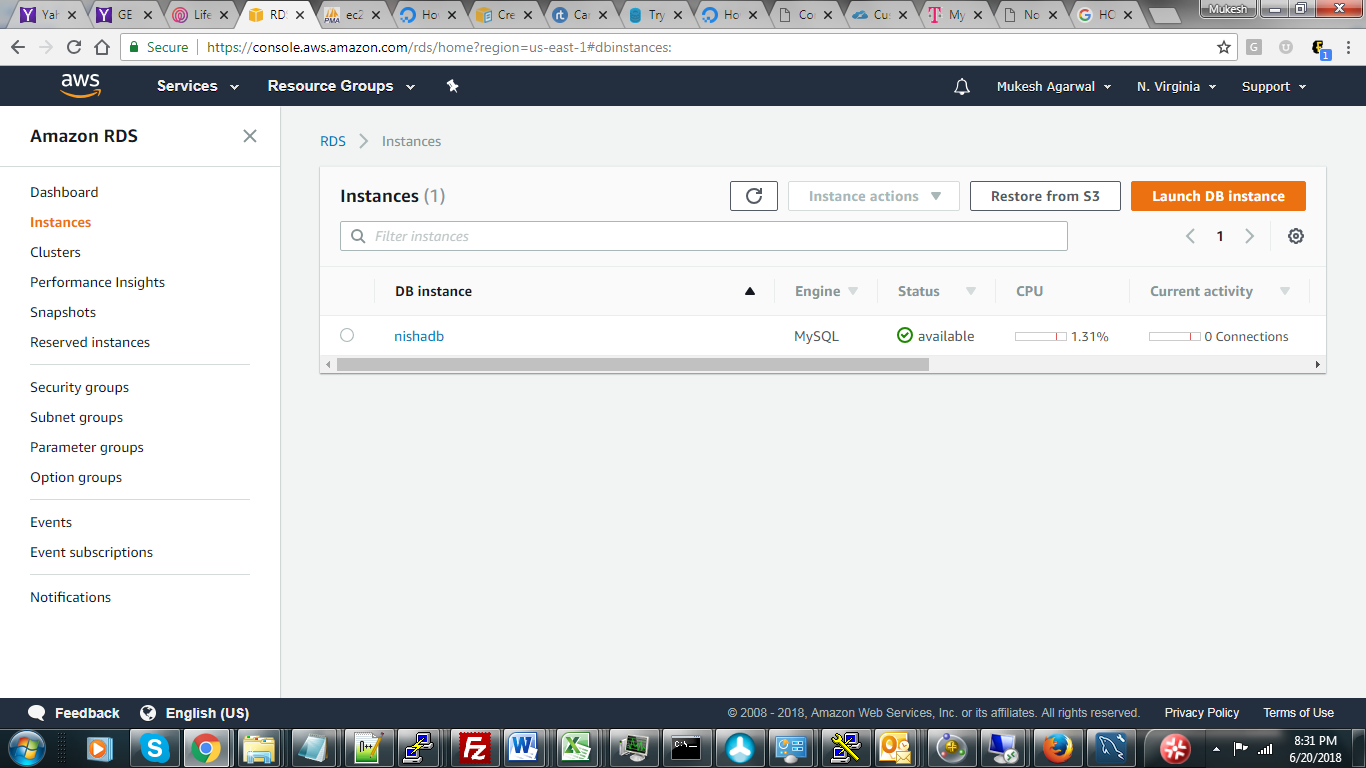
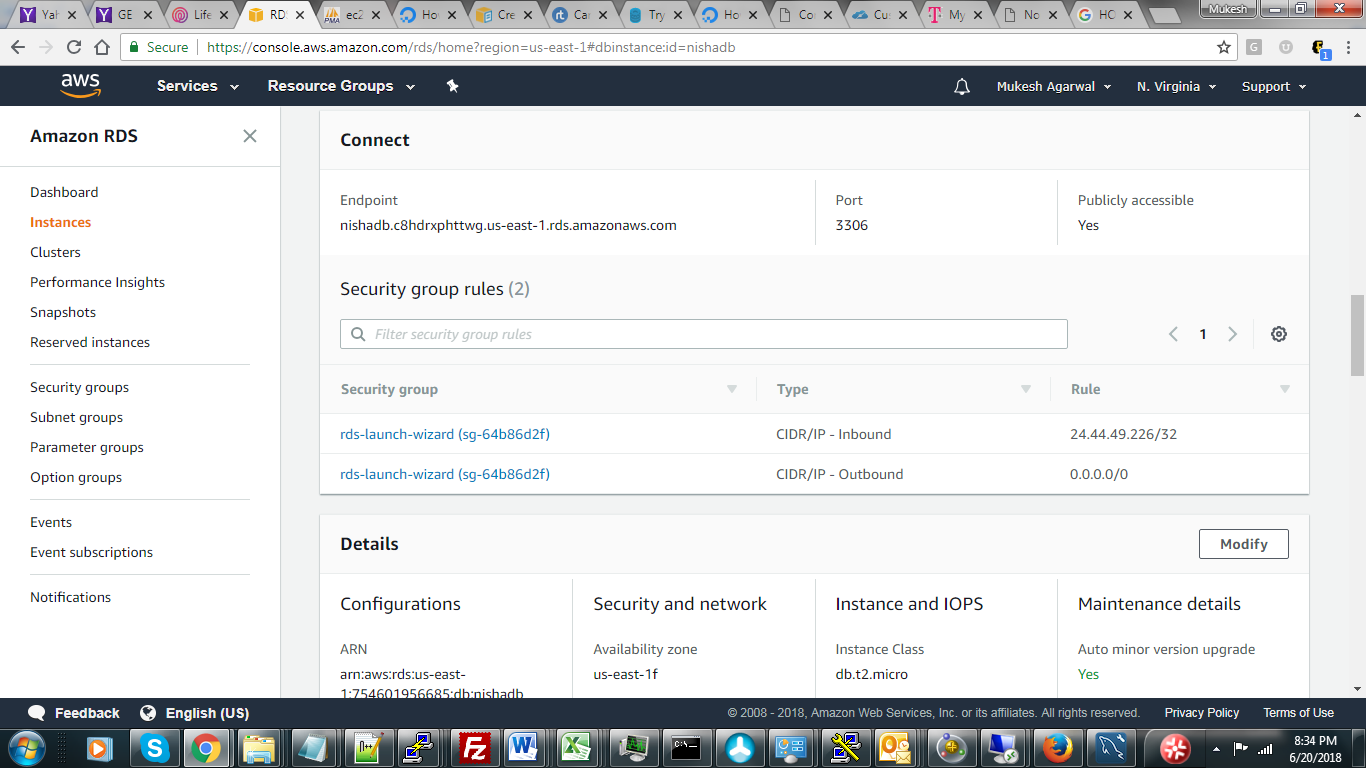
**Amazon RDS: Quick way to get database on cloud for quick deployment and very less investment.**

