

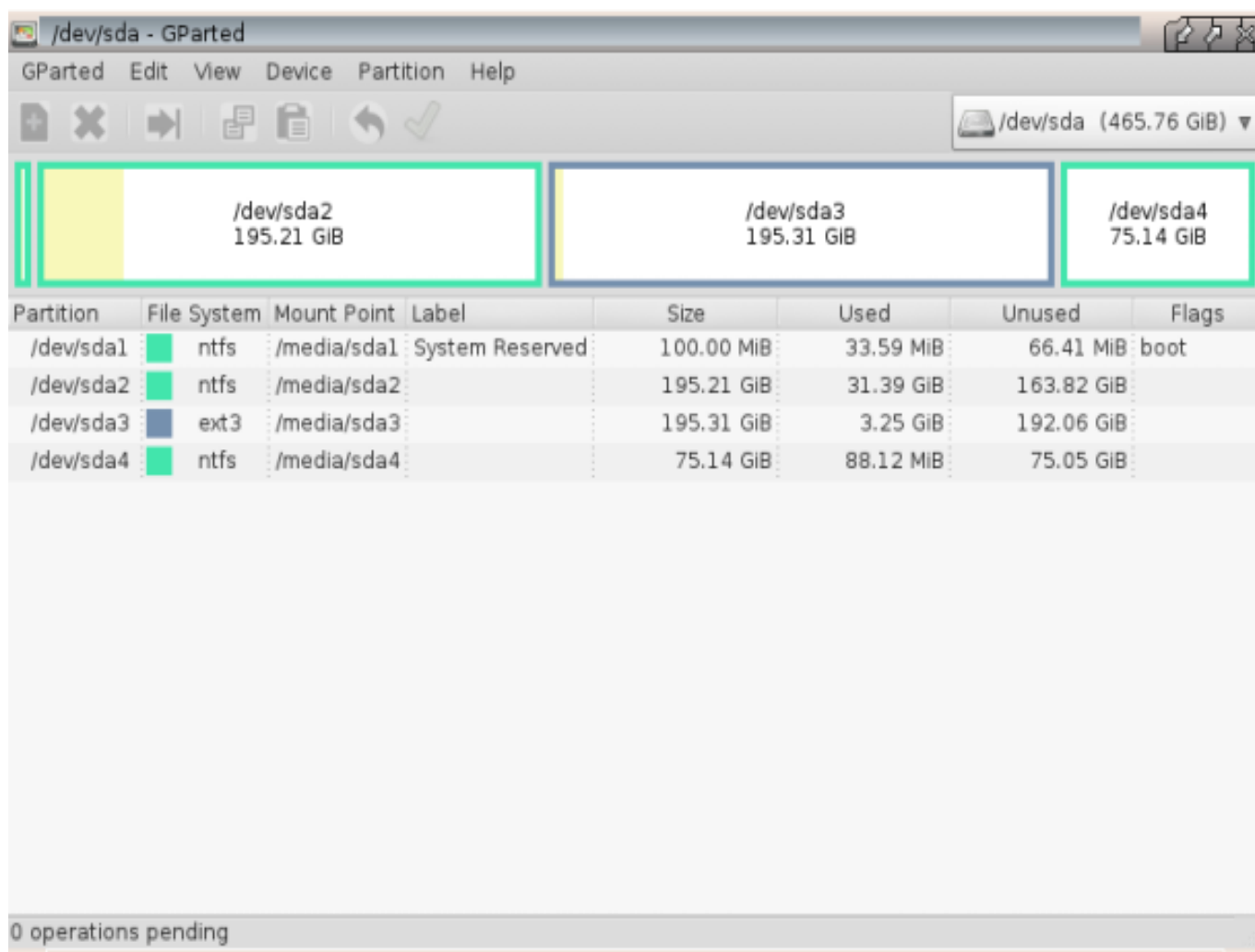
Kloniranje Windowsa na privremeni SSH server



Za preživljavanje u svakodnevnom poslu sistemca često se moraju koristiti improvizacije i razni trikovi da se doskoči nekom problemu. Stari hardver uglavnom nije dorastao nekim novijim metodama rada ili zahtjeva drugačiji pristup. Ovo je jedan takav primjer iz prakse.

U računalnoj učionici unatrag 2 godine smo počeli raditi "bare metal restore" rezervnu kopiju svakog pojedinačnog računala. Iako je potrebno potrošiti nešto više vremena nego što je uobičajeno na klasičnu reinstalaciju učionice, prednosti su velike. U nekoliko minuta možemo svako pojedinačno računalo vratiti u ispravno stanje ukoliko se sistem nepovratno ošteti uslijed nepravilnog rukovanja, kompromitacije sistema ili u najčešćem slučaju nepravilnog gašenja. Jedna od prednosti ove metode da "zauvijek" imate registriranu kopiju Windowsa 7 koju nije potrebno ponovno registrirati kao kod klasične reinstalacije. Time ne upadate u problem sa promjenom ili nestašice ključeva preko MS referalnog centra.

Da bi "sačuvali" ispravno stanje sistema Windows 7 registriranog sa pripadnim ključevima na svaki disk od 500 GB smo razdjelili na particije kao na slici.

A screenshot of the GParted disk partitioning tool. The window title is "/dev/sda - GParted". The menu bar includes "GParted", "Edit", "View", "Device", "Partition", and "Help". Below the menu is a toolbar with icons for adding, deleting, moving, copying, pasting, undo, redo, and apply. On the right, a dropdown menu shows "/dev/sda (465.76 GiB)". The main area shows a visual representation of the disk with four partitions: /dev/sda1 (yellow, 100.00 GiB), /dev/sda2 (green, 195.21 GiB), /dev/sda3 (blue, 195.31 GiB), and /dev/sda4 (green, 75.14 GiB). Below this is a table with the following data:

Partition	File System	Mount Point	Label	Size	Used	Unused	Flags
/dev/sda1	ntfs	/media/sda1	System Reserved	100.00 MiB	33.59 MiB	66.41 MiB	boot
/dev/sda2	ntfs	/media/sda2		195.21 GiB	31.39 GiB	163.82 GiB	
/dev/sda3	ext3	/media/sda3		195.31 GiB	3.25 GiB	192.06 GiB	
/dev/sda4	ntfs	/media/sda4		75.14 GiB	88.12 MiB	75.05 GiB	

At the bottom, a status bar indicates "0 operations pending".

Windows korisnicima "nevidljiva" Linux "ext3" /dev/sda3 particija služi kao medij za pohranu rezervne kopije boot sektora /dev/sda1 C: sistemskog diska /dev/sda2 za potrebe vraćanja računala u originalno ispravno stanje. NTFS particija /dev/sda4 ostaje za podatke Windows korisnicima najčešće oznake D: ili E: .

Međutim da ne bude sve idealno postoje 2 PC "oldimera" u učionici sa hard diskom od 80 GB koji nisu dostatni da se od njih "otkida" prostor potreban za "skriveni" dio. Možda bi se moglo nešto prostora "navući" međutim drastično ćemo smanjiti sistemski C: disk kojeg Windows 7 svakom slijedećom nadogradnjom ili instalacijom softvera treba sve više.

U ovom slučaju bi poslužio dobro neki NAS uređaj ili vanjski disk sa dovoljno praznog prostora. Kako to obično bude NAS se još nije kupio, vanjski disk je ionako pretrpan raznim potrebnim i nepotrebnim kopijama za koje nikad ne znaš hoće li kad zatrebati. Međutim zaključujemo da novija računala iz učionice imaju sasvim dovoljno mjesta na disku za pohranu . NTFS podatkovna particija baš nije najbolje rješenje jer dostupna je znatijelnim korisnicima Windowsa i treba dodatno definirati prava pristupa. EXT3 particija sa novih računala ima sasvim dovoljno prostora samo je treba učiniti dostupnom alatu za kloniranje.

Jednom starom [članku](#) [1] smo opisali kako se koristiti Clonezilla live-cd za kloniranje na npr. USB stick. Za ovaj slučaj na Windows 7 PC sa EXT3 particijom podižemo live SSH server preko kojeg "isporučujemo" kopiju. Na "izvornom" računalu uzimamo kopiju cijelog diska od 80 GB sa Clonezilla 1.2.10-14 verzijom koja je starija inačica ali za ovaj tip hardvera odgovarajuća.

Prvo odredišno računalo sa W7 OS "Debianiziramo" preko Antix 13.1 distribucije (ustvari Debian live cd). Kad smo računalo bootali preko CD/DVD uređaja podigli Antix 13.1 kroz GUI podignemo terminal i pokrenemo prijavu lozinka je "demo".

```
demo@antiX1:~
```

```
$ sudo su
```

```
We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:
```

- #1) Respect the privacy of others.
- #2) Think before you type.
- #3) With great power comes great responsibility.

```
[sudo] password for demo:
```

Provjerimo postojeće diskove na sistemu.

