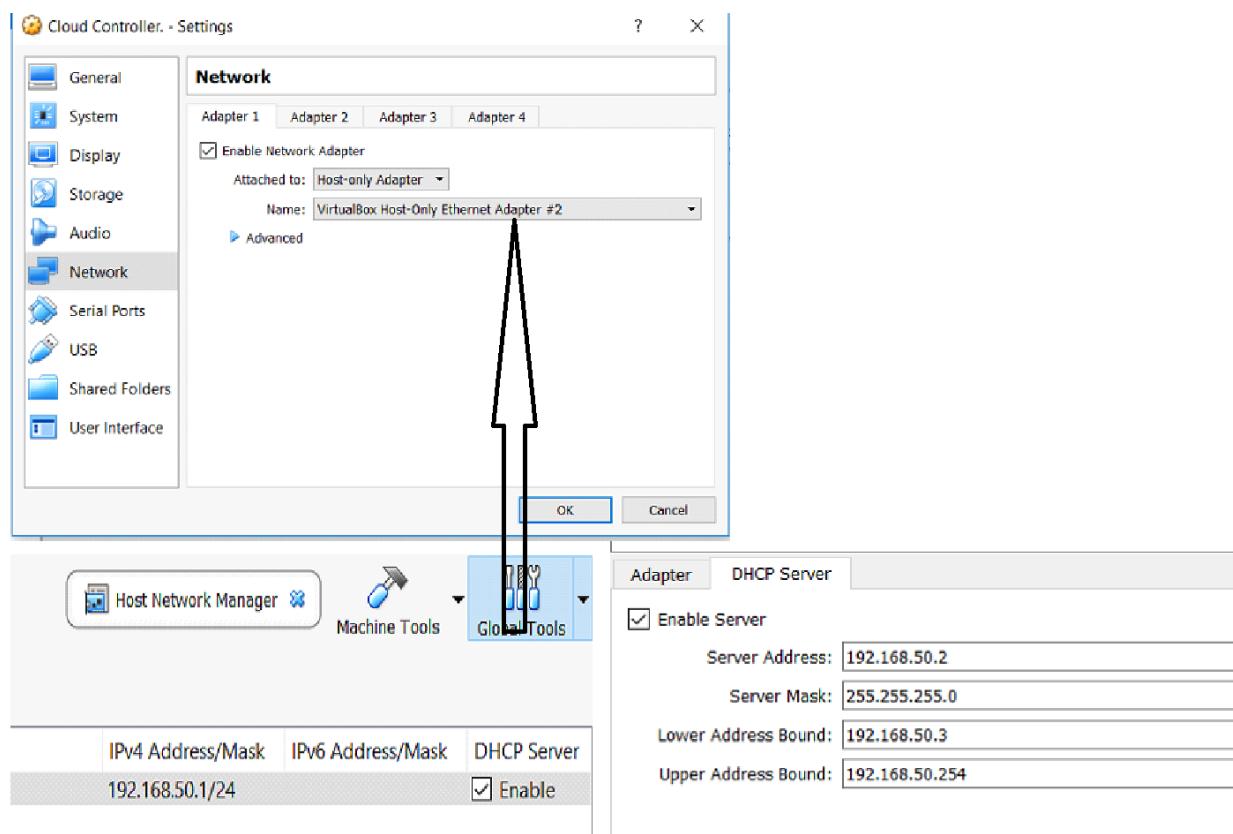
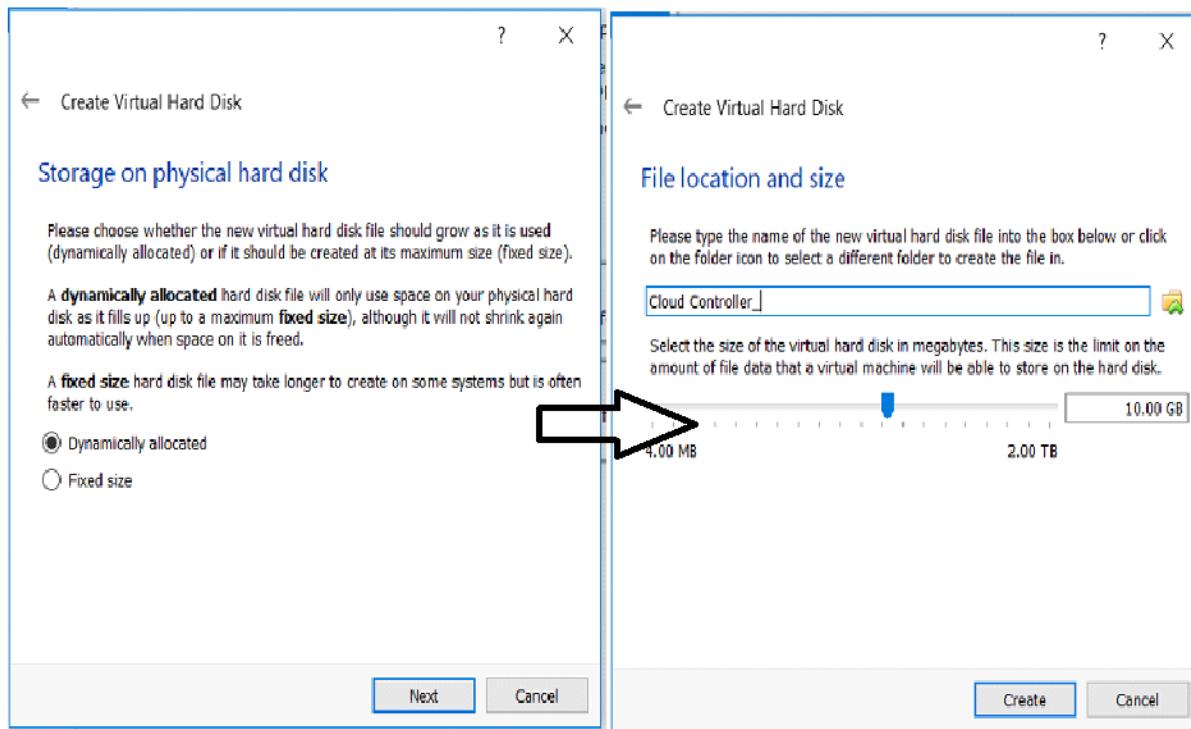


# Installation

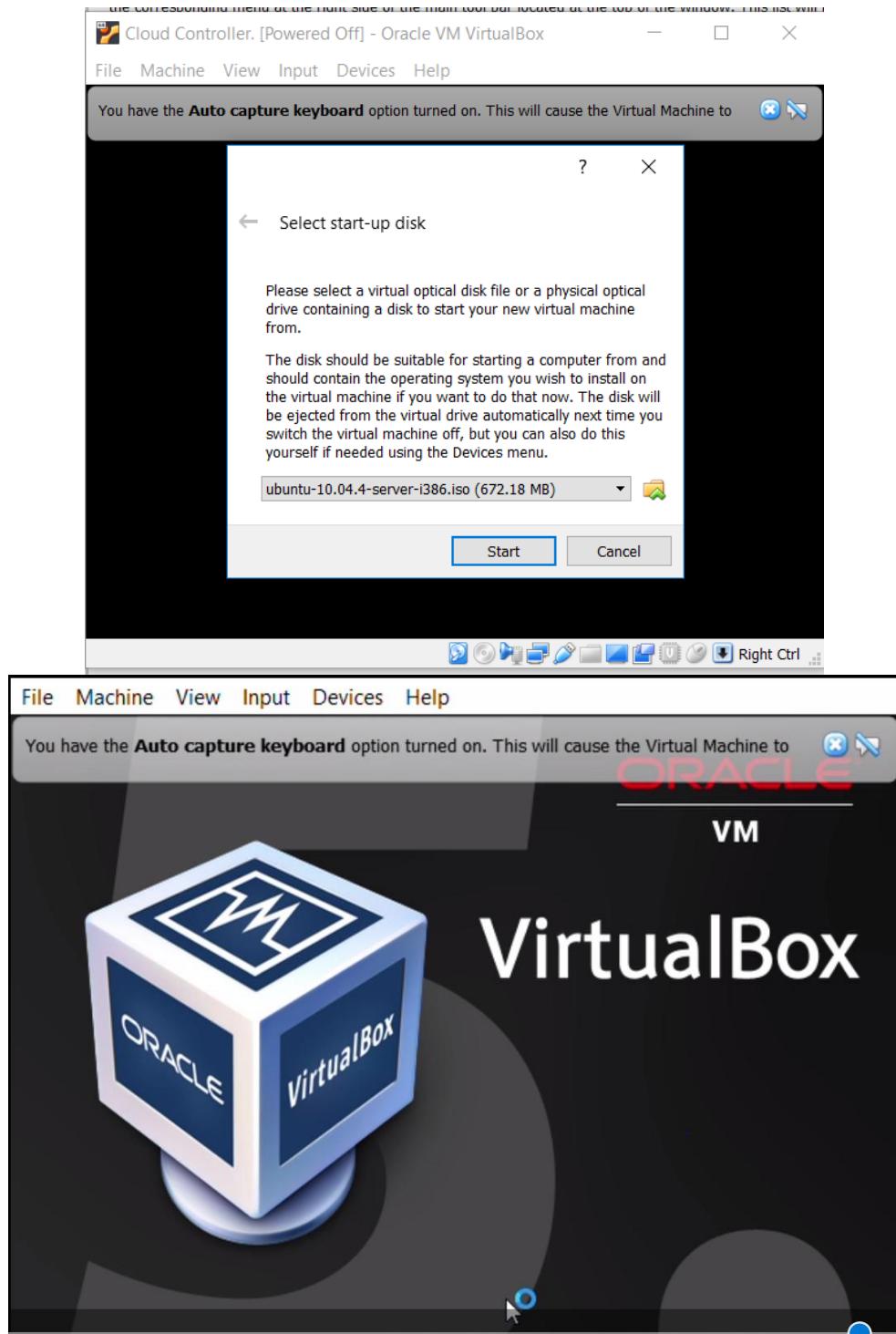
## ❖ Setup server-1

- First we setup server-1, i.e. Cloud Controller.



