ubuntu 安装 ceph 文档

一：组 raid 卡

1.通过电源将服务器重启，启动过程中按 delete 进入 bios 设置，进入 bios 配置 raid（新机器需要配置）
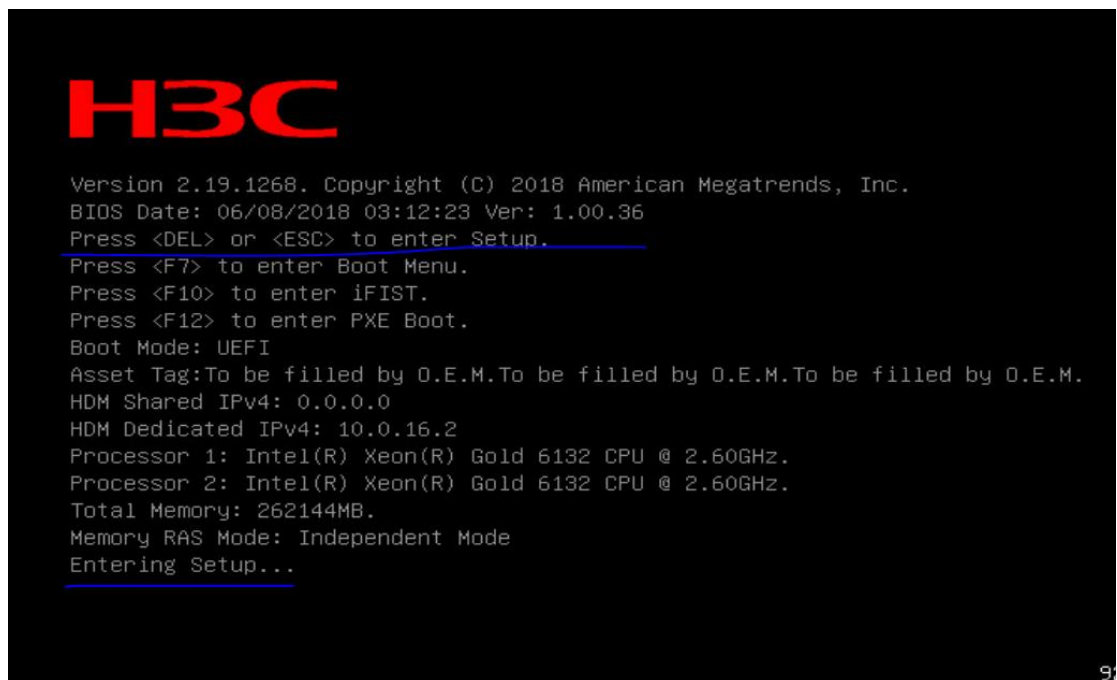
2.配置 raid0（生产环境配置 raid1，实验环境节约资源，配置 raid0）

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Main Advanced Platform Configuration Socket Configuration

▶ Intel(R) Virtual RAID on CPU
▶ Slot10-Mezz:Port 1 – PMC maxView Storage Manager
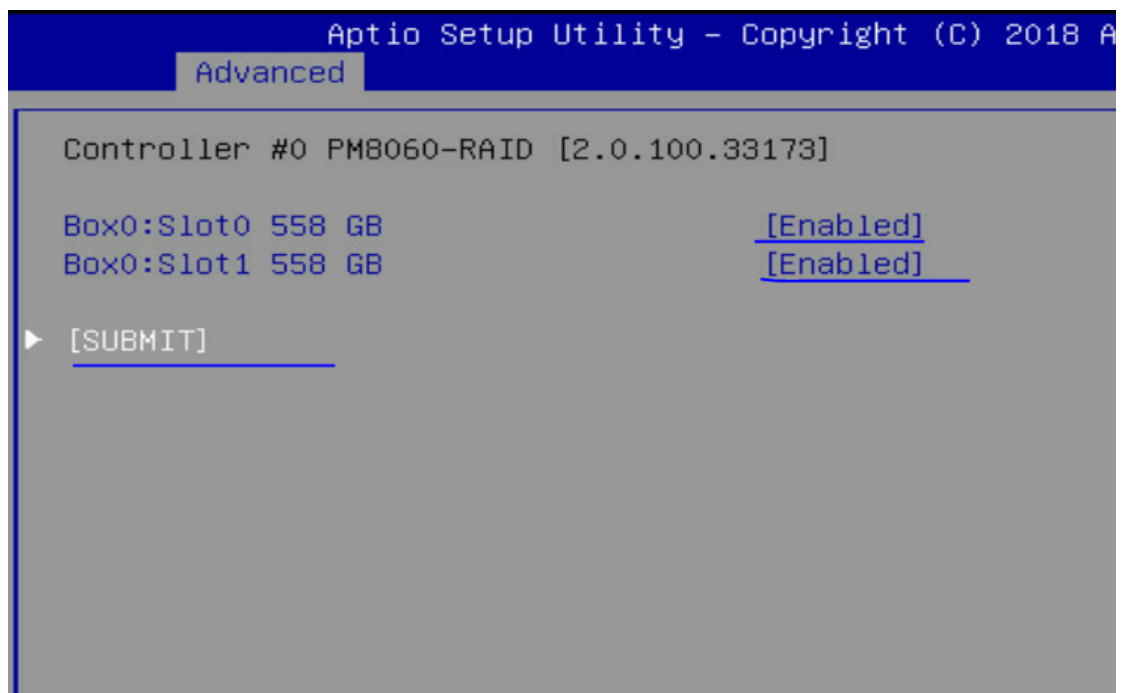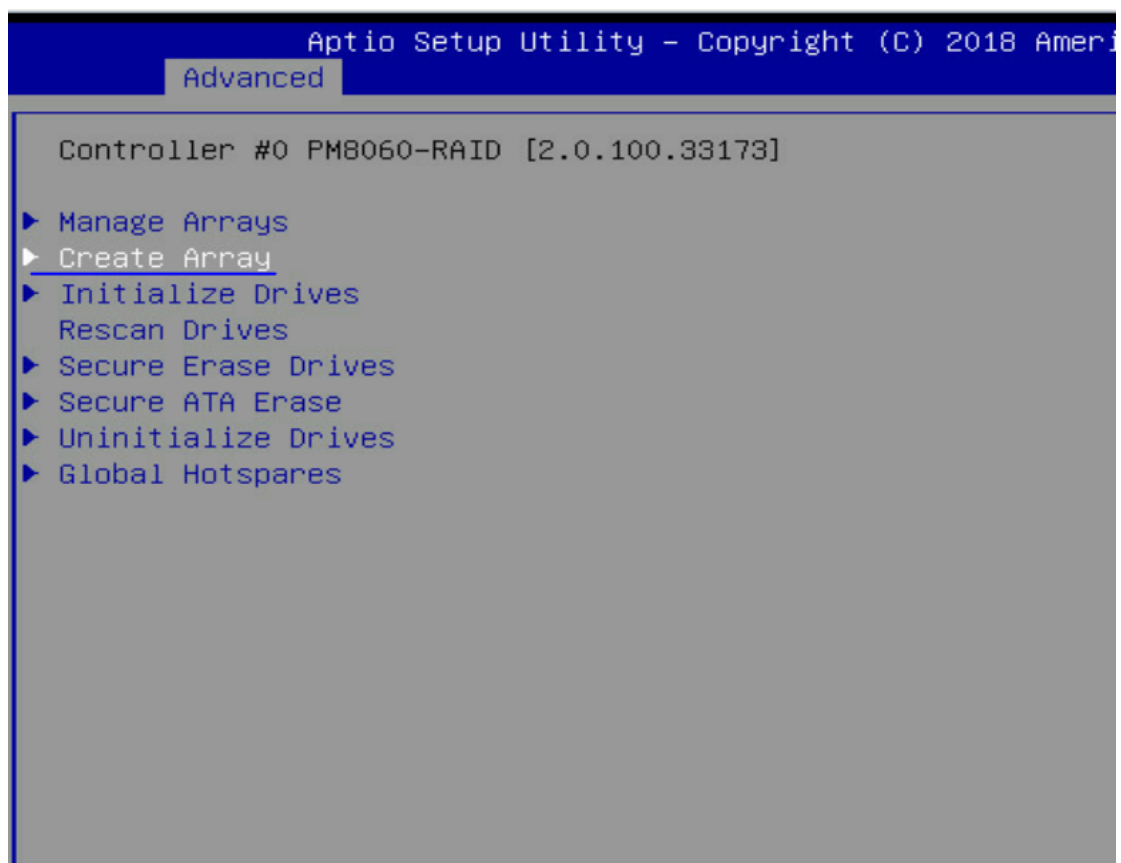▶ Intel(R) RSTe SATA Controller
▶ Slot9-mLOM:Port 1 – Intel(R) Ethernet Connection X722 for
  1GbE – 3C:F5:CC:92:40:FA
▶ Slot9-mLOM:Port 2 – Intel(R) Ethernet Connection X722 for
  1GbE – 3C:F5:CC:92:40:FB
▶ Slot9-mLOM:Port 3 – Intel(R) Ethernet Connection X722 for
  1GbE – 3C:F5:CC:92:40:FC
▶ Slot9-mLOM:Port 4 – Intel(R) Ethernet Connection X722 for
  1GbE – 3C:F5:CC:92:40:FD
▶ Driver Health
▶ Trusted Computing
▶ ACPI Settings
▶ Serial Port Console Redirection
▶ PCI Subsystem Settings
▶ Network Stack Configuration
▶ CSM Configuration
▶ NVMe Configuration
▶ USB Configuration

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Advanced

Controller #0 PM8060-RAID [2.0.100.33173]