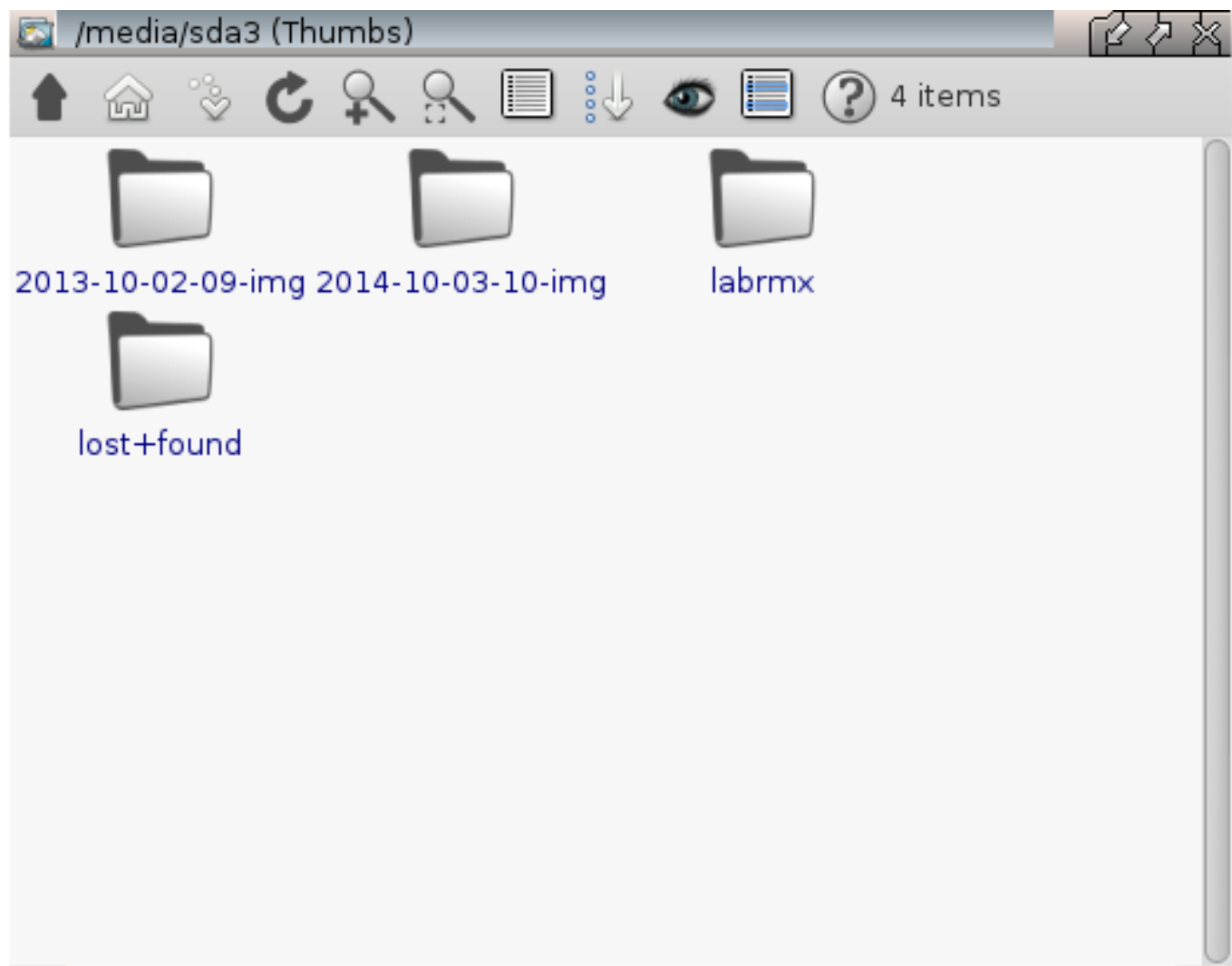
```
root@antiX1:~# fdisk -l
Disk /dev/sda: 500 GB, 500105249280 bytes
255 heads, 63 sectors/track, 60801 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
   Device Boot      Start         End      Blocks   Id  System
/dev/sda1  *           1           13        104391    7  HPFS/NTFS
Warning: Partition 1 does not end on cylinder boundary.
/dev/sda2           13        25497       204700230    7  HPFS/NTFS
Warning: Partition 2 does not end on cylinder boundary.
/dev/sda3          25497        50993       204796620   83  Linux
Warning: Partition 3 does not end on cylinder boundary.
/dev/sda4          50993        60802       78790792    7  HPFS/NTFS
```

Otkrijemo gdje se svi nalaze. Zanima nas sda3 Linux ext3 particija.

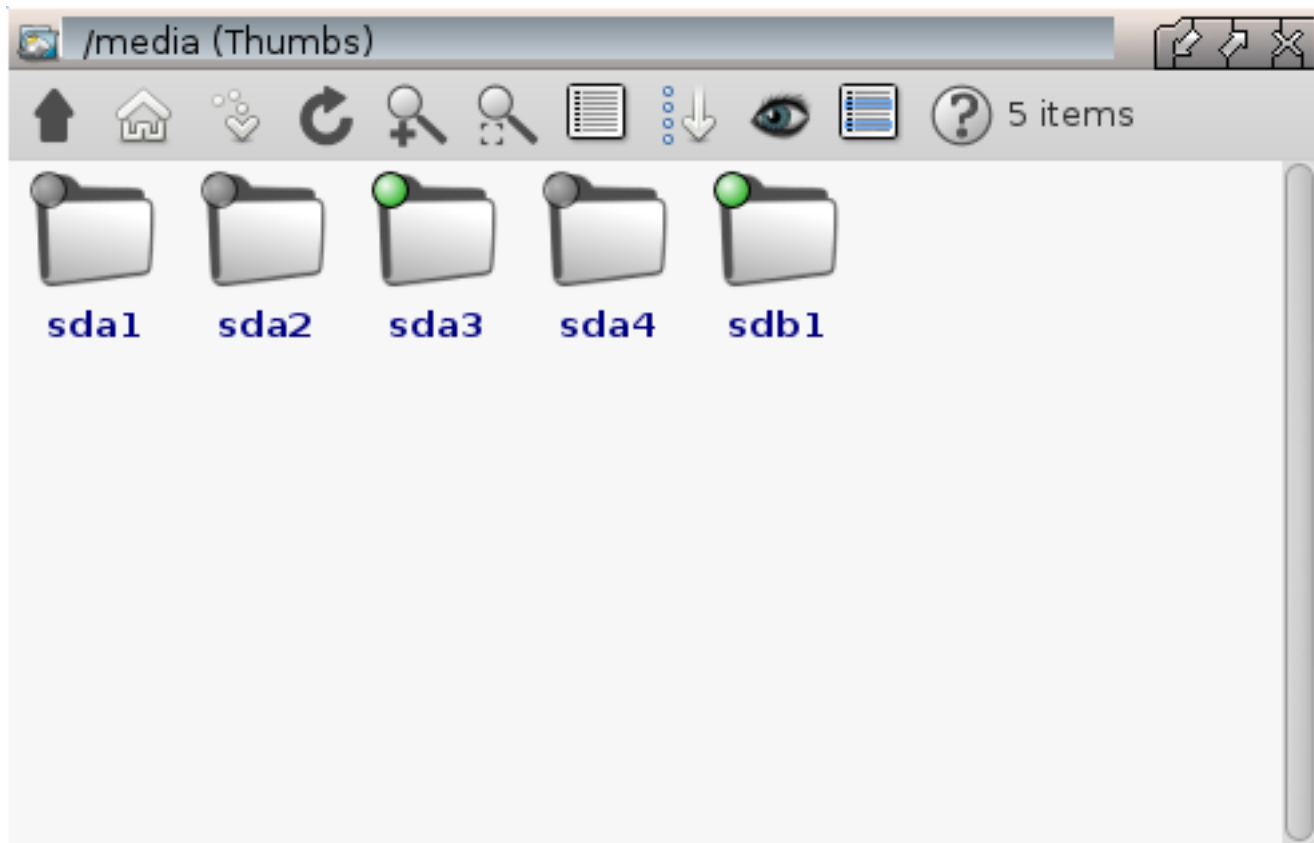
```
root@antiX1:/home/demo# cd /media
root@antiX1:/media# ls
```

sda1 sda2 sda3 sda4 sdb1

Navigiramo do nje kroz GUI Rox file manager. Tu pronalazimo ranije rezervne kopije od računala domaćina rađene Clonezilla alatom.



Pristupom kroz GUI smo montirali sda3 particiju što vidimo kad se dignemo nivo više kao direktorij markiran "zeleno".



