

```
joe — joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:desdemona:5949 — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh + ssh yavin ● joe@it4100-a1-sample: ~ — ssh jfrancom@... +
joe@it4100-a1-sample:~$ echo "here is an example of how to resize partitions"
here is an example of how to resize partitions
joe@it4100-a1-sample:~$ █
```

```
joe — joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:desdemona:5949 — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh + ssh yavin joe@it4100-a1-sample: ~ — ssh jfrancom@...
joe@it4100-a1-sample:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            478M   0 478M   0% /dev
tmpfs           100M  3.2M   97M   4% /run
/dev/sda1       3.7G  2.1G  1.4G  60% /
tmpfs           497M   0 497M   0% /dev/shm
tmpfs           5.0M   0  5.0M   0% /run/lock
tmpfs           497M   0 497M   0% /sys/fs/cgroup
/dev/sda3       923M  1.3M  859M   1% /home
tmpfs           100M   0  100M   0% /run/user/1000
/dev/sda5       477M  2.3M  445M   1% /home/joe/mymounts/d1
/dev/sda6       477M  2.3M  445M   1% /home/joe/mymounts/d2
/dev/sda7       239M  2.1M  220M   1% /home/joe/mymounts/d3
joe@it4100-a1-sample:~$ █
```

```
joe — joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:desdemona:5949 — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh + ssh yavin joe@it4100-a1-sample: ~ — ssh jfrancom@...
[joe@it4100-a1-sample:~$ echo "I want to resize sda5,6,7"
I want to resize sda5,6,7
[joe@it4100-a1-sample:~$ echo "I also want to resize my root filesystem"
I also want to resize my root filesystem
[joe@it4100-a1-sample:~$ echo "Shan't happen while any of the filesystems are mounted"
Shan't happen while any of the filesystems are mounted
[joe@it4100-a1-sample:~$ echo "Need to reboot with live linux disk"
Need to reboot with live linux disk
joe@it4100-a1-sample:~$ █
```

The image shows a macOS-style terminal window with three tabs. The active tab is titled "joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:desdemona:5949 — 87x24". The other two tabs are "atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie..." and "atlas@uranus-2016: ~ — ssh + ssh yavin". The main terminal area displays the command "joe@it4100-a1-sample:~\$ sudo shutdown -h now" with a cursor at the end of the line.

```
joe@it4100-a1-sample:~$ sudo shutdown -h now
```

```
joe — atlas@uranus-2016: ~ — ssh • ssh yavin — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh • ssh yavin joe@it4100-a1-sample: ~ — ssh jfrancom@... +
[jfrancom@desdemona:~$ citv bootvm IT4100-a1 d xenial_desktop
/usr/bin/ssh -q cordelia "/qemu/bin/qemu-boot 49 'jfrancom-IT4100-a1' 1024 '52:54:00:08:00:30' '' '' 'xenial_desktop' 'd' 1 1 2003 '/qemu/images';"
User(jfrancom) has booted machine(IT4100-a1) on server(cordelia:49) with 1024 memory.
[jfrancom@desdemona:~$ echo "You could also boot from d drive and GUI at the webpage"
You could also boot from d drive and GUI at the webpage
jfrancom@desdemona:~$ █
```

Install (as superuser)

# Welcome



**Disconnected**  
Ethernet network

- English
- Español
- Esperanto
- Euskara
- Français
- Gaeilge
- Galego
- Hrvatski
- Íslenska
- Italiano
- Kurdî
- Latviski
- Lietuviškai
- Magyar
- Nederlands
- Norsk bokmål
- Norsk nynorsk
- Polski



Try Ubuntu



Install Ubuntu

You can try Ubuntu without making any changes to your computer, directly from this CD.

Or if you're ready, you can install Ubuntu alongside (or instead of) your current operating system. This shouldn't take too long.

Install (as superuser)

# Welcome

- English
- Español
- Esperanto
- Euskara
- Français
- Gaeilge
- Galego
- Hrvatski
- Íslenska
- Italiano
- Kurdî
- Latviski
- Lietuviškai
- Magyar
- Nederlands
- Norsk bokmål
- Norsk nynorsk
- Polski



