

Deploying ICE on the Amazon Cloud

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The following are community submitted instructions for deploying Infobright Community Edition (ICE) on the Amazon Elastic Compute Cloud (EC2).

Amazon instances come in several different configurations (aws.amazon.com/ec2/#instance). For running Infobright instances, it's best to consider their larger memory setups:

- Large Instance 7.5 GB of memory, 4 EC2 Compute Units (2 virtual cores)
- Extra Large Instance 15 GB of memory, 8 EC2 Compute Units (4 virtual cores)
- High-CPU Extra Large Instance 7 GB of memory, 20 EC2 Compute Units (8 virtual cores)

For most deployments the first two should be sufficient. However, if you have a specific need for more virtual processors running at the same time, the last instance might be appropriate. The first instance costs about \$300/month to run, the other two are about \$600 each.

After choosing the instance, you need to choose the flavour of Linux you want to install. The instructions are detailed for Ubuntu Linux, and using electronic block storage.

Getting Started

Review the Amazon Getting Started Guide:

<http://docs.amazonwebservices.com/AWSEC2/2008-12-01/GettingStartedGuide/>

Ensure your local client computer is set up for talking to EC2:

<http://docs.amazonwebservices.com/AWSEC2/2008-12-01/GettingStartedGuide/index.html?prerequisites.html>

Installation Instructions

Note: the installation instructions assume you are using Ubuntu.

1. Install Java 5, if not already present:

```
apt-get install sun-java5-jdk
```

Install SSH if not already present:

```
apt-get install openssh-server openssh-client
```

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2. Set your JAVA_HOME environment variable by adding the following to the end of .bashrc

```
export JAVA_HOME=/usr/lib/jvm/java-1.5.0-sun
```

3. Create an account on EC2:

<http://docs.amazonwebservices.com/AWSEC2/2008-12-01/GettingStartedGuide/account.html>

4. Set up your local machine with your EC2 account info. This will allow you to communicate with your cloud account and remote machines. Details are at the bottom of the previous linked page.

```
cd ~  
mkdir .ec2
```

Then save your cert-xxxx.pm and pk-xxxx.pem files to that directory.

5. Set up EC2 local tools with the apps:

<http://docs.amazonwebservices.com/AWSEC2/2008-12-01/GettingStartedGuide/setting-up-your-tools.html>

Copy the tools to ~/bin and make a symbolic link...

```
cd ~/bin  
ln -s ec2-api-tools-1.3-30349 ec2-api-tools
```

Add the following to .bashrc:

```
export EC2_HOME=~/bin/ec2-api-tools  
export PATH=$PATH:$EC2_HOME/bin  
export EC2_PRIVATE_KEY=~/ec2/pk-xxxx.pem  
export EC2_CERT=~/ec2/cert-xxxx.pem
```

Note: Replace 'xxxx.pem' with whatever your file names are

6. Create a key pair

Review <http://docs.amazonwebservices.com/AWSEC2/2008-12-01/GettingStartedGuide/running-an-instance.html>

Follow the steps for creating an SSH keypair:

```
ec2-add-keypair gsg-keypair  
cd ~/.ec2  
nano id_rsa-gsg-keypair  
(paste the output of the first line into the file. Not all the output.  
See the linked guide for details)  
chmod 600 id_rsa-gsg-keypair
```

7. Run your instance

Create a large (7.5 gig) Ubuntu instance with the following (this will take some time):

```
ec2-run-instances ami-17d7337e --instance-type m1.large -k gsg-keypaircd ~/.ec2
```

When complete, run:

```
ec2-describe-instances
```

You should see the full detail of your new instance and a URL for it (i.e., 'ec2-123-456-789-248.compute-1.amazonaws.com').

SSH into your instance. Replace the following command with your URL:

```
ssh -i ~/.ec2/id_rsa-gsg-keypair root@ec2-123-456-789-248.compute-1.amazonaws.com
```

After the SSH key is approved, you should be logged in as root to your instance.