Sad još trebamo omogućiti pristup preko mreže "domaćinskom" odredišnom računalu. Promijenimo si password koji je bolje ne komplicirati, stavite što jednostavniji ionako je privremen i neće dugo stajati na mreži, komplikacija sa specijalnim znakovima vam može raditi problem kod drugog rasporeda tipkovnice.

```
root@antiX1:/home/demo# passwd
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

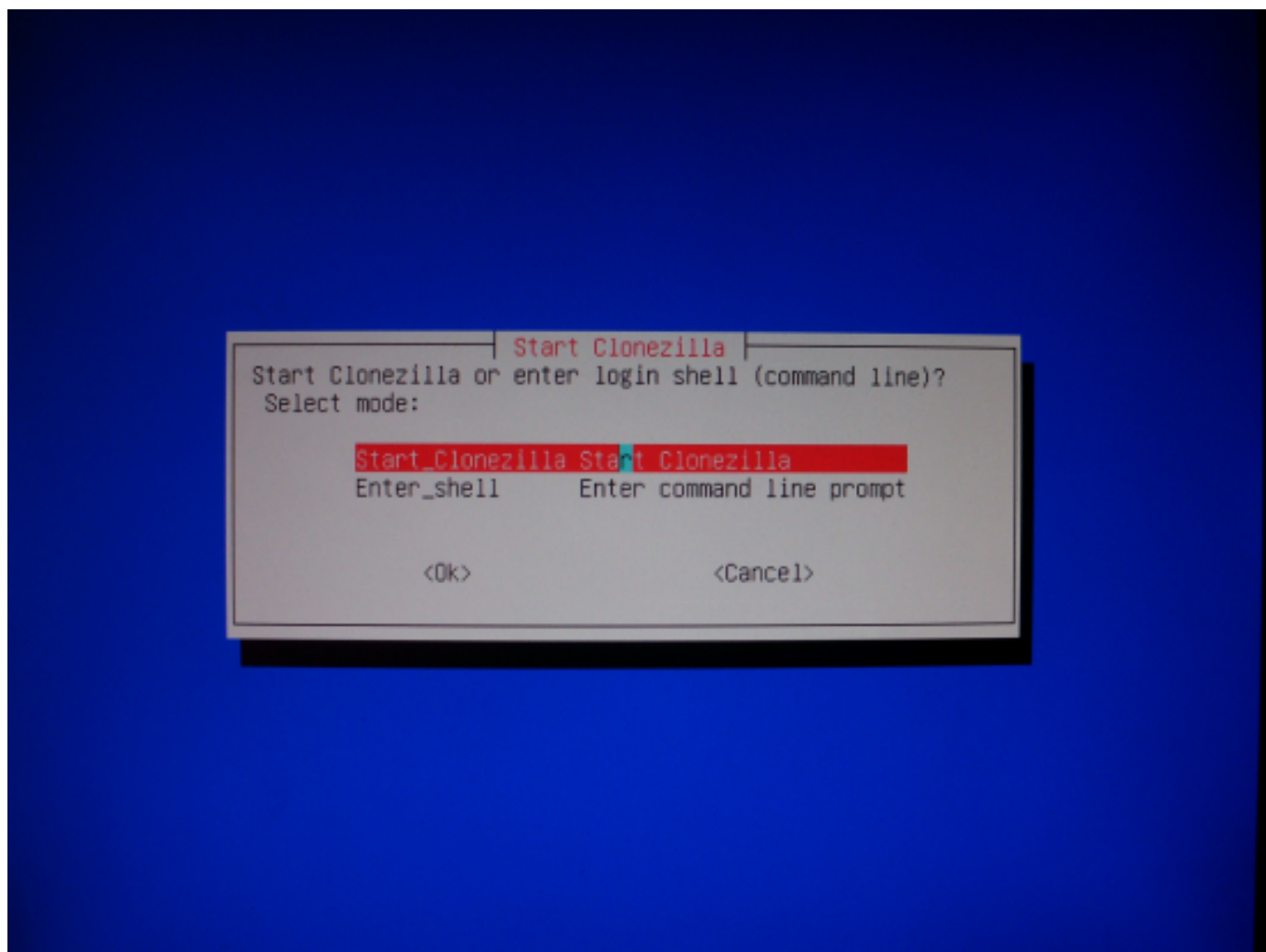
Startajmo ssh server i provjerimo trenutnu IP adresu servera.

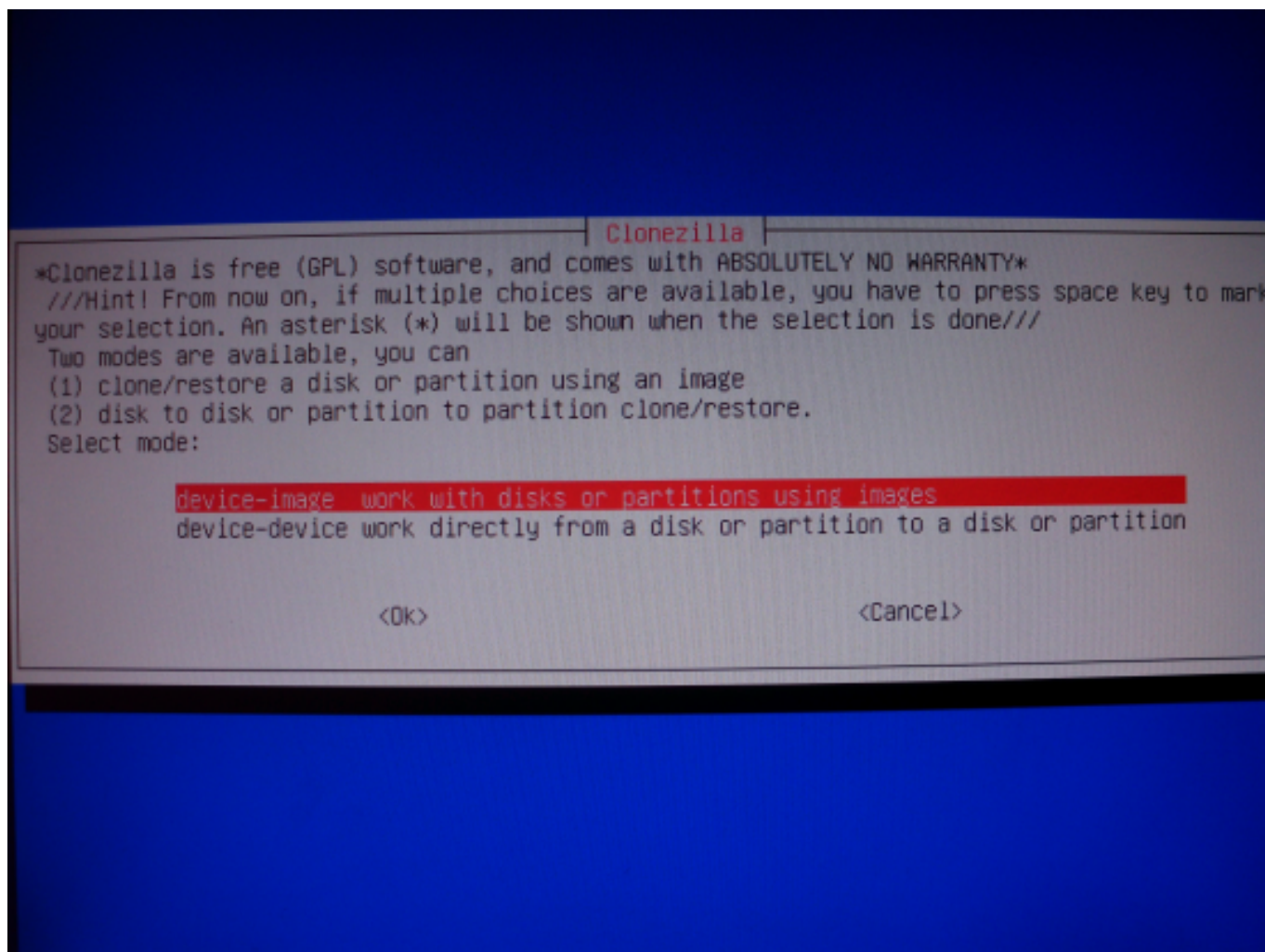
```
root@antiX1:/home/demo# /etc/init.d/ssh start
[ ok ] Starting OpenBSD Secure Shell server: sshd.
root@antiX1:/home/demo# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:19:66:f0:97:a2