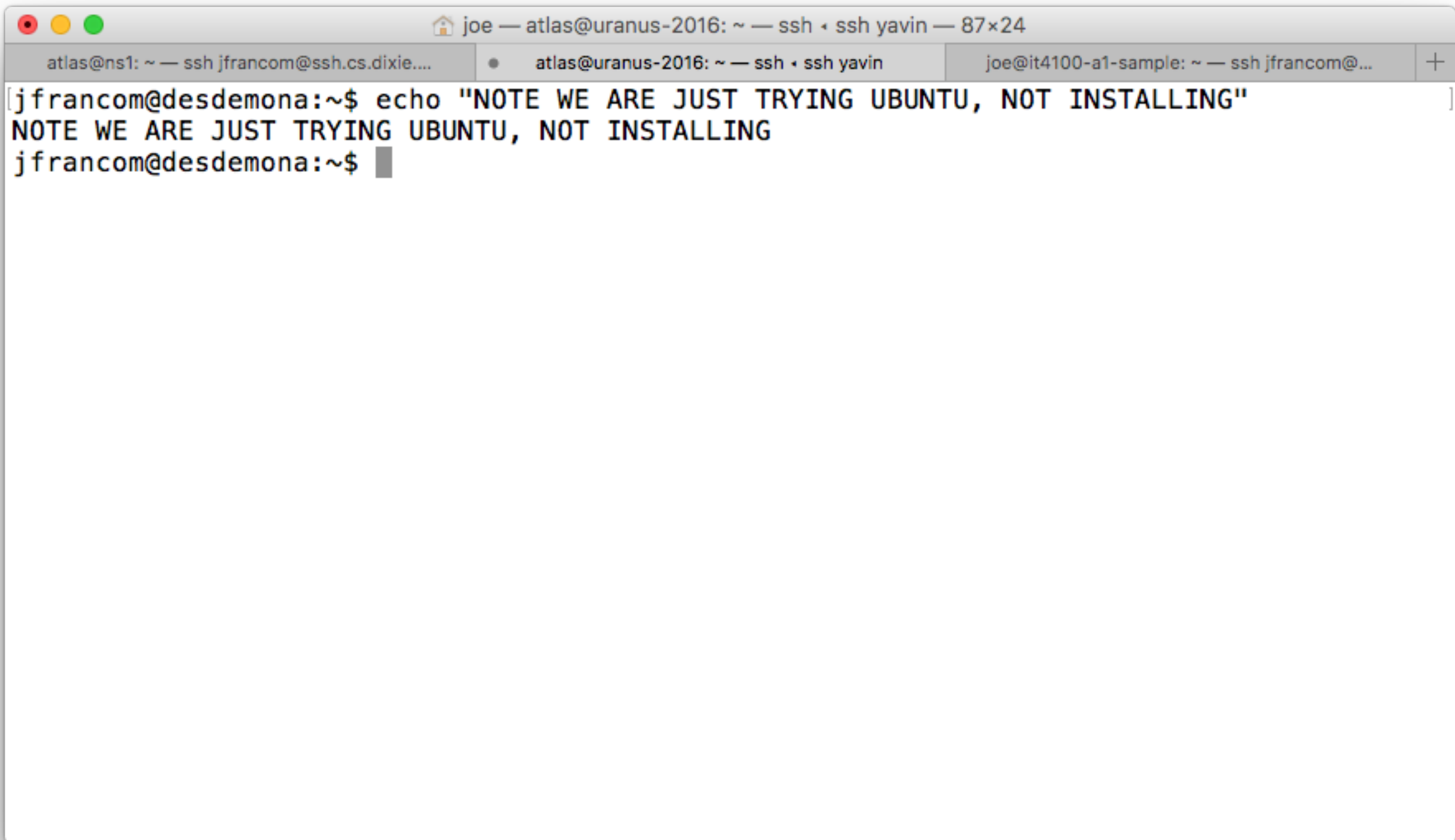
Try Ubuntu



Install Ubuntu

You can try Ubuntu without making any changes to your computer, directly from this CD.

Or if you're ready, you can install Ubuntu alongside (or instead of) your current operating system. This shouldn't take too long.

A terminal window with a title bar containing a home icon, the text "joe — atlas@uranus-2016: ~ — ssh + ssh yavin — 87x24", and three colored window control buttons (red, yellow, green). Below the title bar are three tabs: "atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie...", "atlas@uranus-2016: ~ — ssh + ssh yavin", and "joe@it4100-a1-sample: ~ — ssh jfrancom@...". The main content area shows a terminal session where the user "jfrancom" at host "desdemona" has entered the command "echo 'NOTE WE ARE JUST TRYING UBUNTU, NOT INSTALLING'". The output of the command is "NOTE WE ARE JUST TRYING UBUNTU, NOT INSTALLING". The prompt "jfrancom@desdemona:~\$" is shown again on the next line with a cursor.

```
jfrancom@desdemona:~$ echo "NOTE WE ARE JUST TRYING UBUNTU, NOT INSTALLING"  
NOTE WE ARE JUST TRYING UBUNTU, NOT INSTALLING  
jfrancom@desdemona:~$
```





