

[Step 1. Python code will be attached](#)

[From python console](#)

[From EC2 Dashboard](#)

[From Volumes](#)

[SSH connection instruction](#)

[Step 2. SSH access](#)

[Step 3. Take a snapshot and terminate the first EC2](#)

[New snapshot](#)

[Terminate old EC2](#)

[Step 4. Create a new EC2 instance.](#)

[Create a new EC2 instance](#)

[Create an EBS volume from the snapshot](#)

[Final verification of new EBS mount](#)

Step 1. Python code will be attached

From python console

```
ec2-user@ip-172-31-3-143:/proc
>>> l=launch_instance(key_name="keyPair0")
ERROR!
Creating keypair keyPair0
Group name= SecurityGroup:python2
Security group python2 already authorized
waiting for instance...
.
.
.
.
Instance is now running
Instance IP is 54.67.106.44
>>>
```

```

siming.meng@USAB05147305L ~/.aws
$ fg
python
inst=l[0]
res=l[1]inst=l[0]
>>> res=l[1]
>>> ec2=inst.connection
>>> azone=inst.placement
>>> azone
u'us-west-1a'
>>> ec2=inst.connection
>>> azone=inst.placement
>>> azone
u'us-west-1a'
>>> vol=ec2.create_volume(2,azone)
>>> vol
Volume:vol-06acff83bcd7113b6
>>> vol.attach(inst.id,'/dev/sdf')

```

From EC2 Dashboard

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
<input checked="" type="checkbox"/>	i-03f6bff94ed1d1b55	t2.micro	us-west-1a	running	2/2 checks...	None	ec2-54-67-106-44.us-w
<input type="checkbox"/>	i-054059b5e501b6a6e	t2.micro	us-west-1a	terminated		None	
<input type="checkbox"/> West1	i-06b03430774725f56	t2.micro	us-west-1a	running	2/2 checks...	None	ec2-54-153-26-59.us-w

From Volumes

Create Volume Actions

Filter by tags and attributes or search by keyword

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
<input checked="" type="checkbox"/>	vol-06acff83bcd7113b6	2 GiB	standard	-		September 17, 201...	us-west-1a	in-u

SSH connection instruction

Connect To Your Instance ✕

I would like to connect with ☒ A standalone SSH client
☐ A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (keyPair0.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:

```
chmod 400 keyPair0.pem
```
4. Connect to your instance using its Public DNS:

```
ec2-54-67-106-44.us-west-1.compute.amazonaws.com
```

Example:

```
ssh -i "keyPair0.pem" ec2-user@ec2-54-67-106-44.us-west-1.compute.amazonaws.com
```

Please note that in most cases the username above will be `ec2-user`. However, some instances that

Step 2. SSH access

```
[ec2-user@ip-172-31-3-143 proc]$ sudo !m
sudo mke2fs -F -j /dev/sdf
mke2fs 1.42.12 (29-Aug-2014)
Creating filesystem with 524288 4k blocks and 131072 inodes
Filesystem UUID: cd1e942d-654e-4525-908d-7dbfad5acca5
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-3-143 proc]$ sudo mkdir /mnt/data-store
[ec2-user@ip-172-31-3-143 proc]$ sudo mount /dev/sdf /mnt/data-store
[ec2-user@ip-172-31-3-143 proc]$ df -T
Filesystem      Type      1K-blocks    Used Available Use% Mounted on
/dev/xvda1      ext4       8123812 1222456   6801108  16% /
devtmpfs        devtmpfs    501092         60    501032   1% /dev
tmpfs           tmpfs       509668         0    509668   0% /dev/shm
/dev/xvdf       ext3      1998672     3140   1890676   1% /mnt/data-store
[ec2-user@ip-172-31-3-143 proc]$ cd /mnt/data-store/
[ec2-user@ip-172-31-3-143 data-store]$ chmod 777 .
chmod: changing permissions of '.': Operation not permitted
[ec2-user@ip-172-31-3-143 data-store]$ sudo !ch
sudo chmod 777 .
[ec2-user@ip-172-31-3-143 data-store]$ ls -xap
./ ../ lost+found/
[ec2-user@ip-172-31-3-143 data-store]$ sudo cat > cats.txt
how are you?
[ec2-user@ip-172-31-3-143 data-store]$ ls
cats.txt lost+found
[ec2-user@ip-172-31-3-143 data-store]$ more cats.txt
how are you?
[ec2-user@ip-172-31-3-143 data-store]$
```