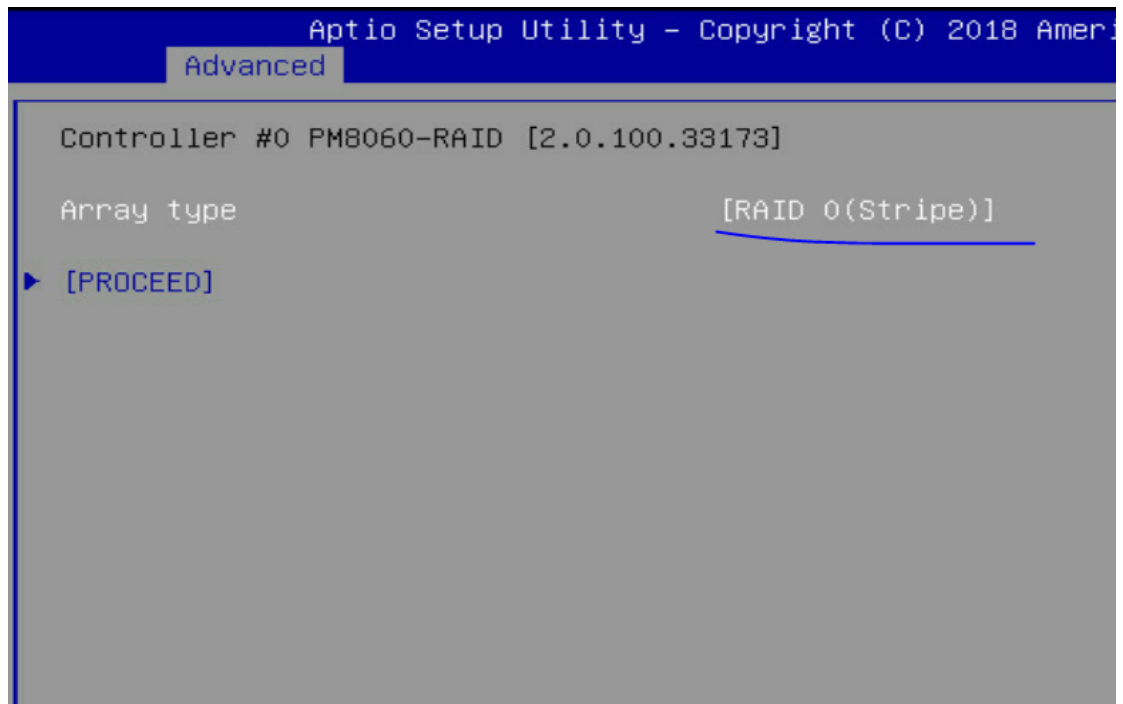▶ Logical Device Configuration
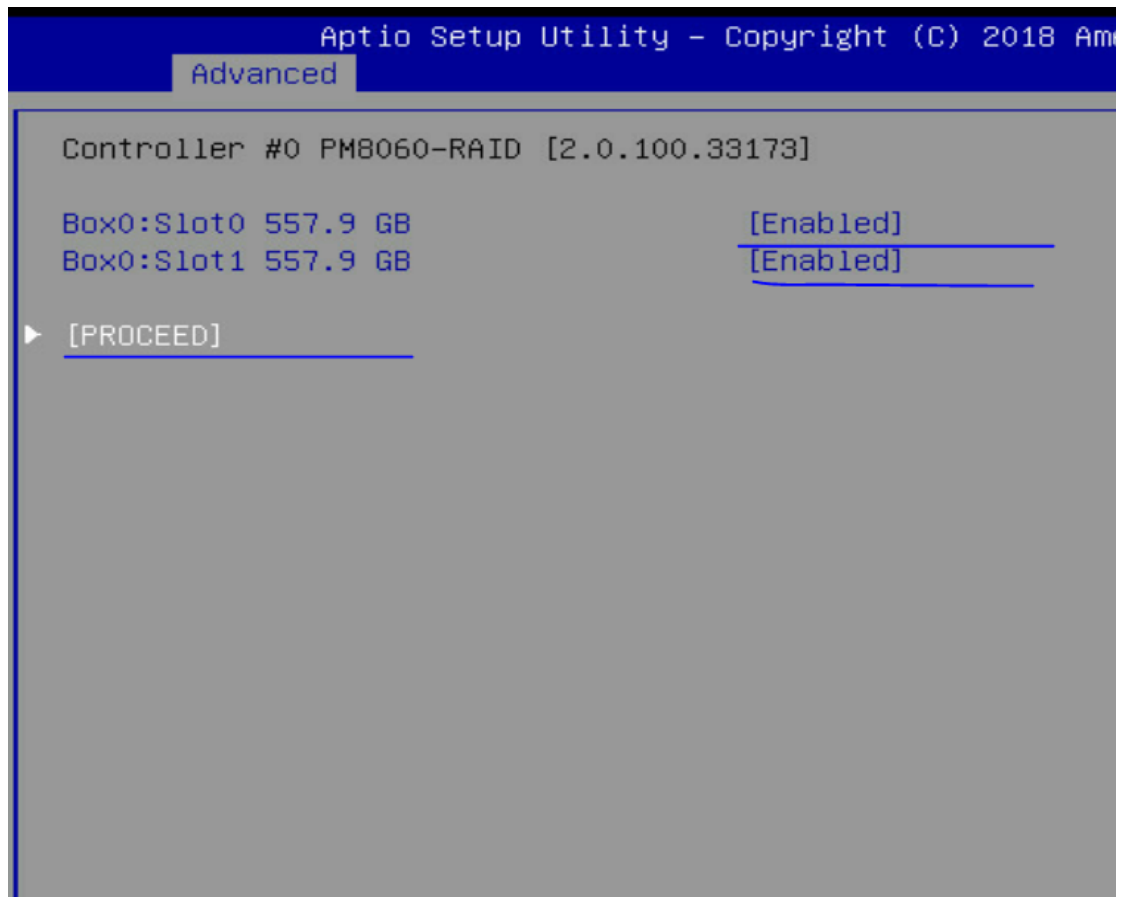▶ Controller Settings
▶ Disk Utilities
▶ Administration

3、先初始化硬盘，把要加入 raid 的硬盘 enable

4、创建 raid

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Advanced

Controller #0 PM8060-RAID [2.0.100.33173]

Box0:Slot0 557.9 GB   [Enabled]
Box0:Slot1 557.9 GB   [Enabled]

▶ [PROCEED]

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Advanced

Controller #0 PM8060-RAID [2.0.100.33173]

Array type   [RAID 0(Stripe)]

▶ [PROCEED]

```
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        Advanced

  Controller #0 PM8060-RAID [2.0.100.33173]

  Array label                        DefaultValue0
  Stripe Size (KB)                   [256]
  Array Size                         1.089
  Array Size Selection               [TB]
  Read Cache                         [Enabled]
  Write Cache                        [Enable Always]
  Create RAID via                    [Quick Init]

 ▶ [SUBMIT]
```

```
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        Advanced

  Controller #0 PM8060-RAID [2.0.100.33173]

  Logical Drive created successfully
  Press ESC to go back

                                                        →←: Sel
                                                        ↑↓: Sel
                                                        Enter:
                                                        +/-: Ch
                                                        ESC: Ex
                                                        F1: Gen
                                                        F2: Pre
                                                        F3: Opt
                                                        F4: Sav
                                                        <K>: Sc
                                                        <M>: Sc
```
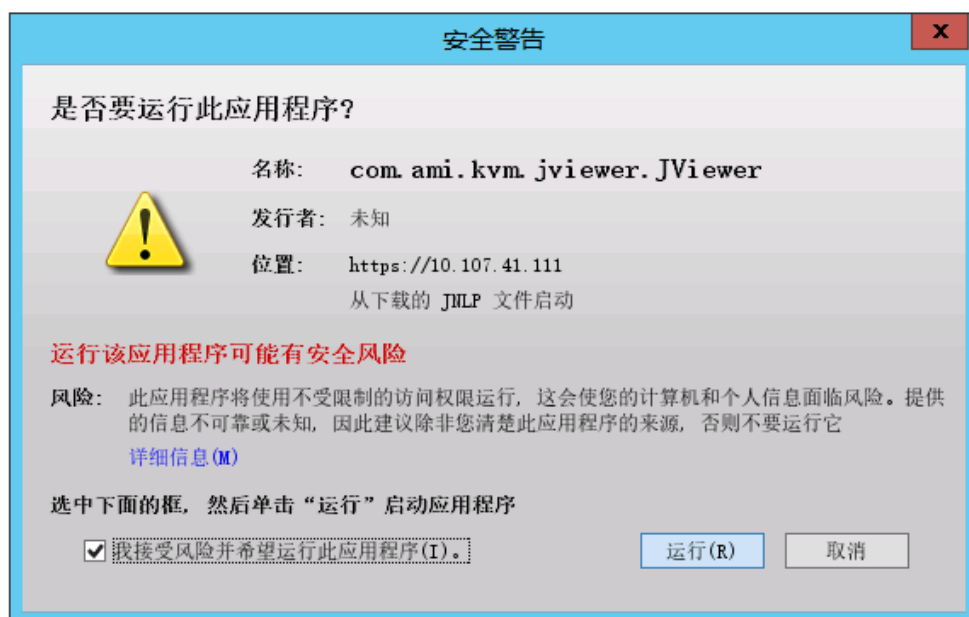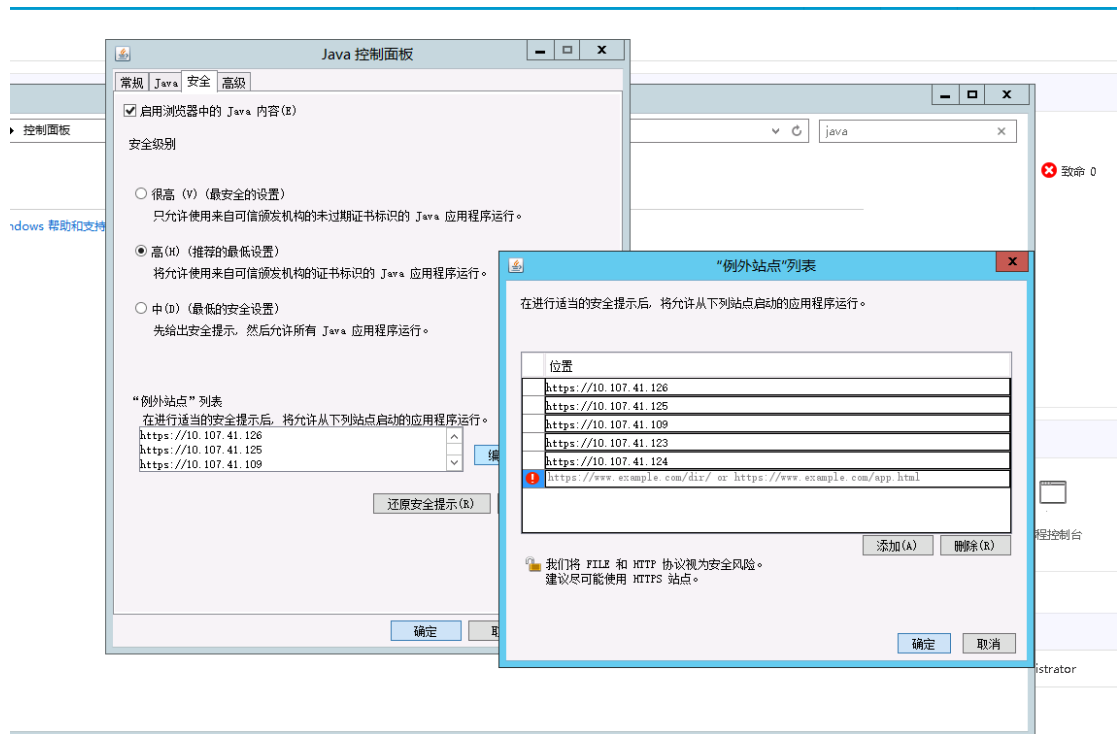
5、配置完成后 F4 保存退出