8. Install ICE

The bigger drives on the instance are on /mnt:

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/sda1	10403128	576268	9302572	6%	/
varrun	3936020	40	3935980	1%	/var/run
varlock	3936020	0	3936020	0%	/var/lock
udev	3936020	20	3936000	1%	/dev
devshm	3936020	0	3936020	0%	/dev/shm
/dev/sdb	433455904	219128	411218472	1%	/mnt

You can use that location for set up, but do not leave things there for the long term.

```
cd /mnt
mkdir downloads
cd downloads
wget
http://www.infobright.org/mint/pepper/tillkruess/downloads/tracker.php?url=http%3A//www.infobright.org/images/uploads/ice/IB_3.1/infobright-3.1-x86_64.tar.gz
```

Follow the ICE installation instructions (www.infobright.org/wiki/Install_Guide/) with the following path changes:

```
cd /usr/local/
gunzip < /mnt/downloads/infobright-3.1-x86_64.tar.gz | tar xvf -
ln -s /usr/local/infobright-3.1-x86_64 infobright
cd infobright
```

9. Create an EBS volume for data

To hold your data, you want something more permanent than /mnt. You can also install your apps on these drives, but if you need to create a new instance later, you'll have to re-setup your /etc/init.d scripts, etc, so it might be best to re-install IB and other apps on new instances.

See the following guide:

<http://docs.amazonwebservices.com/AWSEC2/latest/DeveloperGuide/index.html?ebs-creating.html>

Open a new terminal window. Your EBS block and your instance need to be in the same zone. To determine what zone your instance is in, run:

```
ec2-describe-instances
```

Look for the zone in the output (i.e., us-east-1c).

Create the volume, replacing the number of GBs size you want and zone in the following command:

```
ec2-create-volume -s <GBs size> -z <zone>
```

Check on the status by running:

```
ec2-describe-volumes
```

Wait till you see 'available' and identify the **volume id** from the output. Then identify **your instance id** by running:

```
ec2-describe-instances
```

Then run the following:

```
ec2-attach-volume <volume-id> --instance <instance-id> --device  
<device-to-map-volume> /dev/sdh
```

The last parameter is the device you want the volume mapped to on your server (i.e., /dev/sdh).

From your remote SSL Linux terminal, you should be able to see the new device (try 'ls /dev/sd*'). Create the file system and mount the drive:

```
yes | mkfs -t ext3 /dev/sdh  
mkdir /mnt/ibdata  
mount /dev/sdh /mnt/ibdata
```

You should now be able to cd into /mnt/ibdata and see the directory. This is where you'll keep your data.

10. Finish the ICE install.

The following command should be sufficient. All that's changed is the data directory:

```
cd /usr/local/infobright
./install-infobright.sh --datadir=/mnt/ibdata/data --
cachedir=/usr/local/infobright/cache --port=3306 --config=/etc/my-
ib.cnf --socket=/tmp/mysql-ib.sock --user=mysql --group=mysql --force
```

This should create a data directory 'data' in the mounted EBS volume '/mnt/ibdata'. Remember to update your brighthouse.ini values as described here:

http://www.infobright.org/wiki/Install_Guide_Part_2/

The Amazon instances are 7.5 and 15GB. You can use the 8 and 16GB settings described on the above page.

Start ICE:

```
/etc/init.d/mysqld-ib start
mysql-ib
mysql> create database ibtest

mysql> use ibtest
mysql> create table ibtable(someval integer);
mysql> show create table ibtable;
+-----+-----+
| Table | Create Table
+-----+-----+
| ibtable | CREATE TABLE `ibtable` (
  `someval` int(11) DEFAULT NULL
) ENGINE=BRIGHTHOUSE DEFAULT CHARSET=ascii COLLATE=ascii_bin |
+-----+-----+
1 row in set (0.00 sec)
```