   inet addr:192.168.1.101  Bcast:192.168.1.255  Mask:255.255.255.0
   inet6 addr: fe80::219:66ff:fef0:97a2/64 Scope:Link
   UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
   RX packets:1486 errors:0 dropped:0 overruns:0 frame:0
   TX packets:86 errors:0 dropped:0 overruns:0 carrier:0
   collisions:0 txqueuelen:1000
   RX bytes:164568 (160.7 KiB)  TX bytes:7988 (7.8 KiB)
   .....
```

Znači adresa odredišta je **192.168.1.101**, putanja do odredišnog diska je **/media/sda3**.

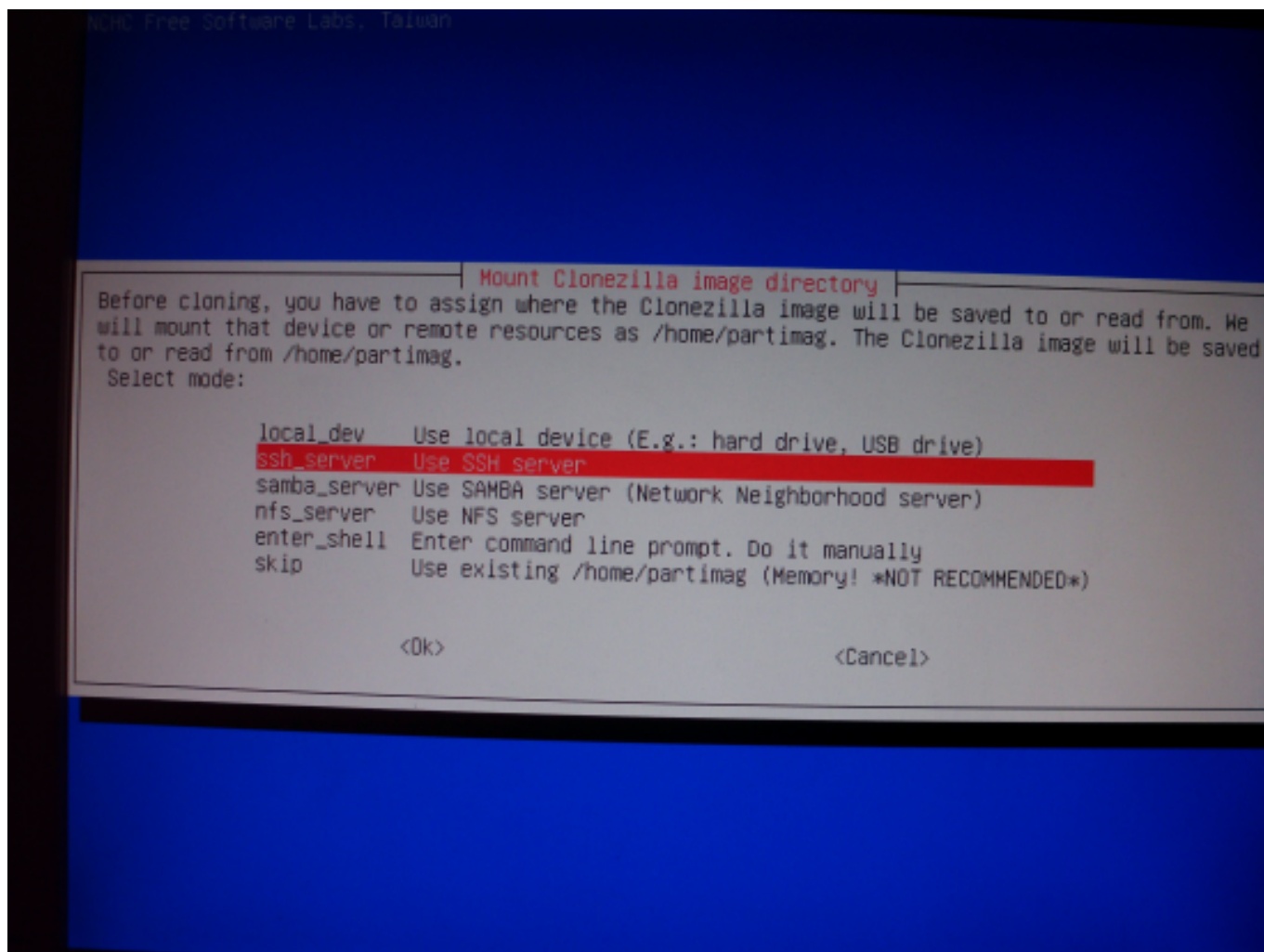
Sada pokrećemo postupak kloniranja "old timer" računala sa diskom od 80 GB. Podignemo izvorno računalo preko Clonezilla live cd-a. Prije pokretanja procesa kloniranja radi lakšeg