

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 88x25
...oot/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ....dixie.edu -L 7289:cordelia:7289  ~/Desktop — -bash  +
[root@ns2:/var/lib/tftpboot# echo "Begin by creating an initial ram disk for our pxe clients to load"
Begin by creating an initial ram disk for our pxe clients to load
[root@ns2:/var/lib/tftpboot# cp /etc/initramfs-tools/initramfs.conf /etc/initramfs-tools/initramfs.conf.0
[root@ns2:/var/lib/tftpboot# echo "Keep that file for later, now edit the original"
Keep that file for later, now edit the original
[root@ns2:/var/lib/tftpboot# vi /etc/initramfs-tools/initramfs.conf
```

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 88x25
...oot/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ....dixie.edu -L 7289:cordelia:7289  ~/Desktop — -bash  +
#
# initramfs.conf
# Configuration file for mkinitramfs(8). See initramfs.conf(5).
#
# Note that configuration options from this file can be overridden
# by config files in the /etc/initramfs-tools/conf.d directory.
#
# MODULES: [ most | netboot | dep | list ]
#
# most - Add most filesystem and all harddrive drivers.
#
# dep - Try and guess which modules to load.
#
# netboot - Add the base modules, network modules, but skip block devices.
#
# list - Only include modules from the 'additional modules' list
#
MODULES=netboot

#
# BUSYBOX: [ y | n | auto ]
#
"/etc/initramfs-tools/initramfs.conf" 73L, 1650C written                20,15                Top
```



```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 88x25
...oot/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ....dixie.edu -L 7289:cordelia:7289  ~/Desktop — -bash
#
# COMPRESS: [ gzip | bzip2 | lzma | lzop | xz ]
#
COMPRESS=gzip
#
# NFS Section of the config.
#
#
# DEVICE: ...
#
# Specify a specific network interface, like eth0
# Overridden by optional ip= bootarg
#
DEVICE=ens3
#
# NFSROOT: [ auto | HOST:MOUNT ]
#
NFSROOT=auto
"/etc/initramfs-tools/initramfs.conf" 74L, 1663C written          67,11          98%
```

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 88x25
...oot/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ....dixie.edu -L 7289:cordelia:7289  ~/Desktop — -bash
root@ns2:/var/lib/tftpboot# mkdir /var/lib/tftpboot/diskless1
root@ns2:/var/lib/tftpboot# mkinitramfs -o /var/lib/tftpboot/diskless1/initrd.img
W: mdadm: /etc/mdadm/mdadm.conf defines no arrays.
root@ns2:/var/lib/tftpboot# cp /boot/vmlinuz-`uname -r` /var/lib/tftpboot/diskless1/vmlinuz
root@ns2:/var/lib/tftpboot# echo "The mkinitramfs command makes the initial ram disk. The cp command copies our kernel image to the tftp location"
The mkinitramfs command makes the initial ram disk. The cp command copies our kernel image to the tftp location
root@ns2:/var/lib/tftpboot#
```



```
Desktop — joe@db: ~ — ssh · ssh yavin — 70x21
...t/pxelinux.cfg — ssh · ssh yavin  ~ — ssh · ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...joe@db: ~ — ssh · ssh yavin  +
joe@db:~$ echo "Here I am on my nfs server"
Here I am on my nfs server
joe@db:~$ echo "I need to make all system files via available nfs"
I need to make all system files via available nfs
joe@db:~$ echo "To do this, I am going to create a new nfs share, connect to it with a client, copy all of the client files onto the share"
To do this, I am going to create a new nfs share, connect to it with a client, copy all of the client files onto the share
joe@db:~$ █
```

Desktop — joe@db: ~ — ssh • ssh yavin — 70x21

...t/pxelinux.cfg — ssh • ssh yavin ~ — ssh • ssh yavin ...xie.edu -L 7289:cordelia:7289 ...joe@db: ~ — ssh • ssh yavin