二：挂载镜像安装

1.打开远程控制台（需要安装好 jdk，在 java 安全中添加站点列表，控制面板—>程序->java➔安全—）编辑站点列表）

2、挂载镜像按提示安装

3、重启后按 F7 进入 boot 界面

4、选择 UEFI: AMI Virtual CDROMO 1.00

```
                    Please select boot device:

ubuntu (Slot10 Mezz  DefaultValue0)                                    ▲
UEFI: IPv4 Slot 2:Port 1 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv4 Slot 2:Port 2 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv4 Slot9-mLOM:Port 1 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv4 Slot9-mLOM:Port 2 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv4 Slot9-mLOM:Port 3 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv4 Slot9-mLOM:Port 4 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv4 Slot 1:Port 1 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv4 Slot 1:Port 2 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv6 Slot 2:Port 1 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv6 Slot 2:Port 2 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv6 Slot9-mLOM:Port 1 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv6 Slot9-mLOM:Port 2 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv6 Slot9-mLOM:Port 3 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv6 Slot9-mLOM:Port 4 - Intel(R) Ethernet Connection X722 for 1GbE
UEFI: IPv6 Slot 1:Port 1 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: IPv6 Slot 1:Port 2 - QLogic 577xx/578xx 10 Gigabit Ethernet (BCM57810)
UEFI: AMI Virtual CDROM0 1.00
Enter Setup                                                            ▼

                    ↑ and ↓ to move selection
                    ENTER to select boot device
                    ESC to boot using defaults
```