gparted

Filter results ▶

Applications



GParted Partition Editor



/dev/sda - GParted

GParted Edit View Device Partition Help







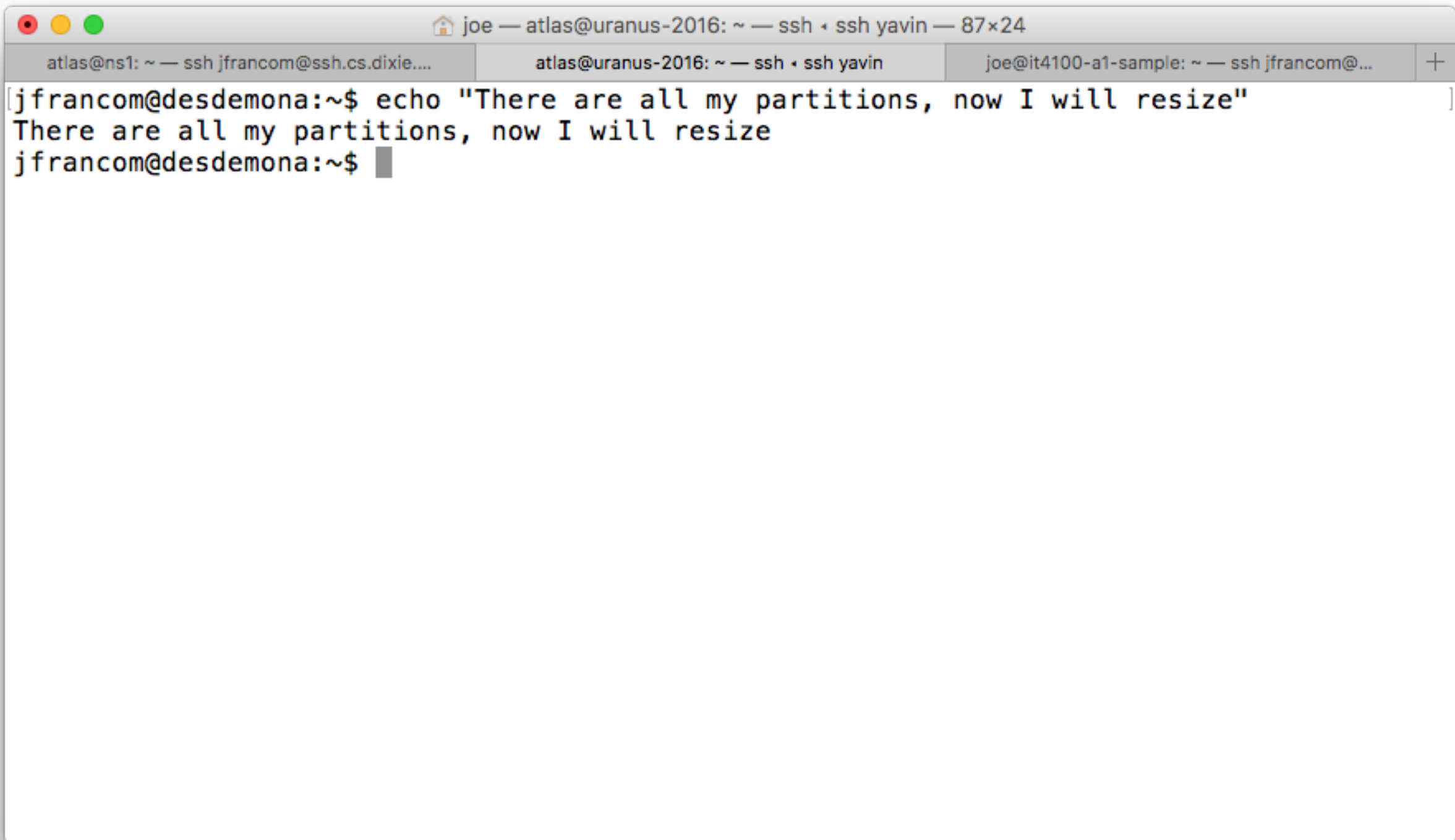

/dev/sda (10.00 GiB)



Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.72 GiB	2.14 GiB	1.59 GiB	boot
/dev/sda2	linux-swap	1.86 GiB	14.56 MiB	1.85 GiB	
/dev/sda3	ext4	954.00 MiB	32.23 MiB	921.77 MiB	
▼ /dev/sda4	extended	3.48 GiB	—	—	
/dev/sda5	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda6	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda7	ext4	250.00 MiB	13.91 MiB	236.09 MiB	
unallocated	unallocated	2.26 GiB	—	—	

0 operations pending












The image shows a terminal window with three tabs. The active tab is titled "atlas@uranus-2016: ~ — ssh + ssh yavin". The terminal content is as follows:

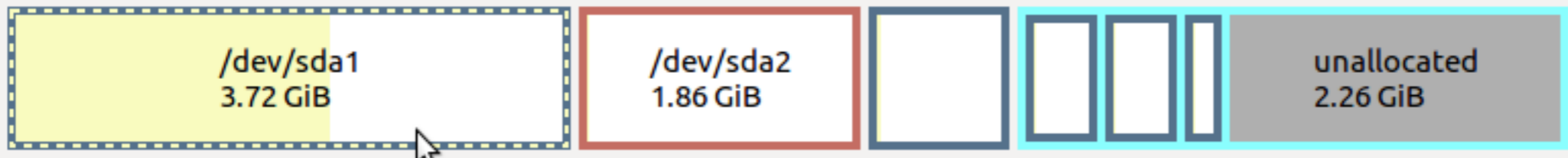
```
jfranco@desdemona:~$ echo "There are all my partitions, now I will resize"
There are all my partitions, now I will resize
jfranco@desdemona:~$
```

/dev/sda - GParted

GParted Edit View Device Partition Help

/dev/sda (10.00 GiB) ▾



Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.72 GiB	2.14 GiB	1.59 GiB	boot
/dev/sda2	linux-swap	1.86 GiB	14.56 MiB	1.85 GiB	
/dev/sda3	ext4	954.00 MiB	32.23 MiB	921.77 MiB	
▼ /dev/sda4	extended	3.48 GiB	—	—	
/dev/sda5	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda6	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda7	ext4	250.00 MiB	13.91 MiB	236.09 MiB	
unallocated	unallocated	2.26 GiB	—	—	

0 operations pending
















/dev/sda - GParted

GParted Edit View Device Partition Help



/dev/sda1  
3.12 GiB

- New
- Delete
- Resize/Move**
- Copy
- Paste
- Format to
- Mount
- Name Partition
- Manage Flags
- Check
- Label File System
- New UUID
- Information