```
[joe@db:~$ sudo mkdir -p /nfs/share  
[joe@db:~$ sudo vi /etc/exports
```

```
Desktop — joe@db: ~ — ssh • ssh yavin — 70x21
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...joe@db: ~ — ssh • ssh yavin  +
# /etc/exports: the access control list for filesystems which may be e
xported
#
#           to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes          hostname1(rw,sync,no_subtree_check) hostname2(ro,sy
nc,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4           gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes    gss/krb5i(rw,sync,no_subtree_check)
#
/nfs/share 144.38.201.32/27(rw,no_root_squash,async,no_subtree_check)
~
~
~
~
~
~
~
~
~
"/etc/exports" 11L, 459C written                                11,69                                All
```



```
Desktop — joe@db: ~ — ssh • ssh yavin — 70x21
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...joe@db: ~ — ssh • ssh yavin  +

UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
RX packets:2582051  errors:0  dropped:1174  overruns:0  frame:0
TX packets:1743896  errors:0  dropped:0  overruns:0  carrier:0
collisions:8691194  txqueuelen:1000
RX bytes:559696986 (559.6 MB)  TX bytes:315217990 (315.2 MB)

lo
Link encap:Local Loopback
inet addr:127.0.0.1  Mask:255.0.0.0
inet6 addr: ::1/128  Scope:Host
UP LOOPBACK RUNNING  MTU:65536  Metric:1
RX packets:160  errors:0  dropped:0  overruns:0  frame:0
TX packets:160  errors:0  dropped:0  overruns:0  carrier:0
collisions:0  txqueuelen:1
RX bytes:12800 (12.8 KB)  TX bytes:12800 (12.8 KB)

joe@db:~$ fg
sudo vi /etc/exports
joe@db:~$ sudo exportfs -a
joe@db:~$ echo "Exportfs makes nfs aware of the exported fs"
Exportfs makes nfs aware of the exported fs
joe@db:~$ █
```

```
Desktop — joe@client1: ~ — ssh · ssh yavin — 70x21
...t/pxelinux.cfg — ssh · ssh yavin  ~ — ssh · ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...@client1: ~ — ssh · ssh yavin  +
[joe@client1:~$ echo "Here I am on client one"
Here I am on client one
[joe@client1:~$ echo "I am going to mount the nfs share"
I am going to mount the nfs share
joe@client1:~$ sudo apt install nfs-common
```

```
Desktop — root@client1: / — ssh • ssh yavin — 70x21
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
[joe@client1:~$ showmount -e db.mojojojo.ml
Export list for db.mojojojo.ml:
/nfs/share 144.38.201.32/27
[joe@client1:~$ cd /
[joe@client1:/$ sudo bash
[root@client1:/# mkdir tempmount
[root@client1:/# mount -t nfs db.mojojojo.ml:/nfs/share tempmount/
[root@client1:/# █
```


```
root@client1:/# mount | grep nfs
```

```
db.mojojojo.ml:/nfs/share on /tempmount type nfs4 (rw,relatime,vers=4.0,rsz
e=65536,wsz
e=65536,namlen=255,hard,proto=tcp,port=0,timeo=600,r
etrans=2,sec=sys,clientaddr=144.38.201.60,local_lock=none,addr=144.38.201.37)
```

```
root@client1:/# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	225M	0	225M	0%	/dev
tmpfs	49M	5.6M	44M	12%	/run
/dev/sda1	8.2G	2.6G	5.2G	34%	/
tmpfs	245M	0	245M	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	245M	0	245M	0%	/sys/fs/cgroup
tmpfs	49M	0	49M	0%	/run/user/1000
db.mojojojo.ml:/nfs/share	8.2G	2.5G	5.3G	33%	/tempmount

```
root@client1:/# █
```



The image shows a terminal window with a title bar that reads "Desktop — root@client1: / — ssh • ssh yavin — 70x21". Below the title bar, there are four tabs: "...t/pxelinux.cfg — ssh • ssh yavin", "~ — ssh • ssh yavin", "...xie.edu -L 7289:cordelia:7289", and "...t@client1: / — ssh • ssh yavin". The main content of the terminal is a single line of text: "root@client1: / # cp -ax / tempmount/". The text is in a monospaced font, with "root@client1:" in green, "/" in purple, and "# cp -ax / tempmount/" in black. A grey cursor is positioned at the end of the line.