5、选择操作 Install Ubuntu Server


```
                        GNU GRUB  version 2.02

    *Install Ubuntu Server
     OEM install (for manufacturers)
     Install MAAS Region Controller
     Install MAAS Rack Controller
     Check disc for defects
     Rescue a broken system
     Boot and Install with the HWE kernel




        Use the ↑ and ↓ keys to select which entry is highlighted.
        Press enter to boot the selected OS, `e' to edit the commands before booting or `c'
        for a command-line. ESC to return previous menu.
        The highlighted entry will be executed automatically in 25s.
```
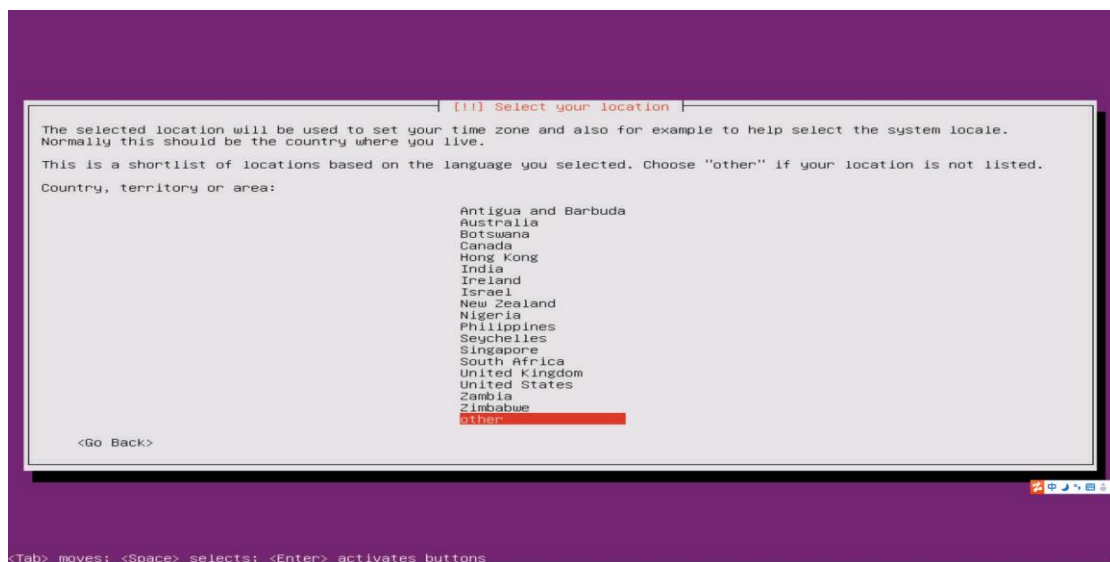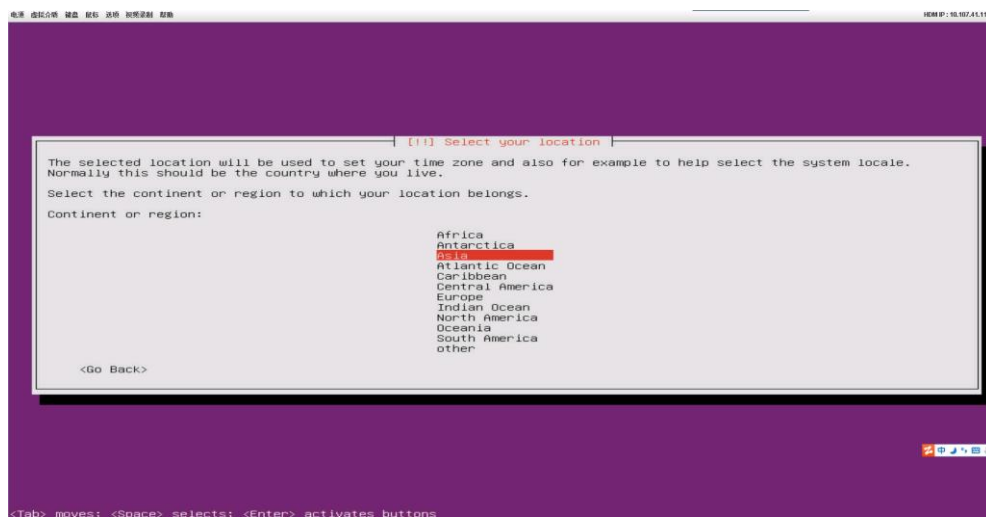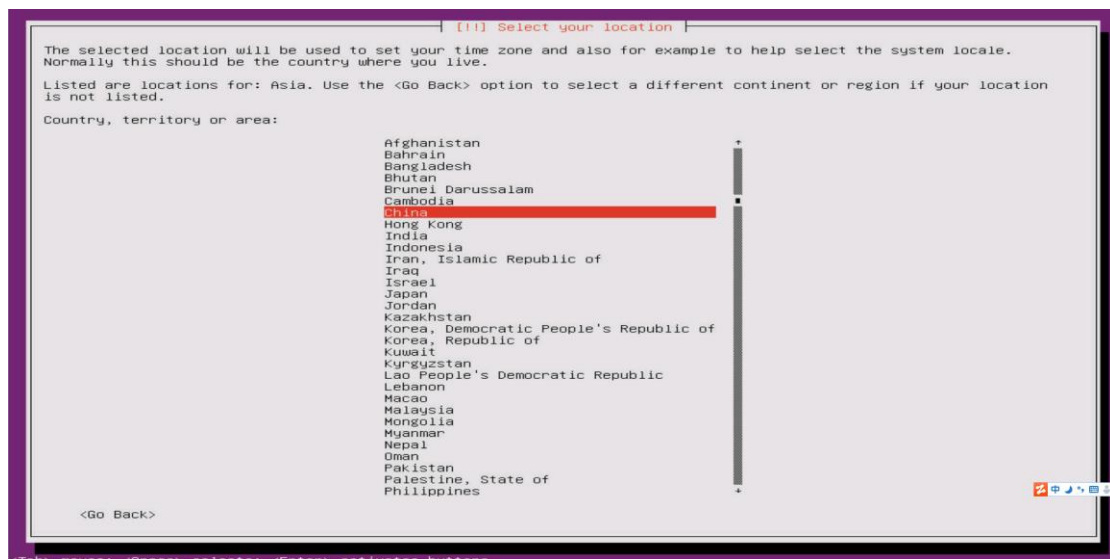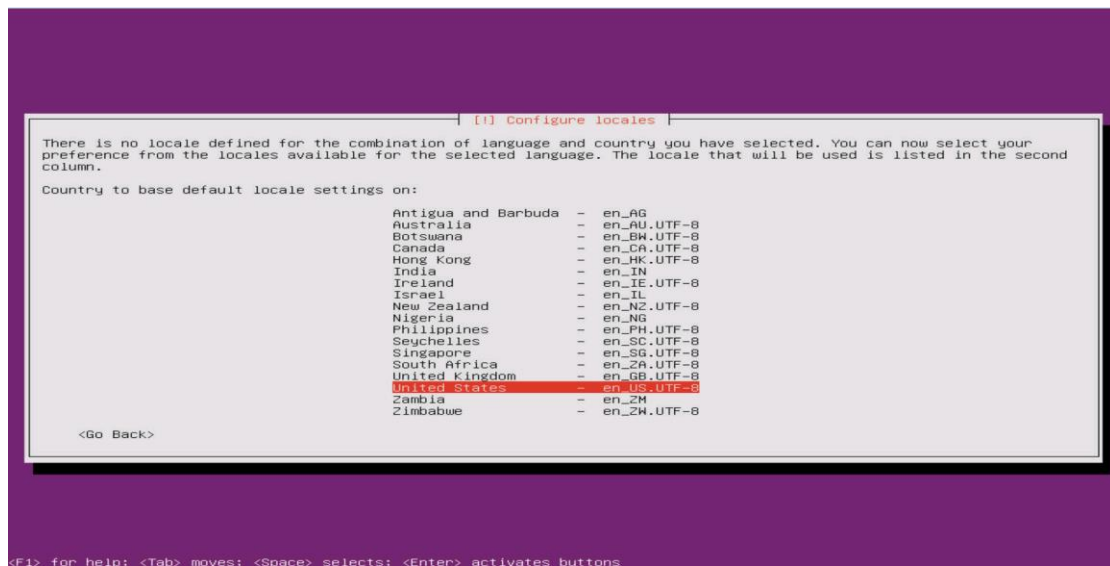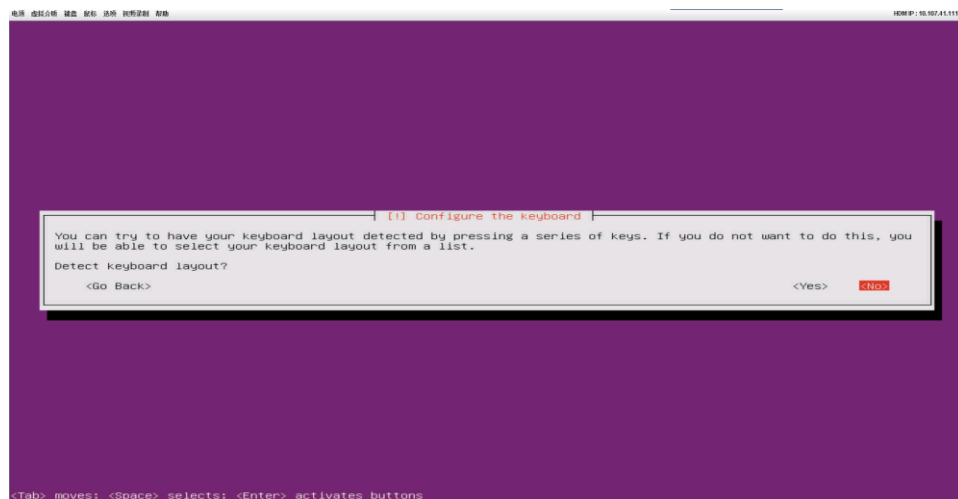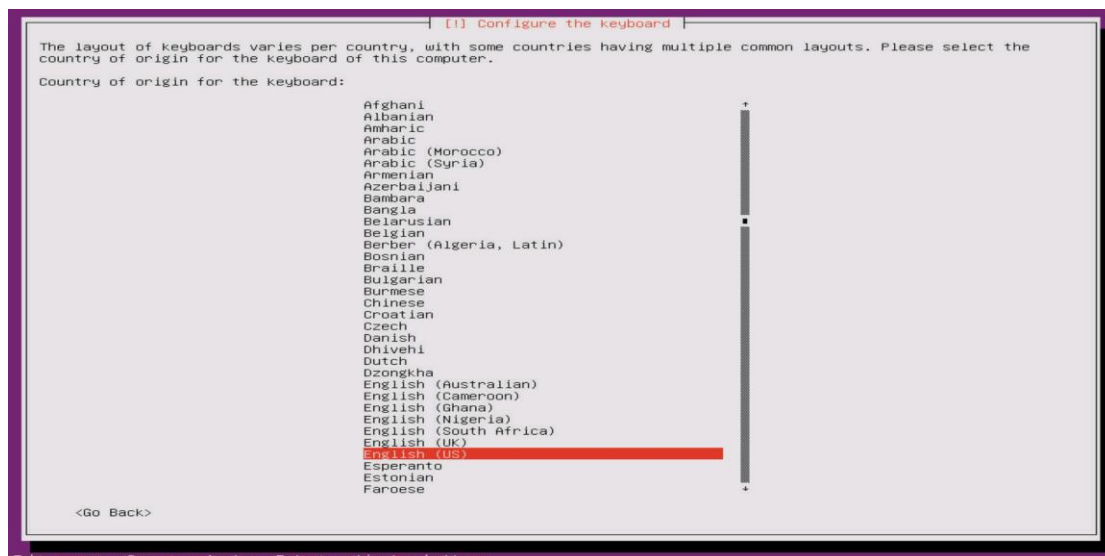
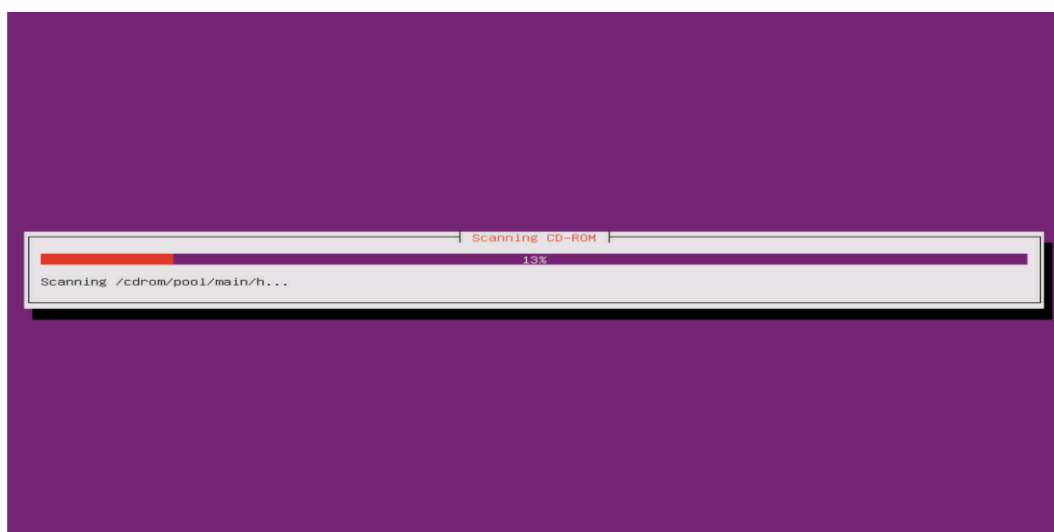6、选择安装过程和系统的默认语言 English
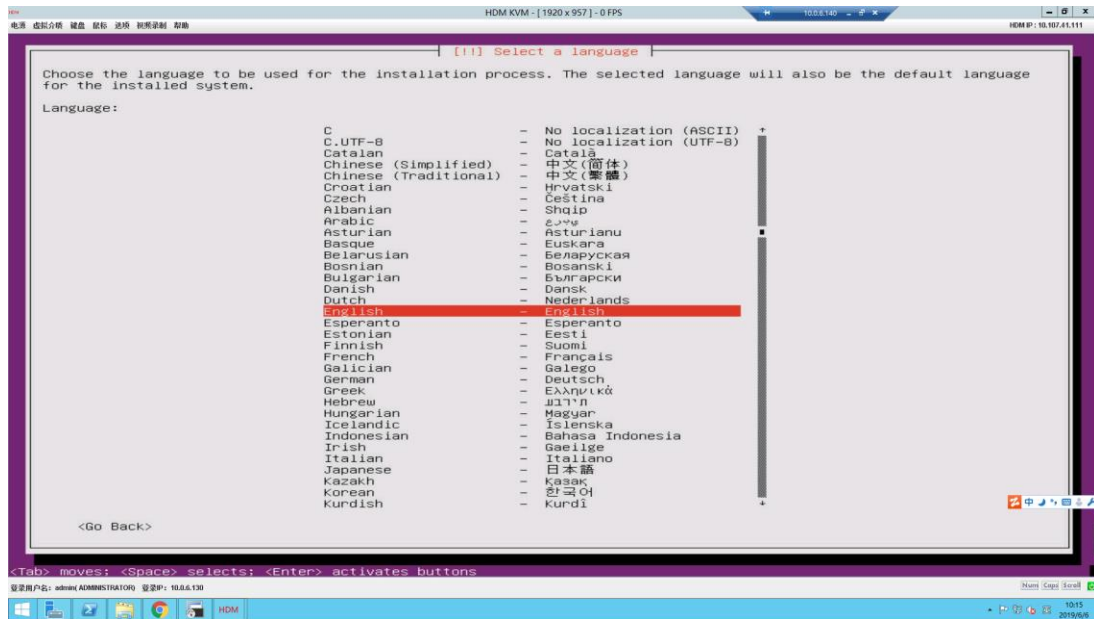
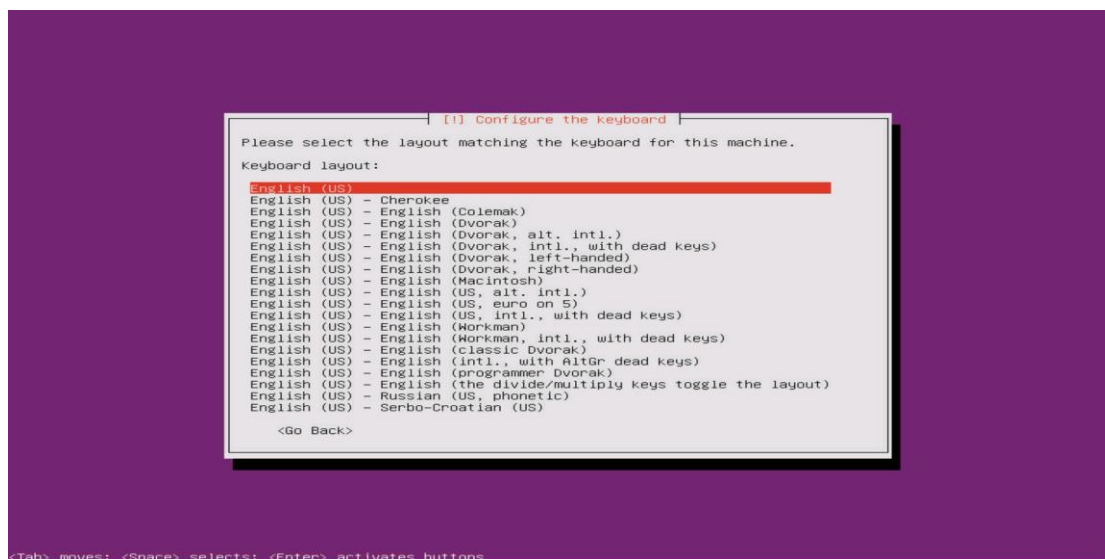7、选择区域 other