/dev/sda (10.00 GiB)



Partition	File System
/dev/sda1	ext4
unallocated	unallocated
/dev/sda2	linux-swap
/dev/sda3	ext4
▼ /dev/sda4	extended
/dev/sda5	ext4
/dev/sda6	ext4
/dev/sda7	ext4
unallocated	unallocated

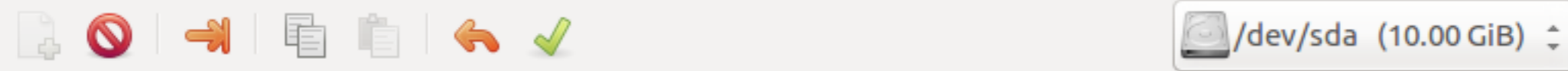
Used	Unused	Flags
2.14 GiB	1009.09 MiB	boot
—	—	—
14.56 MiB	1.85 GiB	—
32.23 MiB	921.77 MiB	—
—	—	—
26.04 MiB	473.96 MiB	—
26.04 MiB	473.96 MiB	—
13.91 MiB	236.09 MiB	—
—	—	—

Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB

1 operation pending







/dev/sda (10.00 GiB)



Partition
/dev/sda1
unallocated
/dev/sda2
/dev/sda3
▼ /dev/sda4
/dev/sda5
/dev/sda6
/dev/sda7
unallocated

	Flags
MiB	boot
—	
GiB	
MiB	
—	
MiB	
MiB	
MiB	
—	

**Warning!** Moving a partition might cause your operating system to fail to boot

You have queued an operation to move the start sector of partition /dev/sda7. Failure to boot is most likely to occur if you move the GNU/Linux partition containing /boot, or if you move the Windows system partition C:.

You can learn how to repair the boot configuration in the GParted FAQ.  
<http://gparted.org/faq.php>

Moving a partition might take a very long time to apply.