Step 3. Take a snapshot and terminate the first EC2

```
>>> vol.create_snapshot('ucsc-aws-class')
Snapshot:snap-0084de3c5a56e404f
>>>
>>> ec2=boto.connect_ec2()
>>> ec2=boto.ec2.connect_to_region('us-west-1')
>>> ec2
EC2Connection:ec2.us-west-1.amazonaws.com
>>> instlist=ec2.get_all_instances()
>>> instlist
[Reservation:r-0e98e6b8efe5eeab7, Reservation:r-0df772c324dae42f8, Reservation:r-0e4f84733fde9fd5b]
>>> res
Reservation:r-0e4f84733fde9fd5b
>>> inst=res.instances[0]
>>> inst.id
u'i-03f6bff94ed1d1b55'
>>> inst.stop()
>>> inst.terminate()
>>>
```

New snapshot

Create SnapshotActions

Owned By Me

Filter by tags and attributes or search by keyword

<input type="checkbox"/>	Name	Snapshot ID	Size	Description	Status
<input type="checkbox"/>		snap-0084de3c5a56...	2 GiB	ucsc-aws-class	<div><div></div>complete</div>
<input type="checkbox"/>		snap-a6269724	8 GiB	Created by CreateImage(i-06b03430774725f56) for ami-5c95da...	<div><div></div>complete</div>

Terminate old EC2

Launch Instance

Connect

Actions

Filter by tags and attributes or search by keyword

<input type="checkbox"/>	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks
<input type="checkbox"/>		i-03f6bff94ed1d1b55	t2.micro	us-west-1a	<div>terminated</div>	
<input type="checkbox"/>	West1	i-06b03430774725f56	t2.micro	us-west-1a	<div>running</div>	<div>2/2 checks..</div>

Create Volume

Actions

Filter by tags and attributes or search by keyword

1 to 2 of 2

<input type="checkbox"/>	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
<input checked="" type="checkbox"/>		vol-06acff83bcd7113b6	2 GiB	standard	-		September 17, 201...	us-west-1a	<div>deleting</div>

Step 4. Create a new EC2 instance,

Create a new EC2 instance

```
siming.meng@USA80S147305L ~/.ssh
$ fg
python (wd: ~/.aws)
l=launch_instance(key_name="keyPair0")
l=launch_instance(key_name="keyPair0")
Key name= KeyPair:keyPair0
Group name= SecurityGroup:python2
Security group python2 already authorized
waiting for instance...
.
.
.
Instance is now running
Instance IP is 52.53.165.252
>>> inst=l[0]
>>> res=l[1]
>>> inst
Instance:i-0921eeaad92cddb06
>>> res
Reservation:r-0085b93a68e9fea4c
>>> |
```

Launch Instance

Connect

Actions ▾

🔍 Filter by tags and attributes or search by keyword

<input type="checkbox"/>	Name ▾	Instance ID ▲	Instance Type ▾	Availability Zone ▾	Instance State ▾	S
<input type="checkbox"/>		i-03f6bff94ed1d1b55	t2.micro	us-west-1a	terminated	
<input type="checkbox"/>	West1	i-06b03430774725f56	t2.micro	us-west-1a	running	
<input type="checkbox"/>		i-0921eeaad92cddb06	t2.micro	us-west-1a	running	