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 83x23
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
[root@ns2:/var/lib/tftpboot# echo "while we are waiting for that copy command to finish, let's go back and fix something"
while we are waiting for that copy command to finish, let's go back and fix something
[root@ns2:/var/lib/tftpboot# echo "Im back on the tftp server"
Im back on the tftp server
[root@ns2:/var/lib/tftpboot# cp /etc/initramfs-tools/initramfs.conf.0 /etc/initramfs-tools/initramfs.conf
[root@ns2:/var/lib/tftpboot# █
```



```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 83x23
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
root@ns2:/var/lib/tftpboot# echo "Wait for your copy command to finish"
Wait for your copy command to finish
root@ns2:/var/lib/tftpboot# █
```

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 83x23
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
[root@ns2:/var/lib/tftpboot# echo "Aaaargh, that is taking forever. Lets edit our pxe menu while waiting"
Aaaargh, that is taking forever. Lets edit our pxe menu while waiting
[root@ns2:/var/lib/tftpboot# vi pxelinux.cfg/default █
```

```
joe — root@ns2: /var/lib/tftpboot — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 83x23
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +

prompt 1
timeout 100

MENU TITLE Sample
label linux
    menu default
    menu label Linux
    kernel ubuntu-installer/amd64/linux
    append ks=http://cit.dixie.edu/it/3110/joe-notes-2016/netboot_2/ks.cfg vga=
normal initrd=ubuntu-installer/amd64/initrd.gz
label debian
    menu default
    menu label Debian
    kernel debian-installer/amd64/linux
    append vga=normal initrd=debian-installer/amd64/initrd.gz ramdisk_size=1643
2 root=/dev/rd/0 rw --
# here is my new entry
label diskless_server
    kernel diskless1/vmlinuz
    append root=/dev/nfs initrd=diskless1/initrd.img nfsroot=144.38.201.37:/nfs
/share ip=dhcp rw
"pxelinux.cfg/default" 23L, 744C written                23,93-100        Bot
```

```
joe — root@ns2: /var/lib/tftpboot/diskless1 — ssh jfrancom@ssh.cs.dixie.edu -L 7289:cordelia:7289 — 83x23
...t/pxelinux.cfg — ssh • ssh yavin  ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
root@ns2:/var/lib/tftpboot/diskless1# ls -la
total 36948
drwxr-xr-x 2 root root    4096 Jan 23 15:34 .
drwxrwxr-x 5 root root    4096 Jan 23 15:32 ..
-rw-r--r-- 1 root root 30716931 Jan 23 15:33 initrd.img
-rw----- 1 root root  7104528 Jan 23 15:34 vmlinuz
root@ns2:/var/lib/tftpboot/diskless1# echo "Perhaps a permissions error will occur here"
Perhaps a permissions error will occur here
root@ns2:/var/lib/tftpboot/diskless1# chmod 644 *
root@ns2:/var/lib/tftpboot/diskless1# ls -l
total 36940
-rw-r--r-- 1 root root 30716931 Jan 23 15:33 initrd.img
-rw-r--r-- 1 root root  7104528 Jan 23 15:34 vmlinuz
root@ns2:/var/lib/tftpboot/diskless1#
```

```
Desktop — root@client1: / — ssh • ssh yavin — 70x21
...t/pxelinux.cfg — ssh • ssh yavin  ~ — joe@db: ~ — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  × ...t@client1: / — ssh • ssh yavin  +
[root@client1:/# echo "Yay copy finally finished. What do we have?"
Yay copy finally finished. What do we have?
[root@client1:/# ls tempmount/
bin      home      lib64      opt      sbin      tempmount  vmlinuz
boot    initrd.img  lost+found  proc     snap     tmp        vmlinuz.old
dev     initrd.img.old  media      root     srv      usr
etc     lib        mnt        run     sys      var
[root@client1:/# █
```

```
Desktop — root@client1: / — ssh · ssh yavin — 70x21
...t/pxelinux.cfg — ssh · ssh yavin  ~ — joe@db: ~ — ssh · ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh · ssh yavin  +