**We bought one instance of MySQL on Amazon RDS.**



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**End point and Port# is needed to connect to Amazon RDS.**

**STEPS TO PREPARE DATABASE:**

* **Due to Port# 3306 being blocked in Rutgers Class, we have decided to use local copy of the database.**
* **Build Database**

Create database bootcamp;

* **Create database table compatible with CSV World Bank file**

create table country\_indicator\_flat (

country\_name nvarchar(1000) DEFAULT NULL,

country\_code nvarchar(20) DEFAULT NULL,

indicator\_name nvarchar(1000) DEFAULT NULL,

indicator\_code nvarchar(25) DEFAULT NULL,

yr\_1960 nvarchar(25) DEFAULT NULL,

yr\_1961 nvarchar(25) DEFAULT NULL,

yr\_1962 nvarchar(25) DEFAULT NULL,

yr\_2015 nvarchar(25) DEFAULT NULL,

yr\_2016 nvarchar(25) DEFAULT NULL,

yr\_2017 nvarchar(25) DEFAULT NULL

) ENGINE=INNODB DEFAULT CHARSET=ascii COLLATE=ascii\_bin;

* **Load CSV file into database table “country\_indicator\_flat”**

LOAD DATA LOCAL INFILE '$DIR/WorldBankData.csv'

INTO TABLE country\_indicator\_flat

FIELDS TERMINATED BY ','

ENCLOSED BY '\"'

LINES TERMINATED BY '\n'

IGNORE 1 LINES

* **Build another table to organize data by country, year and indicator type.**

create table country\_indicator (

country\_indicator\_id INT(11) AUTO\_INCREMENT PRIMARY KEY,

country\_code nvarchar(20) NULL,

country\_id int NULL,

indicator\_code nvarchar(25) NULL,

indicator\_id int NULL,

year int NULL,

indicator\_value double NULL

);

* **Load country\_indicator table as follows:**

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value) select country\_code, indicator\_code, 1960, CAST(yr\_1960 as decimal(22,6)) from country\_indicator\_flat where yr\_1960 is not NULL and yr\_1960 REGEXP '[eE+-.0-9]';

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value)

select country\_code, indicator\_code, 1961, CAST(yr\_1961 as decimal(22,6)) from country\_indicator\_flat where yr\_1961 is not NULL and yr\_1961 REGEXP '[eE+-.0-9]';

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value) select country\_code, indicator\_code, 1962, CAST(yr\_1962 as decimal(22,6)) from country\_indicator\_flat where yr\_1962 is not NULL and yr\_1962 REGEXP '[eE+-.0-9]';

