

Amazon AWS Tutorial III: Creating an AMI

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Disabling SELinux

```
ec2-user@ip-10-170-242-220:/etc/selinux — ssh — 80x24
ssh bash ec2-user@i...elinux — ssh bash
[ec2-user@ip-10-170-242-220 bin]$ cd /etc
[ec2-user@ip-10-170-242-220 etc]$ cd selinux/
[ec2-user@ip-10-170-242-220 selinux]$ ls
config restorecond.conf restorecond_user.conf semanage.conf targeted
[ec2-user@ip-10-170-242-220 selinux]$ cat config

# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
SELINUX=enforcing
# SELINUXTYPE= can take one of these two values:
#     targeted - Only targeted network daemons are protected.
#     strict - Full SELinux protection.
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted
# SETLOCALDEFS= Check local definition changes
SETLOCALDEFS=0

[ec2-user@ip-10-170-242-220 selinux]$ █
```


Uploading X.509 Certificate

```
Terminal — bash — 80x24
ec2-user@i...-31:~ — ssh  bash  bash
Shuang-Luans-MacBook-Pro:~$ ls
Luan_West_MC_keypair.pem
cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem
pk-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem
sluan_linux_key.pem
Shuang-Luans-MacBook-Pro:~$ scp -i Luan_West_MC_keypair.pem pk-00L7CQA5
B4I0BM5SVTCW5JWQ7C5XLNXP.pem cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem root@ec2-
50-18-14-190.us-west-1.compute.amazonaws.com:/mnt
Please login as the ec2-user user rather than root user.
Shuang-Luans-MacBook-Pro:~$ scp -i Luan_West_MC_keypair.pem pk-00L7CQA5
B4I0BM5SVTCW5JWQ7C5XLNXP.pem cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem ec2-user@
ec2-50-18-14-190.us-west-1.compute.amazonaws.com:/mnt
scp: /mnt/pk-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem: Permission denied
scp: /mnt/cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem: Permission denied
Shuang-Luans-MacBook-Pro:~$ scp -i Luan_West_MC_keypair.pem pk-00L7CQA5
B4I0BM5SVTCW5JWQ7C5XLNXP.pem cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem ec2-user@
ec2-50-18-14-190.us-west-1.compute.amazonaws.com:/~
scp: /~: No such file or directory
Shuang-Luans-MacBook-Pro:~$ scp -i Luan_West_MC_keypair.pem pk-00L7CQA5
B4I0BM5SVTCW5JWQ7C5XLNXP.pem cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem ec2-user@
ec2-50-18-14-190.us-west-1.compute.amazonaws.com:/home/ec2-user
pk-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem      100%  926    0.9KB/s   00:01
cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem    100%  916    0.9KB/s   00:00
Shuang-Luans-MacBook-Pro:~$
```

Installing Ruby

```
ec2-user@ip-10-170-245-31:~ -- ssh -- 80x24
[ec2-user@ip-10-170-245-31 mnt]$ cd
[ec2-user@ip-10-170-245-31 ~]$ pwd
/home/ec2-user
[ec2-user@ip-10-170-245-31 ~]$ sudo yum install ruby
Loaded plugins: fastestmirror, security
Loading mirror speeds from cached hostfile
amzn | 2.1 kB 00:00
Setting up Install Process
Package ruby-1.8.7.302-1.2.amzn1.i686 already installed and latest version
Nothing to do
[ec2-user@ip-10-170-245-31 ~]$
```

