Copy the VM
Install PGADMIN4 in client.
Install Qgis in client.

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Lab PostgreSQL server IP: xx

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While in terminal, log in to the psql console as postgres user:

```
sudo -u postgres psql
CREATE EXTENSION adminpack;

CREATE DATABASE gisdb;
\connect gisdb;

CREATE SCHEMA postgis;
ALTER DATABASE gisdb SET search_path=public, postgis, contrib;
\connect gisdb;
CREATE EXTENSION postgis SCHEMA postgis;


SELECT postgis_full_version();
```

==========

```
ogr2ogr -f "PostgreSQL" PG:"host=localhost port=5432 dbname=gisdb
user=postgres password=Postgres" tlgdb_2016_a_us_school.gdb -progress
--config PG_USE_COPY YES
ogr2ogr -f "PostgreSQL" PG:"host=localhost port=5432 dbname=gisdb
user=postgres password=Postgres" tlgdb_2016_a_us_areawater.gdb  -
progress --config PG_USE_COPY YES
```

==========

```
drop view coloradoStateIntersectionCountyCentroid;
create view coloradoStateIntersectionCountyCentroid as
SELECT c.gid, c.name, st_area(c.the_geom) area,
st_centroid(c.the_geom) dist
FROM    tiger_data.county_all c, tiger_data.state_all s
WHERE   s.name='Colorado'
        and ST_intersects(s.the_geom,c.the_geom);
```

```
drop  view ColoradoCountiesCentroidArea;
create  view ColoradoCountiesCentroidArea as
SELECT   c.gid,   c.name countyName,
        ST_Area( ST_Transform(c.the_geom, 2249)) / 27878400 area_sqMi,
                 st_centroid(c.the_geom) as the_geom
FROM     tiger_data.county_all c, tiger_data.state_all s
WHERE    s.name='Colorado'
         and ST_intersects(s.the_geom,c.the_geom);
```

```
Create View ColoradoStateIntersects AS select c.*
from tiger_data.county_all c, tiger_data.state_all s
where s.name='Colorado' and ST_intersects(s.the_geom,c.the_geom);

Create View ColoradoStateContains AS select c.*
from tiger_data.county_all c, tiger_data.state_all s
where s.name='Colorado' and ST_Contains(s.the_geom,c.the_geom);
```

```
Create View ColoradoHydrography AS select h.*
from tiger_data.state_all s, public.areal_hydrography h
where s.name='Colorado' and ST_Contains(s.the_geom,h.wkb_geometry);
```

```
Create View ColoradoDenverHydrography AS select h.*
from tiger_data.county_all c, tiger_data.state_all s,
public.areal_hydrography h
where   s.name='Colorado'
                 and c.name='Denver'
                 and ST_Contains(s.the_geom,c.the_geom)
                 and ST_Contains(c.the_geom,h.wkb_geometry);
```