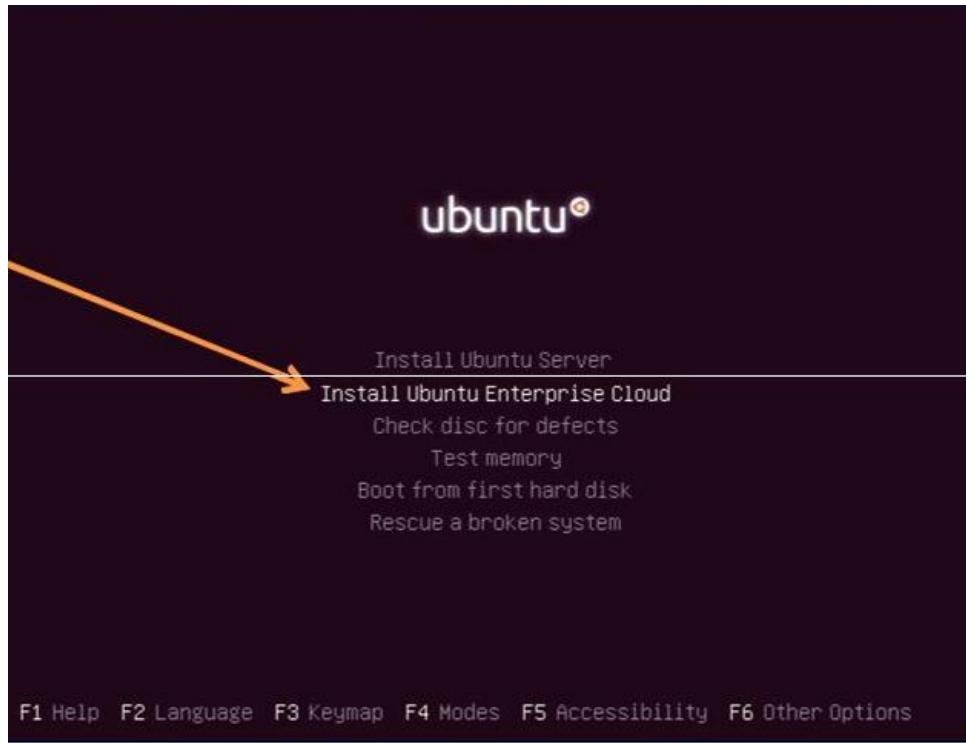


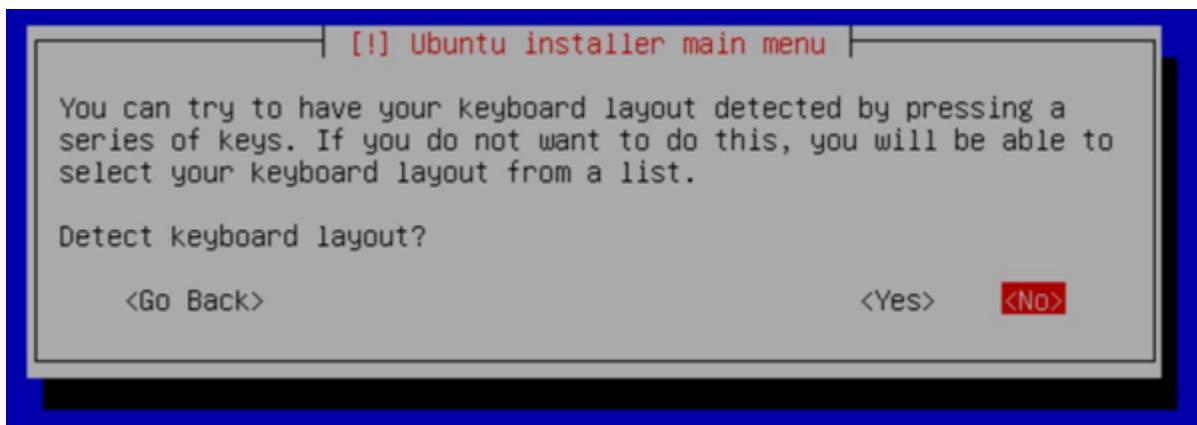
- We build our cloud controller (cc) by Using Virtual box Start Up Desk & “Install Ubuntu Enterprise Cloud” from the menu

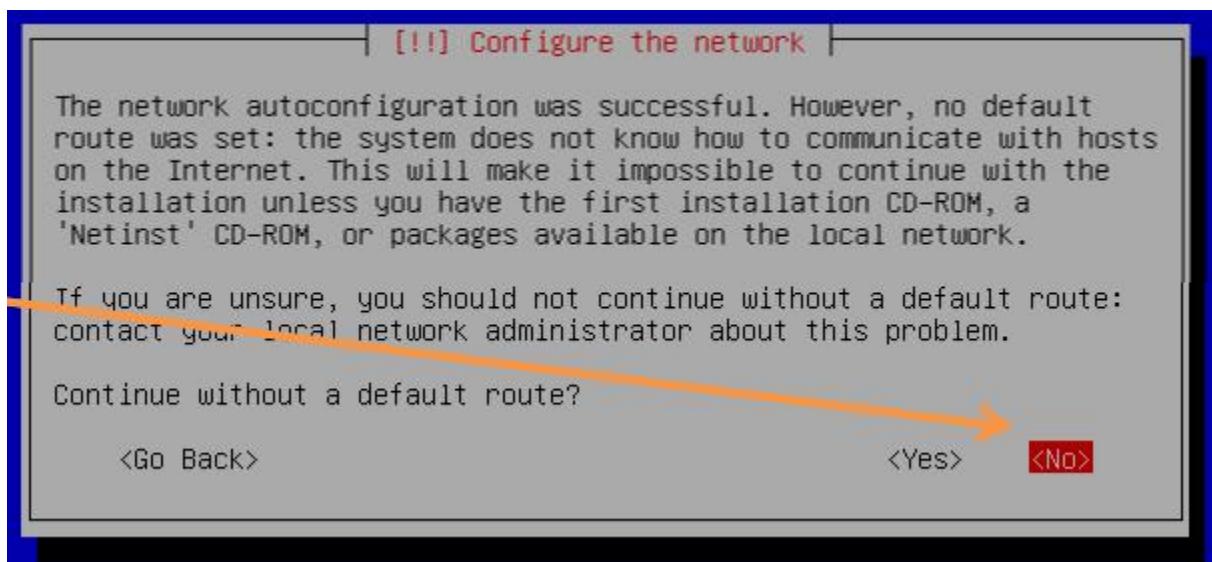
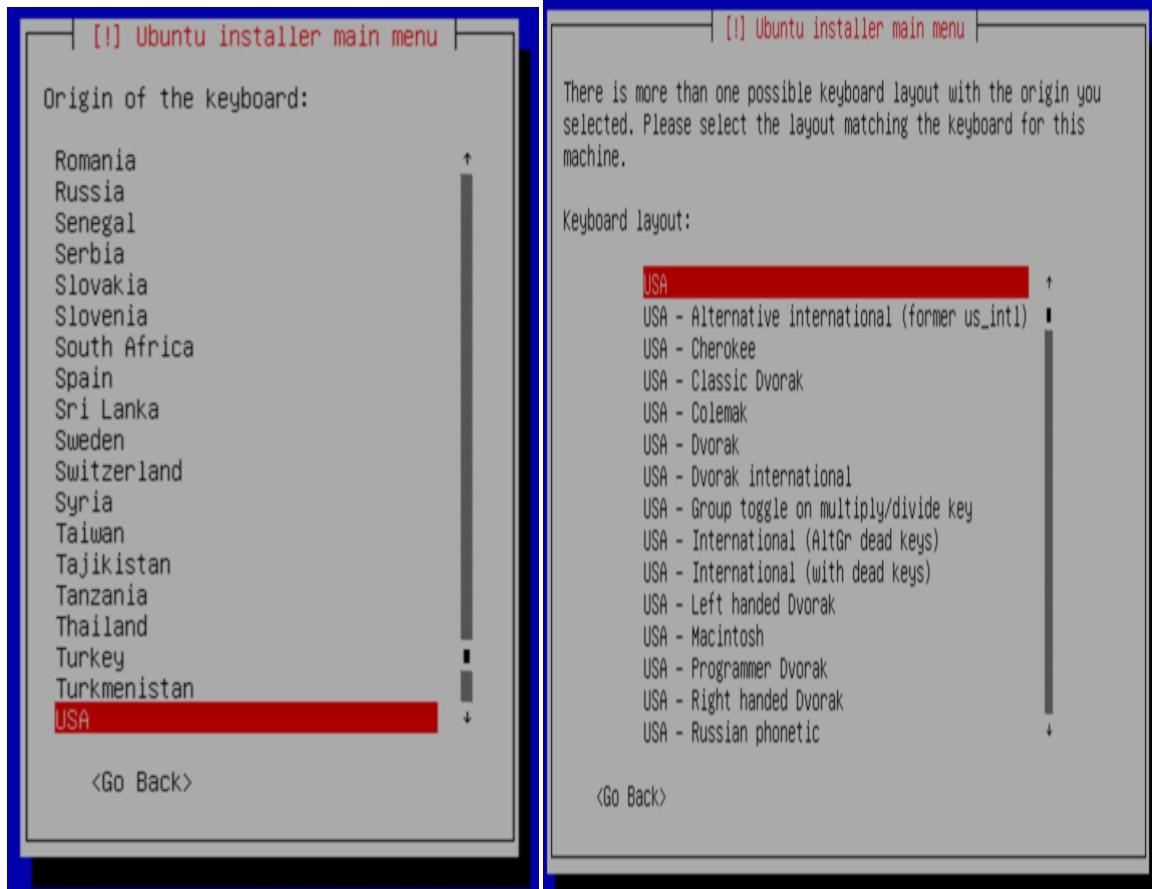


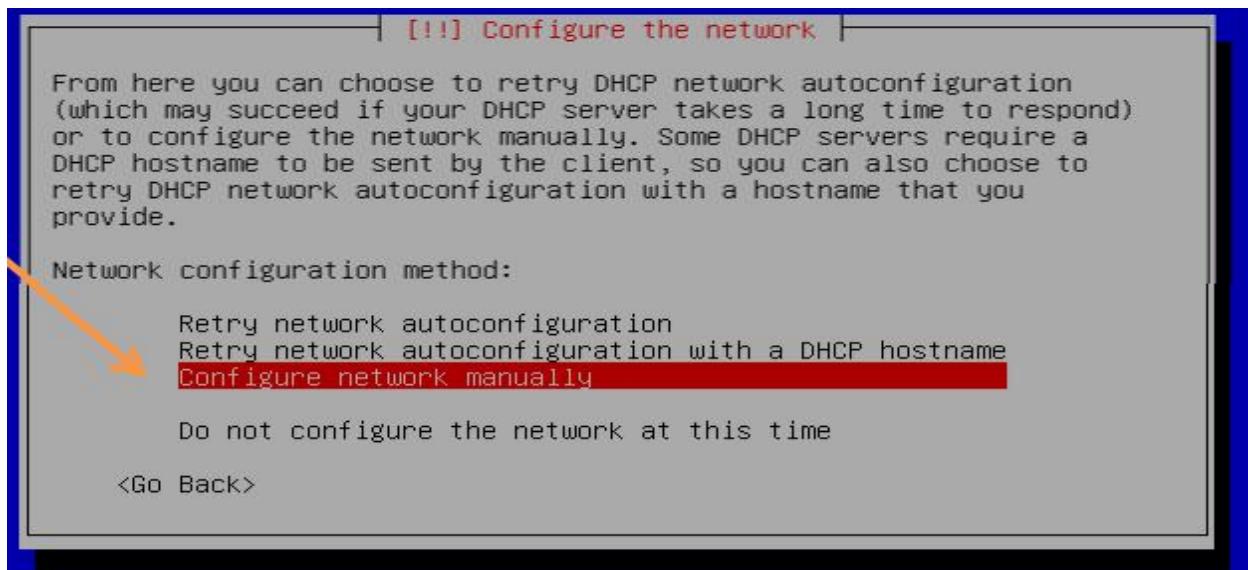


- Select “Install Ubuntu Enterprise Cloud”