[root@client1:/# ls tempmount/dev/
[root@client1:/# echo "Hmmm...."
Hmmm....
[root@client1:/# cp -ax /dev/* tempmount/dev/
[root@client1:/# ls tempmount/dev/
autofs          loop-control    tty14           tty5            ttyS26
block           mapper          tty15           tty50           ttyS27
bsg             mcelog         tty16           tty51           ttyS28
btrfs-control  mem            tty17           tty52           ttyS29
bus            memory_bandwidth  tty18           tty53           ttyS3
cdrom          mqueue         tty19           tty54           ttyS30
char           net            tty2            tty55           ttyS31
console       network_latency  tty20           tty56           ttyS4
core          network_throughput  tty21           tty57           ttyS5
cpu          null           tty22           tty58           ttyS6
cpu_dma_latency  parport0       tty23           tty59           ttyS7
cuse         port           tty24           tty6            ttyS8
disk        ppp           tty25           tty60           ttyS9
dri         psaux         tty26           tty61           uhid
dvd         ptmx         tty27           tty62           uinput
```



```
joe — root@db: /nfs/share — ssh • ssh yavin — 83x22
...t/pxelinux.cfg — ssh • ssh yavin  ...db: /nfs/share — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
[root@db:/nfs/share# echo "Note that I am back on nfs server"
Note that I am back on nfs server
[root@db:/nfs/share# echo "We will make some detailed edits so that the new system knows that the root filesystem is really via NFS"
We will make some detailed edits so that the new system knows that the root filesystem is really via NFS
[root@db:/nfs/share# echo "Note that there is no slash in front of my etc below"
Note that there is no slash in front of my etc below
[root@db:/nfs/share# vi etc/fstab
```

```
joe — root@db: /nfs/share — ssh • ssh yavin — 83x22
...t/pxelinux.cfg — ssh • ssh yavin  ...db: /nfs/share — ssh • ssh yavin  ...xie.edu -L 7289:cordelia:7289  ...t@client1: / — ssh • ssh yavin  +
[root@db:/nfs/share# echo "Note that I am back on nfs server"
Note that I am back on nfs server
[root@db:/nfs/share# echo "We will make some detailed edits so that the new system k
nows that the root filesystem is really via NFS"
We will make some detailed edits so that the new system knows that the root filesys
tem is really via NFS
[root@db:/nfs/share# echo "Note that there is no slash in front of my etc below"
Note that there is no slash in front of my etc below
[root@db:/nfs/share# vi etc/fstab
[root@db:/nfs/share# cat etc/fstab
/dev/nfs          /                nfs              defaults         1                1
[root@db:/nfs/share# echo "That is my WHOLE file"
That is my WHOLE file
root@db:/nfs/share# █
```

```
Desktop — ssh • ssh yavin — 70x20
...ux.cfg — ssh • ssh yavin  ...share — ssh • ssh yavin  ...-L 7289:cordelia:7289  ...t1: / — ssh • ssh yavin  ...top — ssh • ssh yavin  +
[jfrancom@desdemona:~$ echo "Now to test boot my vm"
Now to test boot my vm
[jfrancom@desdemona:~$ citv bootvm mojojojo_netboot n
/usr/bin/ssh -q cordelia "/qemu/bin/qemu-boot 1389 'jfrancom-mojojojo_
netboot' 512 '52:54:00:08:05:6C' '' '' '' 'n' 1 1 2018 '/qemu/images';
"
User(jfrancom) has booted machine(mojojojo_netboot) on server(cordelia
:1389) with 512 memory.
jfrancom@desdemona:~$
```



Sample

- Install
- Advanced options
- Help
- Install with speech synthesis
- Linux
- Debian
- diskless_server**



debian
GNU/Linux



QEMU (jfrancom-mojojojo_netboot)

Loading diskless1/vmlinuz.....

