

## **IS 497 T4B**

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### **Observations and comparisons about speed while performing imports:**

Our team observed different speed values for importing the two csv files into PostgreSQL on AWS. These are specified in the table given below:

Team Member	Shubhangi	Srishti	Tanya	Varad
Air Traffic Database 1	123.04 s	39.63 s	1173.27 s	1034.35 s
Air Traffic Database 2	114.32 s	39.59 s	1046.85 s	981.97 s

It is evident from the given table how the internet upload bandwidth has an effect on the speed of these uploads as Shubhangi and Srishti performed these uploads individually with the entire bandwidth of their home internet dedicated to this task while Tanya and Varad together performed this task and hence, the upload speed was way slower than the remaining two team members.

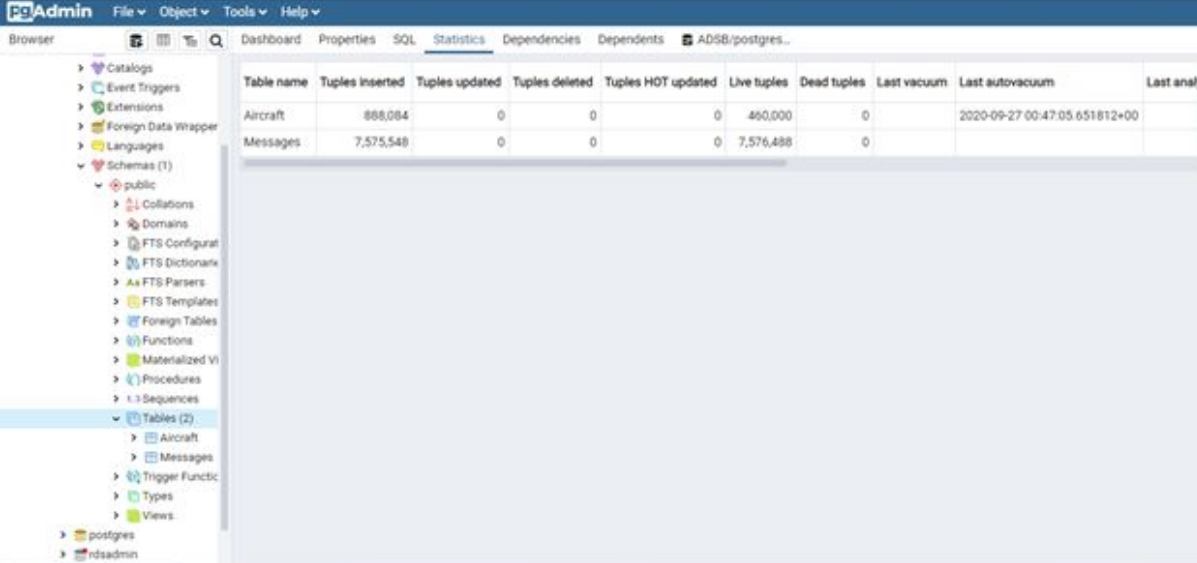
### **Observations and comparisons about storage space on AWS:**

The exact storage remaining for all the team members on AWS after performing these tasks represented values in the range of 16200 - 16600 MB. These are specified in the table below.

Team Member	Shubhangi	Srishti	Tanya	Varad
Remaining Storage Space	16550.47 MB	16549.86 MB	16464.28 MB	16212.34 MB

