



Quick Guide to Clonezilla

Date: April 10, 2014

General Information

- Software

- clonezilla ISO file for respective CPU architecture
- Reference: clonezilla.org

- Hardware

- Network-based storage (NFS, CIFS, SSHFS) or USB hard drive
- Network-based storage can be a Windows or Linux server with respective file system listed above

General Information

- Network

- Network devices management IP and console IP are accessible from Cisco corporate or internal network
- Not all of the host devices will be accessible from Cisco corporate or internal network. There are private networks utilized as part of the lab and demo process

- Software

- Required to have telnet client
- Required to have Microsoft Remote Desktop client
- Recommended to have either Chrome or Firefox browser

- Reference

Access Server Remotely to Boot Clonezilla



The image shows the login interface of a Cisco Integrated Management Controller (IMC). The background is a dark blue gradient with abstract light patterns. On the left side, the text reads: "Cisco Integrated Management Controller", "ucs-c240-m3", and "Version: 1.5(1b)". On the right side, there are two input fields: "Username:" with the text "admin" and "Password:" with a masked password of ten dots. Below these fields are two buttons: "Log In" and "Cancel".

Cisco Integrated Management Controller
ucs-c240-m3
Version: 1.5(1b)

Username: admin
Password: ●●●●●●●●●●

Log In Cancel

©2008-2012, Cisco Systems, Inc. All rights reserved.

Access KVM Console

The screenshot displays the Cisco Integrated Management Controller (CIMC) web interface. At the top, the Cisco logo and the text "Cisco Integrated Management Controller" are visible. The CIMC Hostname is "ucs-c240-m3" and the user is logged in as "admin@172.29.17". A "Log Out" link is present in the top right corner. The main content area is divided into several sections:

- Overall Server Status:** Shows a green checkmark and the word "Good".
- Server Summary:** Contains a navigation menu with "Server", "Admin", and "Storage" tabs. Under "Server", there are links for "Summary", "Inventory", "Sensors", "Remote Presence", "BIOS", "Power Policies", and "Faults and Logs".
- Actions:** A list of server management actions, including "Power On Server", "Power Off Server", "Shut Down Server", "Power Cycle Server", "Hard Reset Server", "Launch KVM Console" (highlighted with a red circle and a red arrow), and "Turn On Locator LED".
- Server Properties:** Displays key information about the server:
 - Product Name: UCS C240 M3S
 - Serial Number: FCH1712Y0JC
 - PID: UCSC-C240-M3S
 - UUID: 61190ADE-1566-481F-80DC-5694ADBD738B
 - BIOS Version: C240M3.1.5.1c.0 (Build Date: 01/31/2013)
 - Description: DFA2-OPENSTACK-CONTROLLER
- Server Status:** Shows various operational metrics:
 - Power State: On
 - Overall Server Status: Good
 - Temperature: Good
 - Power Supplies: Good
 - Fans: Good
 - Locator LED: Off
 - Overall Storage Status: Good
- Cisco Integrated Management Controller (CIMC) Information:** A section at the bottom with "Save Changes" and "Reset Values" buttons.

Change the boot order to CDROM

The screenshot shows the Cisco Integrated Management Controller (CIMC) interface. The main heading is "Cisco Integrated Management Controller". In the top right corner, it says "CIMC Host" and "Logged".

On the left side, there is a navigation menu with the following items: "Overall Server Status" (with a green checkmark and "Good" status), "Server" (selected), "Admin", "Summary", "Inventory", "Sensors", "System Event Log", "Remote Presence", "BIOS" (highlighted in blue), "Power Policies", and "Fault Summary".

The main content area is titled "BIOS". It contains several sections:

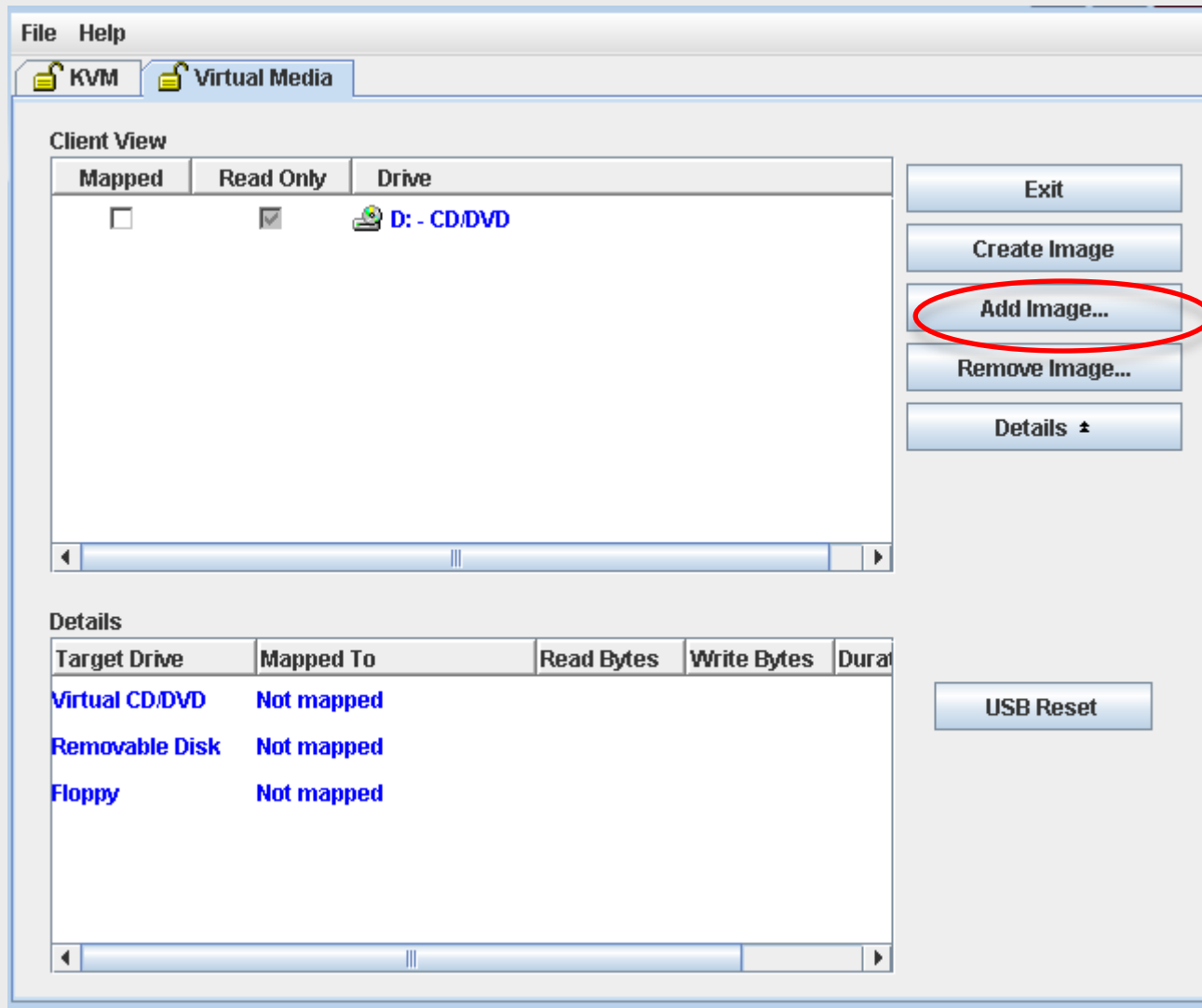
- Actions:** A list of four actions: "Configure BIOS", "Configure Boot Order", "Recover Corrupt BIOS", and "Clear BIOS CMOS".
- BIOS Properties:** "Running Version: C200.1.4.3c.0 (Build Date: 02/29/2012)".
- Boot Order:** A section with two columns:
 - Configured Boot Order:** A list of three items: 1. CDROM, 2. HDD, 3. PXE.
 - Actual Boot Order:** A list of five items: CD/DVD, HDD, Network Device (PXE), FDD, and Internal EFI Shell.

A "Configure Boot Order" dialog box is open in the foreground. It has a title bar with a question mark icon. The dialog is divided into two main sections:

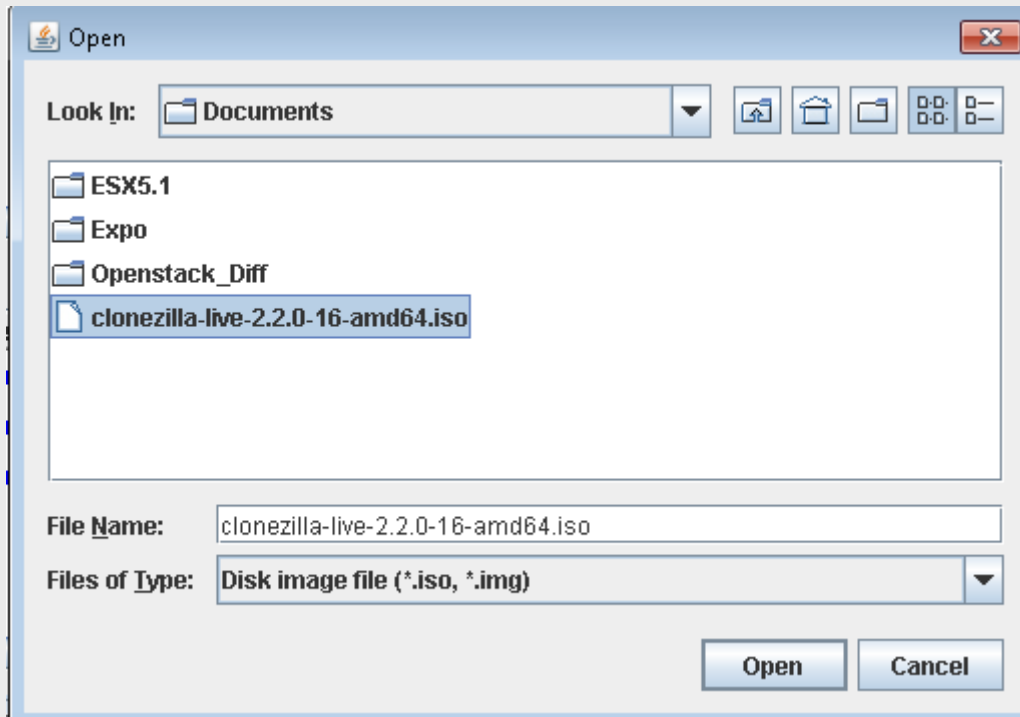
- Device Types:** A list of two items: "FDD" and "EFI".
- Boot Order:** A list of three items: "CDROM", "HDD", and "PXE".

Between the two sections are two buttons: "Add >" and "< Remove". To the right of the "Boot Order" list are two buttons: "Up" and "Down". At the bottom of the dialog are two buttons: "Apply" and "Cancel".

Select Clonezilla ISO – Add Image



Select Clonezilla ISO



Select Clonezilla ISO – Map ISO to vDVD

The screenshot shows the KVM Virtual Media interface. The 'Client View' table lists the mapped drives, and the 'Details' table provides specific information about the mapped virtual CD/DVD.

Mapped	Read Only	Drive
<input type="checkbox"/>	<input checked="" type="checkbox"/>	D: - CD/DVD
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	C:\Users\cisco\Documents\clonezilla-live-2.2.0-1

Target Drive	Mapped To	Read Bytes	Write Bytes	Durat
Virtual CD/DVD	C:\Users\cisco\Docu...	98304	0	00:00
Removable Disk	Not mapped			
Floppy	Not mapped			

Buttons on the right side of the interface include: Exit, Create Image, Add Image..., Remove Image..., Details ▲, and USB Reset.

Power cycle server

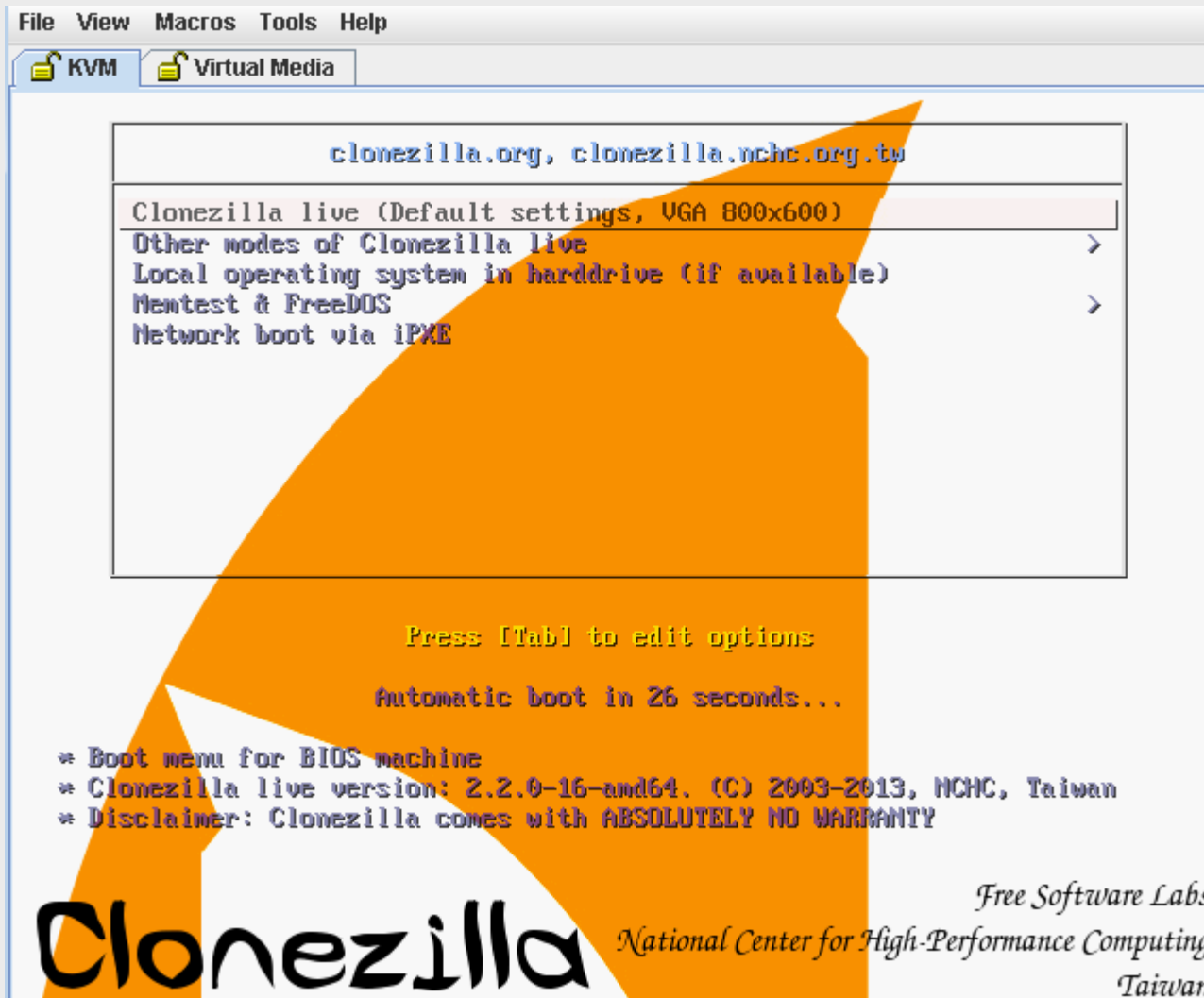
The screenshot displays the Cisco Integrated Management Controller (CIMC) web interface. At the top left, the Cisco logo and the text "Cisco Integrated Management Controller" are visible. On the top right, the CIMC Hostname is "vinci-ucs137-cimc" and the user is logged in as "admin@24.2.0.2". A "Log Out" link is also present.