Loading diskless1/initrd.img....._

```
joe — root@db: /nfs/share — ssh • ssh yavin — 83x22
...ux.cfg — ssh • ssh yavin  .../share — ssh • ssh yavin  ...-L 7289:cordelia:7289  ...t1: / — ssh • ssh yavin  ...top — ssh • ssh yavin  +
[root@db:/nfs/share# echo "Whoop's, it hangs forever on the network"
Whoop's, it hangs forever on the network
[root@db:/nfs/share# echo "Edit one more file and make note of the path"
Edit one more file and make note of the path
[root@db:/nfs/share# vi etc/network/interfaces
```

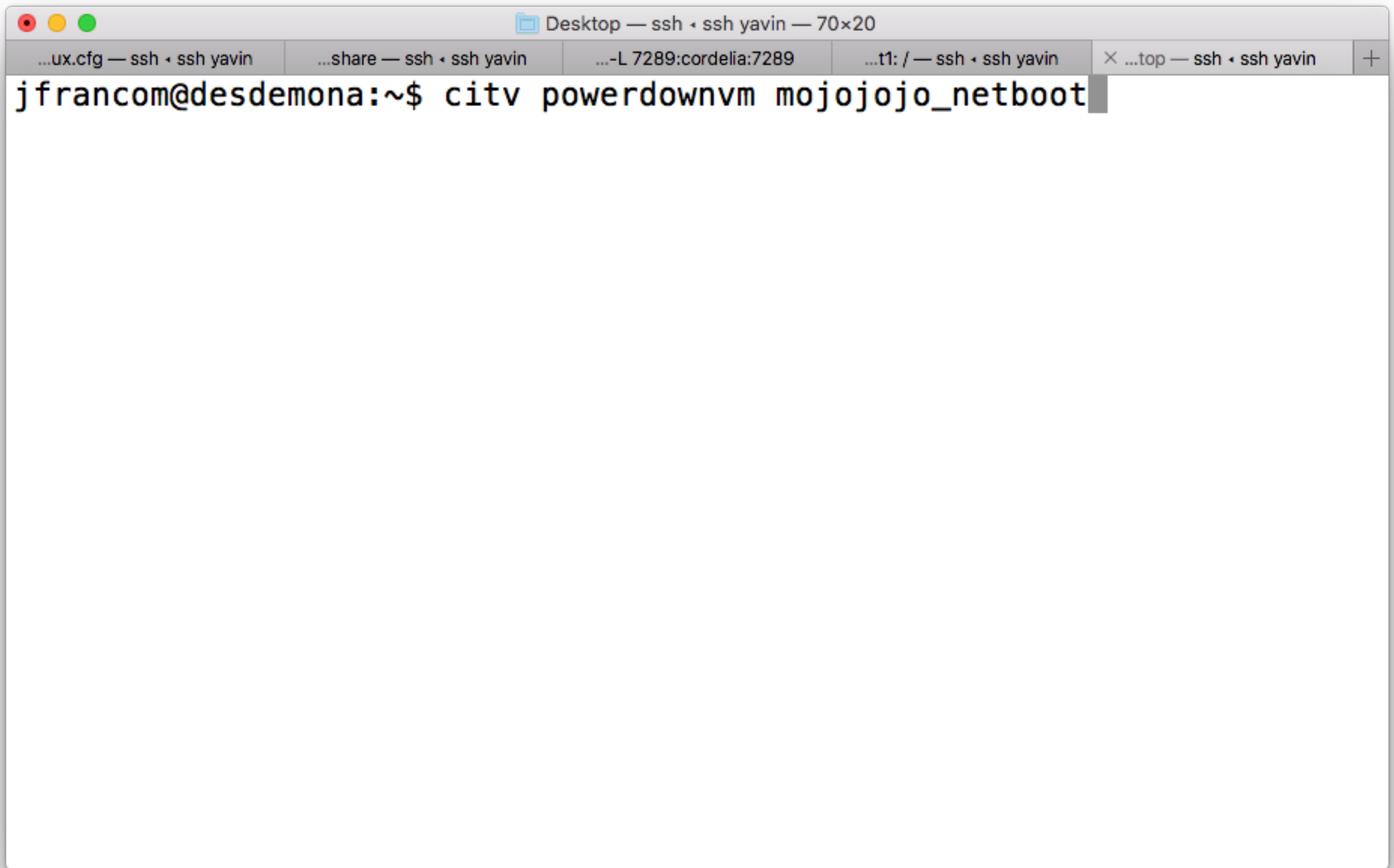


```
joe — root@db: /nfs/share — ssh • ssh yavin — 83x22
...ux.cfg — ssh • ssh yavin  .../share — ssh • ssh yavin  ...-L 7289:cordelia:7289  ...t1: / — ssh • ssh yavin  ...top — ssh • ssh yavin  +
root@db:/nfs/share# cat etc/network/interfaces
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto ens3
iface ens3 inet manual
root@db:/nfs/share#
```