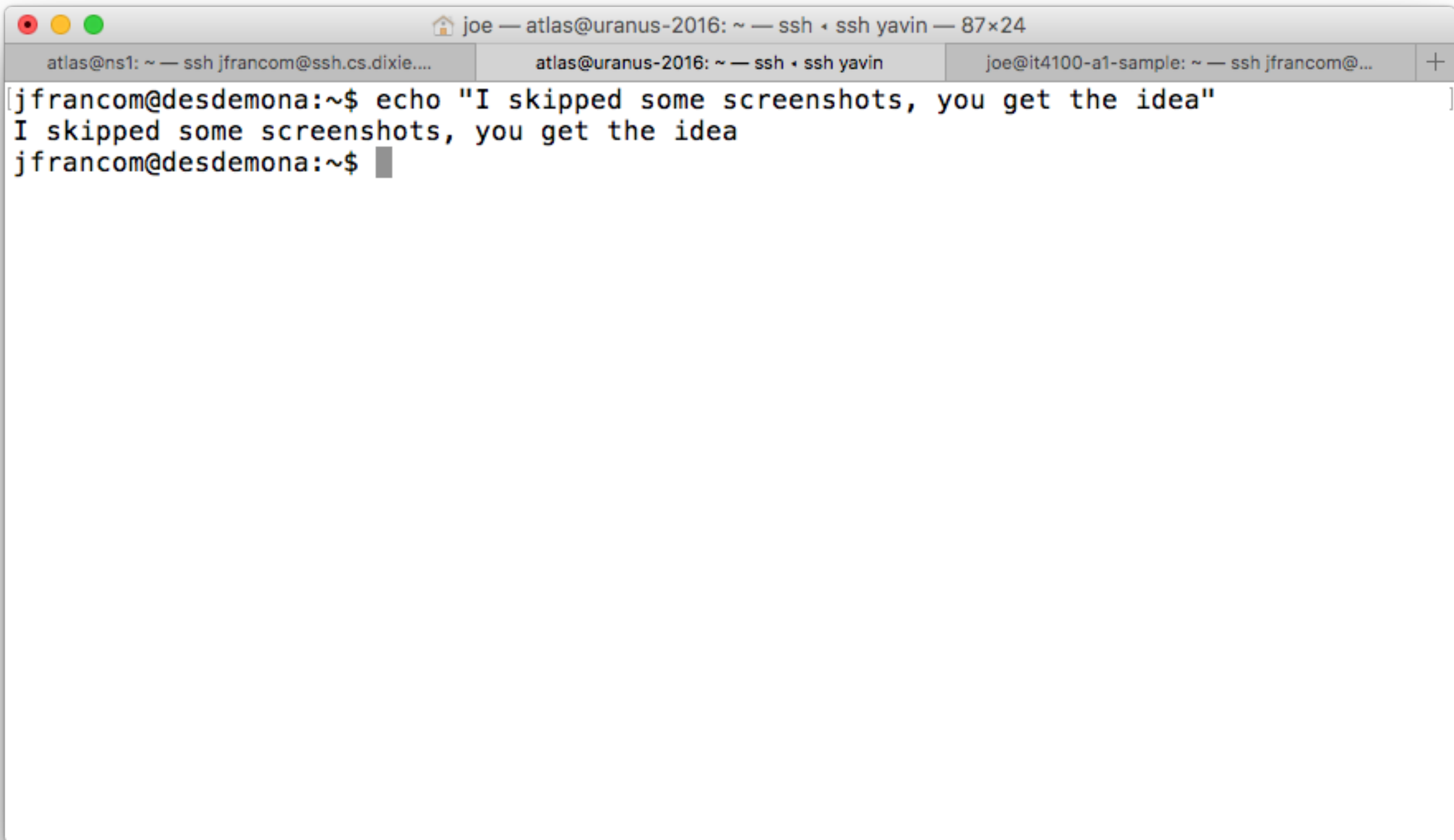
OK

Shrink /dev/sda1

1 operation pending

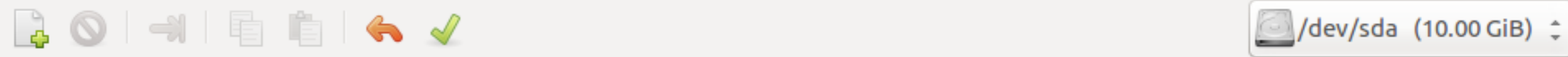




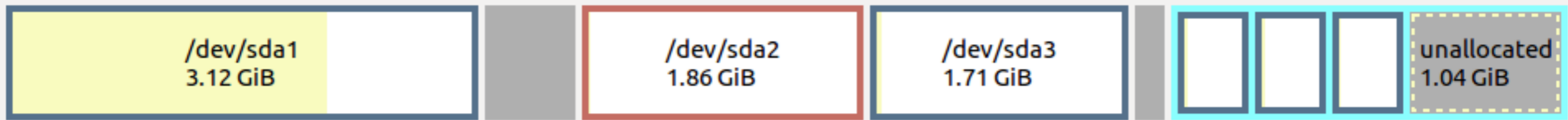


The image shows a terminal window with three tabs. The active tab is titled "atlas@uranus-2016: ~ — ssh • ssh yavin — 87x24". The terminal content is as follows:

```
jfranco@desdemona:~$ echo "I skipped some screenshots, you get the idea"  
I skipped some screenshots, you get the idea  
jfranco@desdemona:~$ █
```



/dev/sda (10.00 GiB)



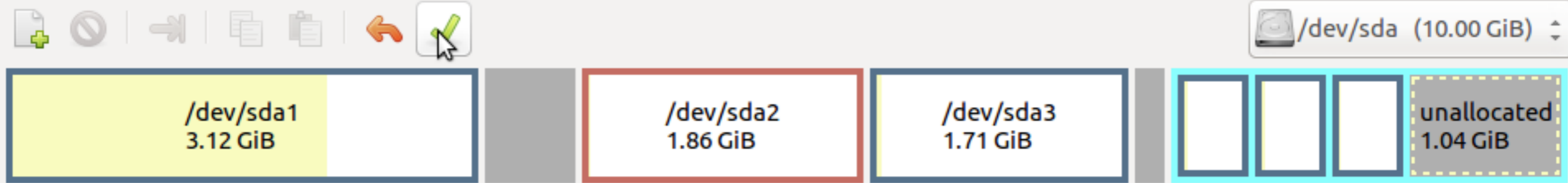
Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.12 GiB	2.14 GiB	1009.09 MiB	boot
unallocated	unallocated	614.00 MiB	—	—	
/dev/sda2	linux-swap	1.86 GiB	14.56 MiB	1.85 GiB	
/dev/sda3	ext4	1.71 GiB	32.23 MiB	1.68 GiB	
unallocated	unallocated	204.00 MiB	—	—	
▼ /dev/sda4	extended	2.50 GiB	—	—	
/dev/sda5	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda6	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda7	ext4	500.00 MiB	13.91 MiB	486.09 MiB	
unallocated	unallocated	1.04 GiB	—	—	

- > Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB
- > Move /dev/sda7 to the right and grow it from 250.00 MiB to 500.00 MiB
- > Move /dev/sda6 to the right
- > Move /dev/sda5 to the right
- > Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Grow /dev/sda3 from 954.00 MiB to 1.71 GiB

6 operations pending



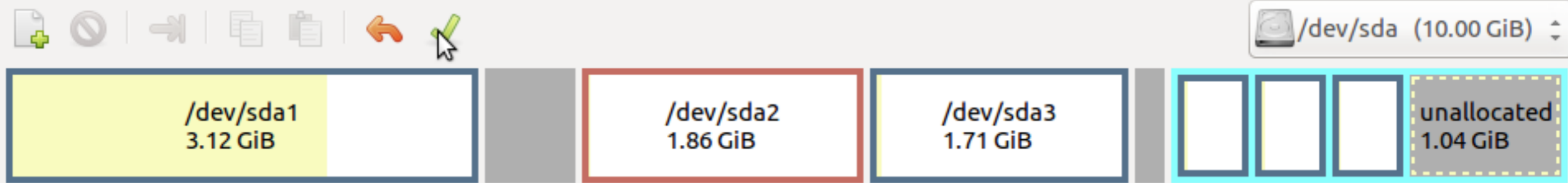
```
joe — atlas@uranus-2016: ~ — ssh • ssh yavin — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh • ssh yavin joe@it4100-a1-sample: ~ — ssh jfrancom@... +
jfrancom@desdemona:~$ echo "Normally, I would only move/resize one partition and apply changes and reboot to make sure it worked. Here I have a bunch of operations pending"
Normally, I would only move/resize one partition and apply changes and reboot to make sure it worked. Here I have a bunch of operations pending
jfrancom@desdemona:~$
```



Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.12 GiB	2.14 GiB	1009.09 MiB	boot
unallocated	unallocated	614.00 MiB	—	—	
/dev/sda2	linux-swap	1.86 GiB	14.56 MiB	1.85 GiB	
/dev/sda3	ext4	1.71 GiB	32.23 MiB	1.68 GiB	
unallocated	unallocated	204.00 MiB	—	—	
▼ /dev/sda4	extended	2.50 GiB	—	—	
/dev/sda5	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda6	ext4	500.00 MiB	26.04 MiB	473.96 MiB	
/dev/sda7	ext4	500.00 MiB	13.91 MiB	486.09 MiB	
unallocated	unallocated	1.04 GiB	—	—	

- > Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB
- > Move /dev/sda7 to the right and grow it from 250.00 MiB to 500.00 MiB
- > Move /dev/sda6 to the right
- > Move /dev/sda5 to the right
- > Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Grow /dev/sda3 from 954.00 MiB to 1.71 GiB

6 operations pending



Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.12 GiB	2.14 GiB	1009.09 MiB	boot
unallocated	unallocated	614.00 MiB	—	—	—
/dev/sda2	linux-swap	1.86 GiB	14.56 MiB	1.85 GiB	—
/dev/sda3	ext4	1.71 GiB	32.23 MiB	1.68 GiB	—
unallocated	unallo	—	—	—	—
/dev/sda4	exten	—	—	—	—
/dev/sda5	ext4	—	—	—	—
/dev/sda6	ext4	—	—	—	—
/dev/sda7	ext4	—	—	—	—
unallocated	unallo	—	—	—	—

**Apply operations to device**

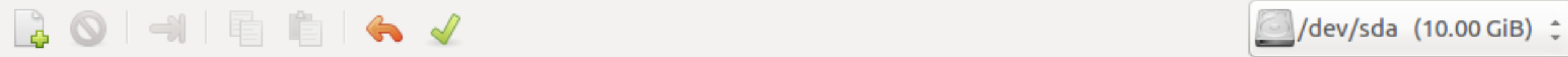
**Are you sure you want to apply the pending operations?**

Editing partitions has the potential to cause LOSS of DATA.  
You are advised to backup your data before proceeding.

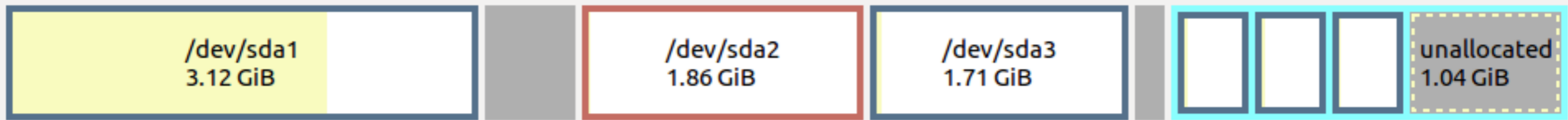
Cancel Apply

- Shrink /dev/sda1 from 3.12 GiB to 3.12 GiB
- Move /dev/sda7 to the right and grow it from 250.00 MiB to 500.00 MiB
- Move /dev/sda6 to the right
- Move /dev/sda5 to the right
- Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB
- Grow /dev/sda3 from 954.00 MiB to 1.71 GiB

6 operations pending



/dev/sda (10.00 GiB)



Partition	File System	Size	Used	Unused	Flags
/dev/sda1	ext4	3.12 GiB	2.14 GiB	1009.09 MiB	boot
unallocated	unallocated	614.00 MiB	—	—	
/dev/sda2					
/dev/sda3					
unallocated					
/dev/sda4					
/dev/sda5					
/dev/sda6					
/dev/sda7					
unallocated					

**Applying pending operations**

Depending on the number and type of operations this might take a long time.

**Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB**

*check file system on /dev/sda1 for errors and (if possible) fix them*

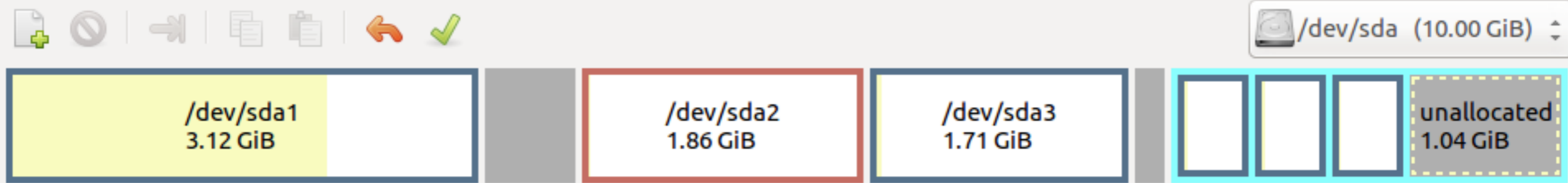
**Completed Operations:**

0 of 6 operations completed

[Details](#)

Cancel

- > Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB
- > Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Move /dev/sda5 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Move /dev/sda6 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Move /dev/sda7 to the right and shrink it from 3.48 GiB to 2.50 GiB
- > Grow /dev/sda3 from 954.00 MiB to 1.71 GiB



Partition	File System	Size	Used	Unused	Flags
/dev/sda1		3.12 GiB			
unallocated					
/dev/sda2		1.86 GiB			
/dev/sda3		1.71 GiB			
unallocated					
/dev/sda4					
/dev/sda5					
/dev/sda6					
/dev/sda7					
unallocated					

**Applying pending operations**

Depending on the number and type of operations this might take a long time.