The main content area is titled "Server Summary" and is divided into several sections:

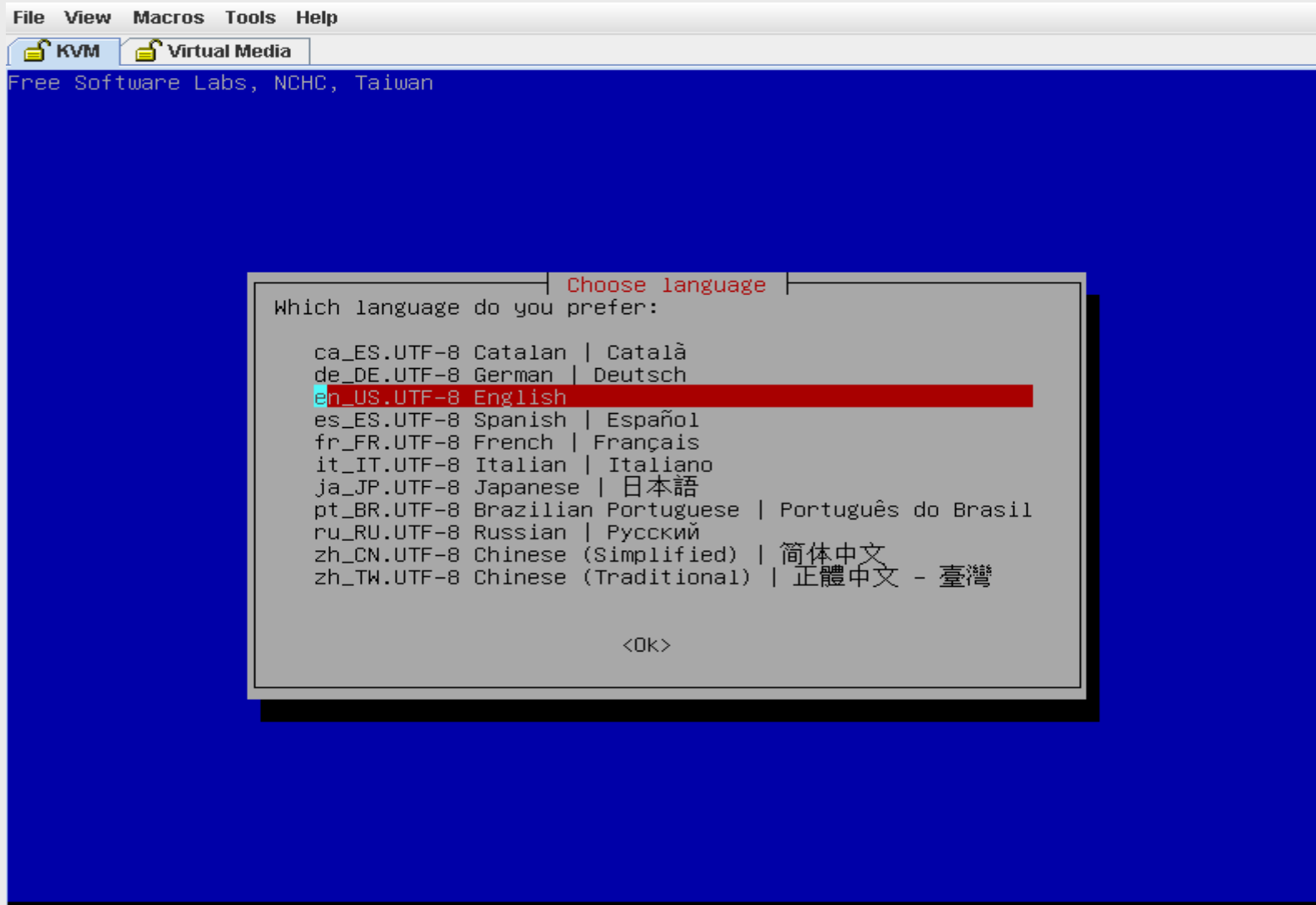
- Overall Server Status:** Shows a green checkmark and the word "Good".
- Actions:** A list of server management actions. The "Power Cycle Server" action, represented by a circular arrow icon, is highlighted with a red oval.
- Server Properties:** A box containing the following information:
 - Product Name: UCS C220 M3S
 - Serial Number: FCH1724V0FK
 - PID: UCSC-C220-M3S
 - UUID: AE44C799-A747-4C44-A398-D0D3EFFB8692
 - BIOS Version: C220M3.1.5.1g.0 (Build Date: 03/15/2013)
 - Description: (Empty text field)
- Server Status:** A box showing the current status of various components:
 - Power State: On (indicated by a green dot)
 - Overall Server Status: Good (indicated by a green checkmark)
 - Temperature: Good (indicated by a green checkmark)
 - Power Supplies: Good (indicated by a green checkmark)
 - Fans: Good (indicated by a green checkmark)
 - Locator LED: Off (indicated by a grey dot)
 - Overall Storage Status: N/A
- Cisco Integrated Management Controller (CIMC) Information:** Shows the Hostname: vinci-ucs137-cimc.

At the bottom right of the interface, there are two buttons: "Save Changes" and "Reset Values".