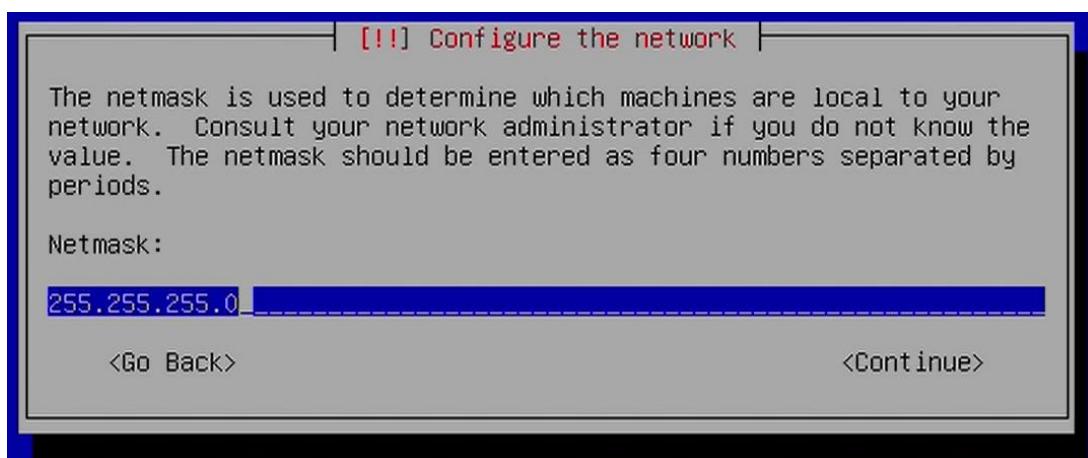
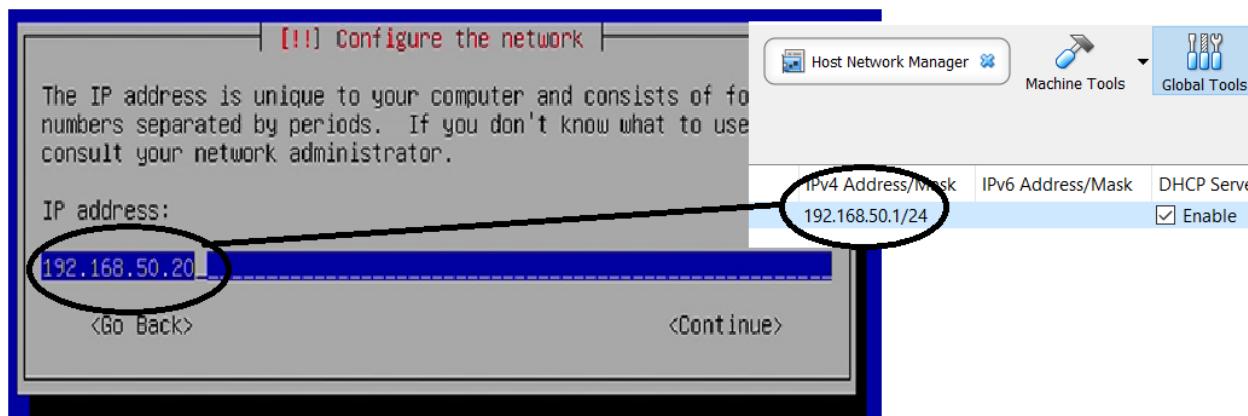








#### ➤ Give IP Address Which is Available AT “Host Network Manager”



### [!] Configure the network

The gateway is an IP address (four numbers separated by periods) that indicates the gateway router, also known as the default router. All traffic that goes outside your LAN (for instance, to the Internet) is sent through this router. In rare circumstances, you may have no router; in that case, you can leave this blank. If you don't know the proper answer to this question, consult your network administrator.

Gateway:

192.168.50.1

<Go Back>

<Continue>

### [!] Configure the network

Please enter the hostname for this system.

The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting up your own home network, you can make something up here.

Hostname:

cc

<Go Back>

<Continue>

### [!] Configure the network

The domain name is the part of your Internet address to the right of your host name. It is often something that ends in .com, .net, .edu, or .org. If you are setting up a home network, you can make something up, but make sure you use the same domain name on all your computers.

Domain name:

private.cloud

<Go Back>

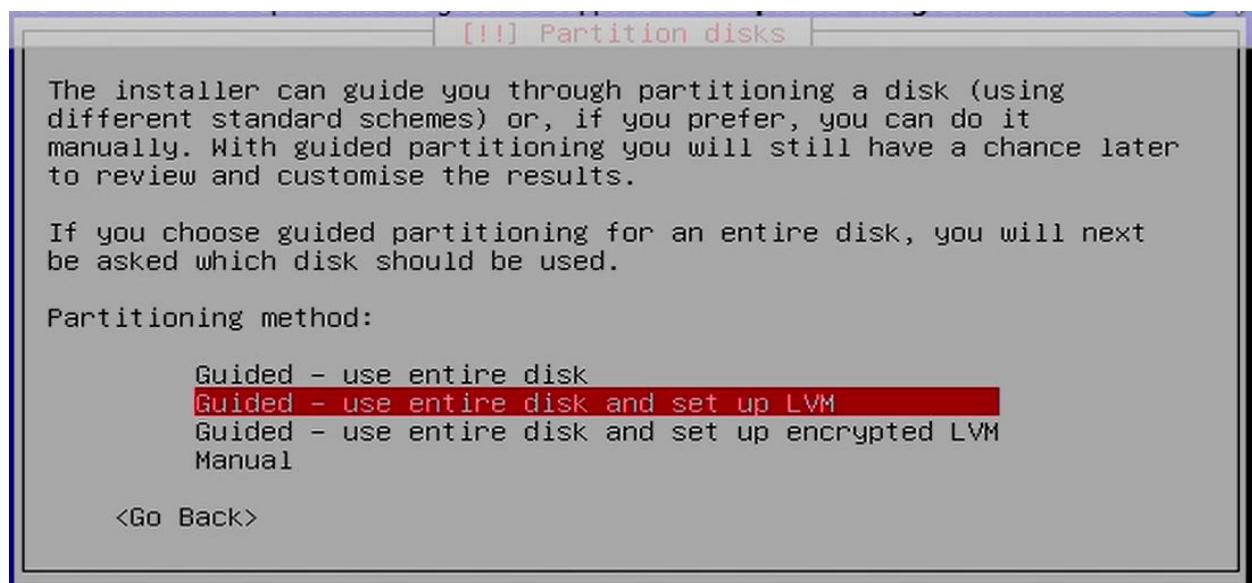
<Continue>

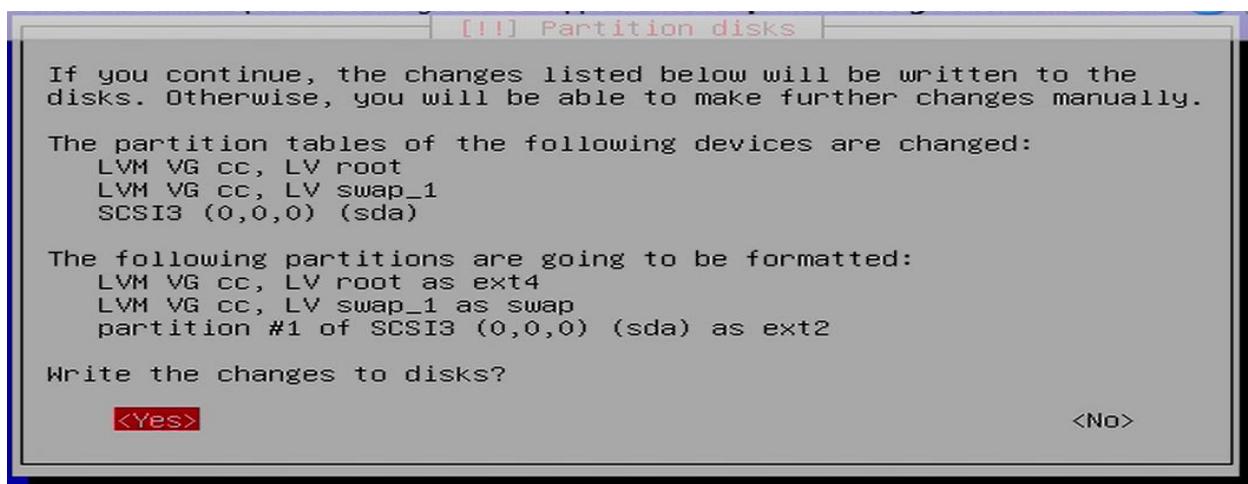
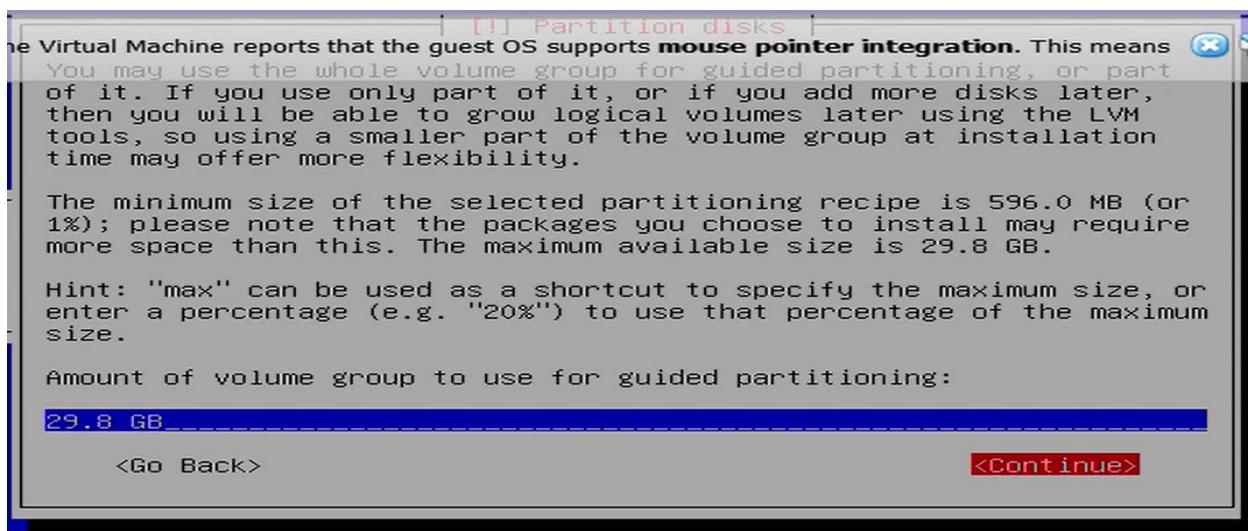
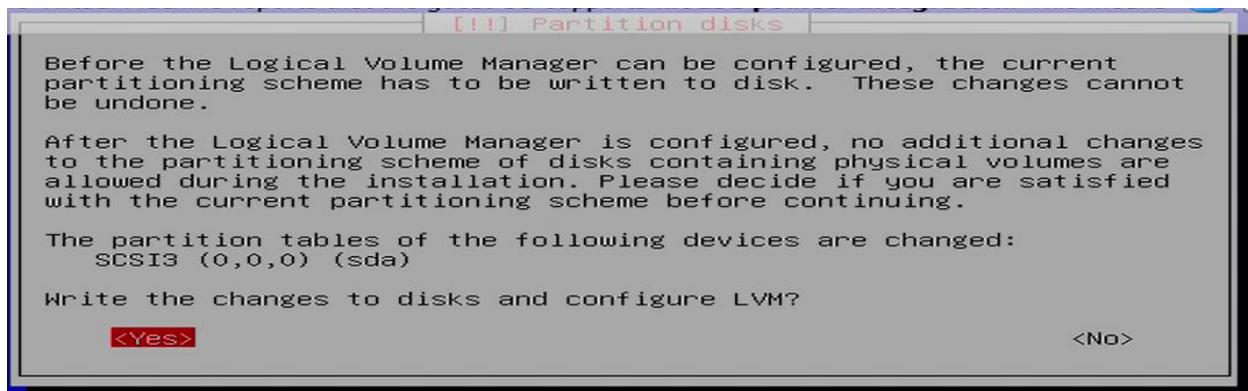


