PROJECT DOCUMENTATION- User manual

.PROJECT TITLE - **“PostgreSQL Data Server migration within heterogeneous environment.”**

.Project duration- 1 June 2018 -18 June 2018

.Organisation- Bhaskaracharya Institute for Space Applications and Geoinformatics. Gandhinagar.

.Developers Team -Mr. Prashant Chauhan (project guide)

-Rahul Khandelwal

- K.G.Sankalp

-Vedant Patwary

(Team from Bits-Pilani)

Contacts- Sankalp(f20160683@hyderabad.bits-pilani.ac.in)

Rahul(f2016128@pilani.bits-pilani.ac.in)

Vedant(f2016031@pilani.bits-pilani.ac.in)

PROJECT DOCUMENTATION- User manual

1) Purpose-: To automate transfer of database from windows server to Ubuntu efficiently using batch file script.
2) Functional Requirements-:
   -Creating database using postgresSQL
   -Using Oracle Virtual box with Ubuntu Operating system as virtual machine installed or another computer with Ubuntu OS
   - Creating and connecting to Ubuntu Server using Pgadmin.

   *(The version used in the project is postgresql 10 and pgadmin4).

   -Little Understanding on Batch Script.

(* For the above mentioned tutorials are available on net and youtube. You can go through them.*)

3) Features added- 1.Progress meter

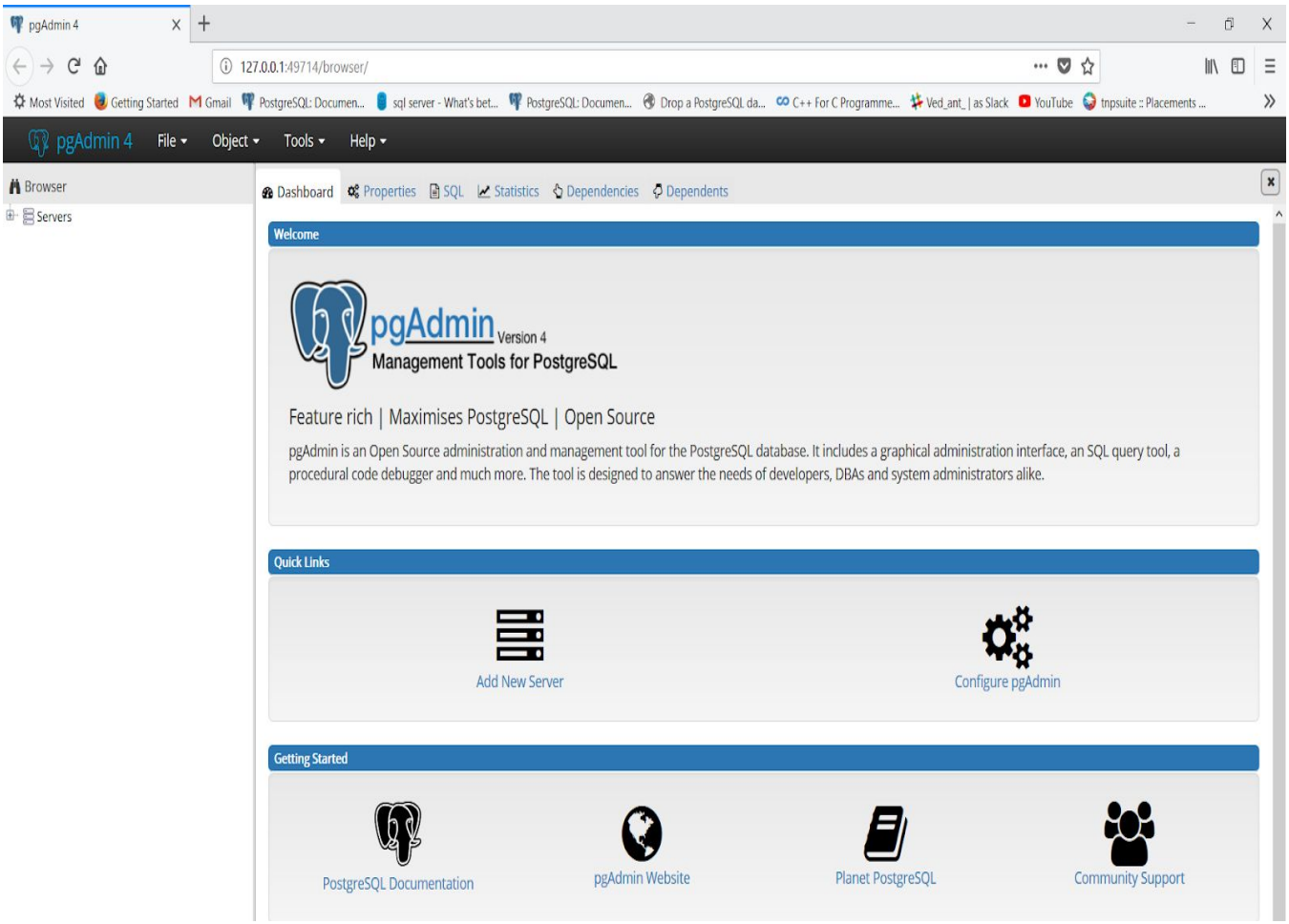
2.Saving log files with date and time.