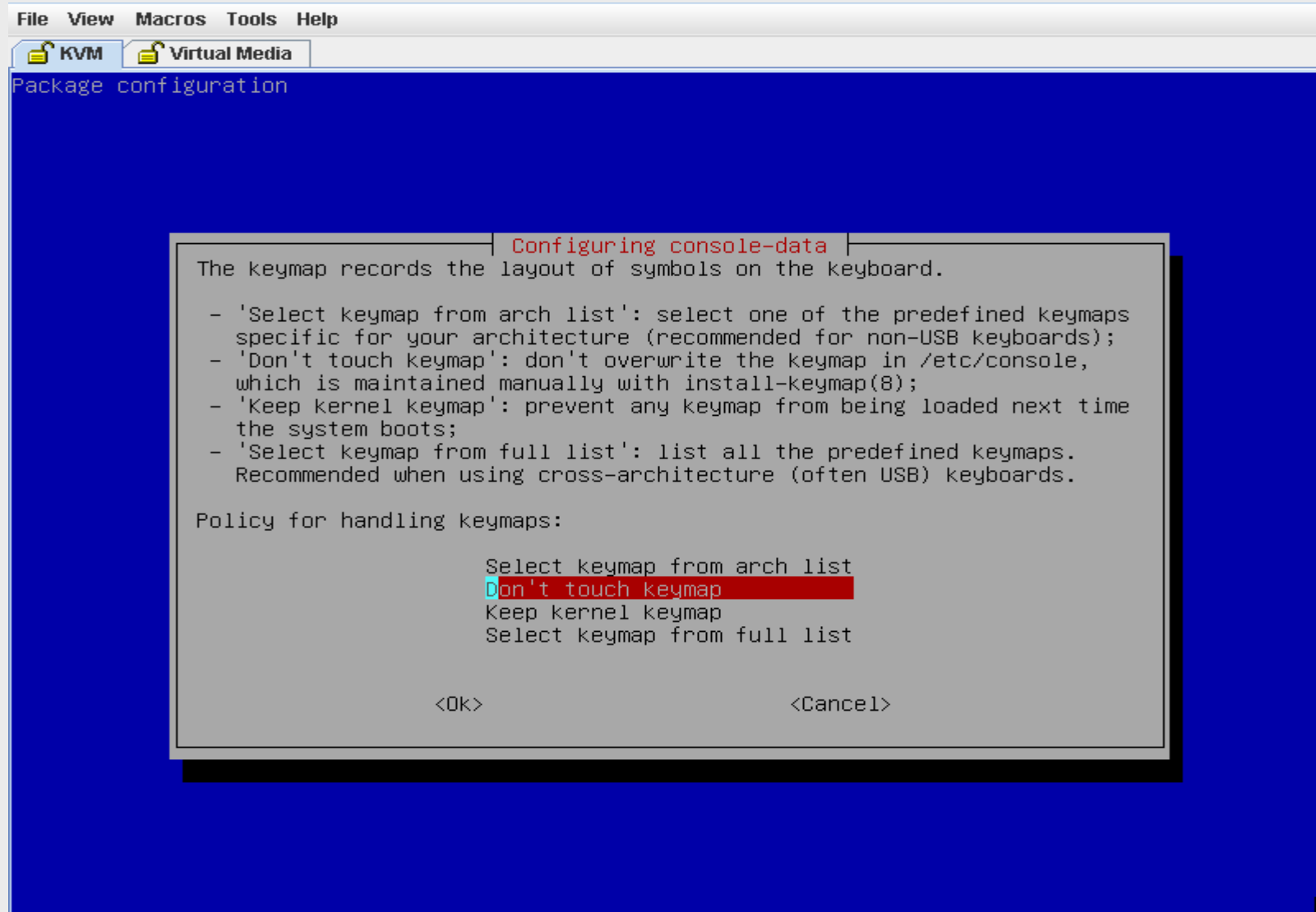
Boot Clonezilla ISO



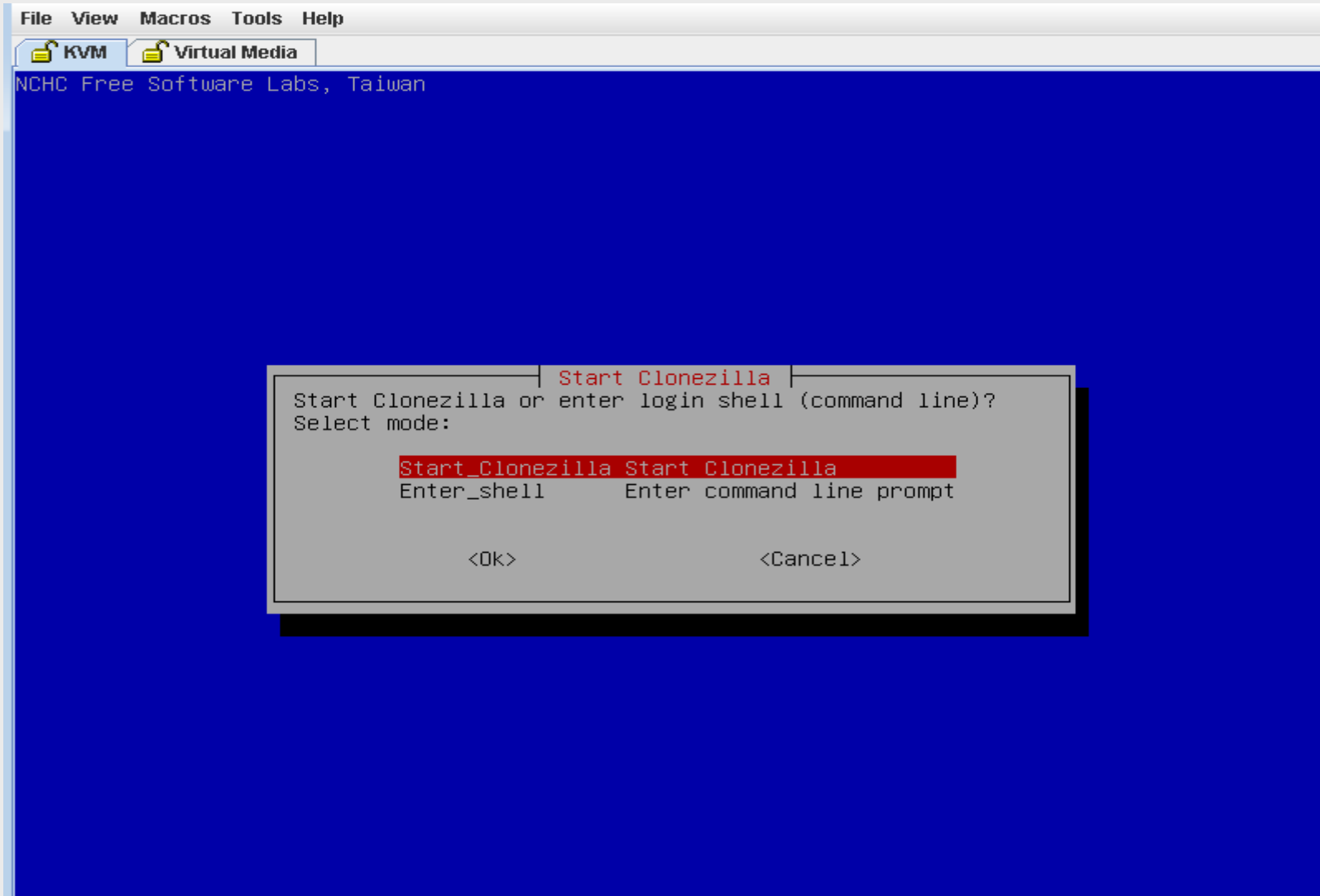
Select Language



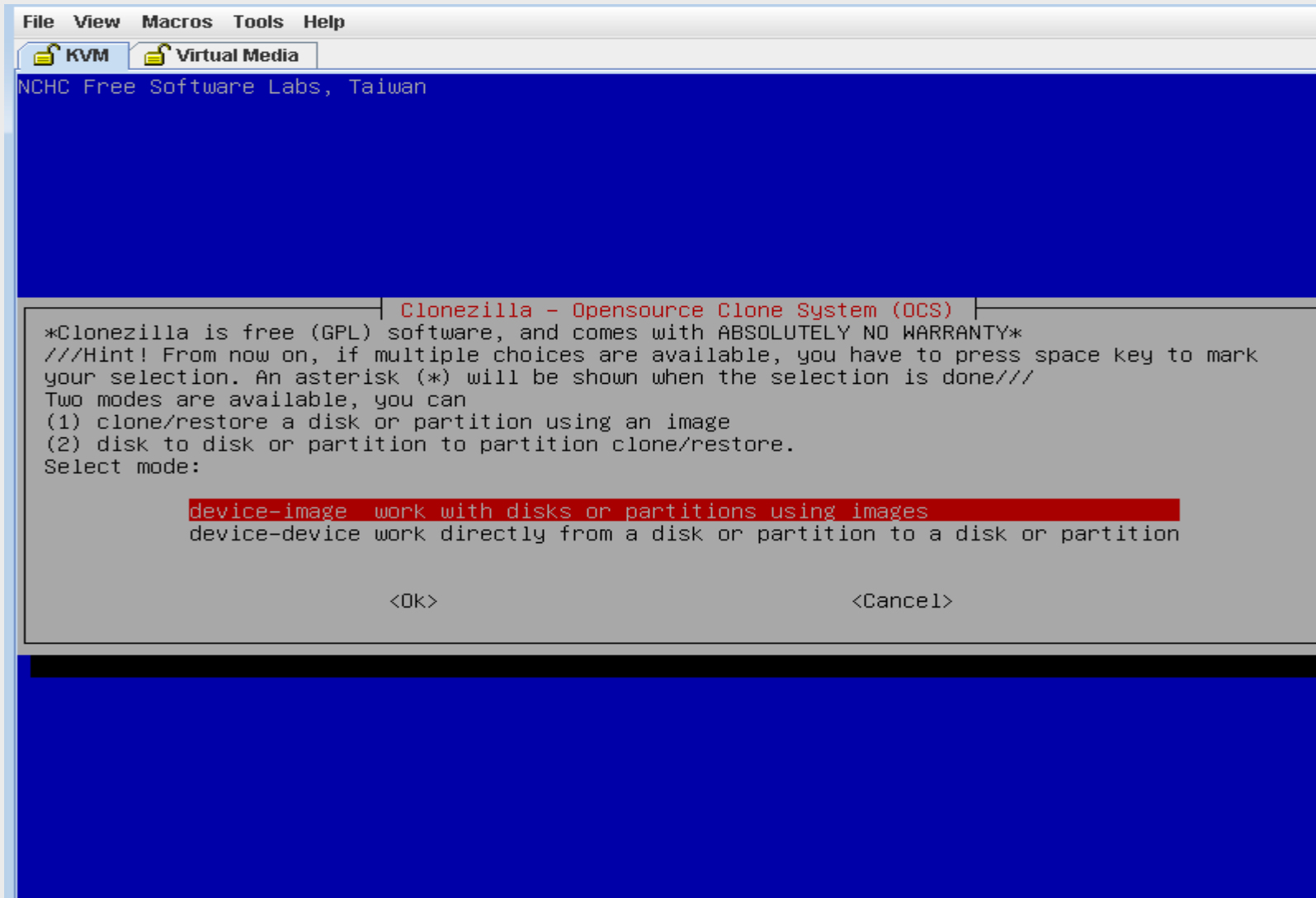
Select Keyboard Mapping



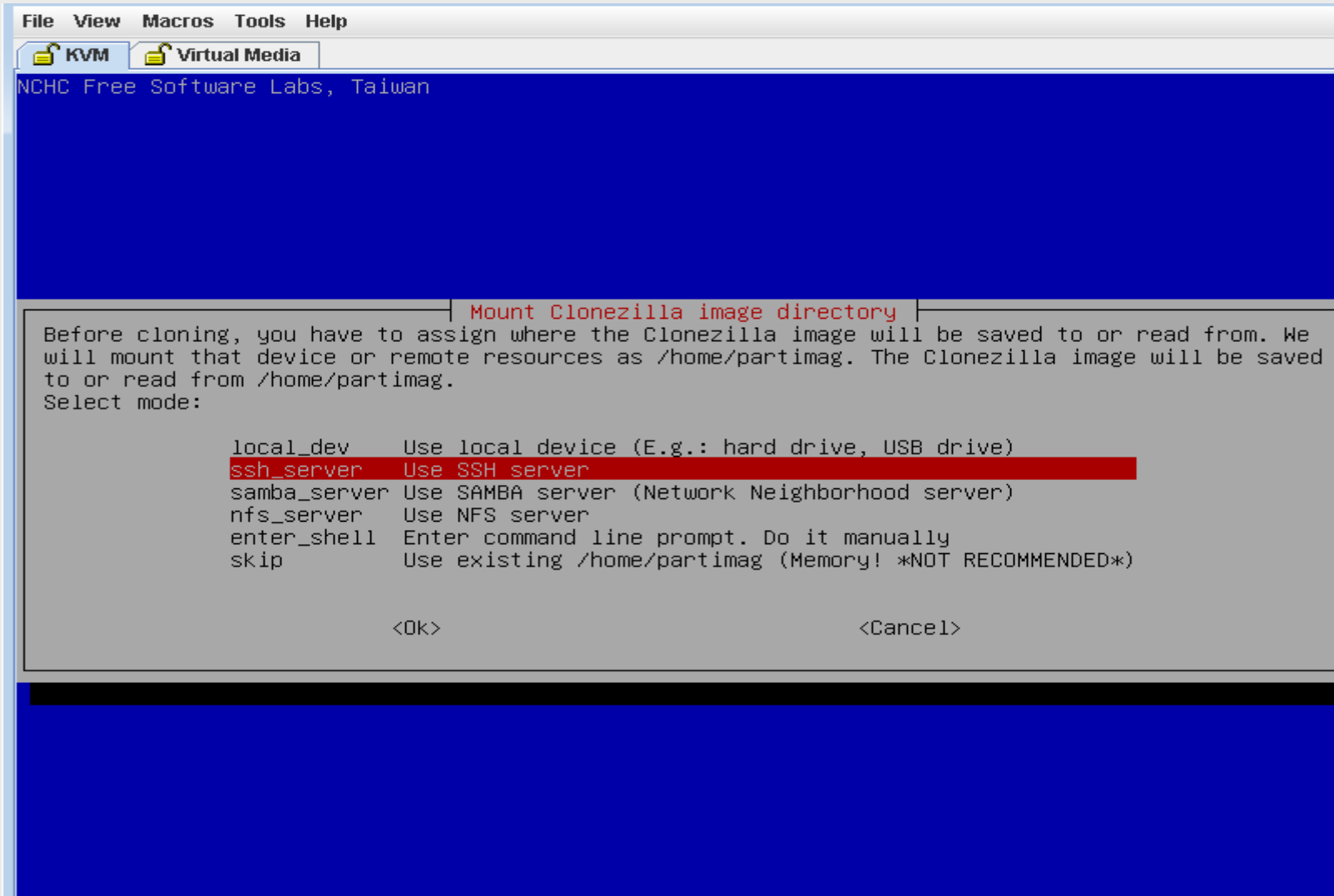
Start Clonezilla



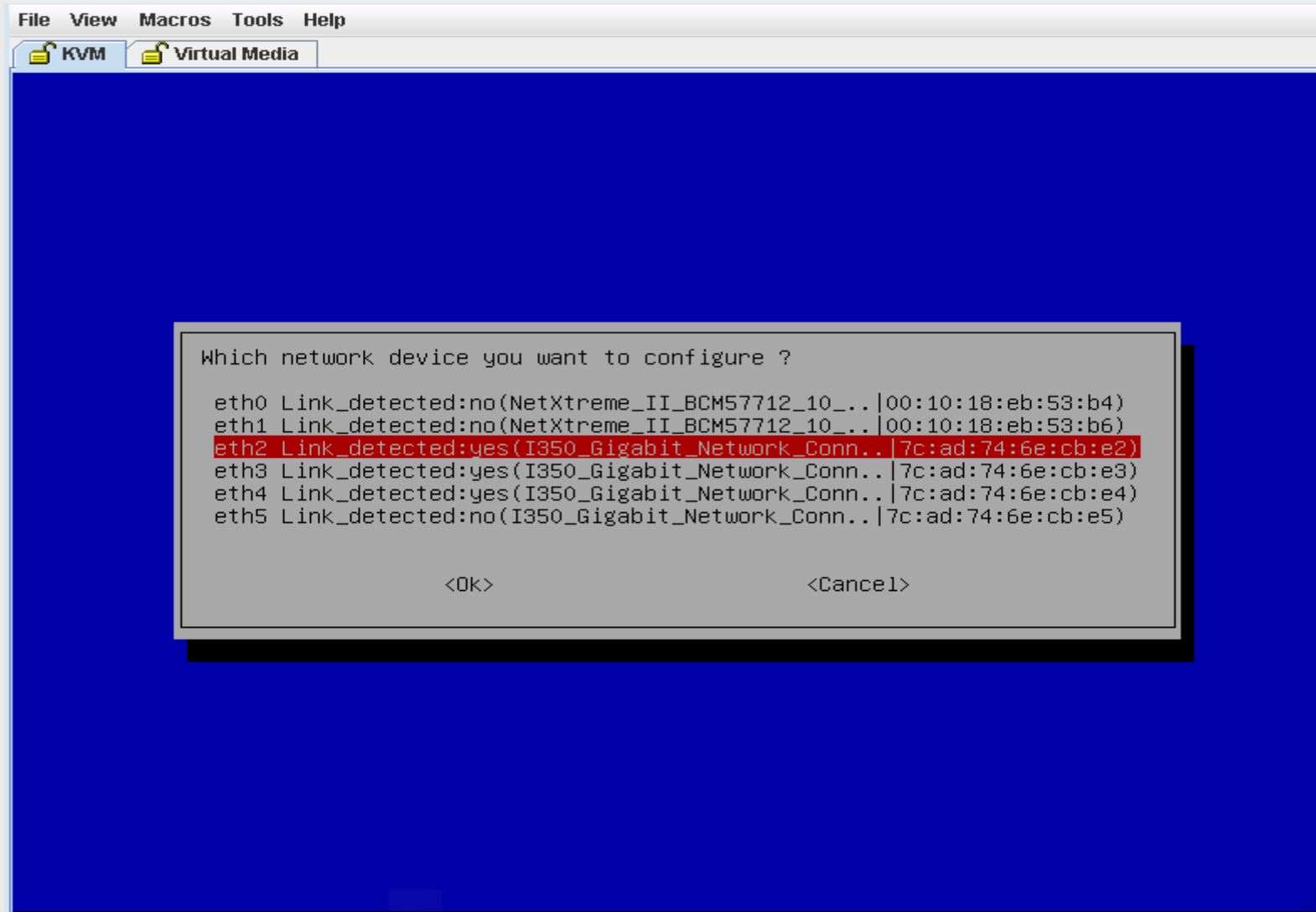
Select device-image



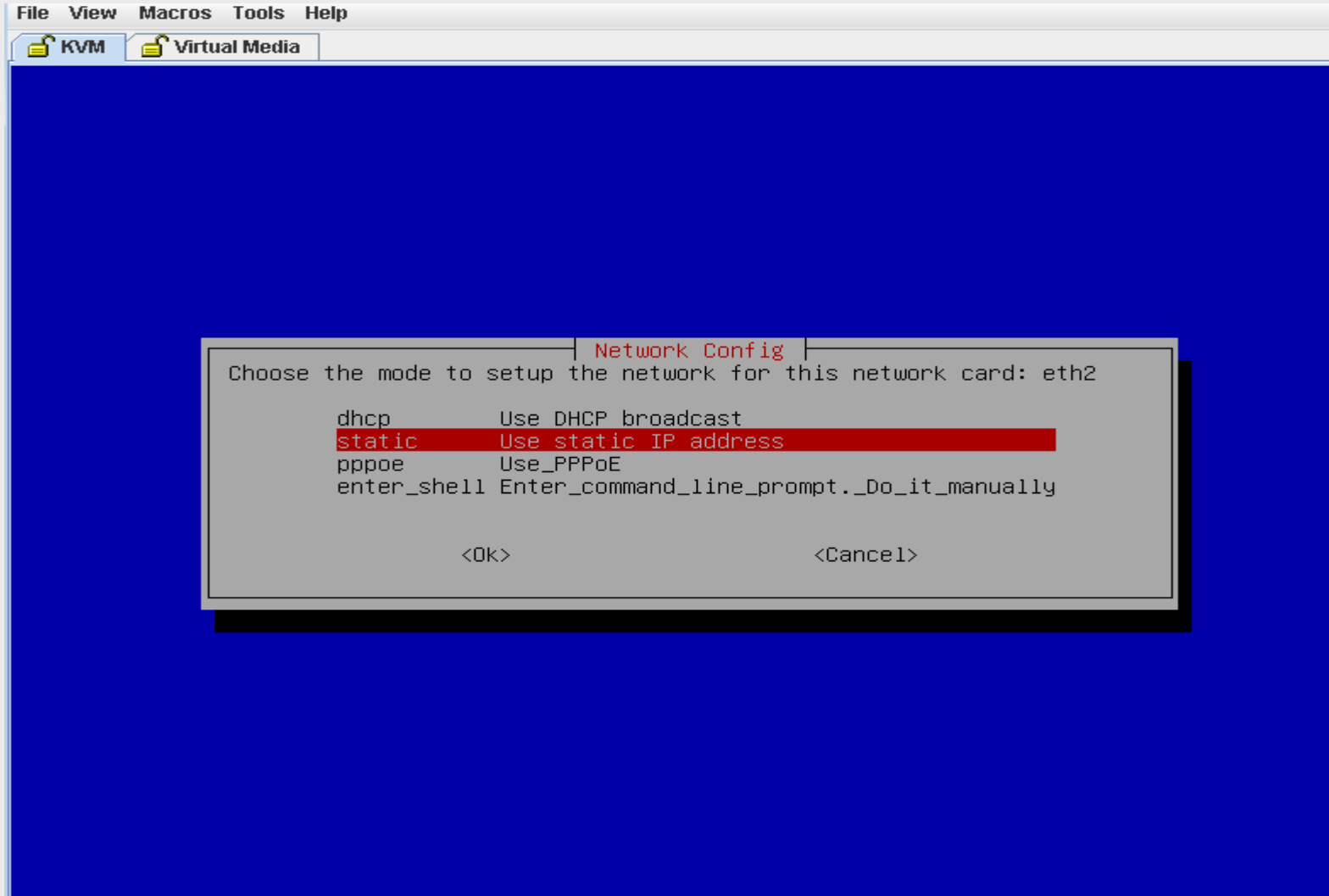
Select Image Repository - SSH Server



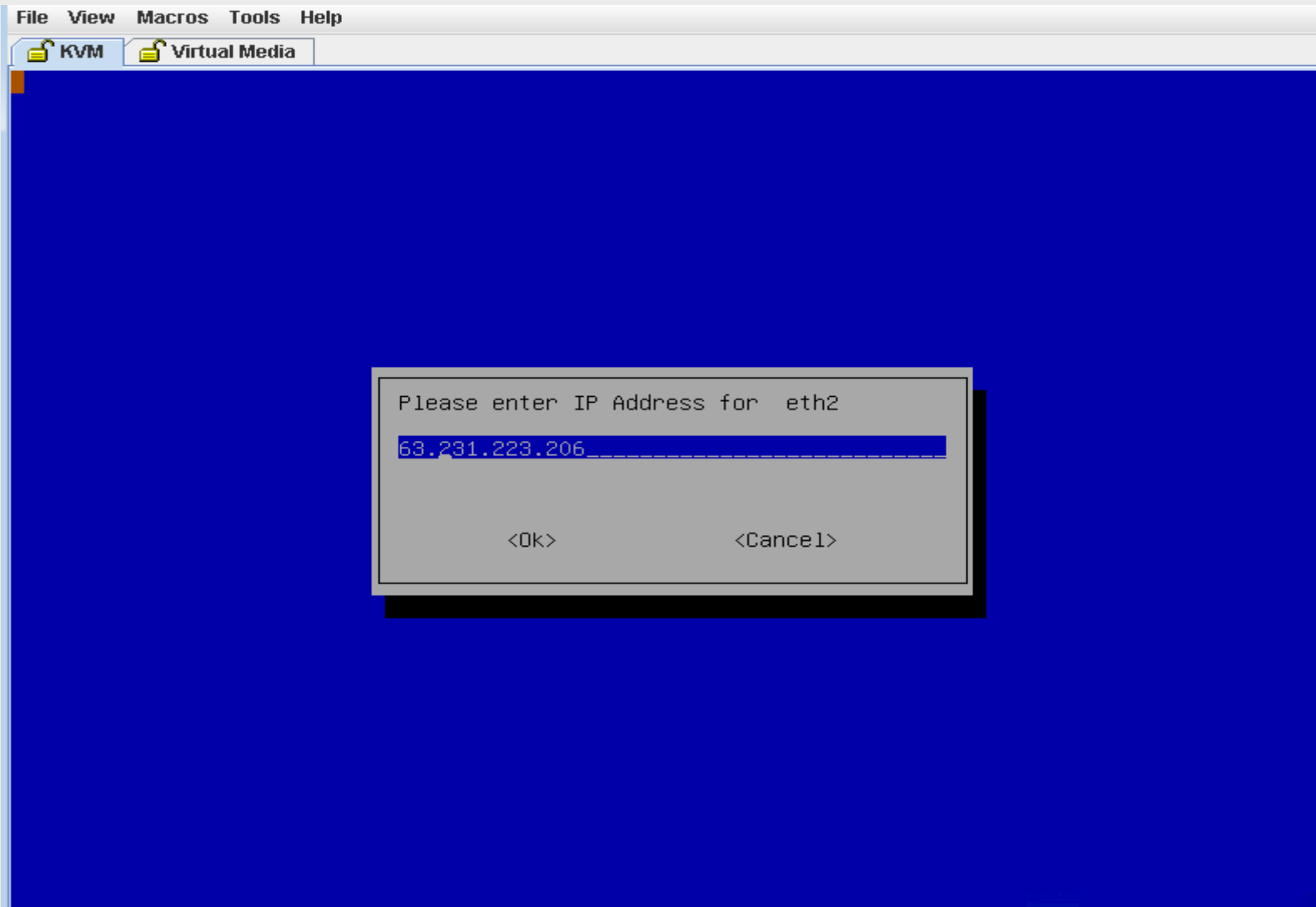
Select Ethernet0 Interface – lowest MAC address