8、选择亚洲 Asia
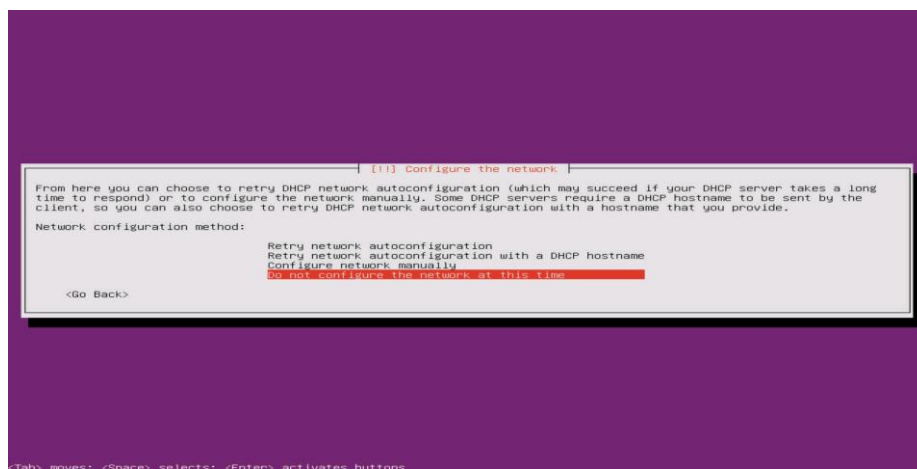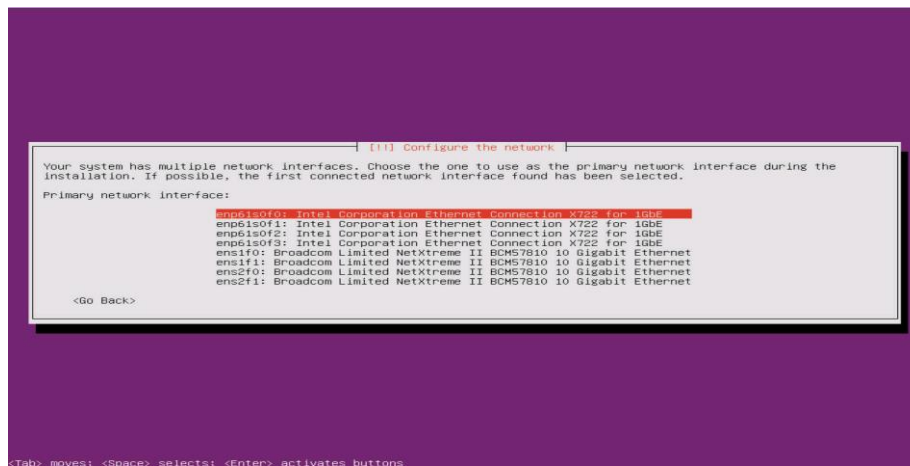
9、选择国家 China

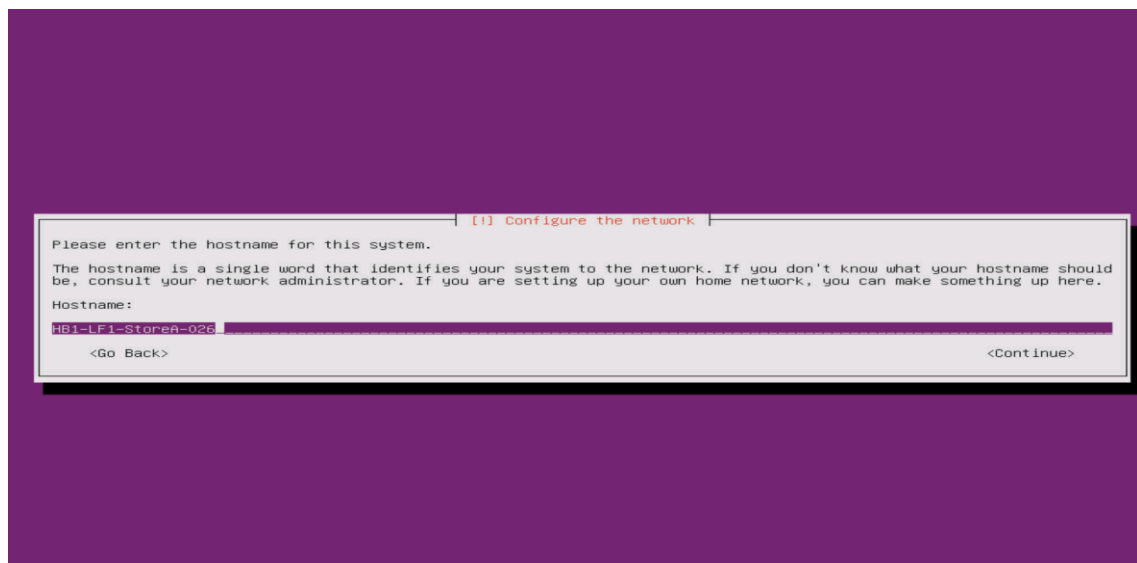10、选择字符集编码 United States

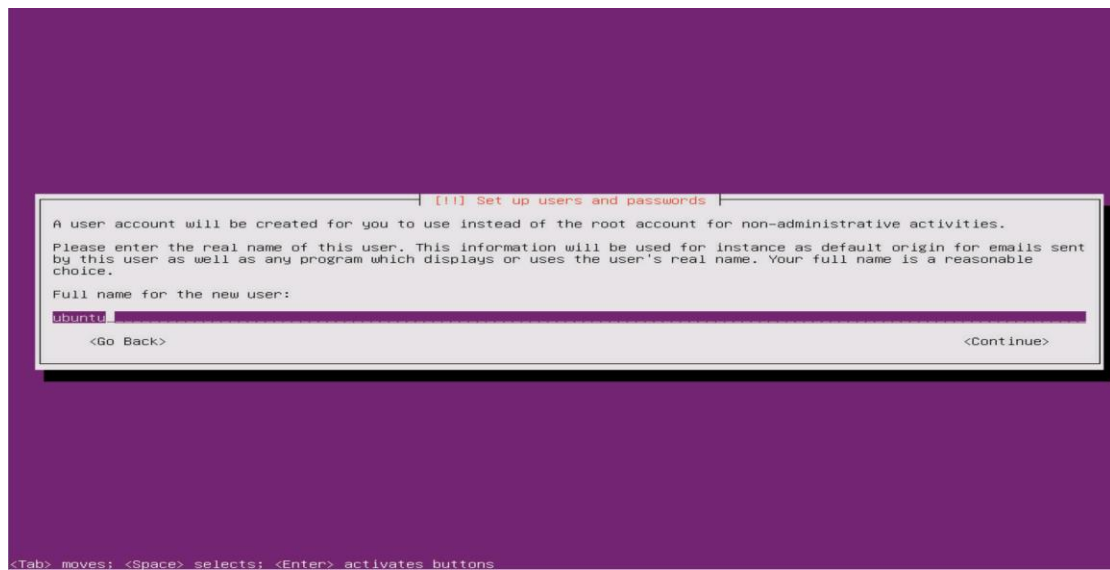11、是否扫描和配置键盘，选择否 NO

12、选择键盘类型 English(US)

13、选择键盘布局 English(US)