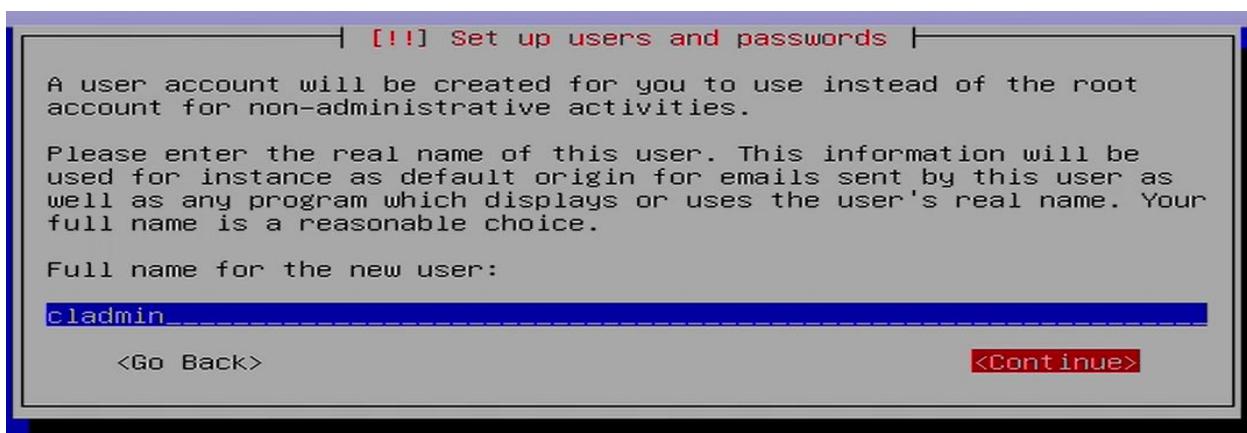
## Selection of Components

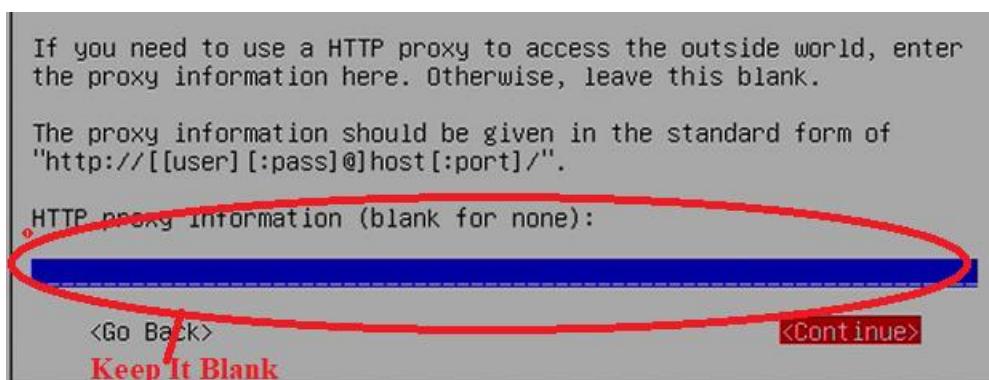
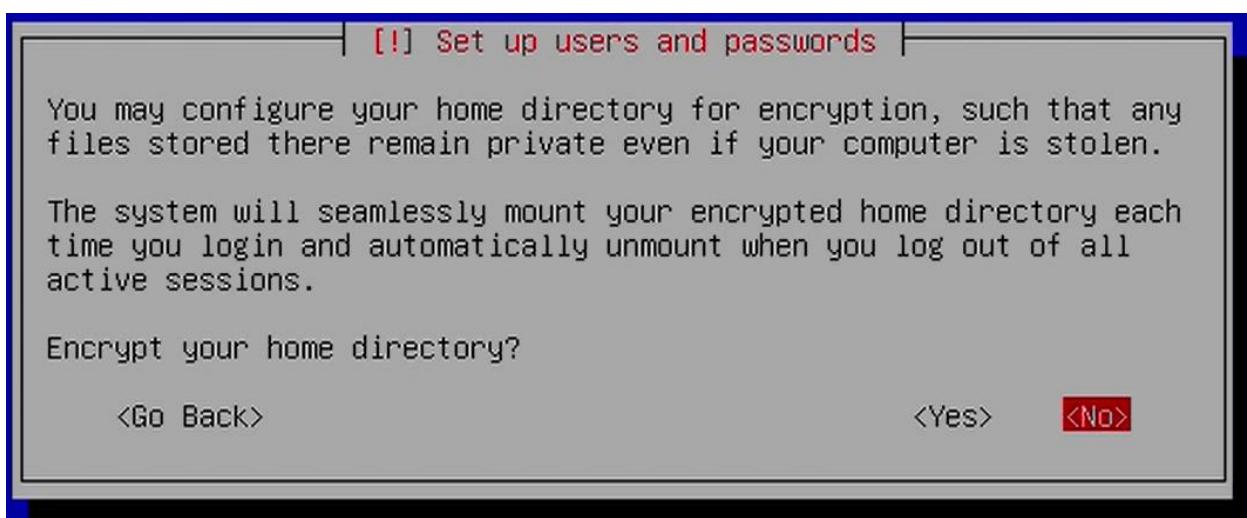
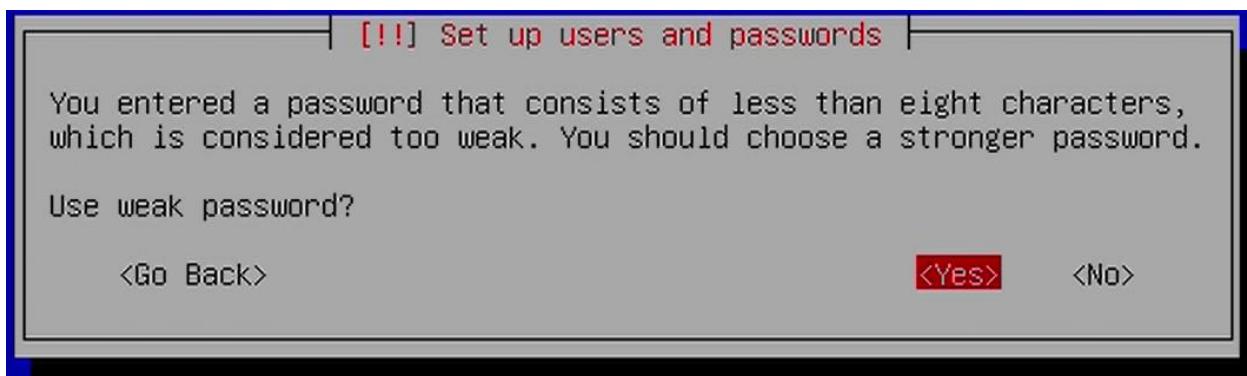
- In larger and/or more complex installations, each of the functions shown in menu (next screen) may be divided onto separate physical servers.
  - Eucalyptus private cloud has **a single cloud controller**,
  - But there can be **multiple cluster controllers** within the cloud,
  - and **multiple node controllers** reporting to each cluster controller.
  - **Walrus** is the **data storage component** of Eucalyptus, which is

- similar to Amazon's Simple Storage Service (S3).
  - We choose the role first server will play in our cloud.
  - For our demonstration, we use a single-cluster installation and
- accept the **default cloud installation mode** of Cloud controller,
- Walrus storage service, cluster controller, and storage controller.









```

[!] Select and install software

Applying updates on a frequent basis is an important part of keeping
your system secure.

By default, updates need to be applied manually using package
management tools. Alternatively, you can choose to have this system
automatically download and install security updates, or you can
choose to manage this system over the web as part of a group of
systems using Canonical's Landscape service.

How do you want to manage upgrades on this system?

No automatic updates
Install security updates automatically
Manage system with Landscape

```

```

[!] Configuring eucalyptus-cc

Enter a name for this cluster. The name should contain only ASCII
letters, digits, hyphens, and underscores. It will be shown to users
as the name of an availability zone.

Eucalyptus cluster name:

cluster1

<Continue>

```



## Public IPs

- We provide a pool of addresses that will be automatically assigned to VMs when instances are created.
- These public addresses will be automatically assigned to VM instances to make them accessible from outside the cloud

You have the Auto capture keyboard option turned on. This will cause the Virtual Machine to

Eucalyptus requires a pool of IP addresses that can be dynamically assigned to virtual machines. The Virtual Machine reports that the guest OS supports mouse pointer integration. If this is true, unused within their Class C subnet, this system must have a static IP address assigned to it. The interface configured with an address on this subnet, and the corresponding port on the host machine, prospective users must be able to connect to these IPs from outside the cloud. They run the client tools.