Installing ec2-ami tools

```
ec2-user@ip-10-170-245-31:~ -- ssh -- 80x24
[ec2-user@ip-10-170-245-31 ~]$ wget http://s3.amazonaws.com/ec2-downloads/ec2-ami-tools.noarch.rpm
--2011-02-07 04:07:22-- http://s3.amazonaws.com/ec2-downloads/ec2-ami-tools.noarch.rpm
Resolving s3.amazonaws.com... 207.171.189.80
Connecting to s3.amazonaws.com|207.171.189.80|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 169597 (166K) [binary/octet-stream]
Saving to: "ec2-ami-tools.noarch.rpm"

100%[=====>] 169,597      341K/s   in 0.5s

2011-02-07 04:07:23 (341 KB/s) - "ec2-ami-tools.noarch.rpm" saved [169597/169597]

[ec2-user@ip-10-170-245-31 ~]$ ls
ec2-ami-tools.noarch.rpm
[ec2-user@ip-10-170-245-31 ~]$ sudo rpm -i ec2-ami-tools.noarch.rpm
[ec2-user@ip-10-170-245-31 ~]$ which which ec2-bundle-image
alias which='alias | /usr/bin/which --tty-only --read-alias --show-dot --show-tilde'
      /usr/bin/which
/usr/local/bin/ec2-bundle-image
[ec2-user@ip-10-170-245-31 ~]$
```


Bundle

```
ec2-user@ip-10-170-242-220:/mnt — ssh — 80x24
[ec2-user@ip-10-170-242-220 mnt]$ sudo /usr/local/bin/ec2-bundle-vol -d /mnt -k
pk-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP.pem -c cert-00L7CQA5B4I0BM5SVTCW5JWQ7C5XLNXP
.pem -u 959394824376 -p luan.ami
Please specify a value for arch [i386]:
Copying / into the image file /mnt/luan.ami...
Excluding:
    /sys
    /proc
    /proc/sys/fs/binfmt_misc
    /dev/pts
    /dev
    /media
    /mnt
    /proc
    /sys
    /mnt/luan.ami
    /mnt/img-mnt
1+0 records in
1+0 records out
1048576 bytes (1.0 MB) copied, 0.00579631 s, 181 MB/s
mke2fs 1.41.12 (17-May-2010)
warning: Unable to get device geometry for /mnt/luan.ami
```

Bundle (cont.)

```
ec2-user@ip-10-170-242-220:/mnt — ssh — 80x24
ssh  bash  ec2-user@i...:/mnt — ssh  bash  bash
Created luan.ami.part.09
Created luan.ami.part.10
Created luan.ami.part.11
Created luan.ami.part.12
Created luan.ami.part.13
Created luan.ami.part.14
Created luan.ami.part.15
Created luan.ami.part.16
Created luan.ami.part.17
Created luan.ami.part.18
Created luan.ami.part.19
Created luan.ami.part.20
Created luan.ami.part.21
Created luan.ami.part.22
Created luan.ami.part.23
Created luan.ami.part.24
Created luan.ami.part.25
Generating digests for each part...
Digests generated.
Unable to read instance meta-data for ancestor-ami-ids ←
Unable to read instance meta-data for ramdisk-id ←
Unable to read instance meta-data for product-codes ←
Creating bundle manifest...
ec2-bundle-vol complete.
```


Access Credentials



[Sign in to the AWS Management Console](#) [Create an AWS Account](#) [English](#)

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Your Account

> Account Activity

View current charges and account activity, itemized by service and by usage type. Previous months' billing statements are also available.

> Usage Reports

Download usage reports for each service you are subscribed to. Reports can be customized by specifying usage types, timeframe, service operations, and more.

> Security Credentials

Amazon Web Services uses access identifiers to authenticate requests to AWS and to identify the sender of a request. Three types of identifiers are available: (1) AWS Access Key Identifiers, (2) X.509 Certificates, and (3) Key pairs

> Personal Information

View and edit personal contact information, such as address and phone number. Set communication preferences for email subscriptions.

> Payment Method

View and edit current payment method, as well as add new payment methods.

> Consolidated Billing

Receive one bill for multiple AWS Accounts, with cost breakdowns for each account. Usage is combined, enabling you to more quickly reach lower-priced volume tiers.

> AWS Identity and Access Management

Create multiple Users and manage the permissions for each of these Users within your AWS Account.