The image shows a terminal window with a title bar that reads "Desktop — ssh • ssh yavin — 70x20". The window contains several tabs: "...ux.cfg — ssh • ssh yavin", "...share — ssh • ssh yavin", "...-L 7289:cordelia:7289", "...t1: / — ssh • ssh yavin", and "...top — ssh • ssh yavin". The main content of the terminal is a single line of text: "jfrancom@desdemona:~\$ citv powerdownvm mojojojo_netboot". The cursor is positioned at the end of the command.

```
jfrancom@desdemona:~$ citv powerdownvm mojojojo_netboot
```

Desktop — ssh • ssh yavin — 70x20

...ux.cfg — ssh • ssh yavin ...share — ssh • ssh yavin ...-L 7289:cordelia:7289 ...t1: / — ssh • ssh yavin ...top — ssh • ssh yavin +

```
jfrancom@desdemona:~$ citv bootvm mojojojo_netboot n
```

```
ipXE (PCI 00:03.0) starting execution...ok
ipXE initialising devices...ok

ipXE 1.0.0+ (09c5) -- Open Source Network Boot Firmware -- http://ipxe.org
Features: HTTP iSCSI DNS TFTP AoE bzImage ELF MBOOT PXE PXEXT Menu
net0: 52:54:00:08:05:6c using rtl8139 on PCI00:03.0 (open)
  [Link:up, TX:0 TXE:0 RX:0 RXE:0]
DHCP (net0 52:54:00:08:05:6c)..... ok
net0: 144.38.201.41/255.255.255.224 gw 144.38.201.33
Next server: 144.38.201.35
Filename: pxelinux.0
tftp://144.38.201.35/pxelinux.0... ok
!PXE entry point found (we hope) at 9C7E:0307 via plan A
UNDI code segment at 9C7E len 074A
UNDI data segment at 9CF3 len 2CC8
Getting cached packet  01 02 03
My IP address seems to be 9026C929 144.38.201.41
ip=144.38.201.41:144.38.201.35:144.38.201.33:255.255.255.224
BOOTIF=01-52-54-00-08-05-6c
SYSUUID=00000000-0000-0000-0000-000000000000
TFTP prefix:
Trying to load: pxelinux.cfg/default                                ok
boot:
```



org

Sample

- Install
- Advanced options
- Help
- Install with speech synthesis
- Linux
- Debian
- diskless_server**