14、配置网络，选择 Do not configure the network at this time 配置 ip
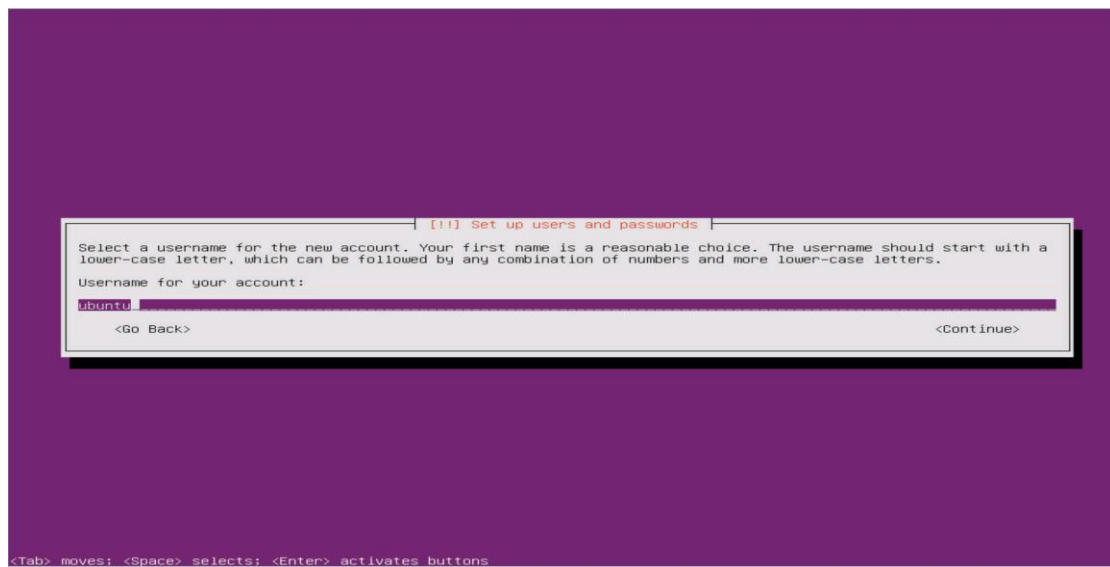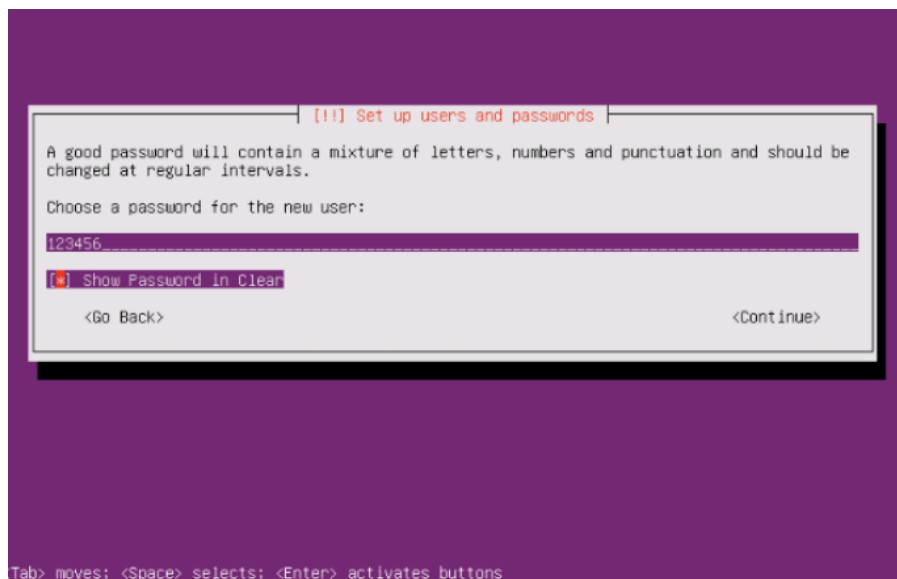

15、 设置主机名称

16、设置用户全名

17、设置登录账号
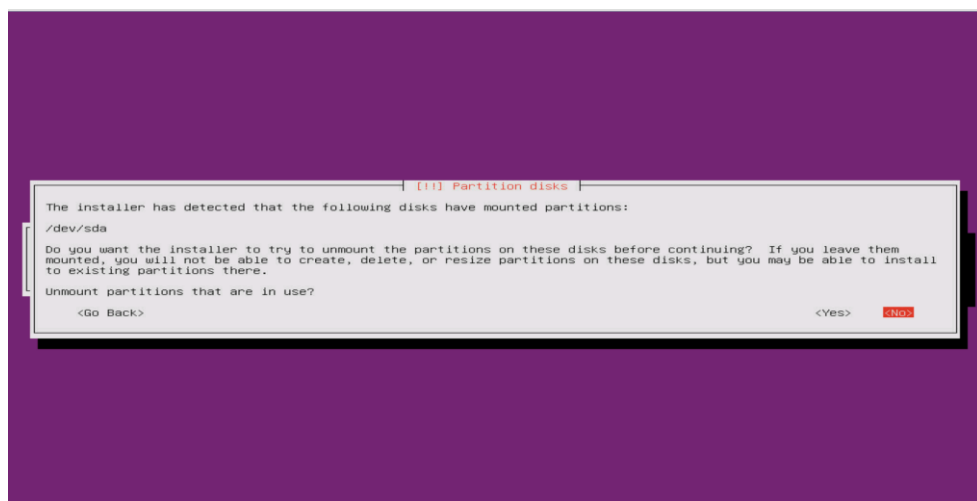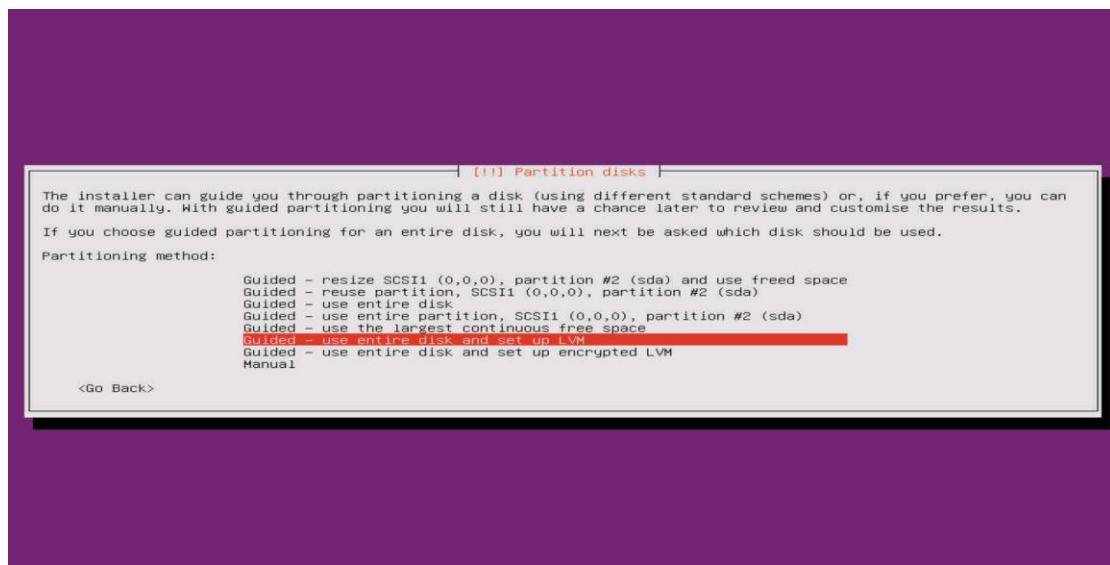