> AWS Management Console

Access and manage AWS Infrastructure Web Services through our web-based, point-and-click, graphical user interface.

> DevPay Activity

View revenue and costs for your Amazon DevPay products. Manage your Amazon DevPay products.



Access Credentials

Access Credentials

There are three types of access credentials used to authenticate your requests to AWS services: (a) access keys, (b) X.509 certificates, and (c) key pairs. Each access credential type is explained below.

Access Keys

X.509 Certificates

Key Pairs

Use access keys to make secure REST or Query protocol requests to any AWS service API. We create one for you when your account is created — see your access key below.

Your Access Keys

Created	Access Key ID	Secret Access Key	Status
October 26, 2009	[REDACTED]	Show 	Active (Make Inactive)
December 7, 2009	[REDACTED]	Show	Inactive (Make Active Delete)

For your protection, you should never share your secret access keys with anyone. In addition, industry best practice recommends frequent key rotation.

 [Learn more about Access Keys](#)

Account Identifier

Account Identifiers

AWS uses two types of account identifiers — canonical user ID and AWS account ID. These account identifiers are used to share resources between accounts.

The canonical user ID can be used exclusively for Amazon S3 resources such as buckets or files.

The AWS account ID can be used for all AWS service resources except Amazon S3. These resources include Amazon EC2 AMIs, Amazon EBS snapshots, Amazon SQS queues, etc.

AWS Account ID: [REDACTED]

Canonical User ID: [View canonical user ID](#)

 [Learn more about Account Identifiers](#)

Upload to S3

```
ec2-user@ip-10-170-242-220:/mnt — ssh — 80x24
[ec2-user@ip-10-170-242-220 mnt]$ ec2-upload-bundle -b luanwest -m /mnt/luan.ami
.manifest.xml -a [REDACTED] -s [REDACTED]
Uploading bundled image parts to the S3 bucket luanwest ...
Uploaded luan.ami.part.00
Uploaded luan.ami.part.01
Uploaded luan.ami.part.02
Uploaded luan.ami.part.03
Uploaded luan.ami.part.04
Uploaded luan.ami.part.05
Uploaded luan.ami.part.06
Uploaded luan.ami.part.07
Uploaded luan.ami.part.08
Uploaded luan.ami.part.09
```


Upload to S3

ec2-upload-bundle

-b luanwest

-m /mnt/luan.clhep.ami.manifest.xml

-a <access_id>

-s <secret_key>

On S3

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Elastic Beanstalk | S3 | EC2 | VPC | CloudWatch | Elastic MapReduce | CloudFront | RDS | SNS

Buckets

- computational-medicine-amis3
- computational-medicine-input
- computational-medicine-output
- luanwest**

Objects and Folders

luanwest

Name	Size	Last Modified
luan.ami.manifest.xml	5.7 KB	Mon Feb 07 20:04:37 GMT-700 2011
luan.ami.part.00	10 MB	Mon Feb 07 20:03:23 GMT-700 2011
luan.ami.part.01	10 MB	Mon Feb 07 20:03:26 GMT-700 2011
luan.ami.part.02	10 MB	Mon Feb 07 20:03:29 GMT-700 2011
luan.ami.part.03	10 MB	Mon Feb 07 20:03:32 GMT-700 2011
luan.ami.part.04	10 MB	Mon Feb 07 20:03:36 GMT-700 2011
luan.ami.part.05	10 MB	Mon Feb 07 20:03:39 GMT-700 2011
luan.ami.part.06	10 MB	Mon Feb 07 20:03:42 GMT-700 2011
luan.ami.part.07	10 MB	Mon Feb 07 20:03:45 GMT-700 2011

Transfers

Automatically clear finished transfers

Delete: Deleting 28 objects from luanwest Done

Registering AMI

```
Terminal - bash - 80x24
ssh bash bash
dhcp-20:~ sluan$ ec2-register --region us-west-1 luanwest/image.manifest.xml
WARNING: Ignoring extra parameter(s): [ us-west-1, luanwest/image.manifest.xml
]
Client.InvalidManifest: Invalid manifest path: '????-region'
dhcp-20:~ sluan$ ec2-register luanwest/image.manifest.xml
IMAGE    ami-b5a7f7f0
dhcp-20:~ sluan$ █
```

AMI Added

Request Instances Wizard

Cancel X



Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its **Select** button.