Please specify one or more ranges of IP addresses, e.g.:  
 192.168.1.100-192.168.1.199  
 or  
 192.168.2.50-192.168.2.99 192.168.2.150-192.168.2.199

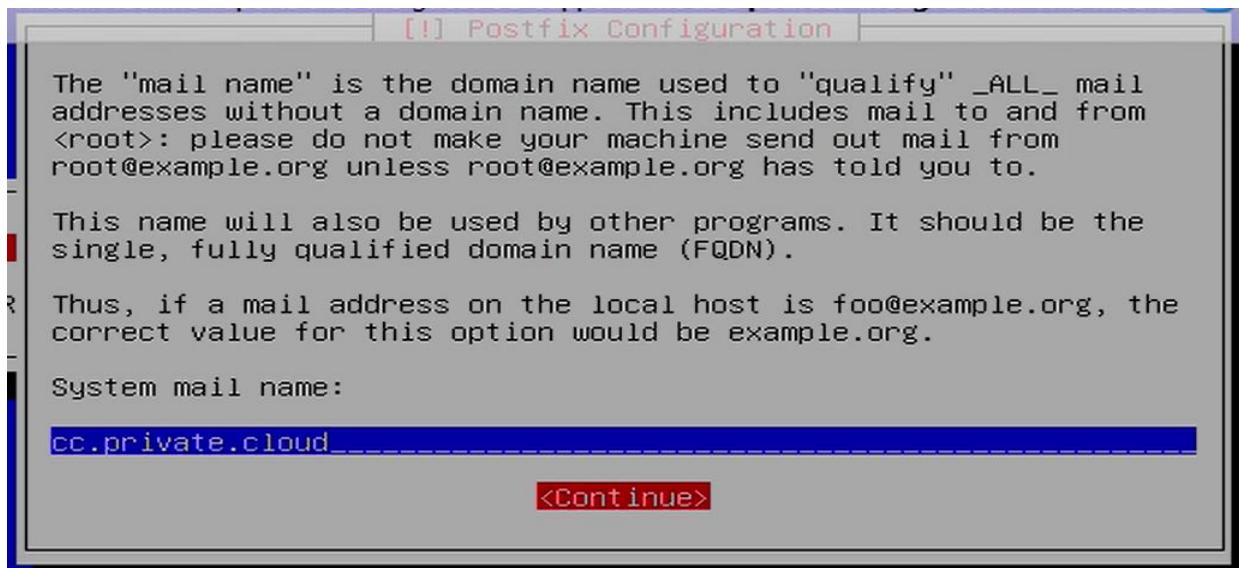
You may leave this blank if you have no IP addresses available. In this case, the system will assign IP addresses to you and your users must then request the private addresses. When starting a virtual machine instance for ec2-run-instances, euca-run-instances, this is done with the option "--address private".

Enable Server

Server Address:	192.168.50.2
Server Mask:	255.255.255.0
Lower Address Bound:	192.168.50.3
Upper Address Bound:	192.168.50.254