>

debian
GNU/Linux

QEMU (jfrancom-mojojajo_netboot)

```
[ 1.400114] usb 1-sizee33554432          gs: Mfr=1, Product=3, SerialNumber=5
[ 1.292507] usb 1-fb depth is Q4MU USB Tablet
01/input92928t4usb 1-  pitcfactu3072 QEMU
[ 1.275295] fbcon: cirrusdrmfb (fb0)2is primary device
01/input54131t38139cpI0000:00:03.0 ens3: renamed from eth0
[ 1.265764] hidraw: raw HID events driver (C) Jiri Kosina fc90000002000, 52:54
:00:08:089322 IConsole: s itching to colour frame buffer device 128x48
[ 1.400651] usbclrsizeregistered new inter ace driver usbh d
[ 1.400502] 8drhid: USB HID core driver          9
[ 1.492240] input: QEMUtQEMU USB7Tabl t as /devices/pci0000:00/0000:00:01.2/usb1/1-1/1-
[ 1.405623] hid-genericu0003:0627:0001.0001: input,hidraw : USB HID v .  Pointer [QEMU
1/input0
:
d
2 2 i
[ 1.511257] cirrus:0000:00:02.0:tfb0:icirrusdrmfbiframenbuffer device
[ 1.389311] [dnm] Initialized cirrus 1.0.0 20110418 fore0000:00:02.0 on1minor 0
Begin: Loading essential driverse... [ i 1r651533] md: linear personalitymregistered for
[ 1.655697] md: multipath personalityeregistered for ev l -4
[ 1.399874] inpuraid0 personality registered forclev ec 0 0 0/0000:00:01.2/usb1/1-1/1-
[ 1.364633] hid-geneic 0003:0627:0001.0001: input,hidr1w0: USB HID v0.01 Pointer [QEMU
1/input740027 raid6: sse2x1 gen() 5204 MB/s
[ 1.808256] cirrus 0000:00:0xor: fb4010irrusdrmfb frame buffer device
[ 1.576311] [drm] Initia2izegenirru650.0.0 20110418 for 0000:00:02.0 on minor 0
Begin: 944di7g essential driverxor.. [46571.651533] md: linear personality registered for
[ 2.012698] md: multipat4 pegennali747registered for level -4
[ 1.680873] md: raid0 personxorty r5569tered for level 0
[ 1.664855] md: raiuling algorithmrsse2x4 gen()r7477eMB/s
```


QEMU (jfrancom-mojohojo_netboot)

Ubuntu 16.04.3 LTS client1 tty1

client1 login:

Ubuntu 16.04.3 LTS client1 tty1

client1 login: joe

Password:

Last login: Tue Jan 23 16:27:31 MST 2018 on tty1

Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-109-generic x86_64)

- * Documentation: <https://help.ubuntu.com>
- * Management: <https://landscape.canonical.com>
- * Support: <https://ubuntu.com/advantage>

5 packages can be updated.

0 updates are security updates.

joe@client1:~\$ _

```
joe@client1:~$ ifconfig
ens3      Link encap:Ethernet  HWaddr 52:54:00:08:05:6c
          inet addr:144.38.201.43  Bcast:144.38.201.63  Mask:255.255.255.224
          inet6 addr: fe80::5054:ff:fe08:56c/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:92684 errors:0 dropped:226 overruns:0 frame:0
          TX packets:20846 errors:0 dropped:0 overruns:0 carrier:0
          collisions:104203 txqueuelen:1000
          RX bytes:122368954 (122.3 MB)  TX bytes:3143728 (3.1 MB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:176 errors:0 dropped:0 overruns:0 frame:0
          TX packets:176 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:13296 (13.2 KB)  TX bytes:13296 (13.2 KB)

joe@client1:~$
```

```
joe@client1:~$ df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	228M	0	228M	0%	/dev
tmpfs	49M	1.8M	48M	4%	/run
144.38.201.37:/nfs/share	8.2G	5.0G	2.8G	65%	/
tmpfs	245M	0	245M	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	245M	0	245M	0%	/sys/fs/cgroup
tmpfs	49M	0	49M	0%	/run/user/1000

```
joe@client1:~$ echo "it is mounted via my nfs share"
```

```
it is mounted via my nfs share
```

```
joe@client1:~$
```

QEMU (jfrancom-mojojajo_netboot_client2)

```
joe@client1:~$ echo "Yay, here is a second client. Booted at the same time"  
Yay, here is a second client. Booted at the same time  
joe@client1:~$ _
```