Create an EBS volume from the snapshot

```
>>> pprint (snapshots)
[Snapshot:snap-0084de3c5a56e404f]
>>> pprint (snapshots[0])
Snapshot:snap-0084de3c5a56e404f
>>> pprint (snapshots[0].name)
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
AttributeError: 'Snapshot' object has no attribute 'name'
>>> dir (snapshots[0])
['AttrName', '__class__', '__delattr__', '__dict__', '__doc__', '__format__', '__new__', '__reduce__', '__reduce_ex__', '__repr__', '__setattr__', '__sizeof__', '__str__', '__subclasshook__', 'add_tag', 'add_tags', 'connection', 'create_volume', 'delete', 'delete_tags', 'item', 'owner_alias', 'owner_id', 'progress', 'region', 'remove_tag', 'remove_tags', 'start_time', 'status', 'tags', 'unshare', 'update', 'volume_id', 'volume_size']
>>> snapshots[0]['volume_id']
File "<stdin>", line 1
  snapshots[0]['volume_id']
                        ^
SyntaxError: invalid syntax
>>> snapshots[0].volume_id
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
TypeError: 'Snapshot' object has no attribute '__getitem__'
>>> snapshots[0].volume_id
u'vol-06acff83bcd7113b6'
>>> snapshots[0].id
u'snap-0084de3c5a56e404f'
>>> snapShotId = snapshots[0].id
>>> snapShotId
u'snap-0084de3c5a56e404f'
>>> vol=ec2.create_volume(2,azone, snapShotId)
>>> vol
Volume:vol-0d7b3001164277cd6
>>> vol.attach(inst.id,'/dev/sdf')
u'attaching'
>>> |
```

Final verification of new EBS mount

```
>>> ec2=boto.connect_ec2()
>>> ec2=boto.ec2.connect_to_region('us-west-1')
>>> azone=inst.placement
>>> azone
u'us-west-1a'
>>> filters = {
...     'description': snapshotName
... }
>>> snapshots = ec2.get_all_snapshots(filters=filters)
>>> snapShotId = snapshots[0].id
>>> snapShotId
u'snap-0084de3c5a56e404f'
>>> vol=ec2.create_volume(2,inst.placement, snapShotId)
>>> vol.attach(inst.id,'/dev/sdf')
u'attaching'
>>> vol
Volume:vol-00976e2fb3f35d36a
>>>
[1]+  Stopped                  python (wd: ~/.aws)
(wd now: ~/.ssh)

siming.meng@USAB05147305L ~/.ssh
$ ssh -i "keyPair0.pem" ec2-user@ec2-52-53-242-41.us-west-1.compute.amazonaws.com
The authenticity of host 'ec2-52-53-242-41.us-west-1.compute.amazonaws.com (52.53.242.41)' can't be
ECDSA key fingerprint is SHA256:8GVAupJEhNlFxJ8kkSCsaZLhNg5NeuvvmSEpv1cNAkw.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-53-242-41.us-west-1.compute.amazonaws.com,52.53.242.41' (ECDSA)

    _ _ _ _ _
    | |   | |
    | |   | |   )   Amazon Linux AMI
    | |   | |   /
    | |   | |   |

https://aws.amazon.com/amazon-linux-ami/2016.03-release-notes/
13 package(s) needed for security, out of 26 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-13-78 ~]$ cat /proc/partitions
major minor #blocks name

202      0      8388608 xvda
202      1      8386543 xvda1
202     80     2097152 xvd1
[ec2-user@ip-172-31-13-78 ~]$ sudo mkdir /mnt/dz
[ec2-user@ip-172-31-13-78 ~]$ sudo mount -t ext3 /dev/sdf /mnt/dz
[ec2-user@ip-172-31-13-78 ~]$ df -T
Filesystem      Type      1K-blocks    Used Available Use% Mounted on
/dev/xvda1      ext4      8123812 1222456   6801108  16% /
devtmpfs        devtmpfs   501092         60    501032   1% /dev
tmpfs           tmpfs      509668         0    509668   0% /dev/shm
/dev/xvd1       ext3     1998672     3144   1890672   1% /mnt/dz
[ec2-user@ip-172-31-13-78 ~]$ ls /mnt/dz/
cats.txt  lost+found
[ec2-user@ip-172-31-13-78 ~]$ cat /mnt/dz/cats.txt
how are you?
[ec2-user@ip-172-31-13-78 ~]$ |
```