<Continue>

In Virtual Box



```
Ubuntu 10.04.4 LTS cc tty1

cc login: cladmin
Password:
Last login: Mon Apr 23 10:48:50 AKDT 2018 on tty1
Linux cc 2.6.32-38-generic-pae #83-Ubuntu SMP Wed Jan 4 12:11:13 UTC 2012 i686 G
NU/Linux
Ubuntu 10.04.4 LTS

Welcome to Ubuntu!
 * Documentation:  https://help.ubuntu.com/

System information as of Mon Apr 23 11:04:44 AKDT 2018

System load: 0.11          Processes:            93
Usage of /: 3.6% of 26.15GB Users logged in:      0
Memory usage: 24%          IP address for eth0:metadata: 169.254.169.254
Swap usage:  0%            IP address for eth0:        192.168.50.20

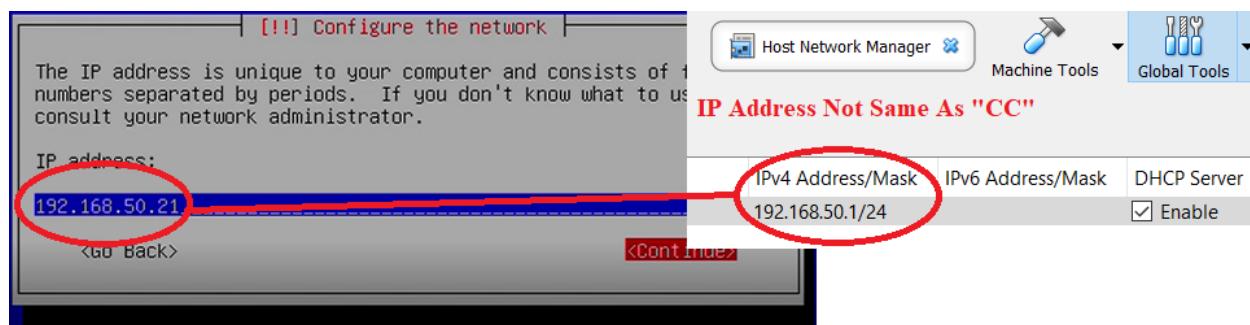
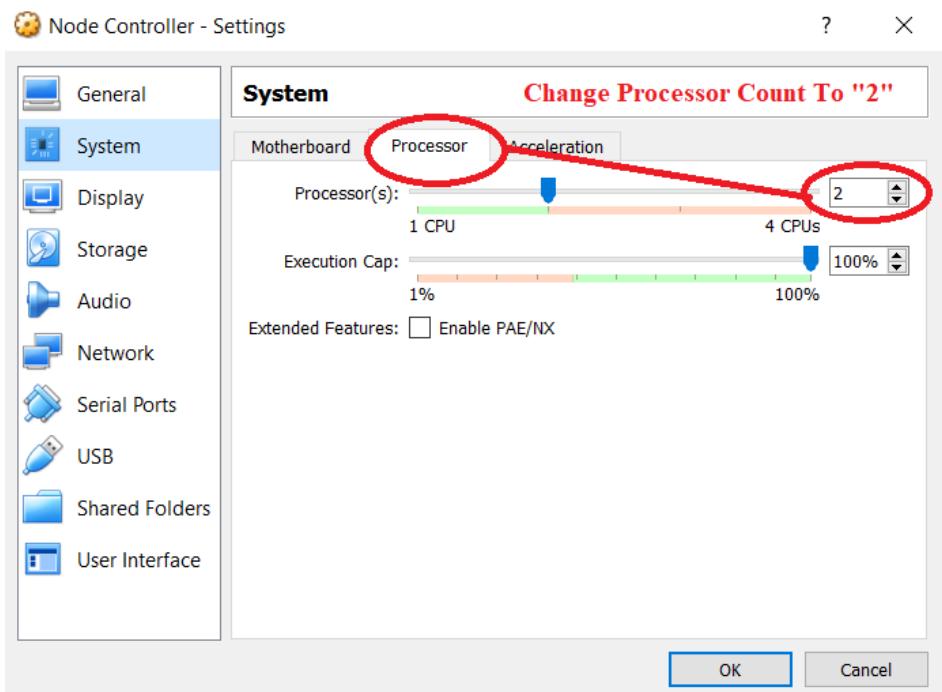
Graph this data and manage this system at https://landscape.canonical.com/

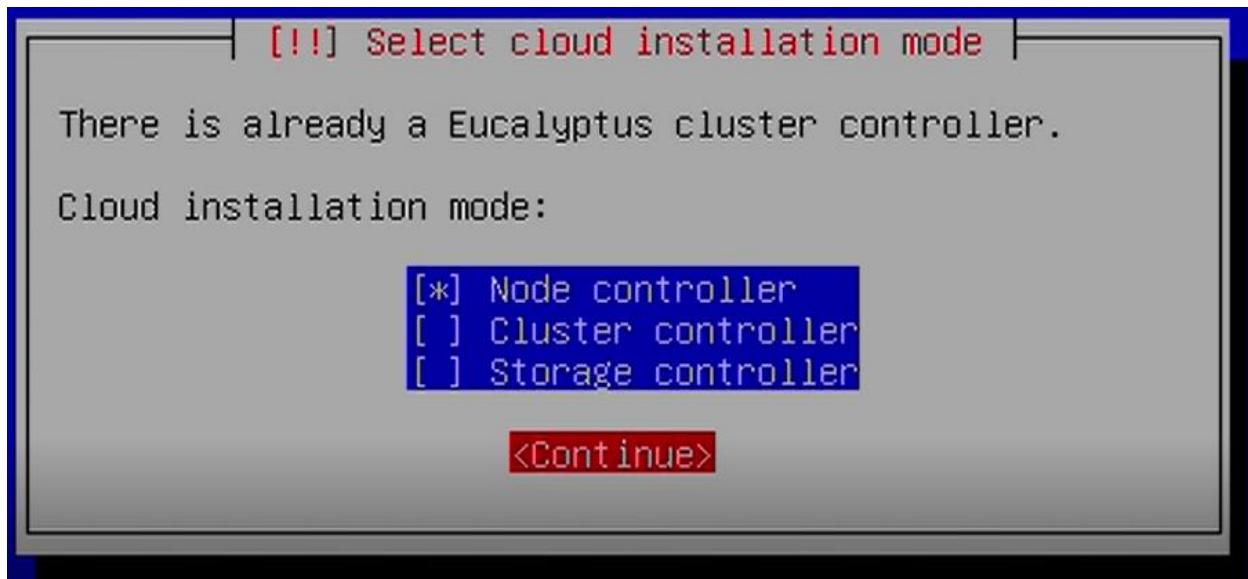
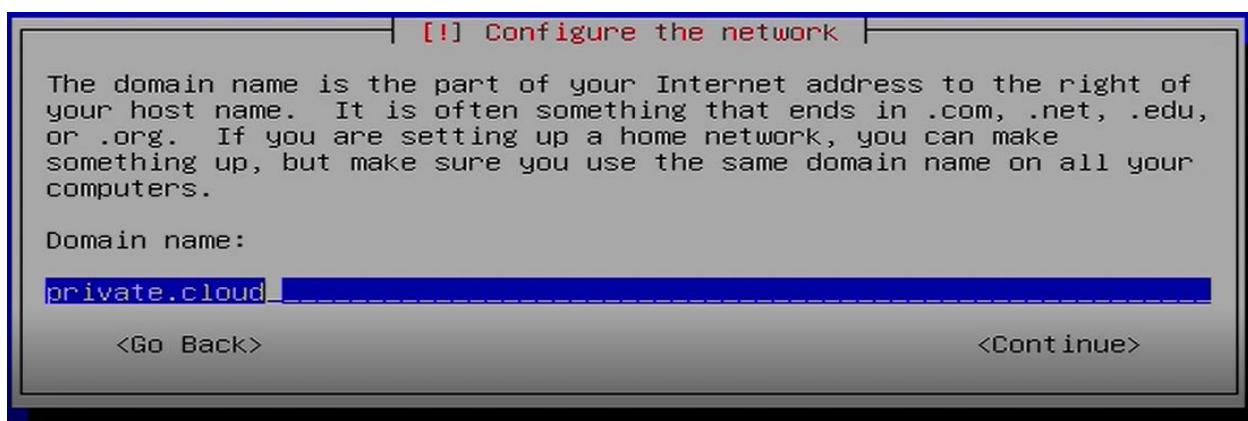
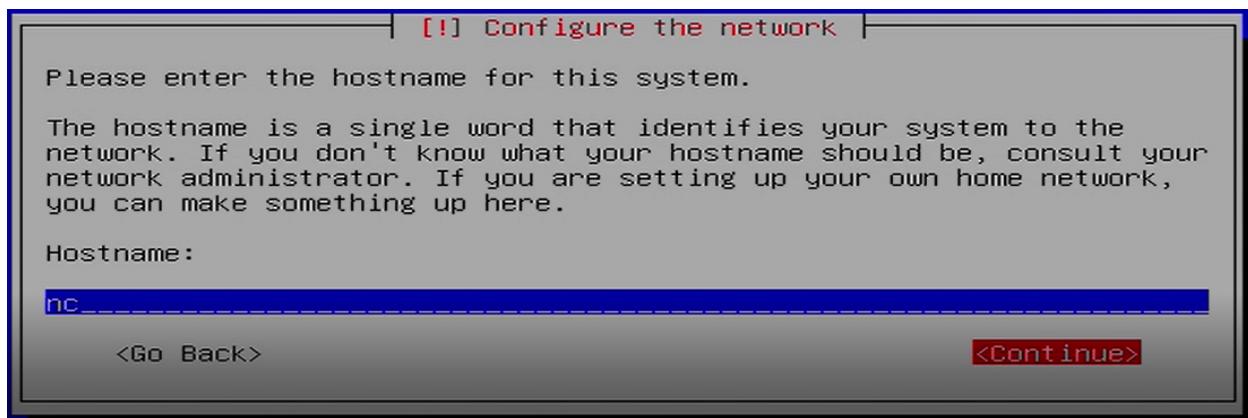
0 packages can be updated.
0 updates are security updates.

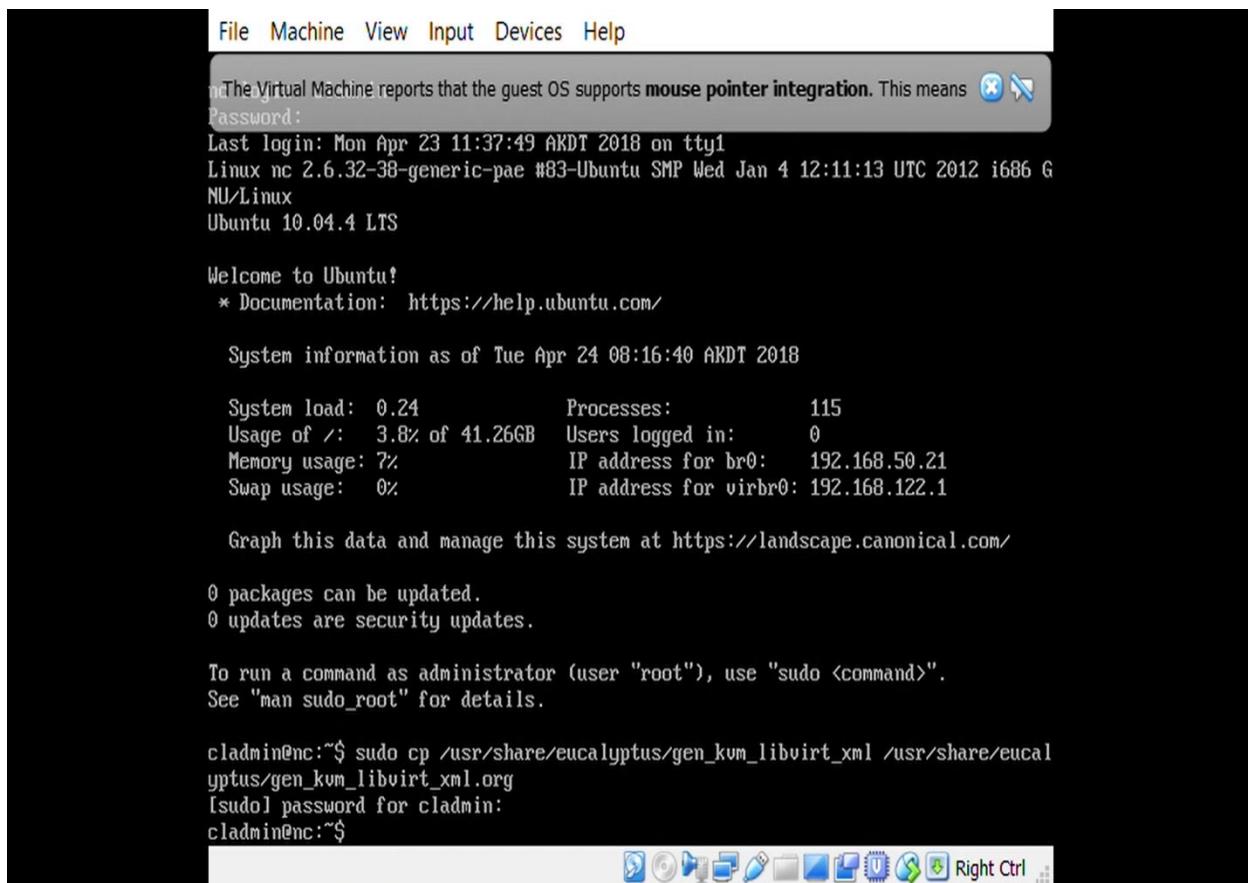
cladmin@cc:~$
```

## ❖ Setup Server-2 (Node Controller)

- Keep Server-1 running
- For Server-2, we will do same it is as Server-1
- But, We Select No of Processor =2

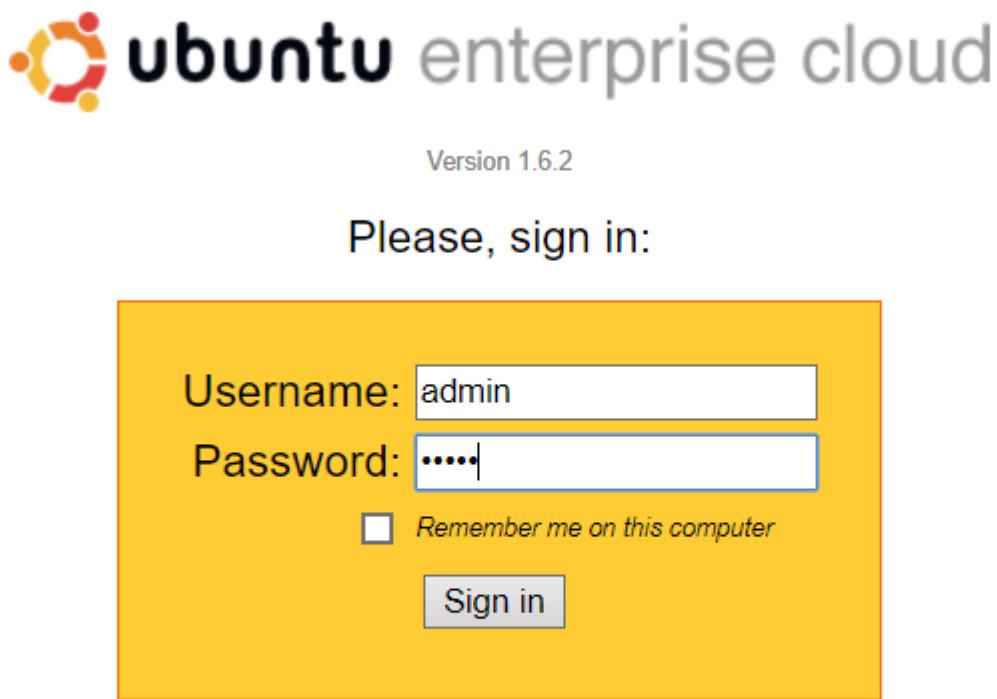






## Installing Cloud Administrative Credentials through the Eucalyptus Web Interface

- Step 1: Browse to web interface of eucalyptus (CC) from a networked machine on which internet browser is available. We used windows machine inside which cloud was setup.
  - Login with default user name: admin and default password: admin
  - USE URL="Your CC IP Address"<192.168.50.20>



- **Step 1: Change password**
- Change password to **adminadmin** at first time configuration
  - Specify email address of administrator as **cladmin@cc.cloud.private**
  - Where **cc** is the host **name of cloud controller** and **cloud.private** is the domain that we assign (Domain name can be configured in **/etc/hosts** file)

## ➤ Step 2: Download credentials



### User account Information

Login: **admin**

Name:

Email: **cladmin@cc.cloud.private**

Feel free to change the account information (except the login) and the password whenever you want. The cryptographic credentials for the Web services associated with this account, shown below, will not be affected by these changes.

[Edit Account Information](#)

[Change Password](#)

### Credentials ZIP-file

Click the button to download a ZIP file with your Eucalyptus credentials. Use the public/private key pair included therein with tools that require X.509 certificates, such as Amazon's EC2 command-line tools.