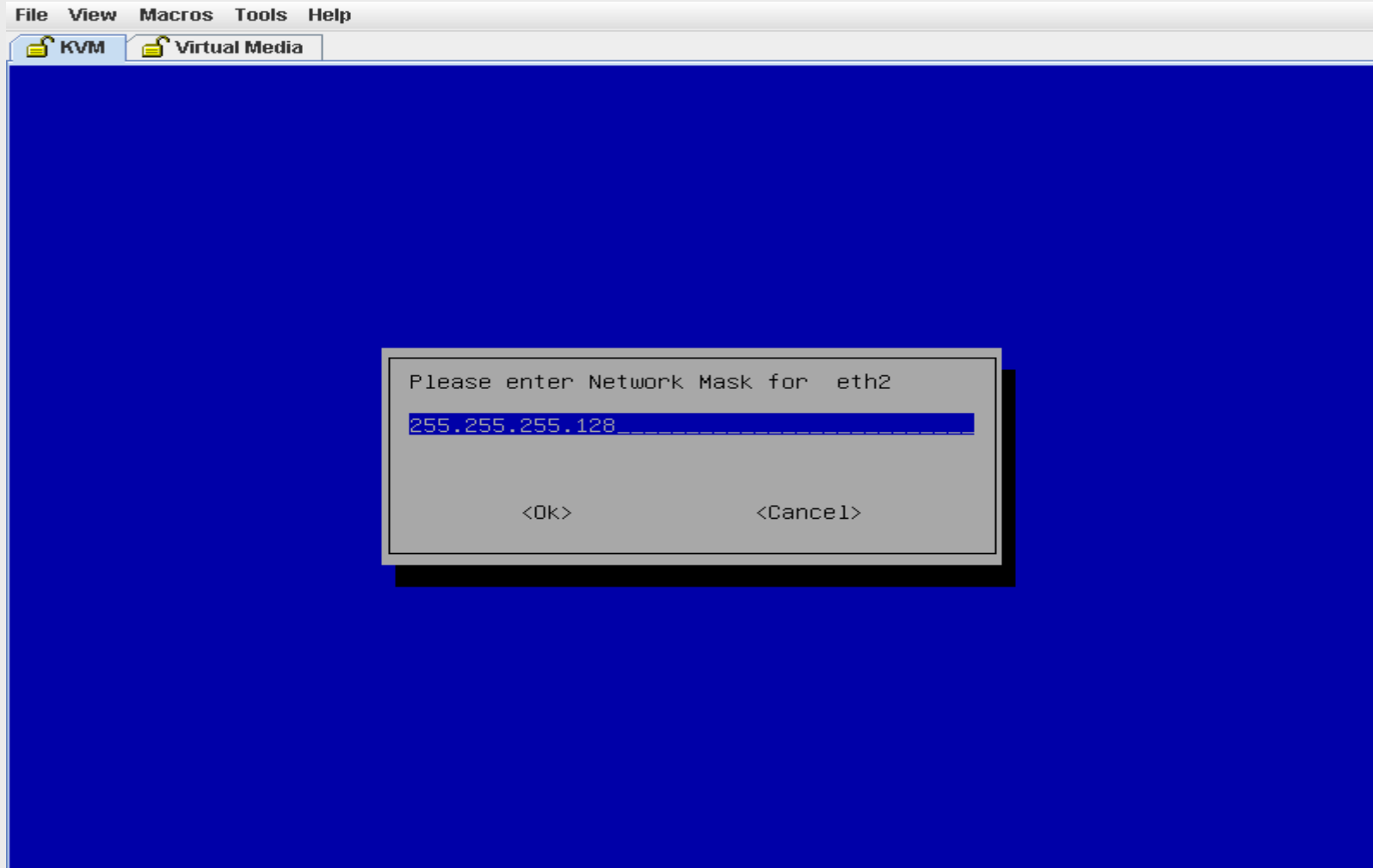
Assign Static IP



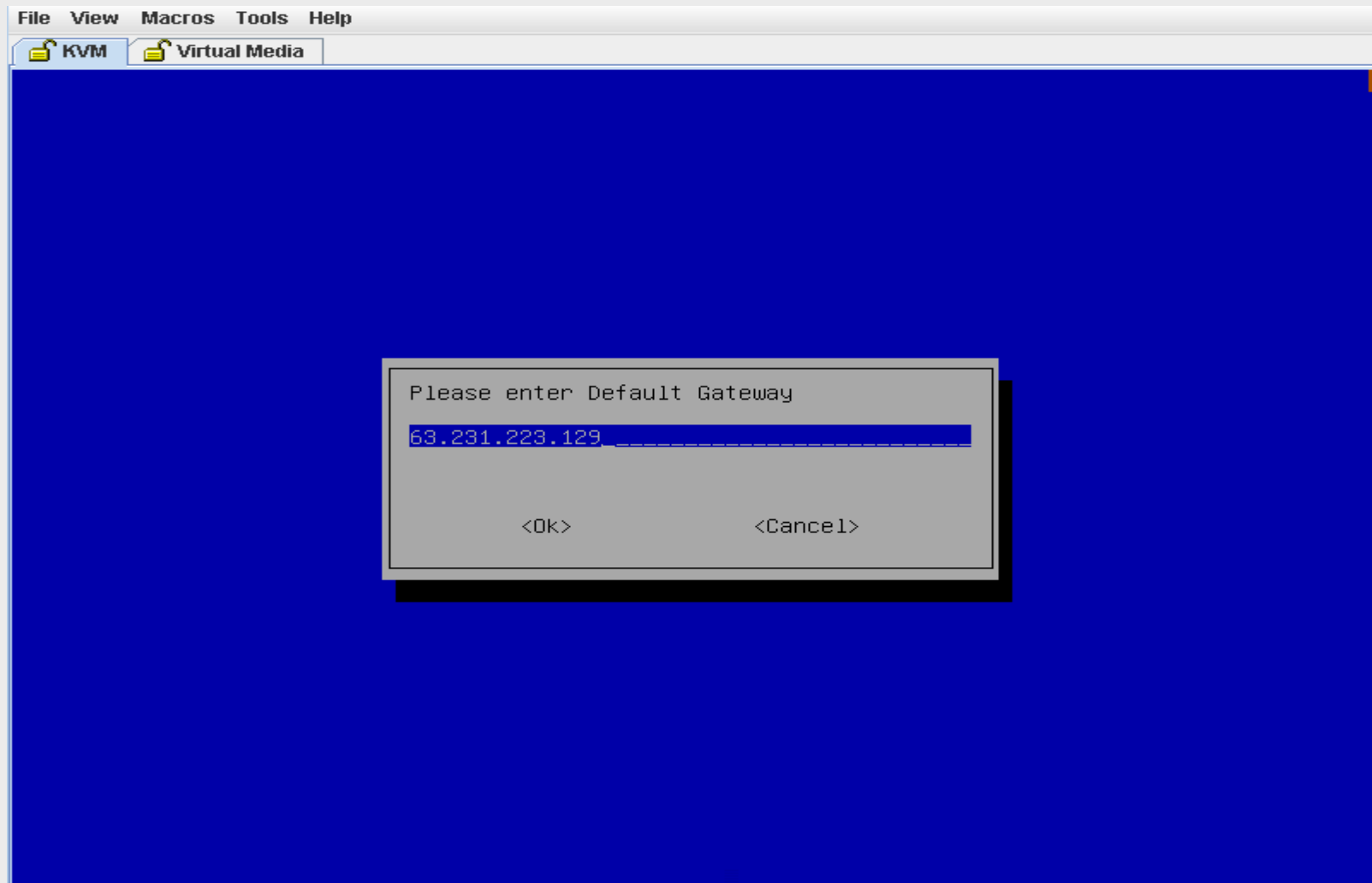
Enter Static IP



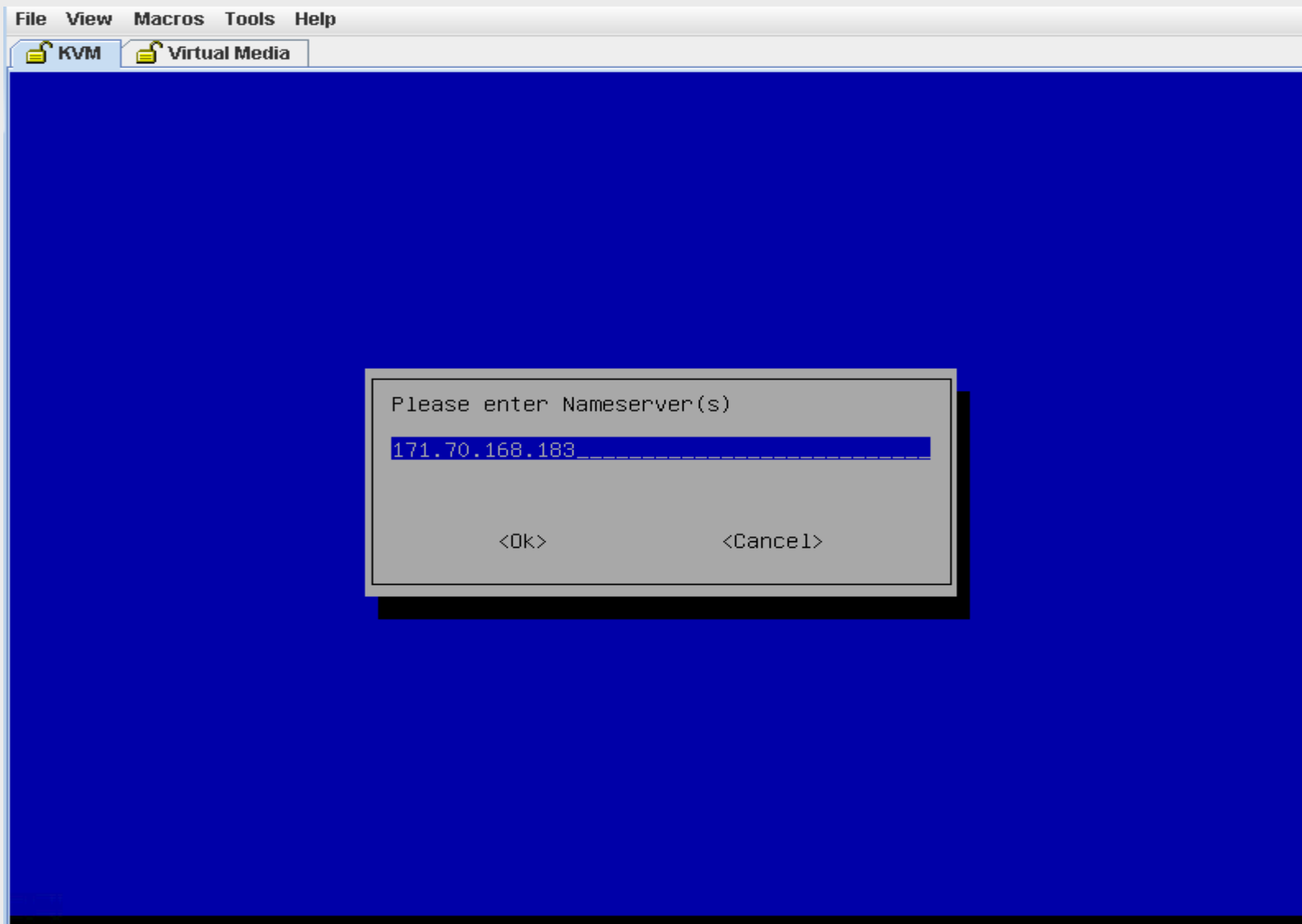
Enter Static IP Mask



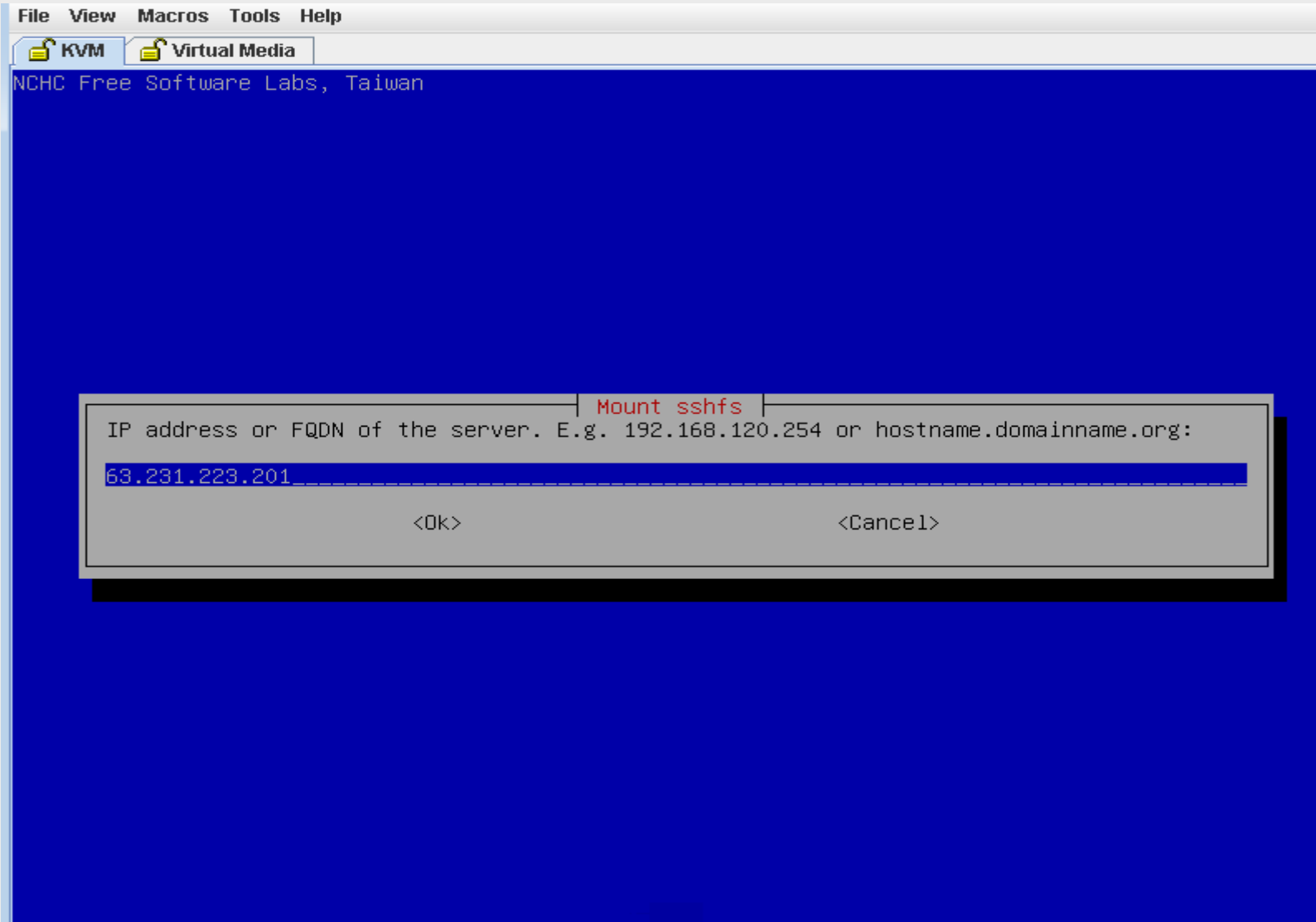
Static IP Default Gateway



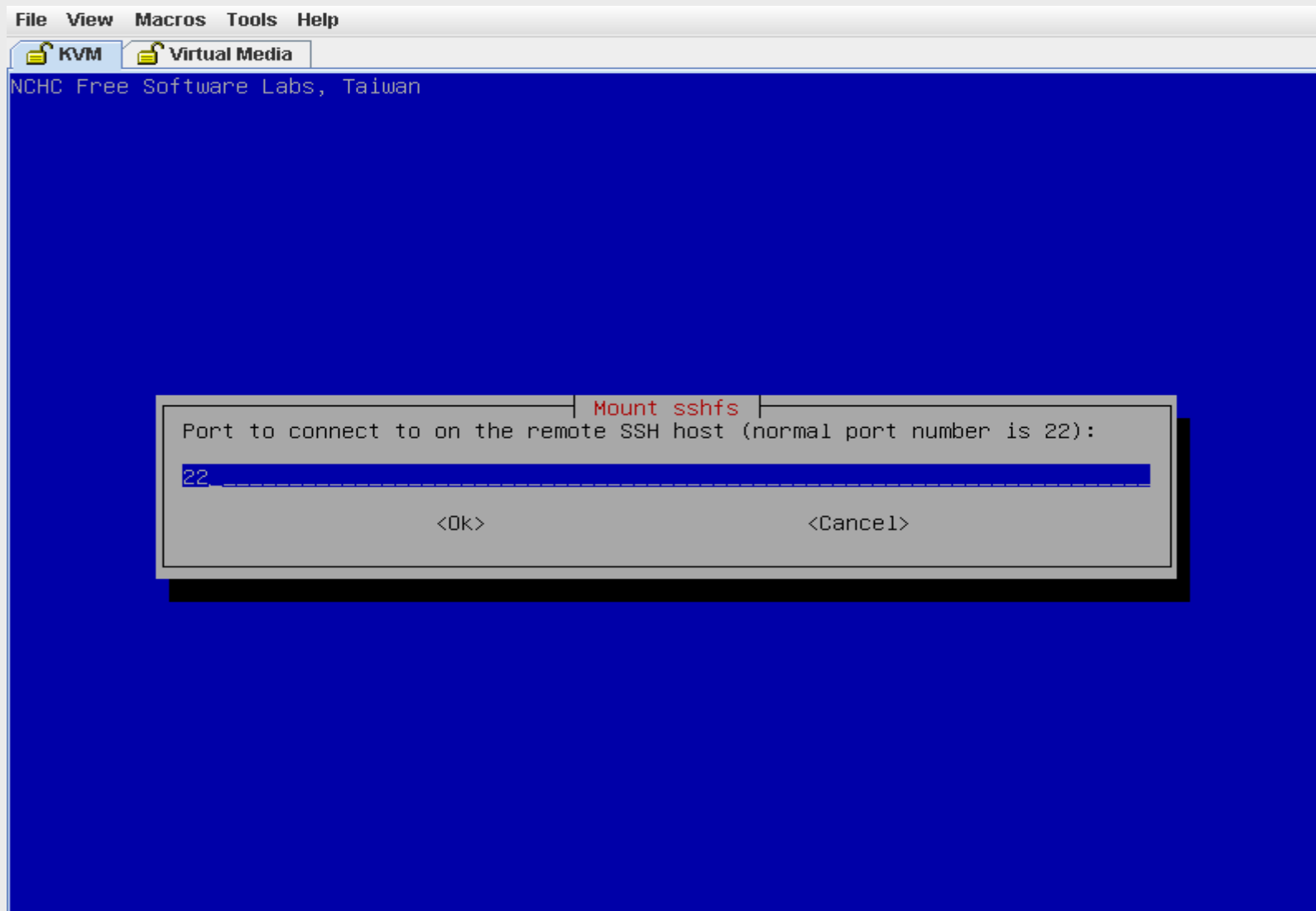
Static IP DNS