snalaženja kod pisanja putanja možda je bolje odabrati "Select keymap from full list" i podesiti "croat" znakove.

Započinjemo proces odabirima.

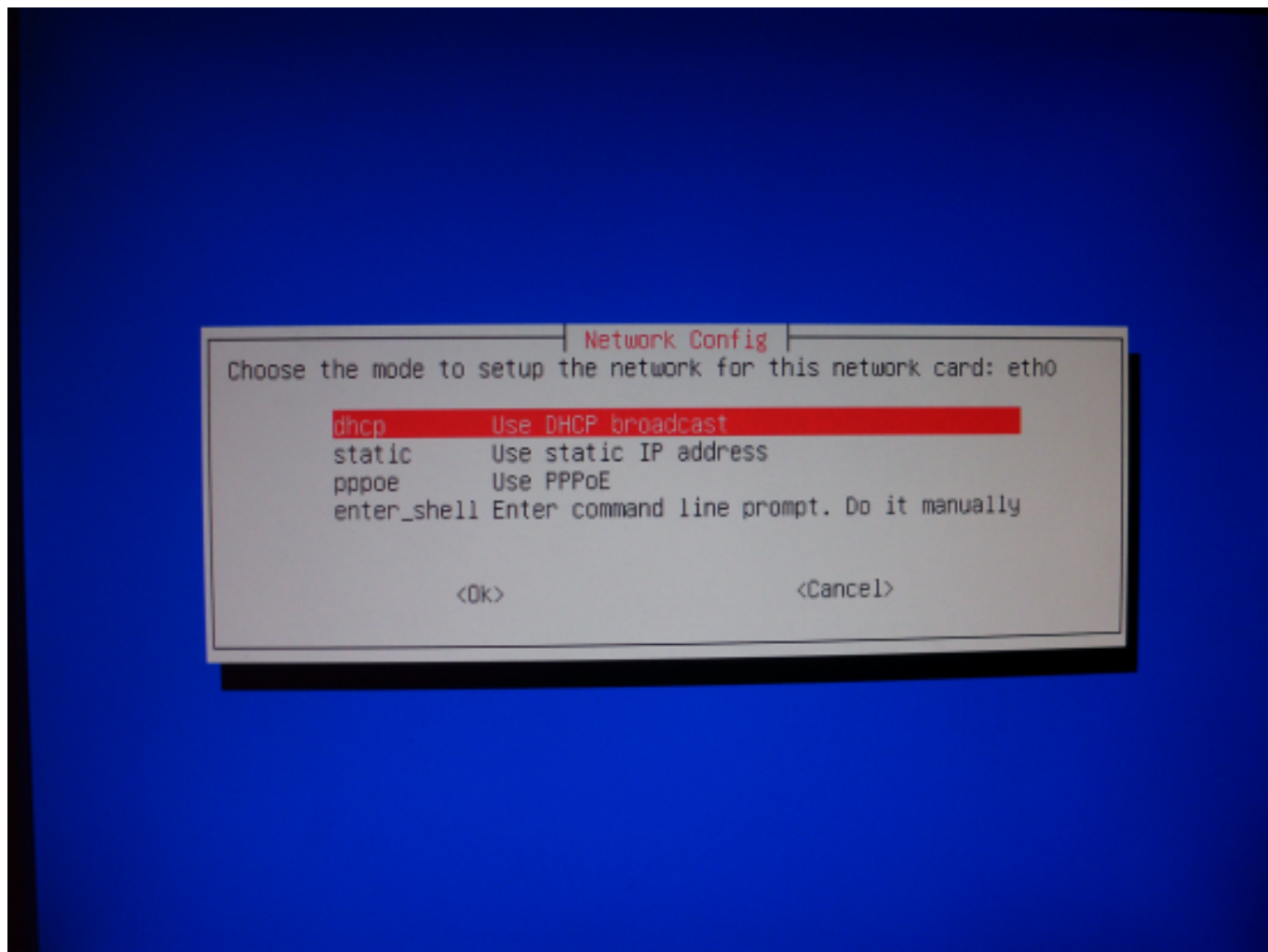




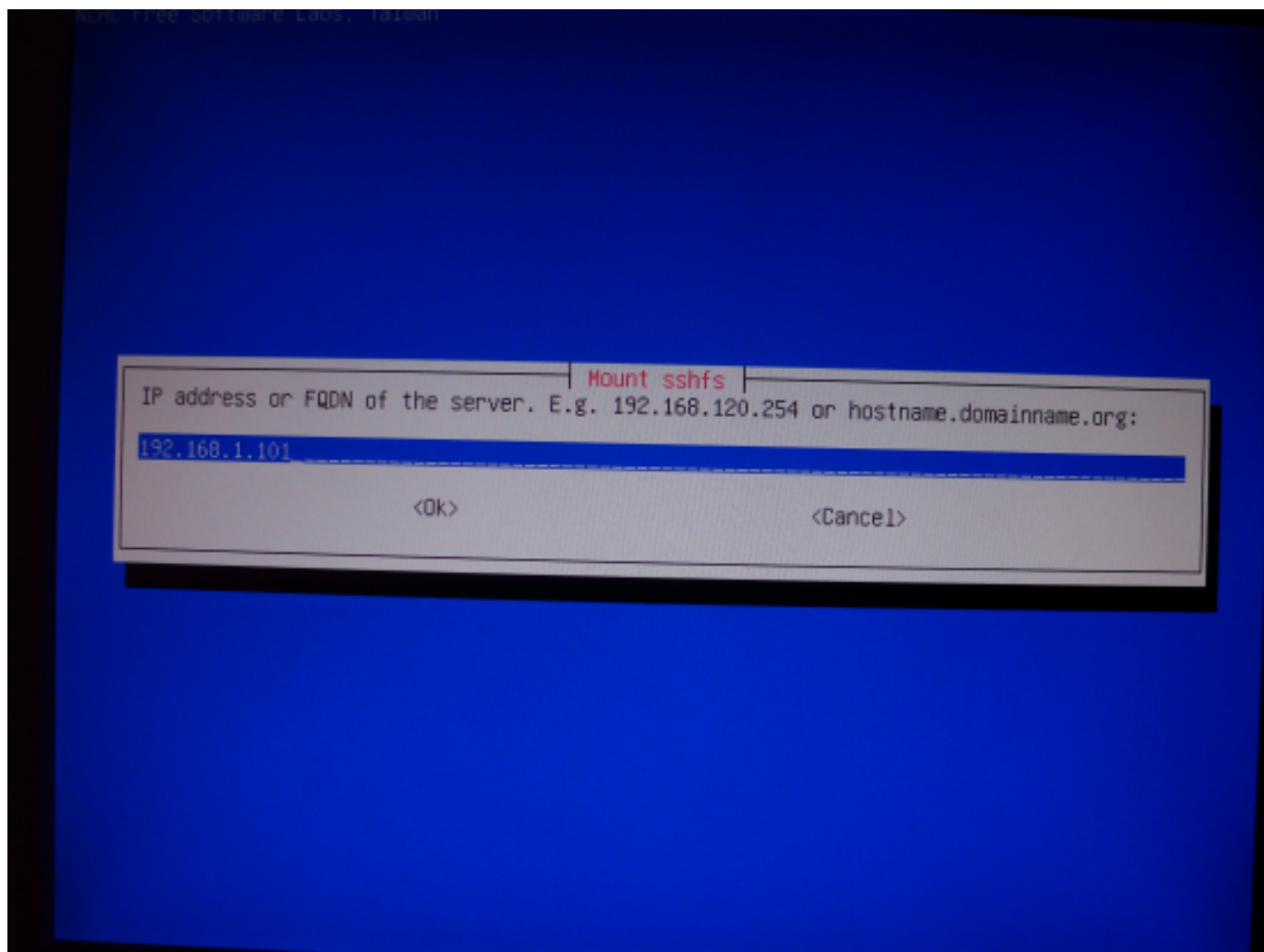
Zatim biramo SSH server kao mjesto spremanja.

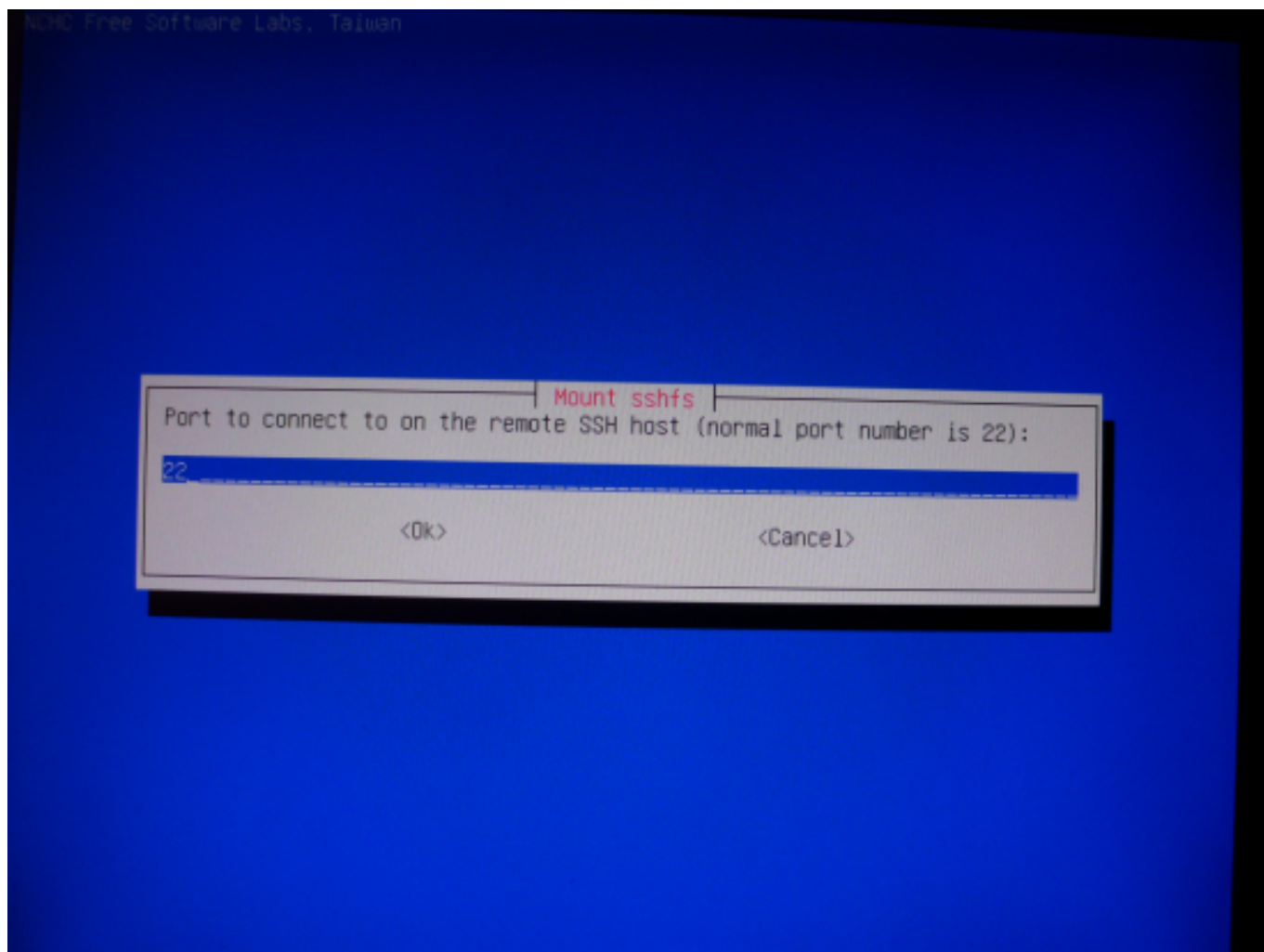


U našoj mreži koristimo dhcp server i prepustimo mu dodijelu adrese.

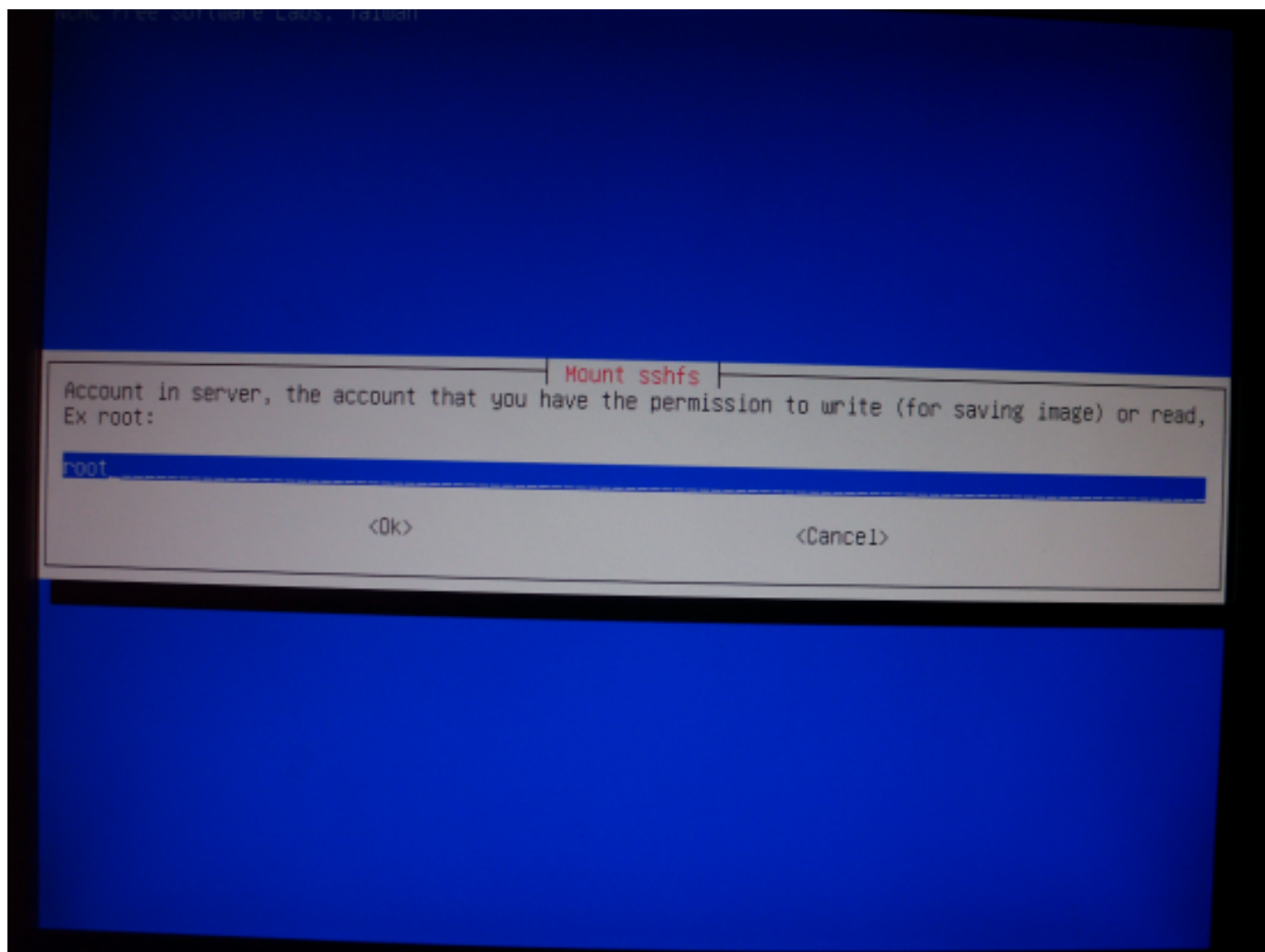


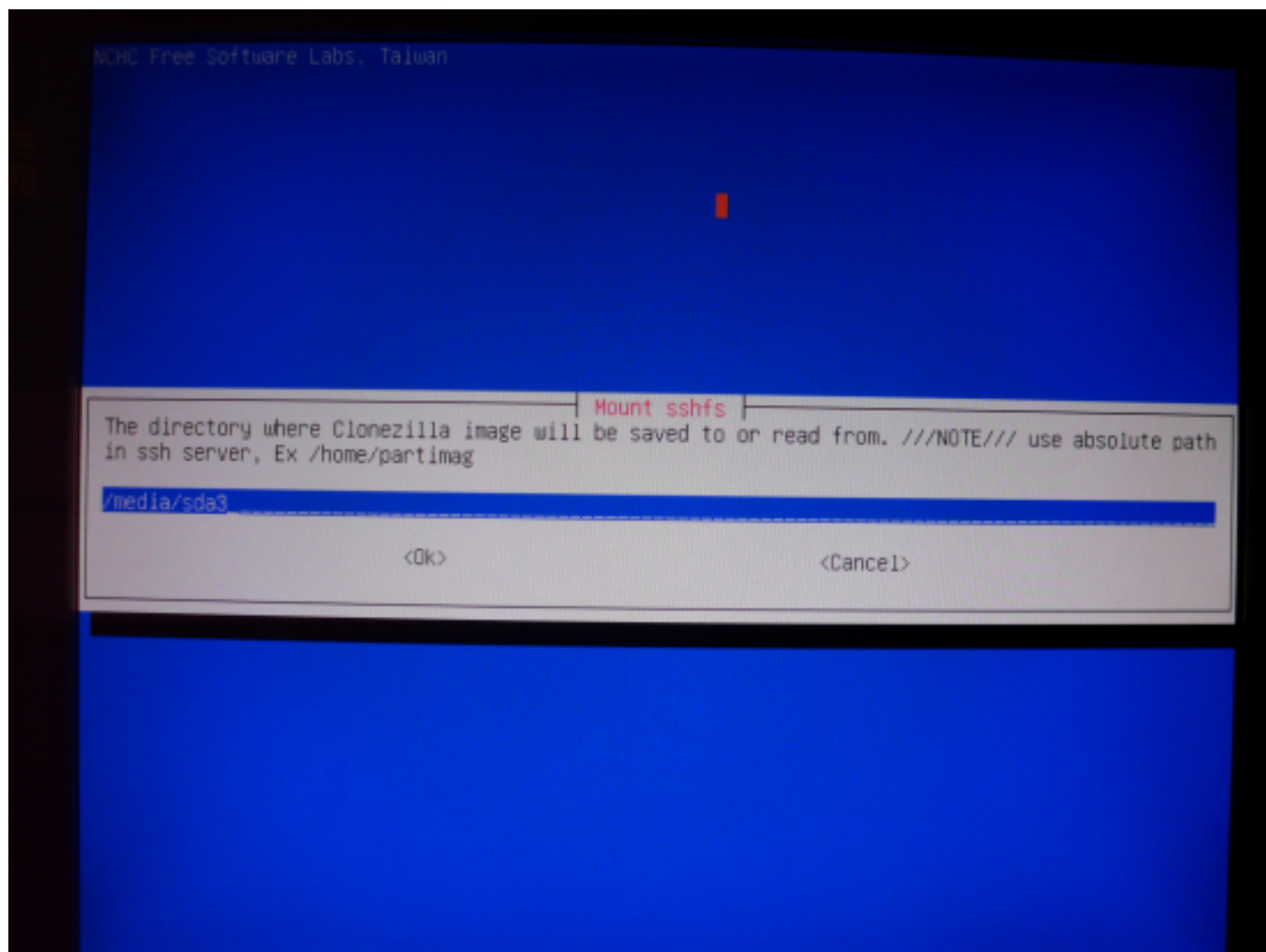
Ručno unesemo adresu ciljanog servera i ostavimo pretpostavljeni port 22.

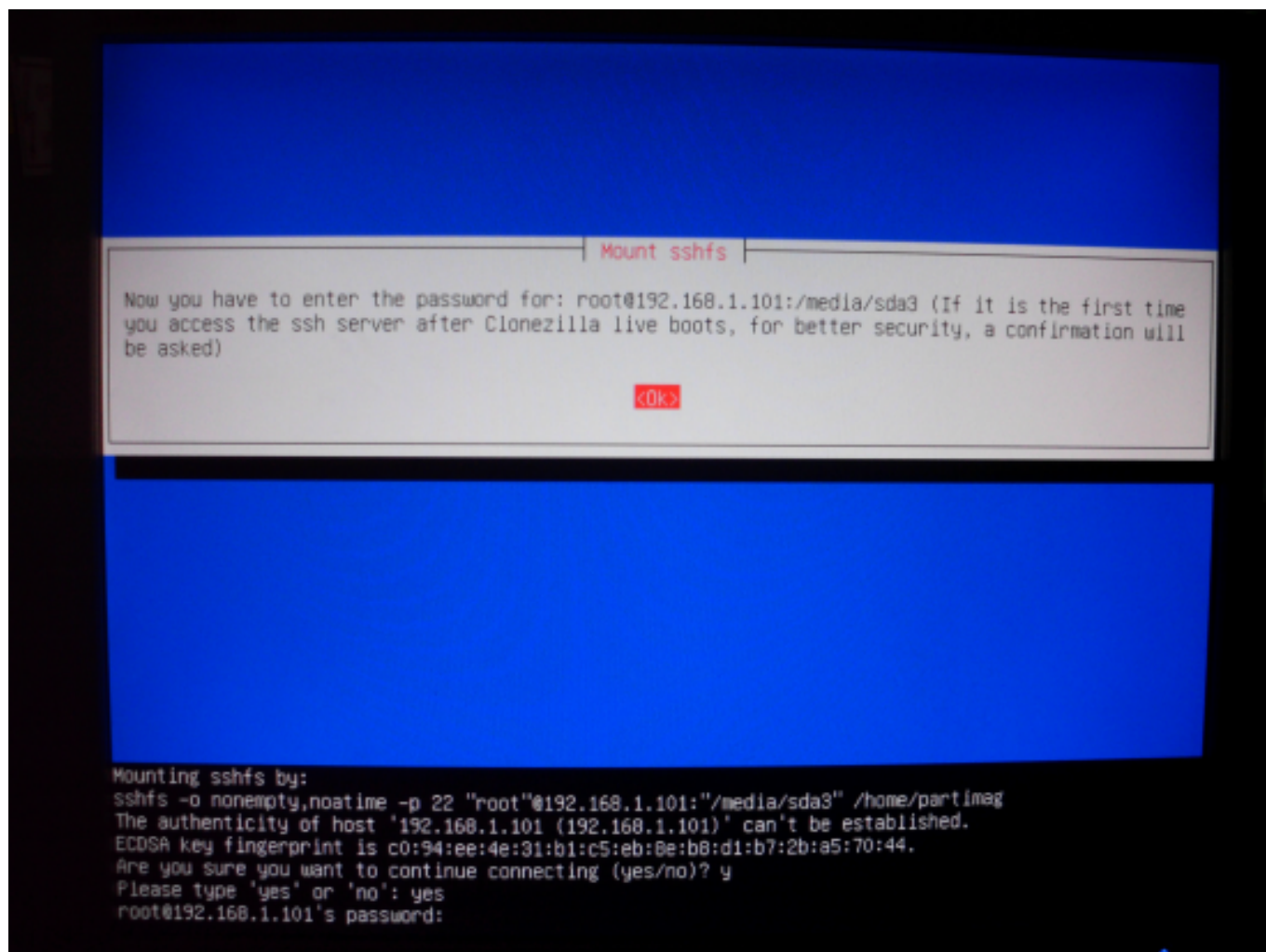




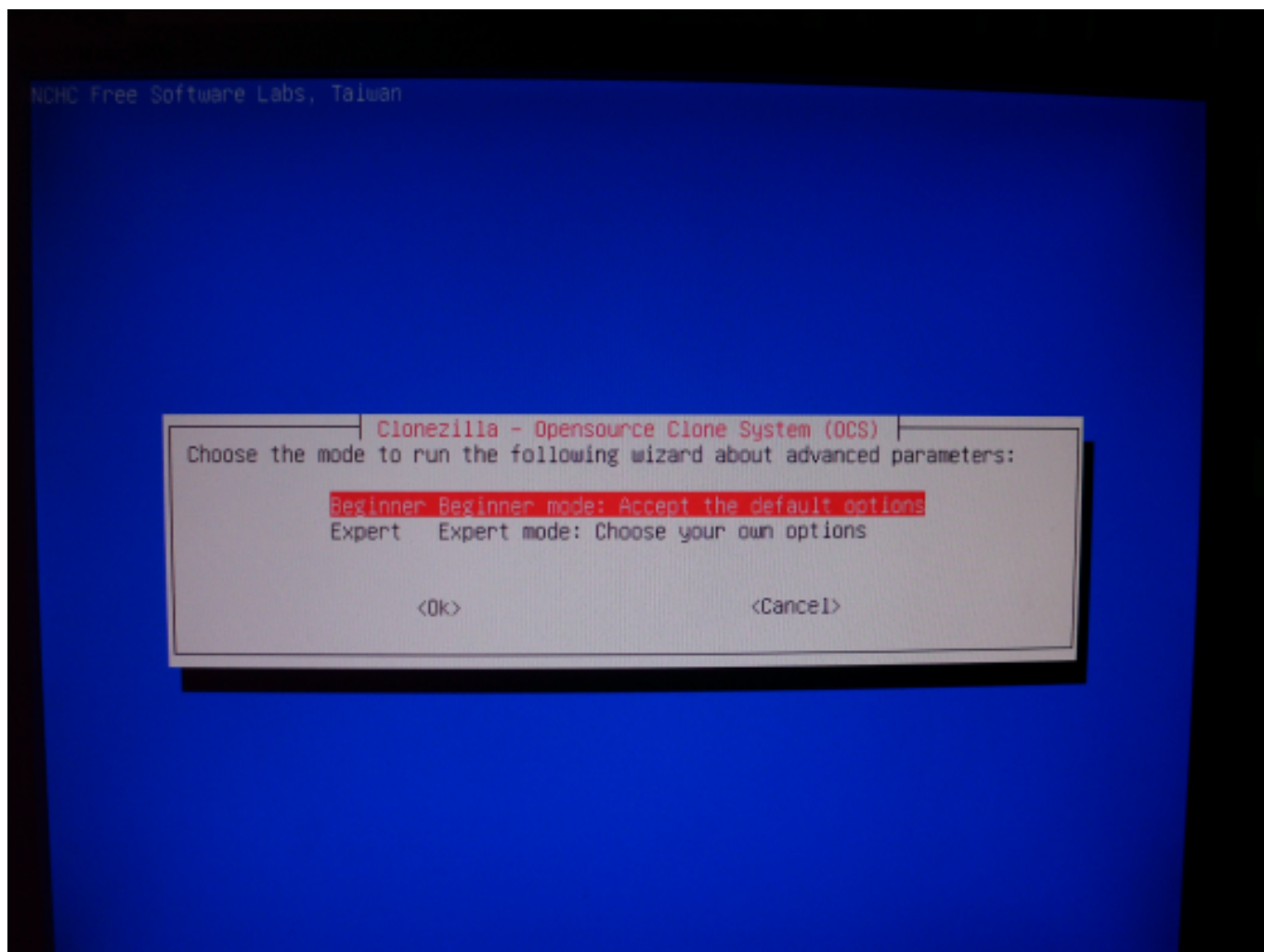
Korisnik, apsolutna putanja i SSH lozinka koju smo odabrali.



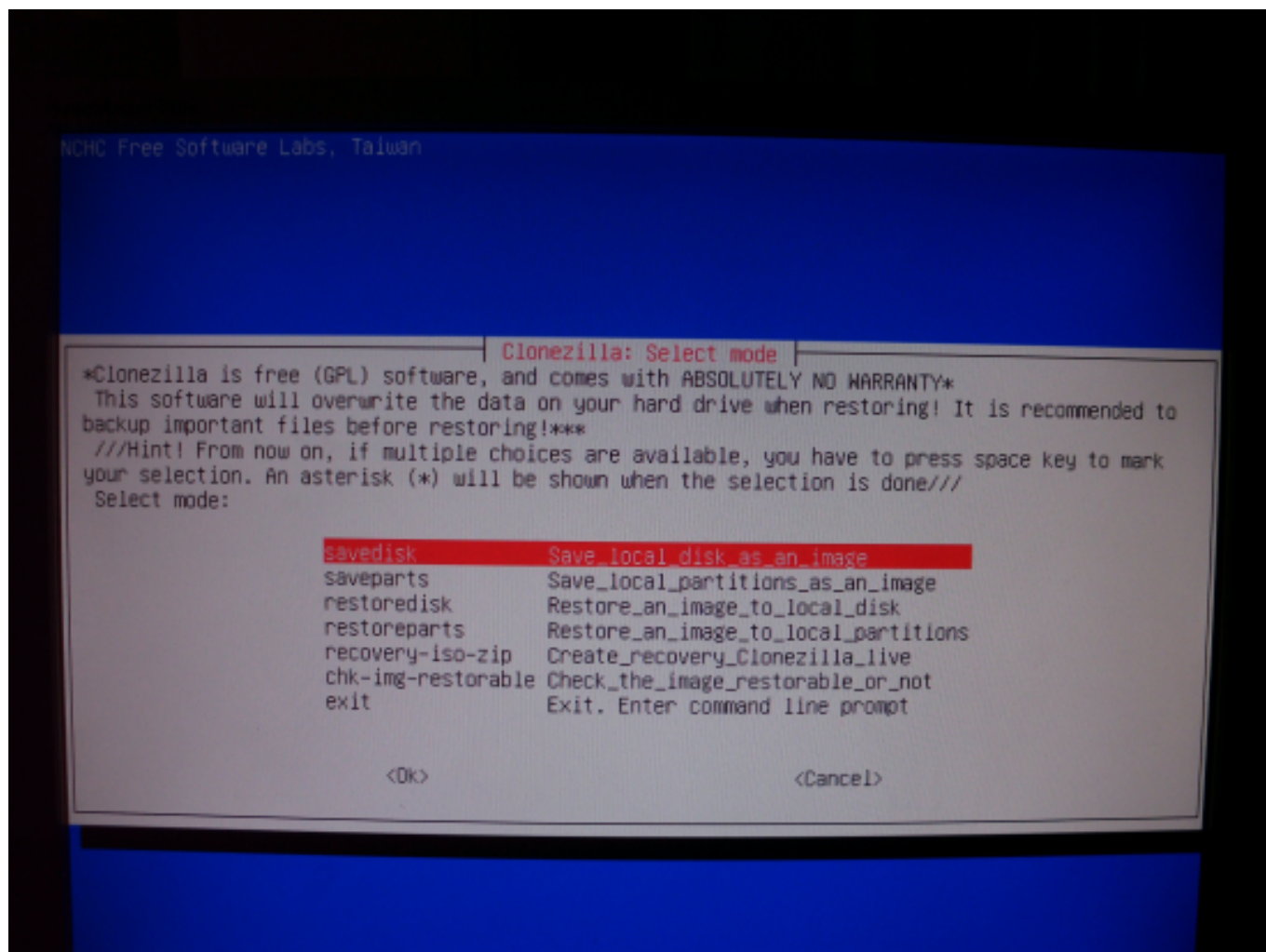