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value) select country\_code, indicator\_code, 1963, CAST(yr\_1963 as decimal(22,6)) from country\_indicator\_flat where yr\_1963 is not NULL and yr\_1963 REGEXP '[eE+-.0-9]';

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value) select country\_code, indicator\_code, 2016, CAST(yr\_2016 as decimal(22,6)) from country\_indicator\_flat where yr\_2016 is not NULL and yr\_2016 REGEXP '[eE+-.0-9]';

insert into country\_indicator (country\_code, indicator\_code, year, indicator\_value) select country\_code, indicator\_code, 2017, CAST(yr\_2017 as decimal(22,6)) from country\_indicator\_flat where yr\_2017 is not NULL and yr\_2017 REGEXP '[eE+-.0-9]';

**We have approx. 4 million rows.**

* **Create abbreviated table to house indicators that we need for report.**

CREATE TABLE `country\_indicator\_abbr` (

`country\_indicator\_id` int(11) NOT NULL AUTO\_INCREMENT,

`country\_code` varchar(20) CHARACTER SET utf8 COLLATE utf8\_general\_ci DEFAULT NULL,

`country\_id` int(11) DEFAULT NULL,

`indicator\_code` varchar(25) CHARACTER SET utf8 COLLATE utf8\_general\_ci DEFAULT NULL,

`indicator\_id` int(11) DEFAULT NULL,

`year` int(11) DEFAULT NULL,

`indicator\_value` double DEFAULT NULL,

PRIMARY KEY (`country\_indicator\_id`),

KEY `idx1\_country\_code` (`country\_code`),

KEY `idx2\_indicator\_code` (`indicator\_code`)

) ENGINE=InnoDB AUTO\_INCREMENT=5341098 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4\_0900\_ai\_ci;

* **Load abbreviated table.**
* **Created views for reports**

CREATE VIEW GDP\_IN\_USD\_ABBR\_VIEW AS SELECT year, ci.country\_code, country\_name, ci.indicator\_code, indicator\_name, indicator\_value FROM country\_indicator\_abbr ci

LEFT JOIN indicator i ON ci.indicator\_id = i.indicator\_id LEFT JOIN country c ON ci.country\_id = c.country\_id

WHERE i.indicator\_code = 'NY.GDP.MKTP.CD' AND year BETWEEN 1990 AND 2016;

SELECT \* FROM GDP\_IN\_USD\_ABBR\_VIEW;

CREATE VIEW TOTAL\_POPULATION\_ABBR\_VIEW AS SELECT year, ci.country\_code, country\_name, ci.indicator\_code, indicator\_name, indicator\_value FROM country\_indicator\_abbr ci

LEFT JOIN indicator i ON ci.indicator\_id = i.indicator\_id LEFT JOIN country c ON ci.country\_id = c.country\_id

WHERE i.indicator\_code = 'SP.POP.TOTL' AND year BETWEEN 1990 AND 2016;

SELECT \* FROM TOTAL\_POPULATION\_ABBR\_VIEW;

CREATE VIEW PCT\_RENEWABLE\_ENERGY\_ABBR\_VIEW AS SELECT year, ci.country\_code, country\_name, ci.indicator\_code, indicator\_name, indicator\_value FROM country\_indicator\_abbr ci

LEFT JOIN indicator i ON ci.indicator\_id = i.indicator\_id LEFT JOIN country c ON ci.country\_id = c.country\_id

WHERE i.indicator\_code = 'EG.ELC.RNEW.ZS' AND year BETWEEN 1990 AND 2016;

SELECT \* FROM PCT\_RENEWABLE\_ENERGY\_ABBR\_VIEW;

CREATE VIEW PCT\_ACCESS\_TO\_ELECTRICITY\_ABBR\_VIEW AS SELECT year, ci.country\_code, country\_name, ci.indicator\_code, indicator\_name, indicator\_value FROM country\_indicator\_abbr ci

LEFT JOIN indicator i ON ci.indicator\_id = i.indicator\_id LEFT JOIN country c ON ci.country\_id = c.country\_id

WHERE i.indicator\_code = 'EG.ELC.ACCS.ZS' AND year BETWEEN 1990 AND 2016;

SELECT \* FROM PCT\_ACCESS\_TO\_ELECTRICITY\_ABBR\_VIEW;

CREATE VIEW CO2\_EMISSION\_KT\_ABBR\_VIEW AS SELECT year, ci.country\_code, country\_name, ci.indicator\_code, indicator\_name, indicator\_value FROM country\_indicator\_abbr ci

LEFT JOIN indicator i ON ci.indicator\_id = i.indicator\_id LEFT JOIN country c ON ci.country\_id = c.country\_id

WHERE i.indicator\_code = 'EN.ATM.CO2E.KT' AND year BETWEEN 1990 AND 2016;

SELECT \* FROM CO2\_EMISSION\_KT\_ABBR\_VIEW;