**Move /dev/sda6 to the right**

`e2image -ra -p -O 1048576000 /dev/sda6`

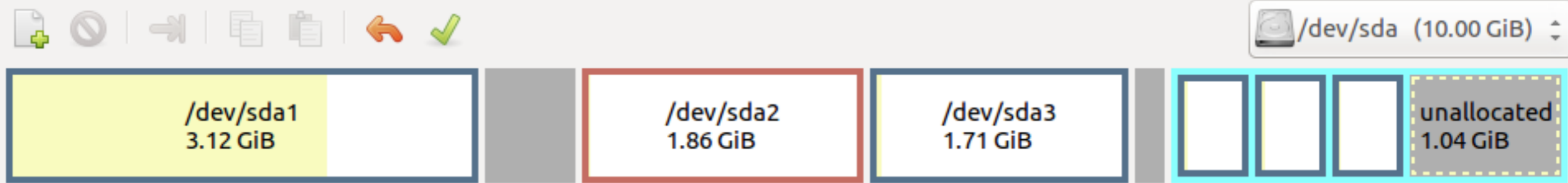
**Completed Operations:**  
2 of 6 operations completed

**Details**

Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB	00:00:24	✓
Move /dev/sda7 to the right and grow it from 250.00 MiB to 500.00 MiB	00:00:09	✓
Move /dev/sda6 to the right		⚙️
Move /dev/sda5 to the right		
Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB		
Grow /dev/sda3 from 954.00 MiB to 1.71 GiB		

6 operations pending

Cancel



Partition	File System	Size	Used	Unused	Flags
/dev/sda1		3.12 GiB			
unallocated					
/dev/sda2		1.86 GiB			
/dev/sda3		1.71 GiB			
unallocated					
/dev/sda4					
/dev/sda5					
/dev/sda6					
/dev/sda7					
unallocated					

**Applying pending operations**

Depending on the number and type of operations this might take a long time.

**Completed Operations:**

All operations successfully completed

**Details**

Shrink /dev/sda1 from 3.72 GiB to 3.12 GiB	00:00:24	✓
Move /dev/sda7 to the right and grow it from 250.00 MiB to 500.00 MiB	00:00:09	✓
Move /dev/sda6 to the right	00:00:12	✓
Move /dev/sda5 to the right	00:00:11	✓
Move /dev/sda4 to the right and shrink it from 3.48 GiB to 2.50 GiB	00:00:02	✓
Grow /dev/sda3 from 954.00 MiB to 1.71 GiB	00:00:01	✓