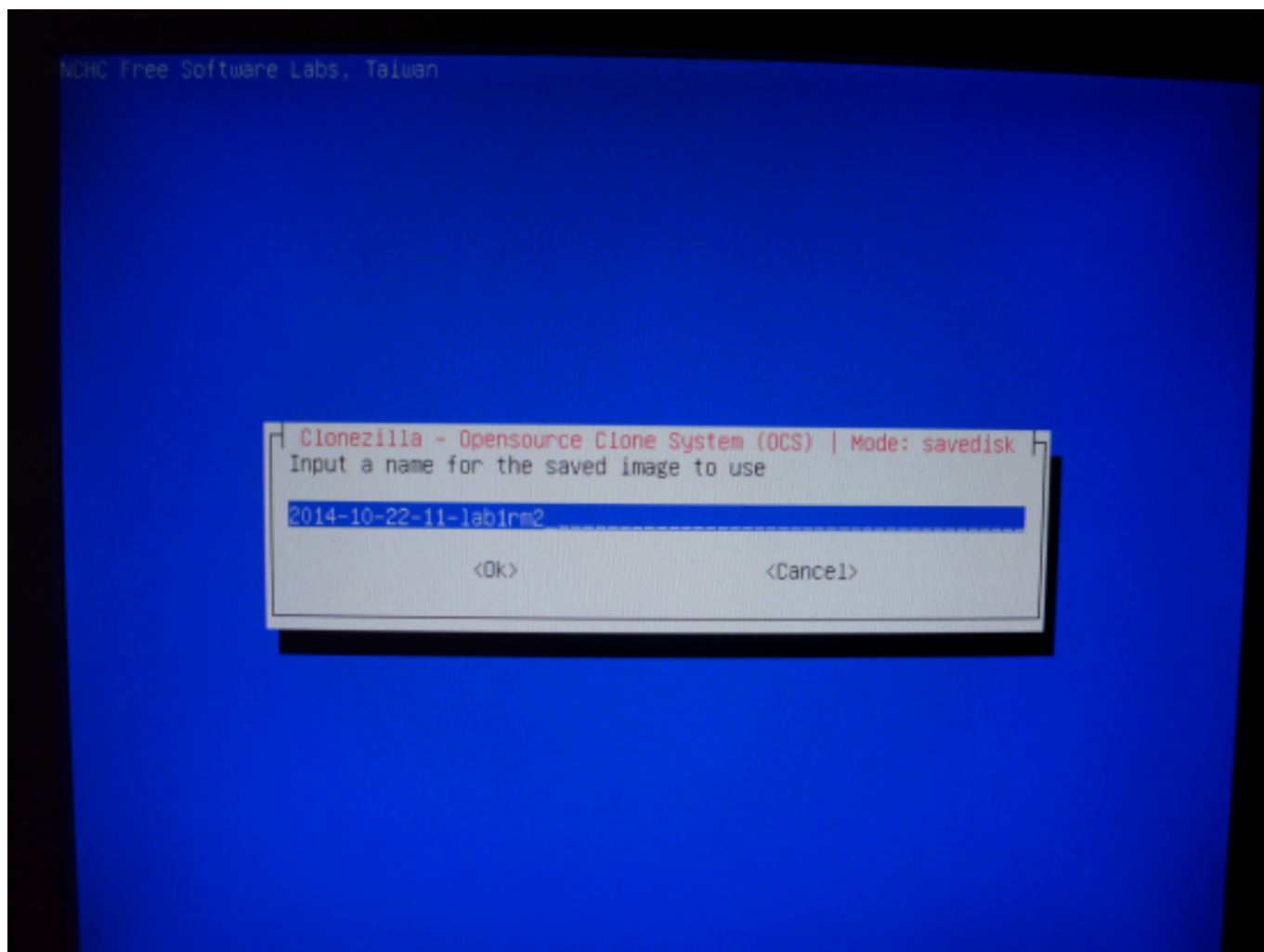


Odabiremo način rada, početnički u našem slučaju.

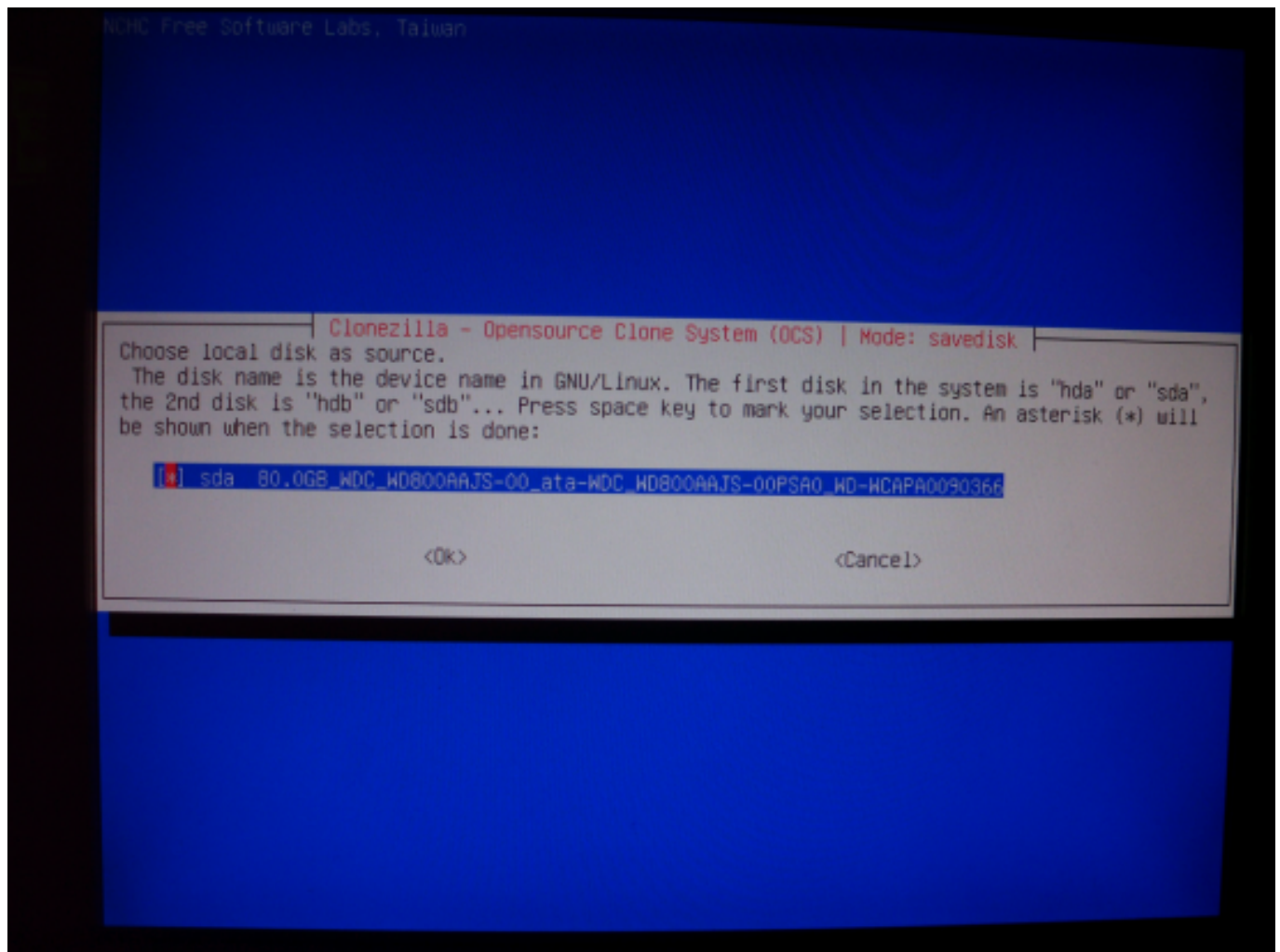


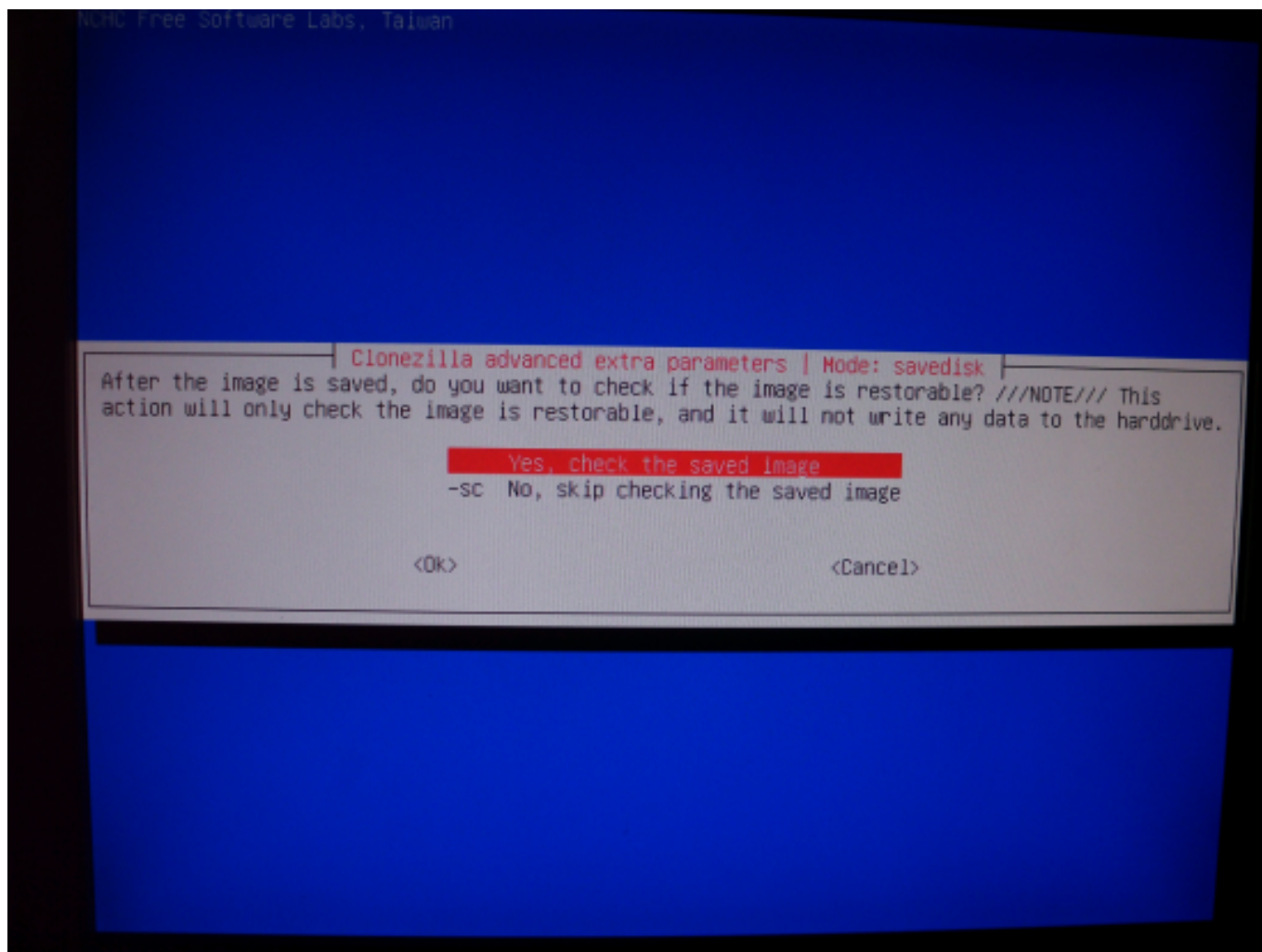
Spremamo cijeli disk pošto je cjelokupan kapacitet iskorišten za sistemski dio. Odabiremo ponuđeno ime uz naš dodatak kojim ga razlikujemo od drugih kopija.





Potvrđujemo identitet izvornog diska kroz dijalog. Za svaki slučaj možemo napraviti provjeru kopije nakon pospremanja.





Proces kloniranja kreće potvrdom "Yes" na ciljani live SSH server brzinom koju mreža dopušta. Sa brzinom se ne trebamo previše zamarati jer proces kloniranja će se dovršiti bez daljnjeg nadzora. Za to vrijeme možemo nešto drugo odraditi.