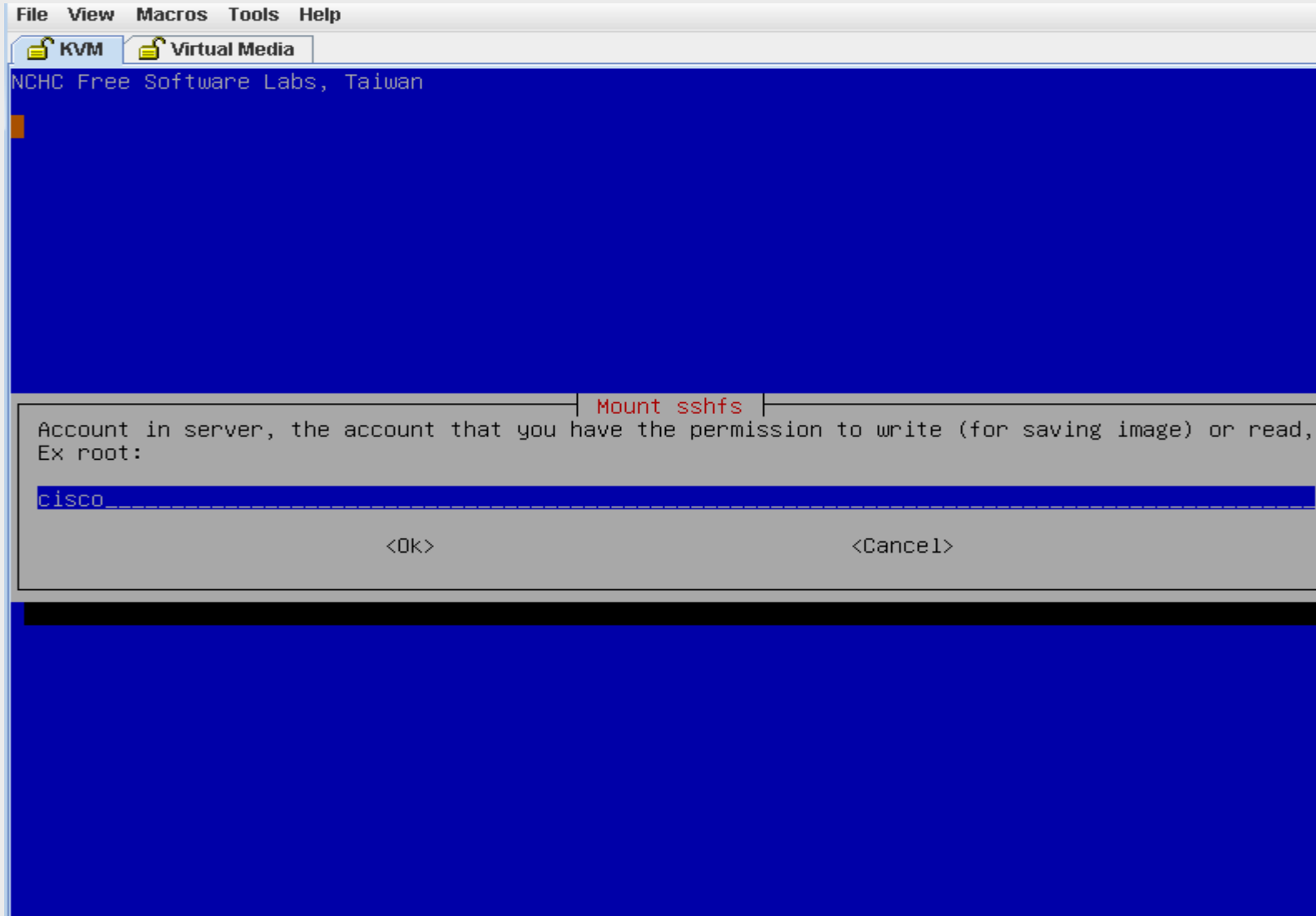
Enter Repository Server IP



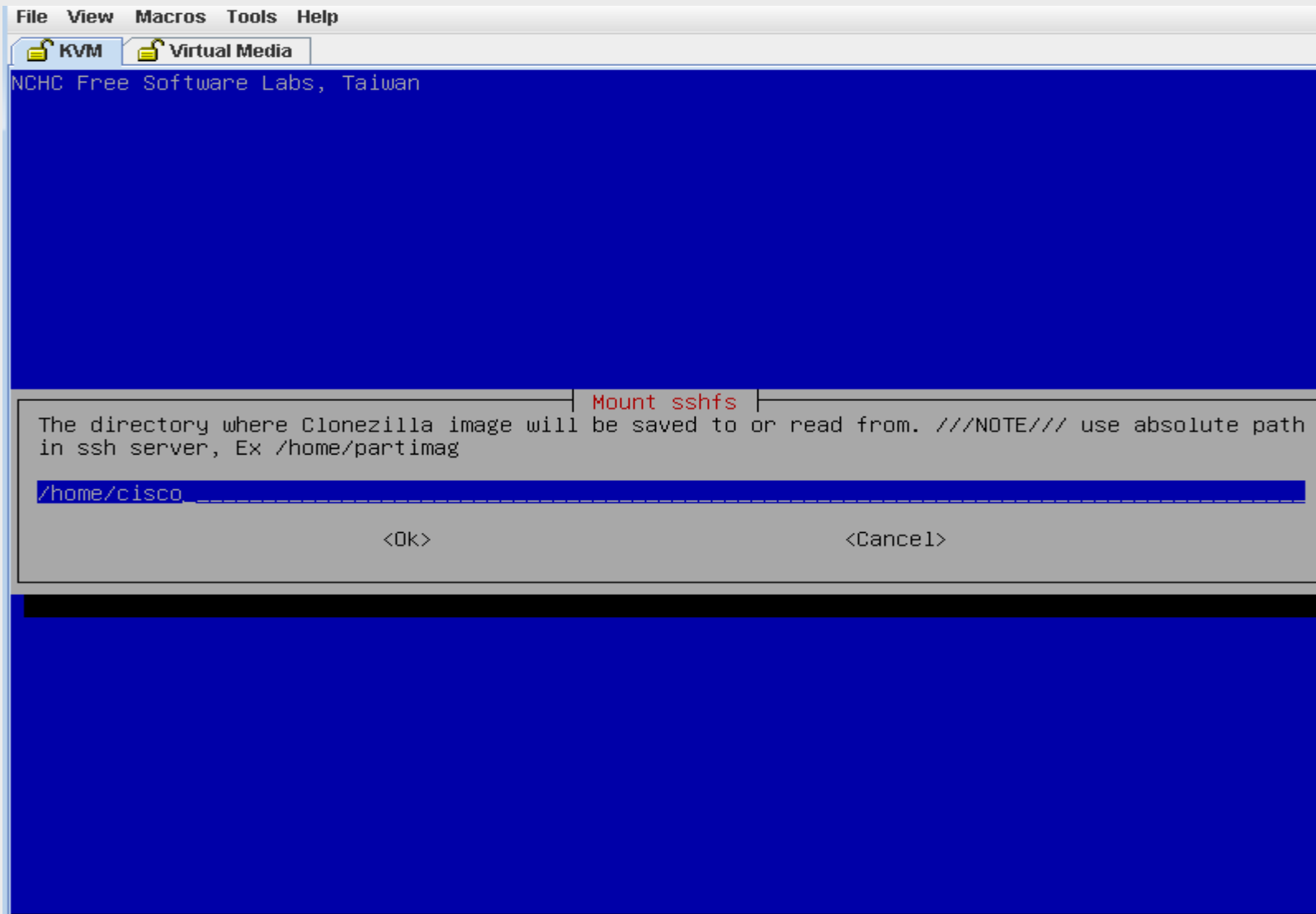
Enter Repository Server SSH Port Number



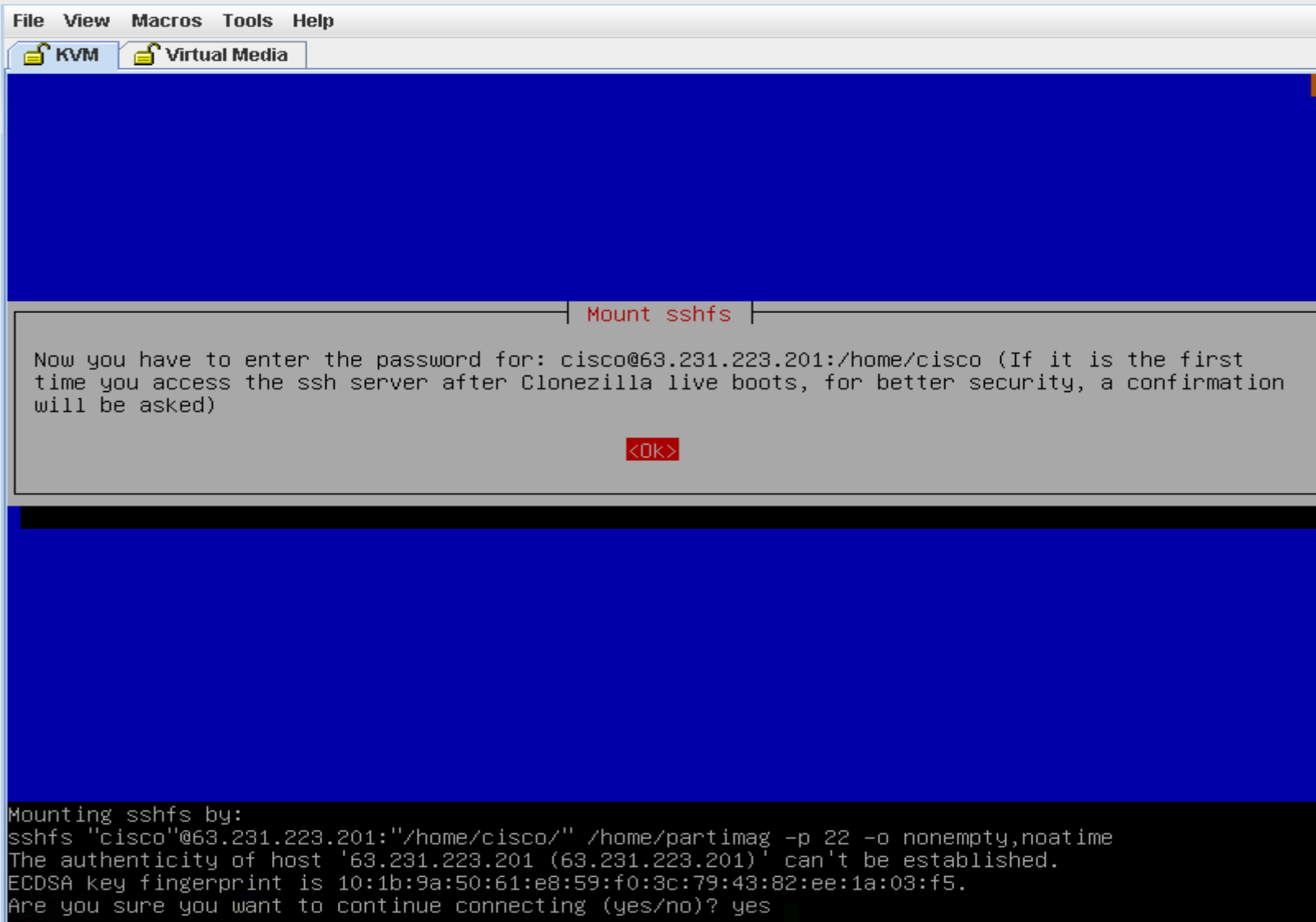
Enter Repository Server User Account



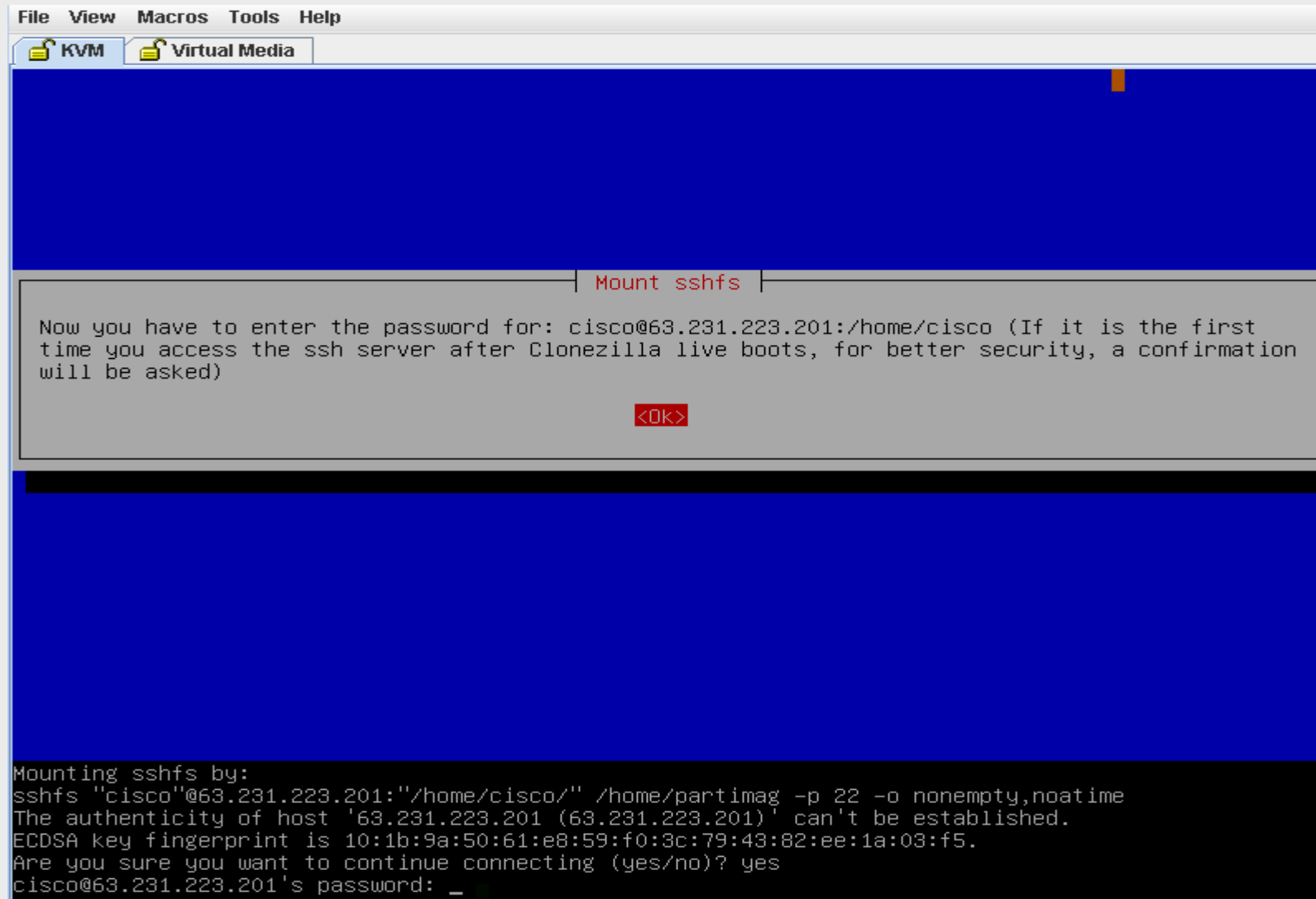
Enter Absolute Path to the image directory on the Repository Server