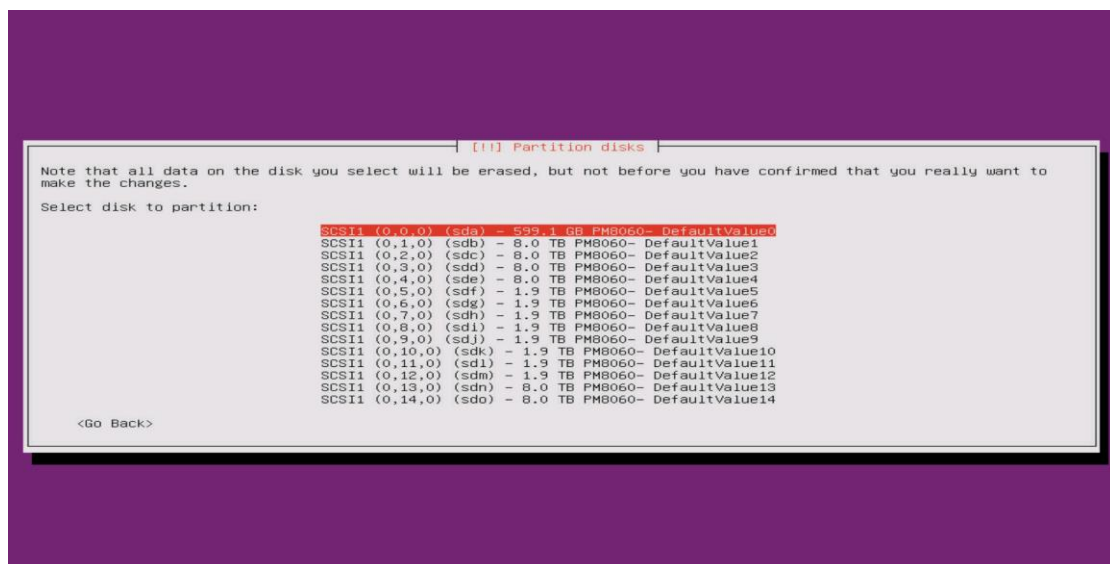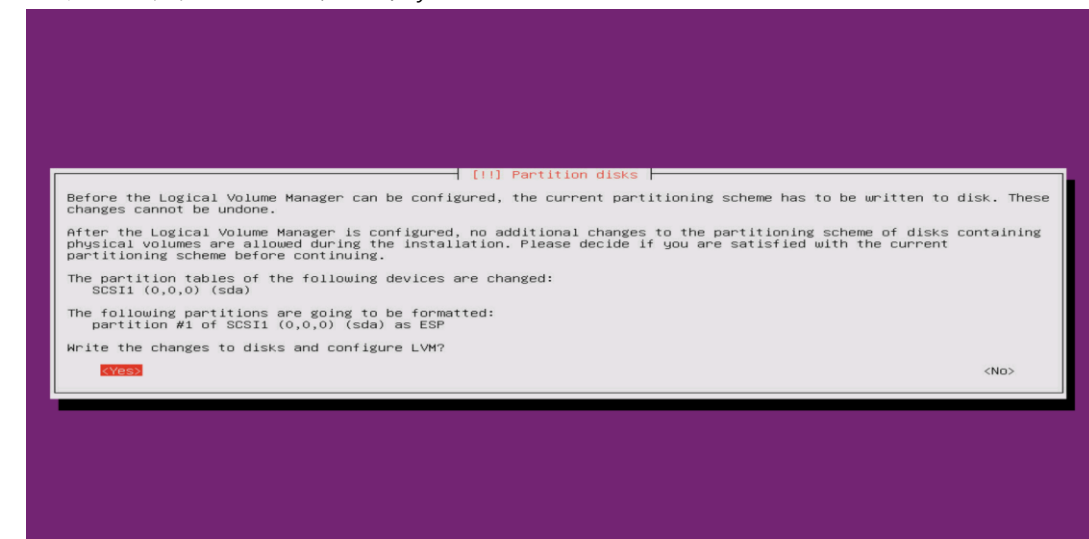18、设置登录密码（空格选择"Show Password in Clear"可以显示密码）
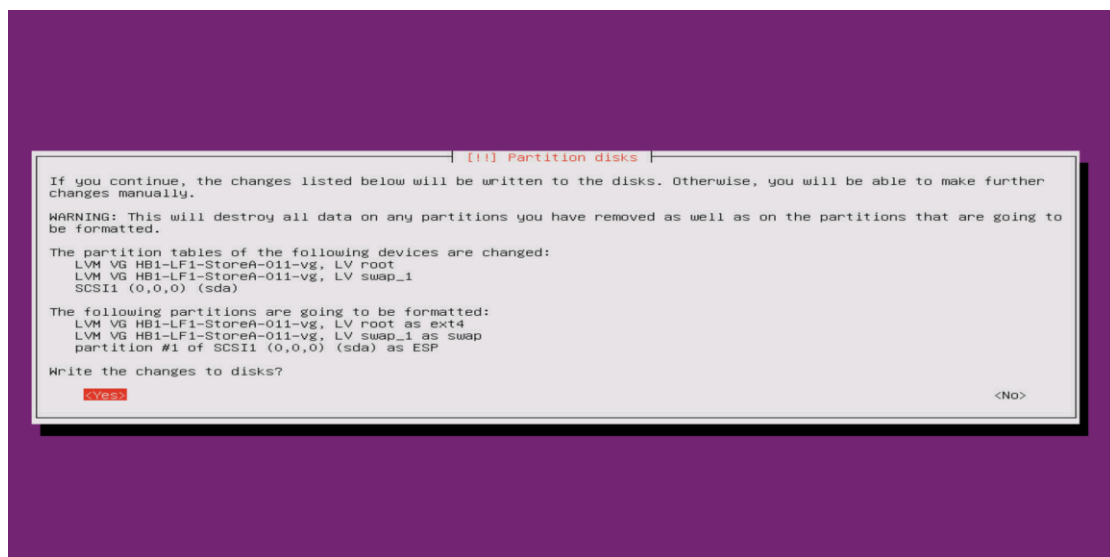
19、重复上一步设置的密码

20、选择 no

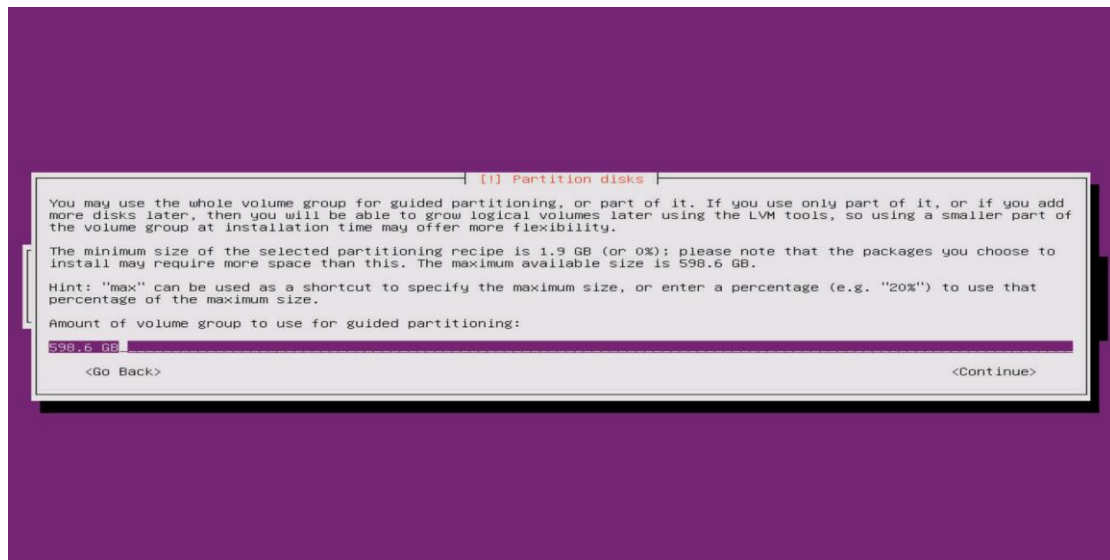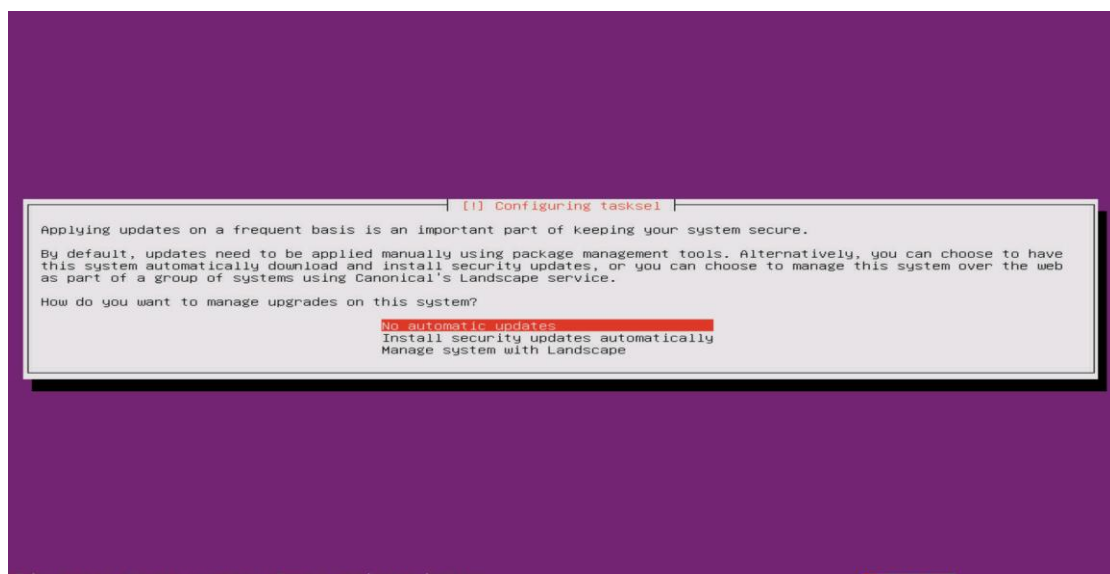21、选择分区方式（分区向导-使用这个磁盘）Guided – use entire disk and set up LVM
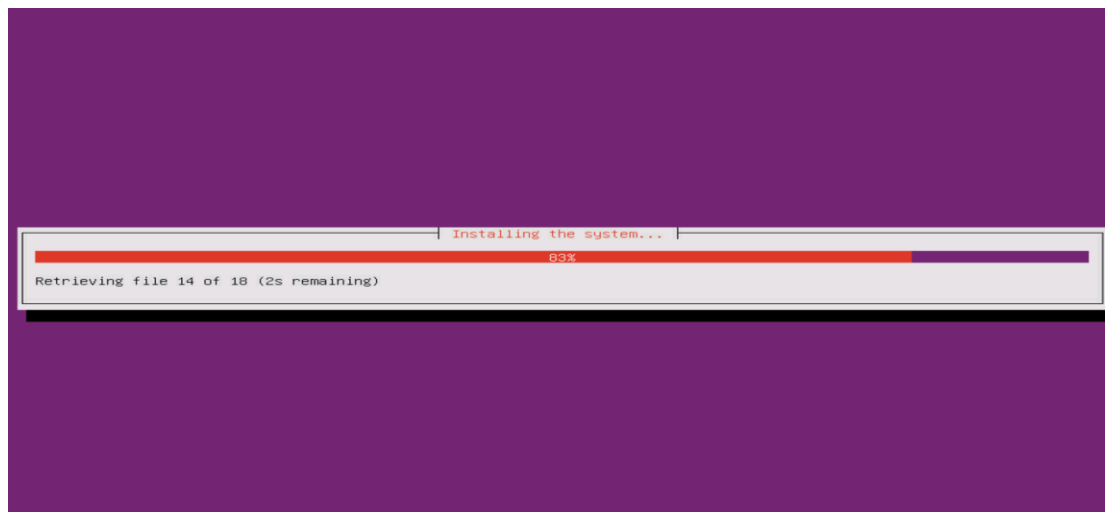