[Download Credentials](#)

## ➤ Step 3: Copy the downloaded file

- Copy the downloaded file euca2-adminx509.zip to [/home/cladmin](#) folder on The [cloud controller \(cc\)](#).
- You can use scp, ftp, sftp, or any other preferred method.
  - `scp euca2-admin-x509.zip cladmin@<cc-IP>:/home/cladmin`
- If any of above is not available, we can copy using pendrive.

# Step 4: Save All Configuration

Credentials Images Store Users Configuration Services Extras

powered by  Eucalyptus

**Cloud configuration:**

Cloud Host: 192.168.50.20  
Default kernel: [ ] Default ramdisk: [ ]

Loaded configuration from server

**DNS configuration:**

Domain name: localhost  
Nameserver: inhost\_localhost IP: 127.0.0.1  
 Loaded configuration from server

**Walrus Configuration:**

Walrus host: 192.168.50.20   
Buckets path: //var/lib/eucalyptus/buckets  
5 Maximum buckets per user  
5120 MB maximum bucket size  
30720 MB of disk are reserved for the image cache  
50 GB of disk are reserved for snapshots  
  Walrus configuration up to date

Use VLAN tags 10 through 4095

**Storage Controller**

Host: 192.168.50.20  
Interface: eth0  
Volumes path: //var/lib/eucalyptus/volumes  
Max volume size: 10 GB  
Disk space reserved for volumes: 50 GB  
 Zero-fill volumes  
  Clusters up to date

**VM Types:**

Name	CPUs	Memory (MB)	Disk (GB)
m1.small	1	192	2
c1.medium	1	256	5
m1.large	2	512	10
m1.xlarge	2	1024	20
c1.xlarge	4	2048	20

## Step 5: Extract file

- Now we will create a `.euca` folder on the cloud controller (`cc`) and extract the zip file to this folder:

```
cladmin@cc:~$ mkdir ~/.euca  
cladmin@cc:~$ cd ~/.euca  
cladmin@cc:~/.euca$ unzip ../euca2-admin-x509.zip
```

## Step 6: Remove zip file and apply appropriate permissions

- Because the credentials file contains information allowing administrative access to the cloud, it is recommended to remove the zip file and apply permissions to the `.euca` folder and its contents:

```
cladmin@cc:~/.euca$ rm ~/euca2-adminx509.zip  
cladmin@cc:~/.euca$ chmod 0700 ~/.euca  
cladmin@cc:~/.euca$ chmod 0600 ~/euca/*
```

### ❖ Without use of web interface how to set credential (OR Step 1,2,3,5,6)

- Using command line on cc (cloud controller)

```
$ mkdir -p ~/.euca  
$ chmod 0700 ~/.euca  
$ cd ~/.euca  
$ sudo euca_conf --get-credentials mycreds.zip  
$ unzip mycreds.zip  
$ ln -s ~/.euca/eucarc ~/.eucarc  
$ cd -
```

```
cladmin@cc:~$ cd ~  
cladmin@cc:~$ mkdir -p ~/.euca  
cladmin@cc:~$ chmod 0700 ~/.euca  
cladmin@cc:~$ cd ~/.euca  
cladmin@cc:~/euca$ sudo euca_conf --get-credentials mycreds.zip  
[sudo] password for cladmin:
```

```
cladmin@cc:~/.euca$ sudo euca-conf --get-credentials mycreds.zip
[sudo] password for cladmin:
--2018-04-23 11:01:59-- https://localhost:8443/getX509?user=admin&code=7Q204E9L
PyktnX24U1JiNI2pdfodEs9Djybyg0Dz4aYi0QrIvcHkbRMTvOMa5xWWzb64TiohvunBPmDw
Resolving localhost... ::1, 127.0.0.1
Connecting to localhost::1::8443... failed: Connection refused.
Connecting to localhost:127.0.0.1::8443... connected.
WARNING: cannot verify localhost's certificate, issued by '/C=US/ST=CA/L=Santa Barbara/O=db/OU=Euca lyptus/CN=localhost':
Self-signed certificate encountered.
HTTP request sent, awaiting response... 200 OK
Length: 5054 (4.9K) [application/zip]
Saving to: 'mycreds.zip'

100%[=====] 5,054      --.-K/s   in 0s

2018-04-23 11:02:02 (514 MB/s) - 'mycreds.zip' saved [5054/5054]
```

```
cladmin@cc:~/.euca$ unzip mycreds.zip
Archive: mycreds.zip
To setup the environment run: source /path/to/eucarc
  inflating: eucarc
  inflating: cloud-cert.pem
  inflating: jssecacerts
  inflating: euca2-admin-85035fe1-pk.pem
  inflating: euca2-admin-85035fe1-cert.pem
```

```
cladmin@cc:~/.euca$ ln -s ~/.euca/eucarc ~/.eucarc
cladmin@cc:~/.euca$ cd ~
/home/cladmin
cladmin@cc:~$ cd ~/.euca
cladmin@cc:~/.euca$ ls
cloud-cert.pem          euca2-admin-85035fe1-pk.pem  jssecacerts
euca2-admin-85035fe1-cert.pem  eucarc      mycreds.zip
```

## ❖ Configure login environment

**Step 6:** Next we will add a line to the `~/.bashrc` file on the cloud controller to ensure the necessary environment variables are initialized upon login:

```
cladmin@cc:~/.euca$ echo ". ~/.euca/eucarc" >> ~/.bashrc
```

**Step 7:** Next we will source the `.bashrc` file to ensure our settings take effect:

```
cladmin@cc:~$ source ~/.bashrc
```

You can log off and back on in order to ensure these settings are active.

```
cladmin@cc:~/.euca$ echo ". ~/.euca/eucarc" >> ~/.bashrc
cladmin@cc:~/.euca$ cd ..
cladmin@cc:~$ source ~/.bashrc
cladmin@cc:~$ exit
```

## Accessing the Cloud

### ❖ checking resources available for hosting VM on cloud

Step 1:

- Do not start any node controller and check resources using “euca-describe-availability-zones” command
- Our clc (cc) is running on [192.168.50.20](http://192.168.50.20)

```
cladmin@cc:~$ euca-describe-availability-zones verbose
AVAILABILITYZONE      cluster1      192.168.50.20
AVAILABILITYZONE      |- vm types   free / max  cpu  ram  disk
AVAILABILITYZONE      |- m1.small    0000 / 0000  1    192   2
AVAILABILITYZONE      |- c1.medium   0000 / 0000  1    256   5
AVAILABILITYZONE      |- m1.large    0000 / 0000  2    512   10
AVAILABILITYZONE      |- m1.xlarge   0000 / 0000  2   1024   20
AVAILABILITYZONE      |- c1.xlarge   0000 / 0000  4   2048   20
cladmin@cc:~$
```

- We can see that we do not find any free resources for hosting new VM  
checking resources available for hosting VM on cloud

Step 2:

- Start node controller and check resources using eucadescribe-availability-zones command

```
cladmin@cc:~$ euca-describe-availability-zones verbose
AVAILABILITYZONE      cluster1      192.168.50.20
AVAILABILITYZONE      |- vm types   free / max  cpu  ram  disk
AVAILABILITYZONE      |- m1.small    0002 / 0002  1    192   2
AVAILABILITYZONE      |- c1.medium   0002 / 0002  1    256   5
AVAILABILITYZONE      |- m1.large    0001 / 0001  2    512   10
AVAILABILITYZONE      |- m1.xlarge   0001 / 0001  2   1024   20
AVAILABILITYZONE      |- c1.xlarge   0000 / 0000  4   2048   20
cladmin@cc:~$
```

- We can see that now we find free resources for hosting new VM. We can start 2 instances of m1.small, 2 instance of c1.medium, 1 instance of m1.large



## Image management

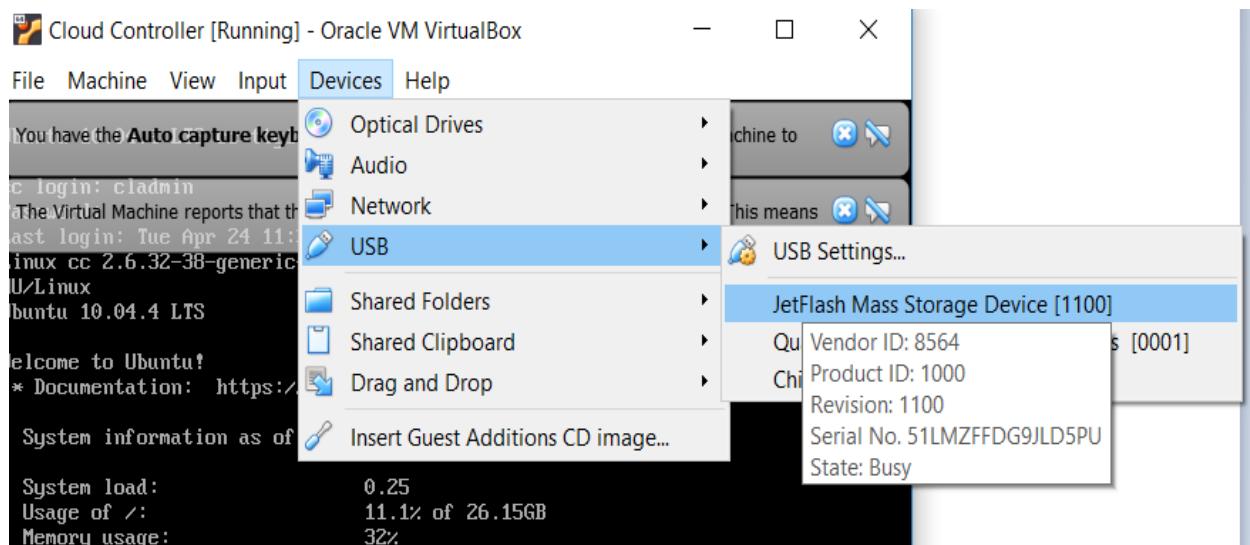
- Eucalyptus Machine Image (EMI) is a bootable system
- EMI contains following
  - Kernel Image
  - Ramdisk image
  - Hard disk image
- We need to perform following for each image file
  - Bundle
  - Upload
  - Register

### ❖ Get Eucalyptus Image file

- It is preferable to directly download images on cc machine from emi repository
  - Internet access is required on cc
- We try to understand manual process
- We downloaded the following image for KVM hypervisor
  - **trusty-server-cloudimg-amd64.tar.gz**
  - **Also Available on “cloud-images.ubuntu.com”**

### ❖ Transfer image file to cc

- We have image in our USB



```
cladmin@cc:~$ [ 1583.179850] sd 3:0:0:0: [sdb] Assuming drive cache: write through  
[ 1583.468154] sd 3:0:0:0: [sdb] Assuming drive cache: write through  
[ 1583.608002] sd 3:0:0:0: [sdb] Assuming drive cache: write through  
cd ..
```