Enter Repository Server User Password



Enter Repository Server User Password Cont.

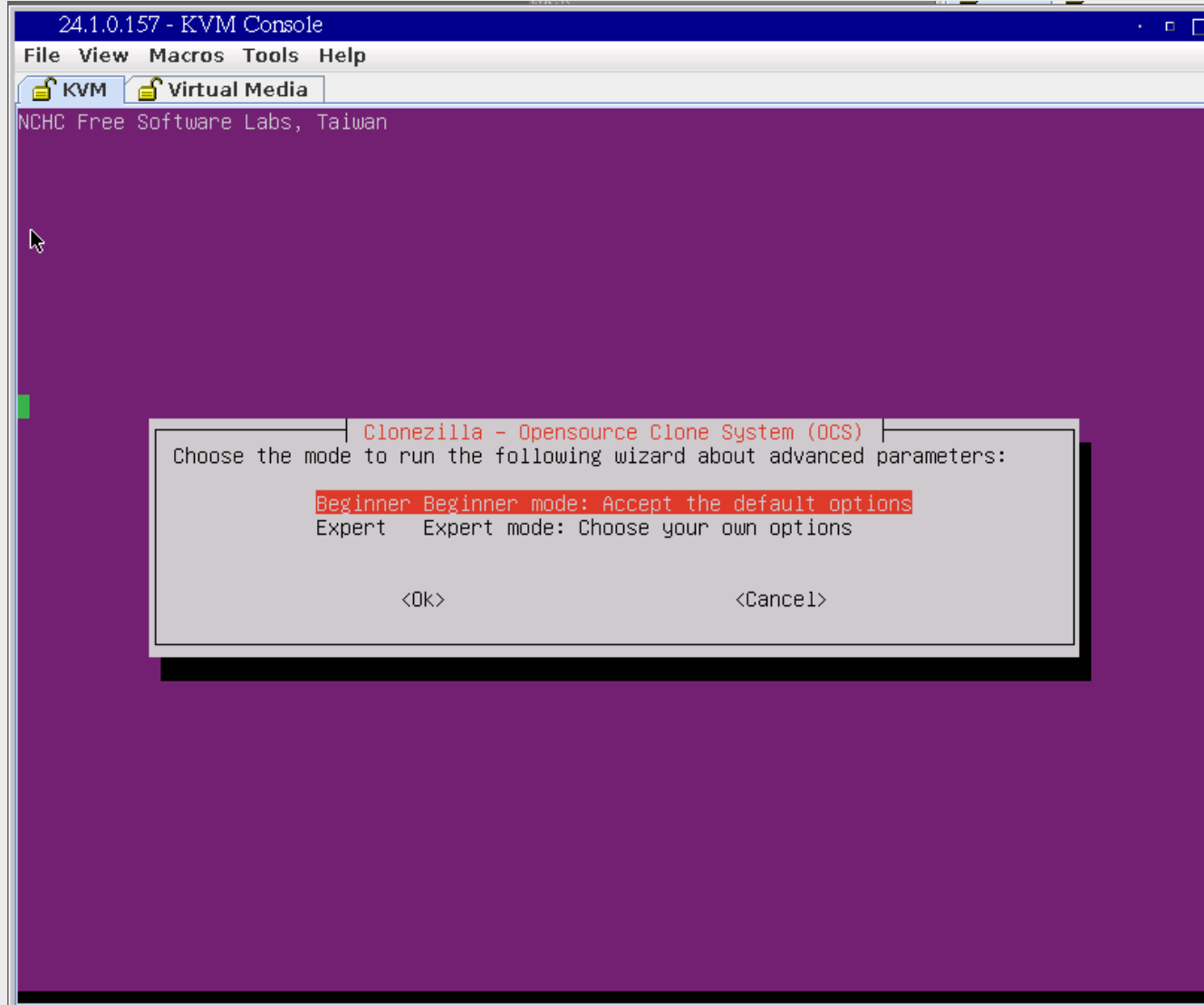


The screenshot shows a terminal window with a blue background. At the top, there is a menu bar with 'File', 'View', 'Macros', 'Tools', and 'Help'. Below the menu bar, there are two tabs: 'KVM' and 'Virtual Media'. The main area of the terminal is a grey box with a black border. Inside this box, the text reads: 'Mount sshfs' in red. Below that, it says: 'Now you have to enter the password for: cisco@63.231.223.201:/home/cisco (If it is the first time you access the ssh server after Clonezilla live boots, for better security, a confirmation will be asked)'. At the bottom of the grey box, there is a red button labeled '<Ok>'. Below the grey box, the terminal continues with the following text: 'Mounting sshfs by:', 'sshfs "cisco"@63.231.223.201:"/home/cisco/" /home/partimag -p 22 -o nonempty,noatime', 'The authenticity of host '63.231.223.201 (63.231.223.201)' can't be established.', 'ECDSA key fingerprint is 10:1b:9a:50:61:e8:59:f0:3c:79:43:82:ee:1a:03:f5.', 'Are you sure you want to continue connecting (yes/no)? yes', and 'cisco@63.231.223.201's password: _'.

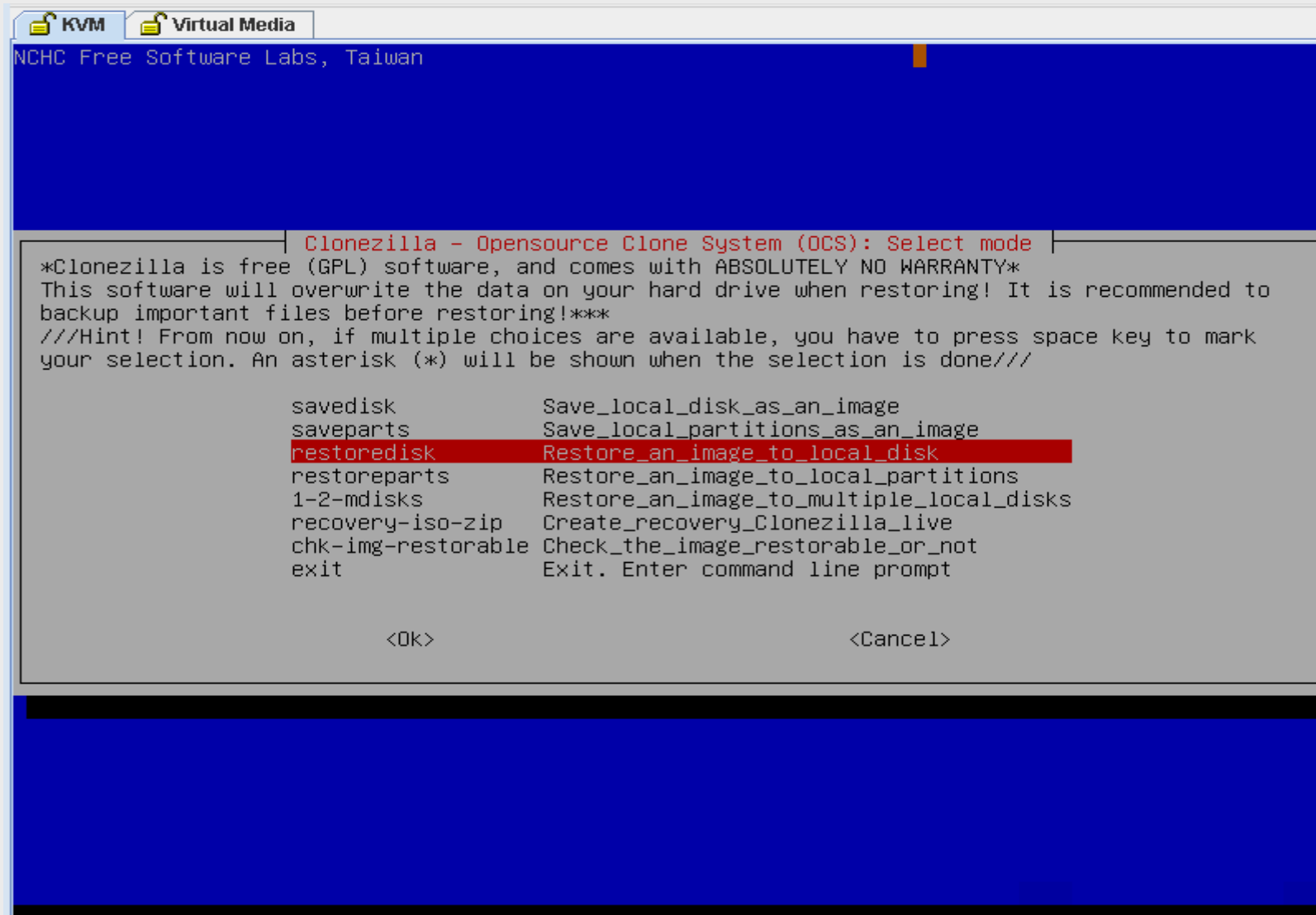
Enter Repository Server User Password Cont.

```
File View Macros Tools Help
KVM Virtual Media
Mounting sshfs by:
sshfs "cisco"@63.231.223.201:"/home/cisco/" /home/partimag -p 22 -o nonempty,noatime
cisco@63.231.223.201's password:
The file system disk space usage
*****.
Filesystem      Size  Used Avail Use% Mounted on
rootfs          127G  7.5M  127G   1% /
sysfs            0      0      0   -  /sys
proc            0      0      0   -  /proc
udev           10M      0   10M   0%  /dev
devpts          0      0      0   -  /dev/pts
tmpfs           26G  236K   26G   1%  /run
/dev/sr0        129M  129M      0 100% /lib/live/mount/medium
/dev/loop0      102M  102M      0 100% /lib/live/mount/rootfs/filesystem.squashfs
tmpfs           127G      0   127G   0%  /lib/live/mount/overlay
tmpfs           127G      0   127G   0%  /lib/live/mount/overlay
aufs           127G  7.5M  127G   1% /
tmpfs           5.0M      0   5.0M   0%  /run/lock
tmpfs           51G      0   51G   0%  /run/shm
cisco@63.231.223.201:/home/cisco/ 13T 482G  12T   4%  /home/partimag
*****.
Press "Enter" to continue.....
```

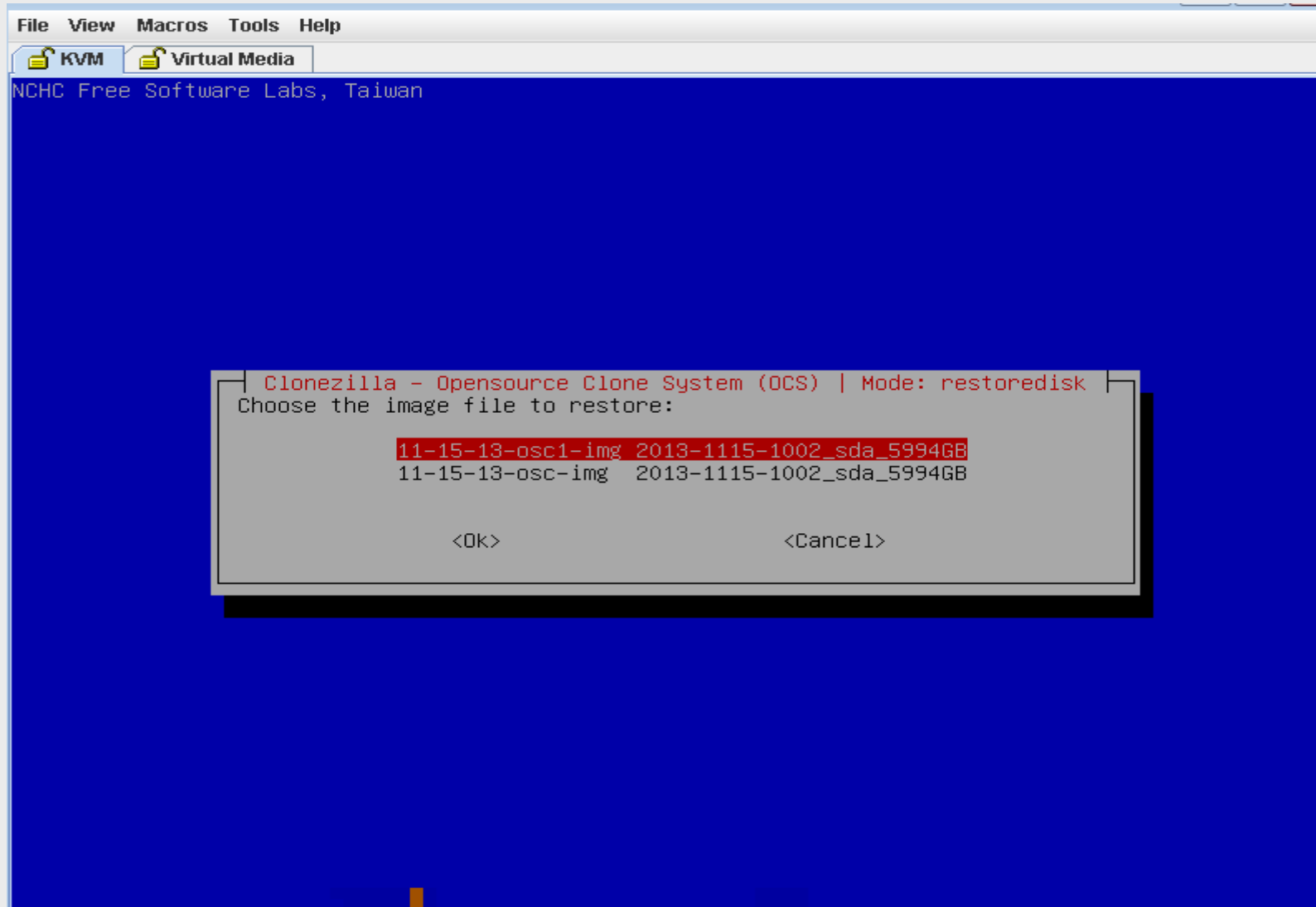
Choose the mode to run wizard.