```
*****
PS. Next time you can run this command directly:
/opt/drbl/sbin/ocs-sr -q2 -c -j2 -zip -i 2000 -p true savedisk 2014-10-22-11-lab1rm2 sda
This command is also saved as this file name for later use if necessary: /tmp/ocs-2014-10-22-11-lab1
rm2-2014-10-22-11-36
Press "Enter" to continue...
Activating the partition info in /proc... done!
Selected device [sda] found!
The selected devices: sda
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sda1 sda2
Collecting info... done!
Searching for swap partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sda1 sda2
Collecting info... done!
The data partition to be saved: sda1 sda2
The swap partition to be saved:
Activating the partition info in /proc... done!
Selected device [sda1] found!
Selected device [sda2] found!
The selected devices: sda1 sda2
Getting /dev/sda1 info...
Getting /dev/sda2 info...
*****
The following step is to save the hard disk/partition(s) on this machine as an image:
*****
Machine: System Product Name
sda (80.0GB_MDC_WD8000AAJS-00_sta-MDC_WD8000AAJS-00PSA0_WD-WCAPA0090366)
sda1 (168MB_ntfs(In_MDC_WD8000AAJS-00)_sta-MDC_WD8000AAJS-00PSA0_WD-WCAPA0090366)
sda2 (79.9GB_ntfs(In_MDC_WD8000AAJS-00)_sta-MDC_WD8000AAJS-00PSA0_WD-WCAPA0090366)
*****
-> "/home/partimag/2014-10-22-11-lab1rm2".
Are you sure you want to continue? ? (y/n)
```