Quick Start

My AMIs

Community AMIs

Viewing: Owned By Me

1 to 37 of 37 Items

AMI ID	Root Device	Name	Platform	
ami-25491860	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-2f52036a	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-3d4d1c78	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-41722304	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-4b4c1d0e	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-4b4d1c0e	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-6b4a1b2e	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-6fa8f82a	instance-store	luanwest/luan.ami.manifest.xml	Other Linux	Select
ami-714c1d34	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-73481936	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-7d4c1d38	instance-store	computational-medicine-amis3/computational.medicine.wor	Other Linux	Select
ami-837223c6	instance-store	computational-medicine-amis3/computational.medicine.flss	Other Linux	Select

Deregister AMI



```
Terminal — bash — 80x24
bash
bash
ec2-user@i.../mnt — ssh
bash
bash
dhcp-20:US_West sluan$ ec2-deregister ami-b5a7f7f0
IMAGE    ami-b5a7f7f0
dhcp-20:US_West sluan$ █
```

Login to the New AMI

```
ec2-user@ip-10-170-246-221:~ -- ssh -- 80x24
bash bash ec2-user@i.../mnt -- bash ec2-user@i...221:~ -- ssh bash
dhcp-20:US_West sluan$ ls
Luan_West_MC_keypair.pem
dhcp-20:US_West sluan$ ssh -i Luan_West_MC_keypair.pem ec2-user@ec2-204-236-141-88.us-west-1.compute.amazonaws.com
The authenticity of host 'ec2-204-236-141-88.us-west-1.compute.amazonaws.com (204.236.141.88)' can't be established.
RSA key fingerprint is 4b:73:d1:55:6b:a7:26:8b:81:ce:bd:f6:3b:14:24:49.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-204-236-141-88.us-west-1.compute.amazonaws.com,204.236.141.88' (RSA) to the list of known hosts.
Last login: Mon Feb  7 19:16:14 2011 from dhcp-20.cs.unm.edu

  __|  __|_ ) Amazon Linux AMI
  _| ( / Beta
  ___|\___|___|

See /usr/share/doc/amzn-ami/image-release-notes for latest release notes. :-)
[ec2-user@ip-10-170-246-221 ~]$
```

Shutting Down Instance

The screenshot displays the AWS Management Console interface. The browser address bar shows the URL `https://console.aws.amazon.com/ec2/home?region=us-west-1#s=Instances`. The page title is "AWS Management Console". The navigation pane on the left shows the "EC2 Dashboard" and "INSTANCES" section, with "Instances" selected. The main content area is titled "My Instances" and shows a table of instances. One instance is selected, and the "Instance Actions" menu is open, with "Terminate" highlighted. The instance details for "EC2 Instance: i-36fe8272" are shown below the table.

Name	Instance	AMI ID	Root Device	Type	Status	Security Groups	Key Pair Name	Monitoring	Virtualization	Placement Group
<input checked="" type="checkbox"/>	i-36fe8272	ami-655a0a20	eph	m1.small	running	Luan_SSH_HTTP	Luan_West_MC_keypair	basic	paravirtual	

1 EC2 Instance selected

EC2 Instance: i-36fe8272

Description	Monitoring	Tags
AMI ID:	ami-655a0a20	
Security Groups:	Luan_SSH_HTTP	
Status:	running	
Zone:	us-west-1c	
Type:	m1.small	
Owner:	959394824376	

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