22、选择分区的磁盘（此机器选择 SCSI1）

23、是否将变更写入磁盘，选择 yes

```
                              ┤ [!] Partition disks ├
  You may use the whole volume group for guided partitioning, or part of it. If you use only part of it, or if you add
  more disks later, then you will be able to grow logical volumes later using the LVM tools, so using a smaller part of
  the volume group at installation time may offer more flexibility.

  The minimum size of the selected partitioning recipe is 1.9 GB (or 0%); please note that the packages you choose to
  install may require more space than this. The maximum available size is 598.6 GB.

  Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage (e.g. "20%") to use that
  percentage of the maximum size.

  Amount of volume group to use for guided partitioning:

  598.6 GB_____

      <Go Back>                                                                                           <Continue>
```



```
                              ┤ [!!] Partition disks ├
  If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further
  changes manually.

  WARNING: This will destroy all data on any partitions you have removed as well as on the partitions that are going to
  be formatted.

  The partition tables of the following devices are changed:
     LVM VG HB1-LF1-StoreA-011-vg, LV root
     LVM VG HB1-LF1-StoreA-011-vg, LV swap_1
     SCSI1 (0,0,0) (sda)

  The following partitions are going to be formatted:
     LVM VG HB1-LF1-StoreA-011-vg, LV root as ext4
     LVM VG HB1-LF1-StoreA-011-vg, LV swap_1 as swap
     partition #1 of SCSI1 (0,0,0) (sda) as ESP

  Write the changes to disks?

     <Yes>                                                                                                     <No>
```

24、选择升级方式 No automatic updates


```
                              ┤ [!] Configuring tasksel ├
  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




<Tab> moves; <Space> selects; <Enter> activates buttons
```
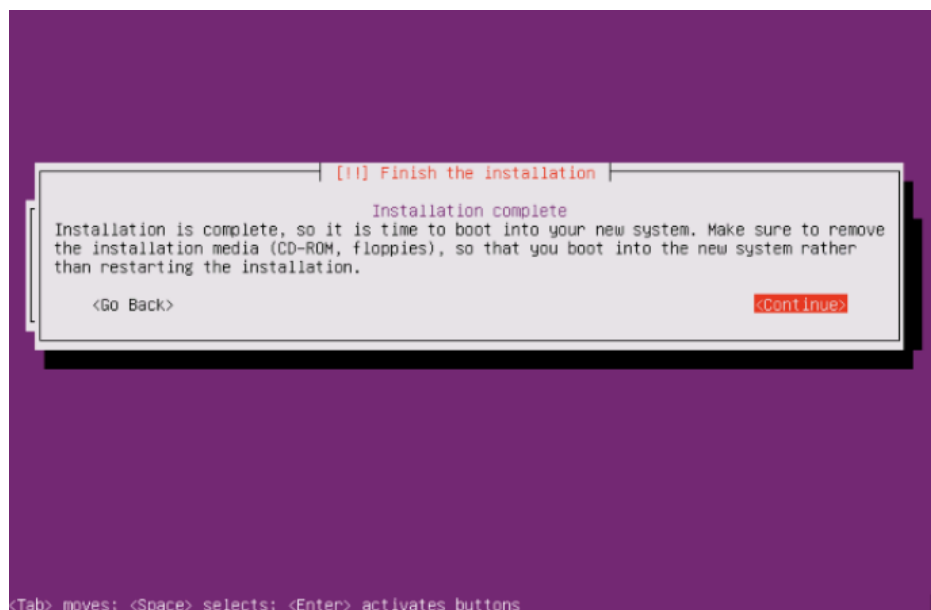
25、选择要安装的软件，多加一个 OpenSSH Server

26、完成安装，选择下一步 continue

27、系统安装完会自动启动主机，然后输入设置好的登录账户和密码就可以开始使用了。

三、静态 ip 配置

登录后切换到 root 账号 $sudo -i

- a、 查找 netplan 目录下默认的网络配置文件，文件后缀为.yaml，

  cd/etc/netplan
- b、 编辑网络配置文件 01-network-manager-all.yaml，内容如下：
  - i. 管理 ip

```
# This file describes the network interfaces available on your system
# For more information, see netplan(5).
network:
        ethernets:
                enp61s0f0:
                        addresses: []
                        dhcp4: true
                enp61s0f1:
                        addresses: []
                        dhcp4: true
        bonds:
                bond0:
                        addresses: [10.107.41.9/24]
                        gateway4: 10.107.41.254
                        nameservers:
                                addresses: [114.114.114.114]
                        optional: true
                        interfaces:
                                - enp61s0f0
                                - enp61s0f1
                        parameters:
                                lacp-rate: fast
                                mode: 802.3ad
                                transmit-hash-policy: layer2
        version: 2
        #renderer: networkd
```

  - ii. 新建 bond1-netcfg.yaml 编辑业务 ip

iii.　　　新建 bond2-netcfg.yaml 编辑存储 ip

　　c、 使用命令，使静态 ip 生效。
　　　　$ sudo netplan apply

四： ceph 部署安装（ubuntu 操作系统）

（一） 安装 Ceph-deploy

1. 配置下载源:
    a、添加 key

  # wget -q -O- 'https://download.ceph.com/keys/release.asc' | sudo apt-key add -

    b、将 Ceph 包添加到您的存储库。 使用下面的命令并将{ceph-stable-release}替换为稳定的 Ceph 版本（例如，nautilus）。:

  #echo deb https://download.ceph.com/debian-{ceph-stable-release}/ $(lsb_release -sc) main | sudo tee /etc/apt/sources.list.d/ceph.list

    例如: # echo deb https://download.ceph.com/debian-nautilus/ $(lsb_release -sc) main | sudo tee /etc/apt/sources.list.d/ceph.list

    c、更新您的存储库并安装 ceph-deploy：:

      sudo   apt update
      sudo   apt upgrade
      sudo   apt install ceph-deploy

2. 每个节点上都安装 NTP，确保每个 Ceph 节点时间同步:
    # sudo apt install ntp

3. 每个节点创建安装用户,
    *   修改每一个服务器名称:`vi /etc/hostname`修改后重启
    *   在每个 Ceph 节点上创建一个新用户: ` sudo useradd -d /home/{username} -m {username}` 把{username}改为自己需要的用户名,下面类似

    *   设置密码` sudo passwd {username}`
    *   对于添加到每个 Ceph 节点的新用户，请确保该用户具有 sudo 权限。
    # echo "{username} ALL = (root) NOPASSWD:ALL" | sudo tee /etc/sudoers.d/{username}
    # sudo chmod 0440 /etc/sudoers.d/{username}
    * 生成 ssh 密钥，将密码保留为空: `ssh-keygen`
（注: ceph-deploy 不会提示输入密码，因此必须在 admin 节点上生成 SSH 密钥，并将公钥分发给每个 Ceph 节点）

*   进行 IP 地址映射,修改文件/etc/hosts,在里面加入:

    192.168.218.134 node1
    192.168.218.135 node2
    192.168.218.136 node3

* 将密钥复制到每个 Ceph 节点

ssh-copy-id {username}@node1
ssh-copy-id {username}@node2
ssh-copy-id {username}@node3

* 修改管理节点的~/.ssh/config 文件，ceph-deploy 会用创建的用户登录 ceph 节点，而不用每次都指定(根据自己的节点更换相应的信息)

```
Host node1
    Hostname node1
    User user1
Host node2
    Hostname node2
    User user2
Host node3
    Hostname node3
    User user3
```

（二）. 使用 Ceph-deploy 安装 Ceph

1. 如果遇到问题需要重新开始执行以下命令清除 ceph 软件包、数据与配置
    * `ceph-deploy purge {ceph-node} [{ceph-node}]`
    * `ceph-deploy purgedata {ceph-node} [{ceph-node}]`
    * `ceph-deploy forgetkeys`
    * `rm ceph.*`
2. 创建 ceph 集群
    * # ceph-deploy new node1 node2 node3   （*注：需要把各 ceph 节点的 hostname 改为对应的名字，如 `hostname node1`)

    * # ceph-deploy install node1 node2 node3 --release nautilus   （指定 ceph 的版本，这条命令会在各节点上安装 ceph）(加入--no-adjust-repos 不修改源；若某个节点安装失败可采用 apt install ceph 在对应节点安装)
        *# vim ceph.conf
        public_network = */25   (* 为本机 ip)
        --> 可以用 echo 'public_network = */25' >> ceph.conf 添加到文件尾
    * 部署初始监视器并收集密钥:
        # ceph-deploy mon create-initial   (首先确定防火墙已关闭)
    * 使用 ceph-deploy 配置文件和管理密钥复制到 ceph 各节点:
        # ceph-deploy admin node1 node2 node3
    * 部署管理器守护程序:
        # ceph-deploy mgr create node1
    * 添加 osd，最好保证每个节点都有一个未使用过的磁盘   如:

ceph-deploy osd create --data /dev/sdb node2
ceph-deploy osd create --data /dev/sdb node3
--> 这一步有可能报错"GPT headers found"

--> ceph-deploy disk zap node2 /dev/sdb 删除磁盘分区信息

3. 查看完整的集群状态：
ssh node1 sudo ceph -s

有疑问请查看 ceph 官网： [Ceph](http://docs.ceph.com/docs/master/start/quick-ceph-deploy/)

若安装中，出现安装包版本不匹配，强制删包：
dpkg --remove --force-remove-reinstreq ceph-deploy