```
Used block : 6180
Elapsed: 00:00:02, Remaining: 00:00:00, Completed:100.00%, Rate: 759.40MB/min,
Total Time: 00:00:02, Ave. Rate: 759.4MB/min, 100.00% completed!
Syncing... OK!
Partclone successfully cloned the device (/dev/sda1) to the image (-)
Checking the disk space...
>>> Time elapsed: 3.08 secs (~ .051 mins)
Finished saving /dev/sda1 as /home/partimag/2014-10-22-11-lab1rm2/sda1.ntfs-ptcl-img.gz
Starting saving /dev/sda2 as /home/partimag/2014-10-22-11-lab1rm2/sda2.XXX...
/dev/sda2 filesystem: ntfs.
Checking the disk space...
Use partclone with pigz to save the image.
Image file will be split with size limit 2000 MB.
If this action fails or hangs, check:
* Is the disk full ?
Partclone v0.2.29 http://partclone.org
Starting to clone device (/dev/sda2) to image (-)
Reading Super Block
Calculating bitmap...
Elapsed: 00:00:07, Remaining: 00:00:00, Completed:100.00%,
Total Time: 00:00:07, 100.00% completed!
File system: NTFS
Device size: 79.9 GB
Space in use: 38.3 GB
Free Space: 41.6 GB
Block size: 4096 Byte
Used block : 9348926
Elapsed: 00:00:09, Remaining: 00:43:59, Completed: 0.34%, Rate: 867.45MB/min,
```

Napravimo još provjeru na SSH serveru da se uvjerimo da naš posao napreduje.

```
root@antiX1:/media# cd sda3
root@antiX1:/media/sda3# du -s * | sort -n
16      lost+found
1247108 2014-10-22-11-lab1rm2
17210848 2013-10-02-09-img
22359076 2014-10-03-10-img
41799264 labrmx
```

```
root@antiX1:/media/sda3# du -s * | sort -n
16      lost+found
1326400 2014-10-22-11-lab1rm2
17210848 2013-10-02-09-img
22359076 2014-10-03-10-img
41799264 labrmx
```

Vidim da se cifra oznake "2014-10-22-11-lab1rm2" povećava i ide prema konačnom cilju. Kad proces kloniranja završi jednostavno oba računala restartamo bez Linux live distribucija i vratimo ih u njima prirodno Windows stanje. Dok naš PC "old timer" ima spremljenu "bare metal restore" kopiju diska za slučaj potrebe povratka ispravnog stanja nakon havarije sistema.

pet, 2014-10-24 13:06 - Goran ŠljivićKuharice: [Linux](#) [2]

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