- We transfer the image to cc

```
cladmin@cc:~/home$ cd ..  
cladmin@cc:~/home$ sudo mkdir /media/usb  
cladmin@cc:~/home$ sudo mount /dev/sdb1 /media/usb  
cladmin@cc:~/home$
```

```
cladmin@cc:~/media$ cd media  
cladmin@cc:/media$ cd usb  
cladmin@cc:/media/usb$ ls
```

**trusty-server-cloudimg-amd64.tar.gz**

## Copy File to /home/cladmin

```
cladmin@cc:/media/usb$ cp trusty-server-cloudimg-amd64.tar.gz /home/cladmin
```

### ❖ Extract image file

- Extract under home directory of cladmin on cc
- Command:**→**uec-publish-tarball trusty-server-cloudimg-amd64.tar.gz `x86\_64`

```
cladmin@cc:/media/usb$ cd  
cladmin@cc:~/media/usb$ uec-publish-tarball trusty-server-cloudimg-amd64.tar.gz 'x86_64'  
Mon Apr 23 11:12:52 AKDT 2018: ===== extracting image =====  
Warning: no ramdisk found, assuming '--ramdisk none'  
kernel : trusty-server-cloudimg-amd64-vmlinuz-generic  
ramdisk: none  
image : trusty-server-cloudimg-amd64.img  
Mon Apr 23 11:13:17 AKDT 2018: ===== bundle/upload kernel =====  
Mon Apr 23 11:13:20 AKDT 2018: ===== bundle/upload image =====  
Mon Apr 23 11:15:24 AKDT 2018: ===== done =====  
emi="emi-FB5315AE"; eri="none"; eki="eki-436C1A8F";
```

## ❖ Image catalog in GUI

- we can also browse using web interface on the
- following address
  - <https://192.168.50.20:8443/#images>

Id	Name	Kernel	Ramdisk	State	Actions	Eucalyptus
emi-FB5315AE	x86_64/trusty-server-cloudimg-amd64.img.manifest.xml	eki-436C1A8F		available	<a href="#">Disable</a>	
eki-436C1A8F	x86_64/trusty-server-cloudimg-amd64-vmlinuz-generic.manifest.xml			available	<a href="#">Disable</a>	

## ❖ Browse Images

- **Step 10:** Browse registered images  
\$euca-describe-images | grep emi

```
cladmin@cc:~$ euca-describe-images | grep emi
IMAGE  emi-FB5315AE    x86_64/trusty-server-cloudimg-amd64.img.manifest.xml   a
dmin    available      public           x86_64  machine eki-436C1A8F
```

## ❖ Key pairs for login to VM instances

- **Step 11:** Add keypair
  - Check key pairs using euca-describe-keypairs
- If key is not already added, add it using following
  - \$euca-add-keypair user-key01 > .euca/user-key01.pk
  - \$chmod 400 .euca/user-key01.pk

## ❖ Security role (allow ssh login)

- **Step 12:** Add security role
  - Check security group using euca-describe-groups

```
cladmin@cc:~$ euca-describe-keypairs
cladmin@cc:~$ euca-add-keypair user-key01 > .euca/user-key01.pk
cladmin@cc:~$ chmod 0400 .euca/user-key01.pk
cladmin@cc:~$ euca-describe-groups
GROUP  admin  default default group
```

## ❖ Security role (allow ssh login)

- **Step 12:** Add security role
  - If security group not already added, add it using following

```
$euca-authorize -P tcp -p 22 -s 192.168.0.0/16 default
$euca-authorize -P icmp -t -1:-1 -s 192.168.0.0/16 default
• -P → protocol
• -p → port no
• -s → source network
```

```
cladmin@cc:~$ euca-authorize -P tcp -p 22 -s 192.168.0.0/16 default
GROUP      default
PERMISSION      default ALLOWS    tcp      22      22      FROM      CIDR      192.168.
0.0/16
cladmin@cc:~$
```

```
cladmin@cc:~$ euca-authorize -P icmp -t -1:-1 -s 192.168.0.0/16 default
GROUP      default
PERMISSION      default ALLOWS    icmp      -1      -1      FROM      CIDR      192.168.
0.0/16
```

## ❖ Launch Instance

- **Step 13:** Launch an instance
  - Find [emi id] using \$euca-describe-images | grep emi
  - Pass [emi id] to euca-run-instances command

```
$euca-run-instances -k user-key01 -t m1.small -n 1 <emi-XXXXXX>
```

Here

```
cladmin@cc:~$ euca-run-instances -k user-key01 -t c1.medium -n 1 emi-FB5315AE
RESERVATION      r-44F006F4      admin      admin-default
INSTANCE          i-4A3C0940      emi-FB5315AE      0.0.0.0 0.0.0.0 pending user-key
01      0      c1.medium      2018-04-24T16:43:57.648Z      cluster1
eki-436C1A8F
```

-k -> key  
-t -> type (get it using euca-availability-zones verbose)  
-n -> number of instances

Public key is injected in VM instance when it boots up. Therefore [password less login](#) is possible to VM

## ❖ Check status of instance

- Step 14:** Check status of instance
  - \$watch euca-describe-instances

```
Every 2.0s: euca-describe-instances              Tue Apr 24 08:45:01 2018

RESERVATION      r-44F006F4      admin  default
INSTANCE         i-4A3C0940      ami-FB5315AE    192.168.50.201  172.19.1.2
running user-key01      0          c1.medium      2018-04-24T16:43:57.648Z
cluster1          eki-436C1A8F
```

- **Modify kvm config file on nc**

- Create a backup file:

```
cladmin@nc:~$ sudo cp /usr/share/eucalyptus/gen_kvm_libvirt_xml /usr/share/eucal
yptus/gen_kvm_libvirt_xml.org
[sudo] password for cladmin:
cladmin@nc:~$
```

- Modify domain information:

```
cladmin@nc:~$ sudo vi /usr/share/eucalyptus/gen_kvm_libvirt_xml_
```

- **Modify kvm config file on nc**

- Original

```
print <<EOF;
<domain type='kvm'>
  <name>NAME</name>
  <os>
    <type>hvm</type>
    <kernel>BASEPATH/kernel</kernel>
  EOF
```

- Modify to

```
# deal with command-line parameters
GetOptions('ramdisk'        => sub { $use_ramdisk = 1; },
           'ephemeral'       => sub { }, # option ignored
           ) or exit (1);

print <<EOF;
<domain type='kvm'>
  <name>NAME</name>
  <os>
    <type arch='x86_64'>hvm</type>
    <kernel>BASEPATH/kernel</kernel>
  EOF
```

- Run instance

- We selected c1.medium type due to insufficient space in t1.small

```
cladmin@cc:~$ euca-run-instances -k user-key01 -t c1.medium -n 1 emi-FB5315AE
RESERVATION      r-44F006F4      admin      admin-default
INSTANCE         i-4A3C0940      emi-FB5315AE      0.0.0.0 0.0.0.0 pending user-key
01          0      c1.medium      2018-04-24T16:43:57.648Z      cluster1
eki-436C1A8F
```

- Check status of instance

- Step 14: Check status of instance

```
$watch euca-describe-instances
RESERVATION      r-44F006F4      admin      default
INSTANCE         i-4A3C0940      emi-FB5315AE      192.168.50.201 172.19.1.2
running user-key01      0      c1.medium      2018-04-24T16:43:57.648Z
cluster1          eki-436C1A8F
```

- Login using ssh

- Step 15: Login to instance

\$ssh -i .euca/keypairs/user-key01.pk [ec2user@192.168.50.20](mailto:ec2user@192.168.50.20)

```
cladmin@cc:~$ ssh -i .euca/user-key01.pk ec2user@192.168.50.201
ssh: connect to host 192.168.50.201 port 22: No route to host
```

- OR

```
$cladmin@cc-64:~$ euca-get-console-output <i-xxxxxxxx>
i-xxxxxxxx is the instance ID.
```

```
cladmin@cc:~$ euca-get-console-output i-4A3C0940
i-4A3C0940
2018-04-24T16:51:51.382
[    0.000000] Initializing cgroup subsys cpuset
[    0.000000] Initializing cgroup subsys cpu
[    0.000000] Initializing cgroup subsys cpacct
[    0.000000] Linux version 3.13.0-144-generic (buildd@lgw01-amd64-059) (gcc ve
rsion 4.8.4 (Ubuntu 4.8.4-2ubuntu1~14.04.4) ) #193-Ubuntu SMP Thu Mar 15 17:03:5
3 UTC 2018 (Ubuntu 3.13.0-144.193-generic 3.13.11-ckt39)
[    0.000000] Command line: root=/dev/sda1 console=ttyS0
```

```
[    1.521108] Call Trace:
[    1.521108] [<ffffffff81d3a46f>] mount_block_root+0x225/0x2b0
[    1.521108] [<ffffffff81d3a697>] mount_root+0x53/0x56
[    1.521108] [<ffffffff81d3a806>] prepare_namespace+0x16c/0x1a4
[    1.521108] [<ffffffff81d3a173>] kernel_init_freeable+0x1e7/0x1f4
[    1.521108] [<ffffffff81d398eb>] ? do_early_param+0x8e/0x8e
[    1.521108] [<ffffffff81725020>] ? rest_init+0x80/0x80
[    1.521108] [<ffffffff8172502e>] kernel_init+0xe/0x130
[    1.521108] [<ffffffff81747f7b>] ret_from_fork+0x5b/0xa0
[    1.521108] [<ffffffff81725020>] ? rest_init+0x80/0x80
[    1.521108] Code: 00 00 49 ff cc 74 0c bf 58 89 41 00 e8 8a c7 c4 ff eb ef 48
83 c3 64 eb ab 83 3d 4b 29 79 00 00 74 05 e8 94 6a 96 ff fb 66 66 90 <66> 66 90
45 31 e4 e8 d5 43 9e ff 4d 39 ec 7c 1e 41 83 f6 01 48
[    1.521108] RIP  [<ffffffff8172fe80>] panic+0x1a9/0x1f3
[    1.521108] RSP  <ffff88000edbfe00>
[    1.521108] ---[ end trace 05640267cb0f6102 ]---
```

- **Clean up instance**

- Terminate instance

```
$cladmin@cc-64:~$ euca-terminate-instances <i-xxxxxxxx>
```

```
cladmin@cc:~$ euca-terminate-instances i-4A3C0940
INSTANCE          i-4A3C0940
```