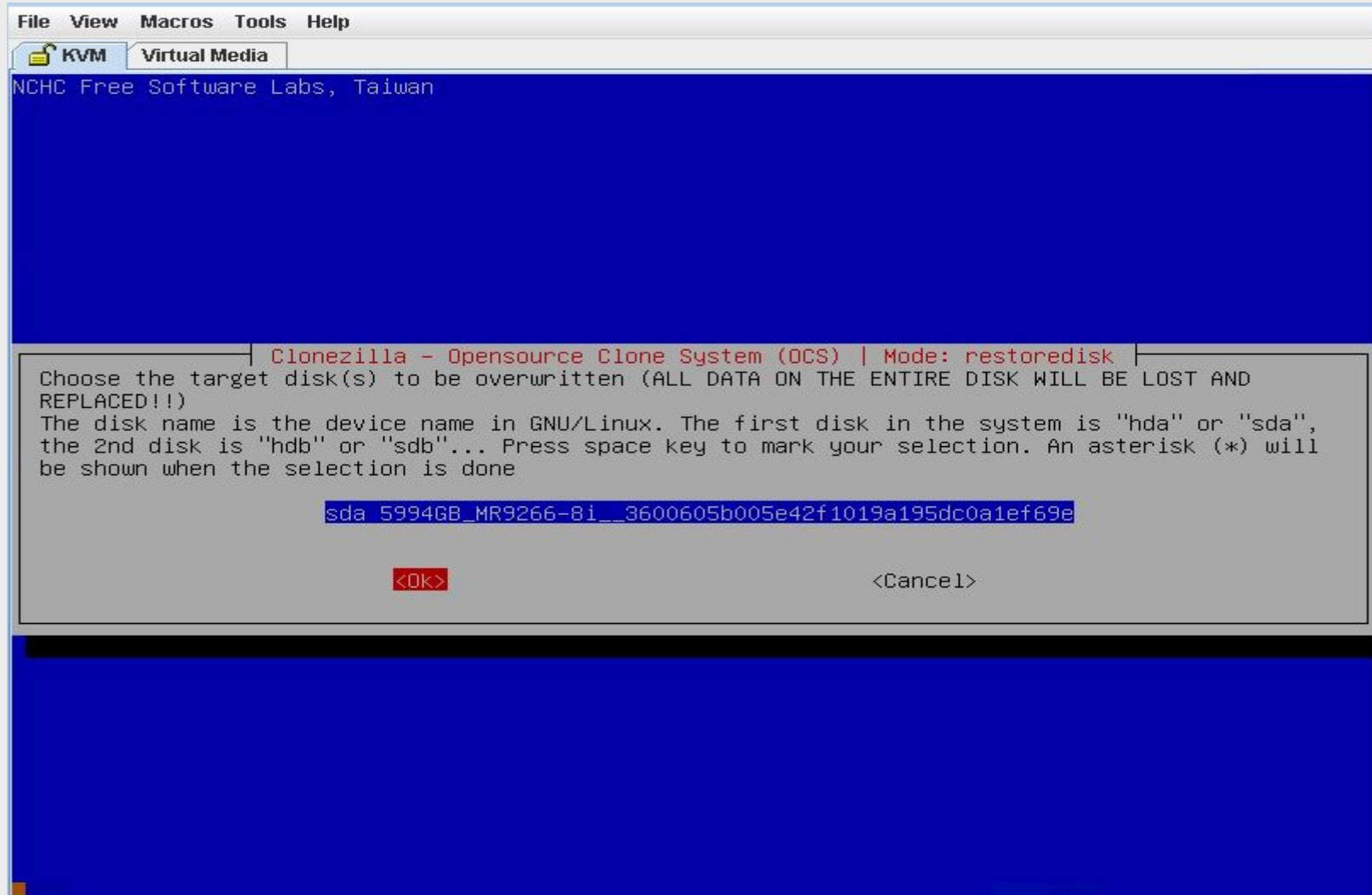
Select Clonezilla Mode – Restore Disk



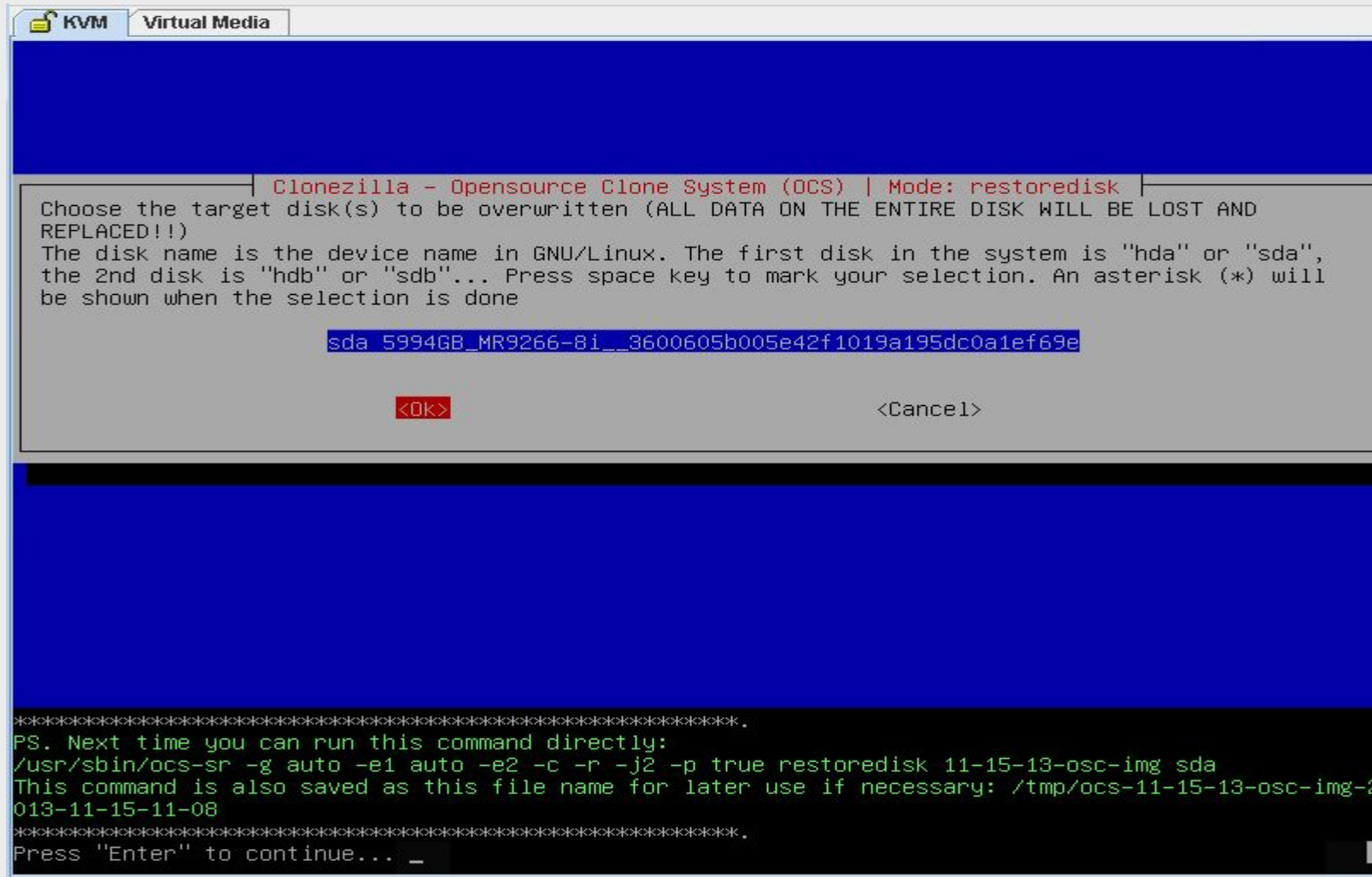
Restore Disk – Select Image : ucs05-build- img/ucs34-control-img/ucs05-compute-img



Restore Disk



Ex. Restore Disk



Ex. Restore Disk Cont.

```
KVM Virtual Media
WARNING!!! WARNING!!! WARNING!!!
WARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****.
Machine: UCSC-C240-M3S
sda (5994GB_MR9266-8i__3600605b005e42f1019a195dc0a1ef69e)
sda1 (1.6T_boot(In_MR9266-8i_)_3600605b005e42f1019a195dc0a1ef69e)
*****.
Let me ask you again. Are you sure you want to continue?
[y/n] y
OK, let's do it!!
Shutting down the Logical Volume Manager
  No volume groups found
Finished Shutting down the Logical Volume Manager
Creating partition in /dev/sda..
Trying to clean the MBR and GPT partition table on the destination disk first: /dev/sda
[ 2850.893544] sda: sda1 sda2 < sda5 >
Informing kernel the partition table has changed...
Informing kernel the file system has been changed.....[ 2853.997744] sda: unknown partition table
. done!
[ 2855.110776] SQUASHFS error: Unable to read data cache entry [280d272]
[ 2855.154283] SQUASHFS error: Unable to read page, block 280d272, size 50394
strings: error while loading shared libraries: /usr/lib/libbfd-2.23.90-system.20131017.so: cannot re
ad file data: Input/output error
Non-grub boot loader found on /home/partimag/11-15-13-osc-img/sda-mbr...
The CHS value of hard drive from EDD will be used for sfdisk.
No CHS value was found from EDD info for disk /dev/sda.
*****.
Fri Nov 15 11:09:19 UTC 2013
Writing the partition table...
No partition table exists in target disk /dev/sda, try to initialize one so that we can get the disk
size by parted... Running: parted -s /dev/sda mklabel msdos
done!
Error! Destination disk (/dev/sda) size is 5.99TB, which is larger than the MBR partition table ent
ry maximum 2 TiB (~ 2.2 TB). You have to use GUID partition table format (GPT).
Program terminated!!
Press "Enter" to continue...█..
```


Change the boot order to HDD

The screenshot displays the Cisco Integrated Management Controller (IMC) interface for BIOS configuration. The main window is titled "BIOS" and includes a sidebar with navigation options like "Server" and "Admin". The "Overall Server Status" is shown as "Good". The "Actions" panel contains options for "Configure BIOS", "Configure Boot Order", "Recover Corrupt BIOS", and "Clear BIOS CMOS". The "BIOS Properties" section indicates the running version is "C200.1.4.3c.0 (Build Date: 02/29/2012)".

The "Boot Order" section is divided into "Configured Boot Order" and "Actual Boot Order". The "Configured Boot Order" list shows:

1. CDROM
2. HDD
3. PXE

The "Actual Boot Order" list shows:

- + CD/DVD
- + HDD
- + Network Device (PXE)
- + FDD
- Internal EFI Shell

A "Configure Boot Order" dialog box is open in the foreground. It has two columns: "Device Types" and "Boot Order".

Device Types:

- FDD
- EFI

Boot Order:

- HDD (highlighted)
- CDROM
- PXE

Buttons for "Add >", "< Remove", "Up", and "Down" are visible between the columns. "Apply" and "Cancel" buttons are at the bottom of the dialog.

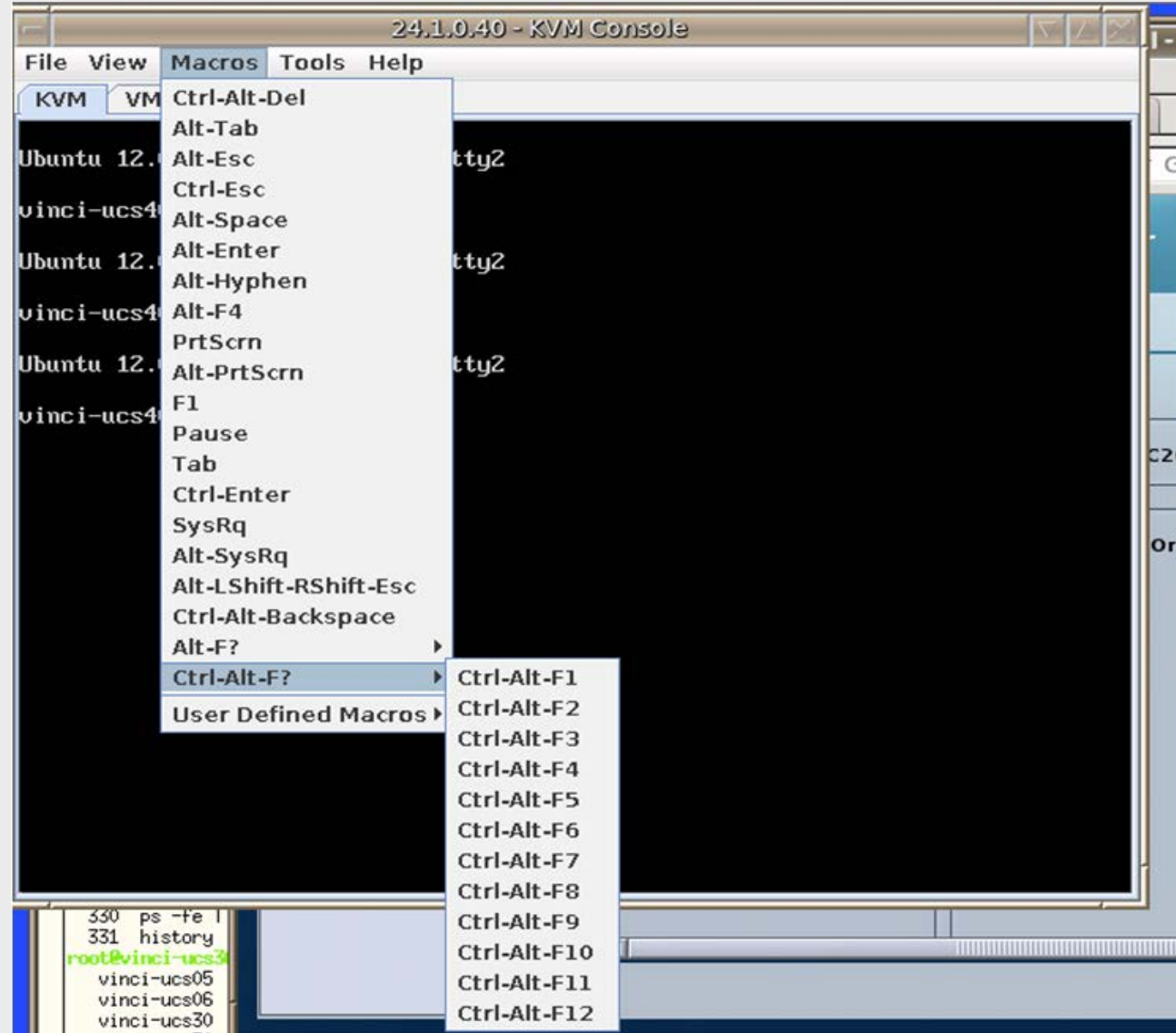
Ex. Restore Disk Completed - Reboot

```
File View Macros Tools Help
KVM Virtual Media
Found boot loader grub in the MBR of disk /dev/sda.
Found grub 2 installed in the restored OS.
Test if we can chroot the restored OS partition /dev/sda1...
Yes, we are able to chroot the restored OS partition /dev/sda1.
Trying to use the grub2 in the restored OS...
Running: run_grub2_from_restored_os "/dev/sda1" "/dev/sda1" "/dev/sda"
Re-installing grub2 on disk /dev/sda with grub2 dir in partition /dev/sda1 and root partition /dev/sda1... [ 522.854108] EXT4-fs (sda1): mounted filesystem with ordered data mode. Opts: (null)

Installation finished. No error reported.
done!
*****
The NTFS boot partition was not found or not among the restored partition(s). Skip running partclone.ntfsfixboot.
*****
End of restoreparts job for image 11-15-13-osc-img.
End of restoredisk job for image 11-15-13-osc-img.
*****
Checking if udevd rules have to be restored...
This program is not started by Clonezilla server, so skip notifying it the job is done.
Finished!
Now syncing - flush filesystem buffers...

Ending /usr/sbin/ocs-sr at 2013-11-15 11:26:45 UTC...
*****
If you want to use Clonezilla again:
(1) Stay in this console (console 1), enter command line prompt
(2) Run command "exit" or "logout"
*****
When everything is done, remember to use 'poweroff', 'reboot' or follow the menu to do a normal poweroff/reboot procedure. Otherwise if the boot media you are using is a writable device (such as USB flash drive), and it's mounted, poweroff/reboot in abnormal procedure might make it FAIL to boot next time!
*****
Press "Enter" to continue..._
```

After reboot, use CTRL-ALT-F2 to get the login window (If you are not in login window)



Issues reported by our users when restoring images

Issue #1 encountered by our users - KVM console issue

The console application file viewer.jnlp(172.29.21.213@0@1391192569073) can't be opened by proper java application.