6 operations pending





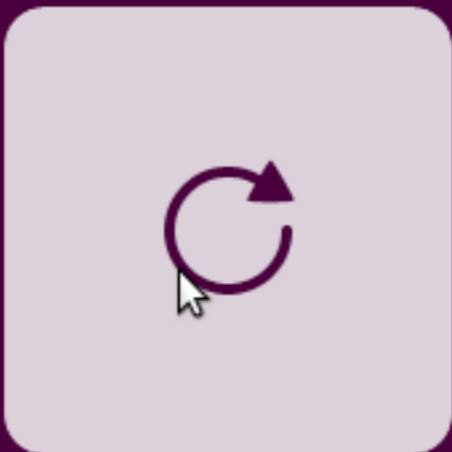

Examples



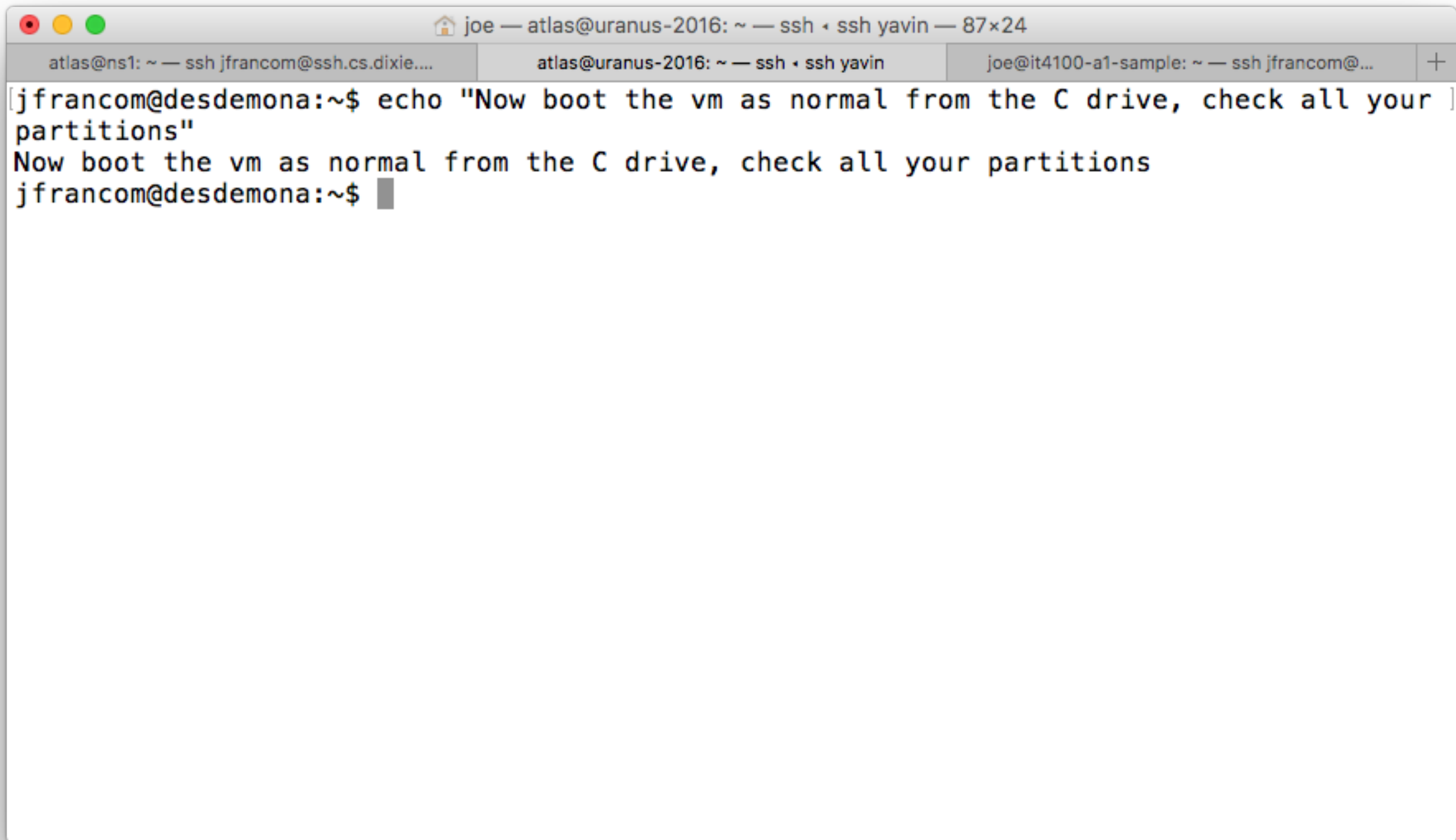
Install Ubuntu  
16.04.1 LTS

Shut Down

Goodbye, Live session user. Are you sure you want to close all programs and shut down the computer?

Restart



The image shows a macOS terminal window with three tabs. The active tab is titled "atlas@uranus-2016: ~ — ssh • ssh yavin". The terminal content shows a user running the command `echo "Now boot the vm as normal from the C drive, check all your partitions"` on a host named "desdemona". The output of the command is the same text in quotes. The prompt returns to the shell.

```
jfranco@desdemona:~$ echo "Now boot the vm as normal from the C drive, check all your partitions"
Now boot the vm as normal from the C drive, check all your partitions
jfranco@desdemona:~$
```

```
joe — joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:cordelia:5949 — 87x24
atlas@ns1: ~ — ssh jfrancom@ssh.cs.dixie... atlas@uranus-2016: ~ — ssh + ssh yavin joe@it4100-a1-sample: ~ — ssh jfrancom@...
joe@it4100-a1-sample:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            478M   0 478M   0% /dev
tmpfs           100M  3.2M   97M   4% /run
/dev/sda1       3.1G  2.1G  845M  71% /
tmpfs           497M   0 497M   0% /dev/shm
tmpfs           5.0M   0 5.0M   0% /run/lock
tmpfs           497M   0 497M   0% /sys/fs/cgroup
/dev/sda3       1.7G  1.5M  1.6G   1% /home
tmpfs           100M   0 100M   0% /run/user/1000
/dev/sda5       477M  2.3M  445M   1% /home/joe/mymounts/d1
/dev/sda6       477M  2.3M  445M   1% /home/joe/mymounts/d2
/dev/sda7       481M  2.3M  450M   1% /home/joe/mymounts/d3
joe@it4100-a1-sample:~$ █
```

```
joe — joe@it4100-a1-sample: ~ — ssh jfrancom@ssh.cs.dixie.edu -L 5949:cordelia:5949 — 87x24
atlas@ns1: ~ — ssh jfrancom... atlas@uranus-2016: ~ — ssh... joe@it4100-a1-sample: ~ — s... ~/Desktop/resizing — -bash
joe@it4100-a1-sample:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            478M   0 478M   0% /dev
tmpfs           100M  3.2M   97M   4% /run
/dev/sda1       3.1G  2.1G  845M  71% /
tmpfs           497M   0 497M   0% /dev/shm
tmpfs           5.0M   0 5.0M   0% /run/lock
tmpfs           497M   0 497M   0% /sys/fs/cgroup
/dev/sda3       1.7G  1.5M  1.6G   1% /home
tmpfs           100M   0 100M   0% /run/user/1000
/dev/sda5       477M  2.3M  445M   1% /home/joe/mymounts/d1
/dev/sda6       477M  2.3M  445M   1% /home/joe/mymounts/d2
/dev/sda7       481M  2.3M  450M   1% /home/joe/mymounts/d3
joe@it4100-a1-sample:~$ echo "Woot!"
Woot!
joe@it4100-a1-sample:~$ █
```