# **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. Update your packages:  
   sudo apt update
2. Start installing PostgreSQL 9.6 and the “contrib” package to add additional utilities and functionality to the database:  
   sudo apt install postgresql postgresql-contrib
3. Start the service

sudo systemctl start postgresql

1. 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. Install PostGIS:  
   sudo apt install postgis
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/

For questions please contact: [kakkar@fas.harvard.edu](mailto:kakkar@fas.harvard.edu)