Solution:

Download following JRE version and reboot Apple MAC:

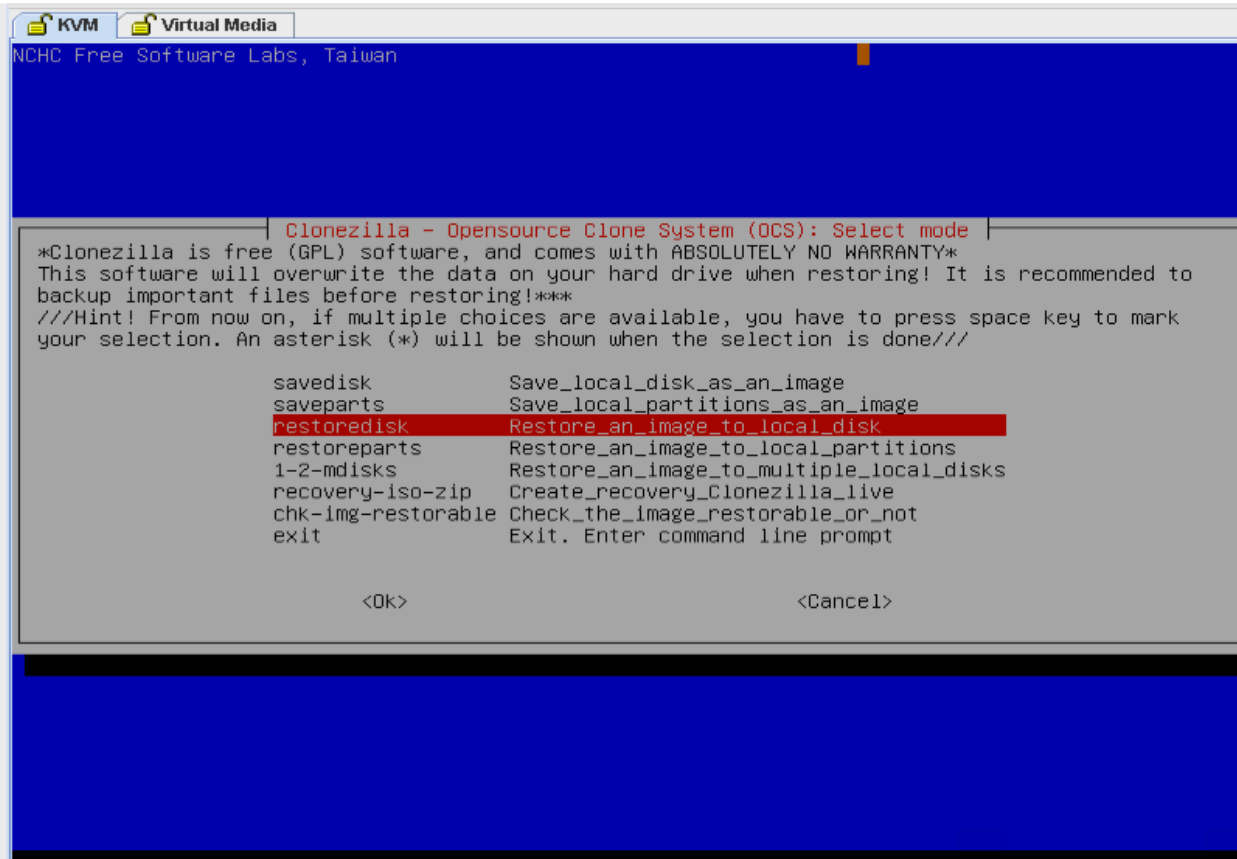
```
java -version
```

```
java version "1.7.0_51"
```

```
Java(TM) SE Runtime Environment (build 1.7.0_51-b13)
```

```
Java HotSpot(TM) 64-Bit Server VM (build 24.51-b03, mixed mode)
```

Issue #2 encountered by our users - The following screen didn't show up:



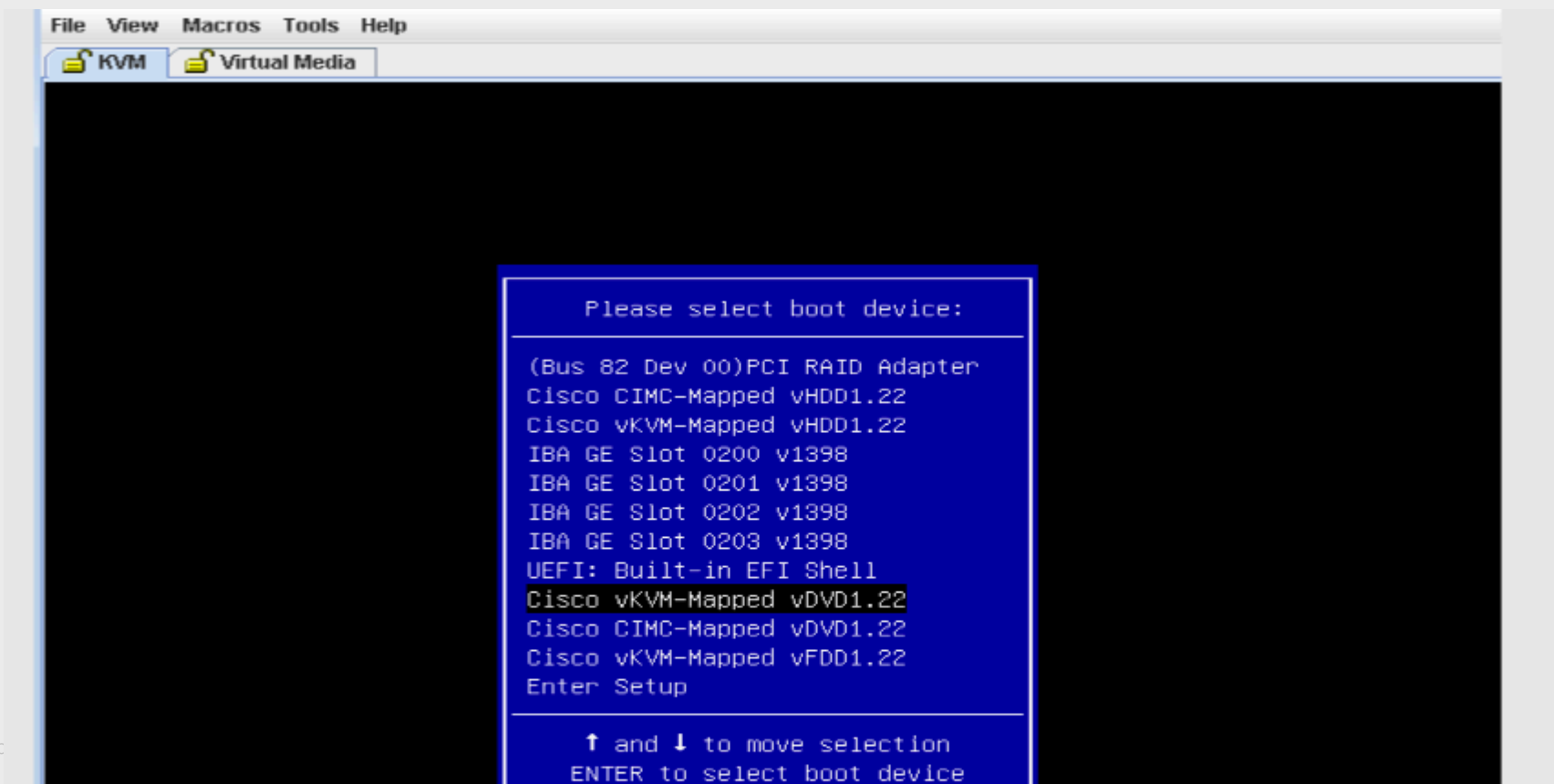
Solution: this is pure network configuration issue.

I used user name "cisco" to access, but found that there is no such user on our repository, so I used "root".

Issue #3 encountered by our users - can't choose boot option to pick Cisco KVM vHDD

After clonezilla iso is installed, can't choose boot option to pick Cisco KVM vHDD, and change BIOS boot order from CMIC GUI does not take effect:

The following menu should be popped up after I try to change boot order (hit Fn+F6 keys), and then I can choose "Cisco vKVM-Mapped vHDD1.22) after clonzilla is installed, but if BIOS version is old (built in 1/31/2013), so it always boot up the system from vKVM-Mapped vDVD.122.



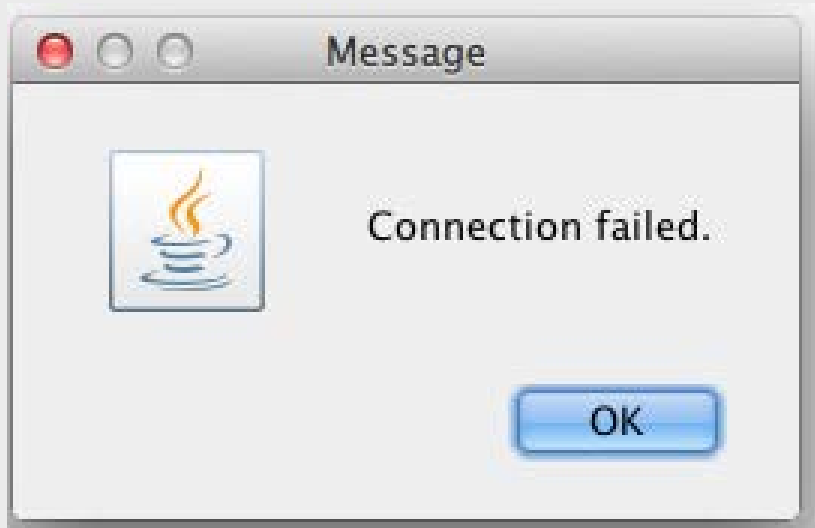
Issue #3 encountered by our users - can't choose boot option to pick Cisco KVM vHDD

Solution:

The BIOS version is old. Upgraded BIOS with: ucs-c220-huu-1.5.4-3.iso

<Lei> 1). On KVM console, "Virtual Media" tab, add the above bios iso as the image. 2). Reboot the UCS and change the boot order to "Cisco vKVM-mapped vDVD1.22". 3). After root the screen pops up asking to upgrade the bios, select upgrade all. Click "yes" when prompt asking to reboot. 4). The KVM console and CMIC will be lost after reboot. Wait for around 10 minutes and reconnect CMIC. Check on the CMIC GUI verify that the BIOS version is updated.

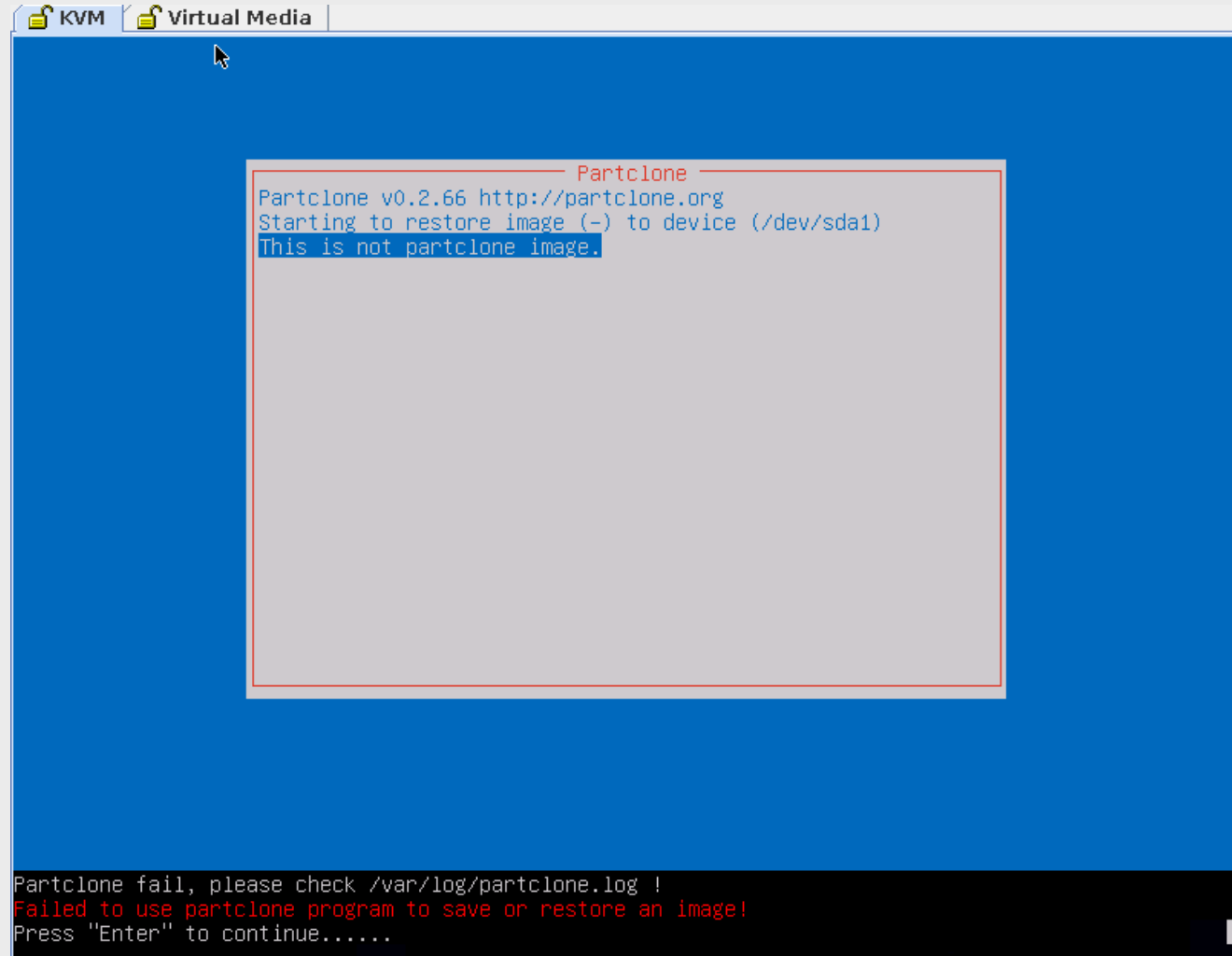
Issue #4 encountered by our users - KVM console connection failure:



Solution:

I went to the lab and unplug and plug in the power for the 2 UCSs, now it is connecting to it.

Issue #5 - If you hit permission error. Change the file owner when tar .tgz file and start Clonezilla again



The screenshot shows a terminal window titled "Partclone" with the following text:

```
Partclone v0.2.66 http://partclone.org
Starting to restore image (-) to device (/dev/sda1)
This is not partclone image.
```

At the bottom of the terminal, there is a black bar with the following text:

```
Partclone fail, please check /var/log/partclone.log !
Failed to use partclone program to save or restore an image!
Press "Enter" to continue.....
```