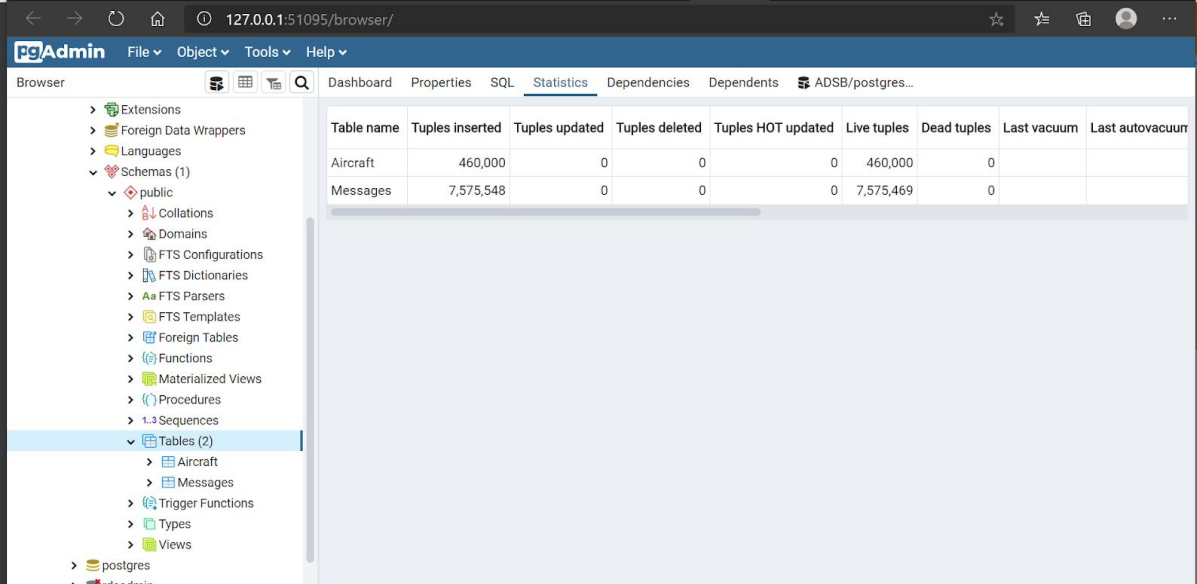
The values mentioned as remaining are out of the total available storage space of 20,000 MB in the AWS RDS instance. Thus, the space utilized is dependent on the various computations performed. Also, there is a lot of free space left for each one of us despite having imported three huge files and implementing basic queries on them.

## Tables imported and Statistics



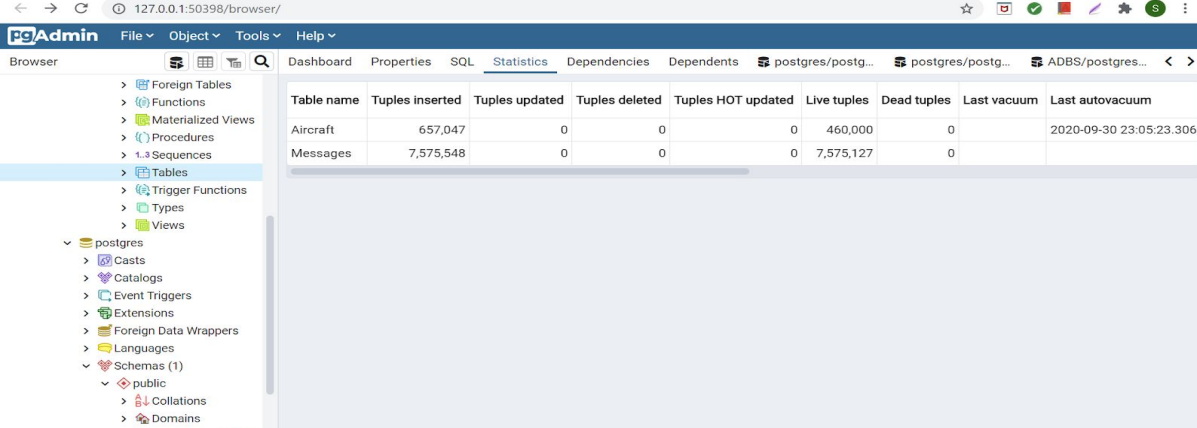
pgAdmin interface showing the Statistics tab for the 'public' schema. The table list on the left includes 'Aircraft' and 'Messages'. The main pane displays the following statistics:

Table name	Tuples inserted	Tuples updated	Tuples deleted	Tuples HOT updated	Live tuples	Dead tuples	Last vacuum	Last autovacuum	Last analyze
Aircraft	888,084	0	0	0	460,000	0		2020-09-27 00:47:05.651812+00	
Messages	7,575,548	0	0	0	7,576,488	0			



pgAdmin interface showing the Statistics tab for the 'public' schema. The table list on the left includes 'Aircraft' and 'Messages'. The main pane displays the following statistics:

Table name	Tuples inserted	Tuples updated	Tuples deleted	Tuples HOT updated	Live tuples	Dead tuples	Last vacuum	Last autovacuum	Last analyze
Aircraft	460,000	0	0	0	460,000	0			
Messages	7,575,548	0	0	0	7,575,469	0			



pgAdmin interface showing the Statistics tab for the 'public' schema. The table list on the left includes 'Aircraft' and 'Messages'. The main pane displays the following statistics:

Table name	Tuples inserted	Tuples updated	Tuples deleted	Tuples HOT updated	Live tuples	Dead tuples	Last vacuum	Last autovacuum	Last analyze
Aircraft	657,047	0	0	0	460,000	0		2020-09-30 23:05:23.306	
Messages	7,575,548	0	0	0	7,575,127	0			

### Evidence of implementation of basic SQL Queries

- 1) Query for finding all records from the table Aircraft for which 'icaoaircrafttype' is L1P

The screenshot displays the pgAdmin 4 web interface in a browser window. The address bar shows the URL `127.0.0.1:55542/browser/`. The interface includes a top navigation bar with 'PgAdmin', 'File', 'Object', 'Tools', and 'Help'. A left sidebar contains a tree view of the database structure, with 'Aircraft' under 'Tables (2)' selected. The main panel shows the 'Query Editor' for the database 'A55B/postgres@tanya3'. The query executed is:

```
1 SELECT *
2 FROM public."Aircraft"
3 WHERE lcaoaircrafttype like 'L1P'
```

The 'Query Output' tab displays the results of the query in a table with 13 columns: ID, PK, bigint, lcao24 character varying (20), registration character varying (20), manufacturercso character varying (42), manufacturename character varying (1000), and model character varying (100). The table contains 13 rows of data, including aircraft like 'F-GQJH', 'N493TR', 'G-ORAF', 'D-EFQV', 'D-KEPS', 'OE-KSD', 'G-OMAG', 'G-OFIX', 'D-EJAL', 'D-KEKG', 'SHJIAZHJANG', 'G-BJNJ', and 'G-ETAM'.

- 2) Query for displaying the 'icao24', 'manufacturername', 'model' and 'DateLogged' after performing inner join on the Aircraft and Messages tables

pgAdmin File Object Tools Help

Dashboard Properties SQL Statistics Dependencies Dependents ADSB/postgres@varadad2

ADSB/postgres@varadad2

Query Editor Query History Scratch Pad

```

1 Select a."icao24", a."manufacturername", a."model", m."DateLogged"
2 from public."Aircraft" as a INNER Join public."Messages" as m
3 ON a."icao24" = m."AircraftHex";

```

Data Output Explain Messages Notifications

	icao24 character varying (100)	manufacturername character varying (1000)	model character varying (100)	DateLogged date
1	424955	Dassault	Falcon 7X	2020-07-09
2	424955	Dassault	Falcon 7X	2020-07-09
3	424955	Dassault	Falcon 7X	2020-07-09
4	424955	Dassault	Falcon 7X	2020-07-09
5	424955	Dassault	Falcon 7X	2020-07-09
6	424955	Dassault	Falcon 7X	2020-07-09
7	424955	Dassault	Falcon 7X	2020-07-09
8	424955	Dassault	Falcon 7X	2020-07-09
9	424955	Dassault	Falcon 7X	2020-07-09
10	424955	Dassault	Falcon 7X	2020-07-09
11	424955	Dassault	Falcon 7X	2020-07-09