# Harvard DataFest2018: Geospatial Data Management with PostGIS

I. Install on Ubuntu Server on Amazon EC2:

## Account Creation and EC2 Launch

1. Create an account on Amazon AWS, if you don’t already have one (<https://aws.amazon.com/>)
2. Sign in to console and click on EC2
3. Click on Launch Instance
4. Select instance type- Ubuntu Server 16.04 LTS (HVM), SSD Volume Type
5. Select t2.micro as Type
6. Click Review and Launch
7. Click Launch
8. Create new key-value pair
9. Give a name to key-value pair
10. Download key-value pair. Save it securely, you will need it later

For more info, please see:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html>

## SSH using Terminal in Mac or PuTTY in Windows

*For Mac/Linux users:*

1. Open an SSH client. (find out how to [connect using PuTTY](https://docs.aws.amazon.com/console/ec2/instances/connect/putty) in Windows) or open terminal in MAC
2. Locate your private key file (e.g. **test-postgis**.pem).
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:
4. chmod 400 test-postgis.pem
5. Connect to your instance using its Public DNS which can be found on the EC2 console: (will look like: ec2-52-23-164-28.compute-1.amazonaws.com)

SSH command example:

ssh -i "test-postgis.pem" [ubuntu@ec2-52-23-164-28.compute-1.amazonaws.com](mailto:ubuntu@ec2-52-23-164-28.compute-1.amazonaws.com)

*For windows users:*

connect to your EC2 instance using instructions at this link:

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html>

## How to install PostgreSQL and PostGIS on Amazon EC2

Install PostgreSQL 9.6 and PostGIS 2.3 by running the instructions on Ubuntu command

1. To install current version 9.6 you have to add the official PostgreSQL Apt Repository to your sources.list:  
   sudo add-apt-repository "deb http://apt.postgresql.org/pub/repos/apt/ xenial-pgdg main"
2. Import the relevant signing key:  
   wget --quiet -O - https://www.postgresql.org/media/keys/ACCC4CF8.asc | sudo apt-key add
3. Update your packages:  
   sudo apt update
4. Start installing PostgreSQL 9.6 and the “contrib” package to add additional utilities and functionality to the database:  
   sudo apt install postgresql-9.6 postgresql-contrib-9.6
5. Check your PostgreSQL Version:  
   psql --version

The output should look somehow like this: psql (PostgreSQL) 9.6.2

1. Create a new database user(replace “dkakkar” with your name):  
   sudo -u postgres createuser -P dkakkar  
   You will be prompted for a password.
2. Create a new database (replace “dkakkar” with your username and “gisdata” with whatever you want to name your database):  
   sudo -u postgres createdb -O dkakkar gisdata
3. Test if your database works correctly:  
   psql -h localhost -U dkakkar gisdata

As an output you should see something like this:  
psql (9.6.2)  
SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 256, compression: off)  
Type "help" for help.  
gisdata=>

1. Exit psql:  
   \q

## Add PostGIS support to your database:

1. Add UbuntuGIS-unstable repository and update packages:

sudo add-apt-repository ppa:ubuntugis/ubuntugis-unstable  
sudo apt update

1. Install PostGIS:  
   sudo apt install postgis postgresql-9.6-postgis-2.3
2. Create extensions for your postgres database:  
   sudo -u postgres psql -c "CREATE EXTENSION postgis; CREATE EXTENSION postgis\_topology;" gisdata
3. Connect to Postgres/ PostGIS:

psql -h localhost -U dkakkar gisdata

1. Check Postgis version:

SELECT postgis\_full\_version();

1. Exit

\q

For more info please see:

<http://www.gis-blog.com/how-to-install-postgis-2-3-on-ubuntu-16-04-lts/>

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