3.Dynamic input in command prompt.

4.Postgis extension.

- Next comes the major part to efficiently automate the transfer the data from one server to other. We will be using batch script for this with .bat file extension and will be executed in the command line prompt.

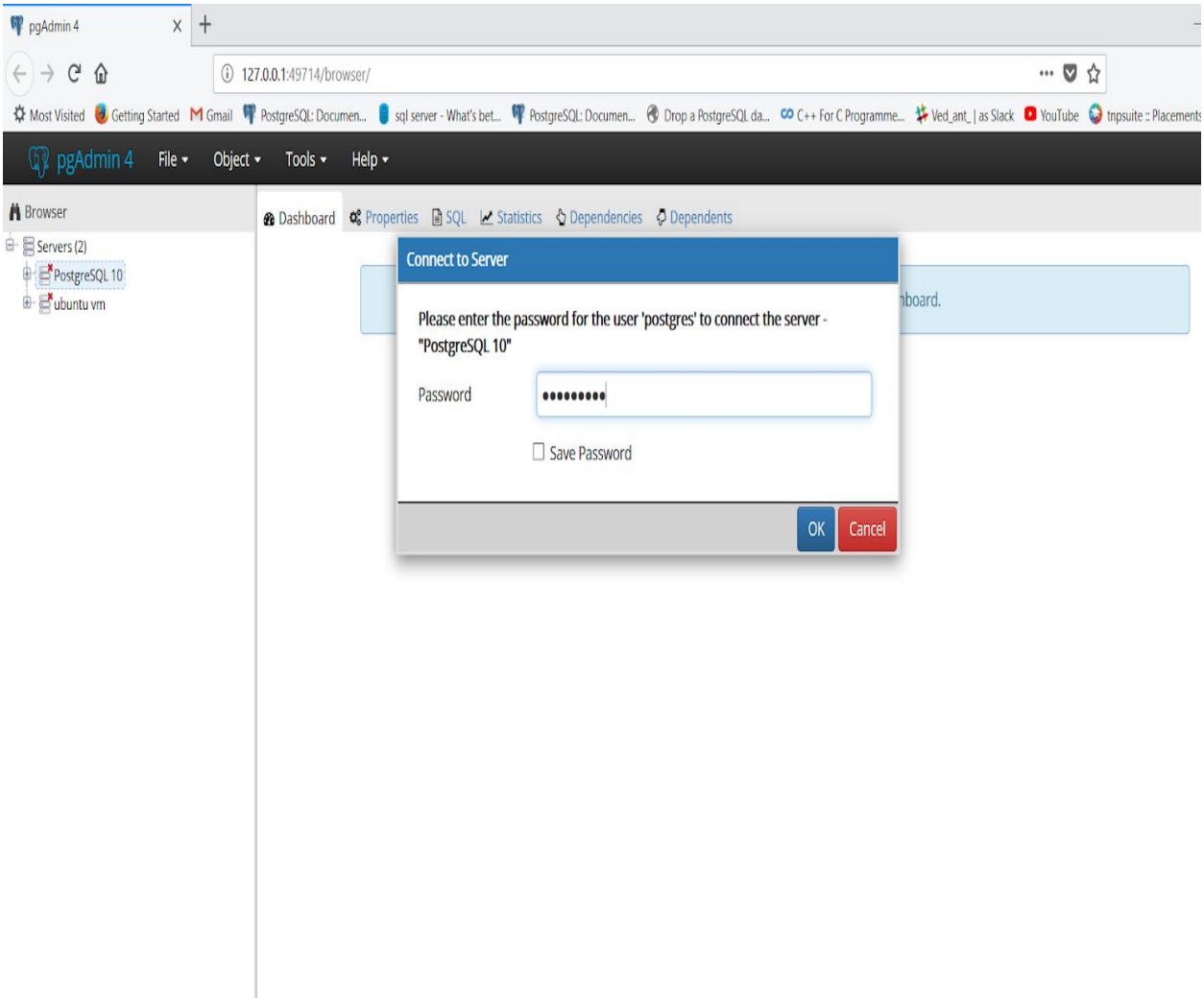
4) Now lets us familiarize ourselves on how to use the code, how it works, what it does.



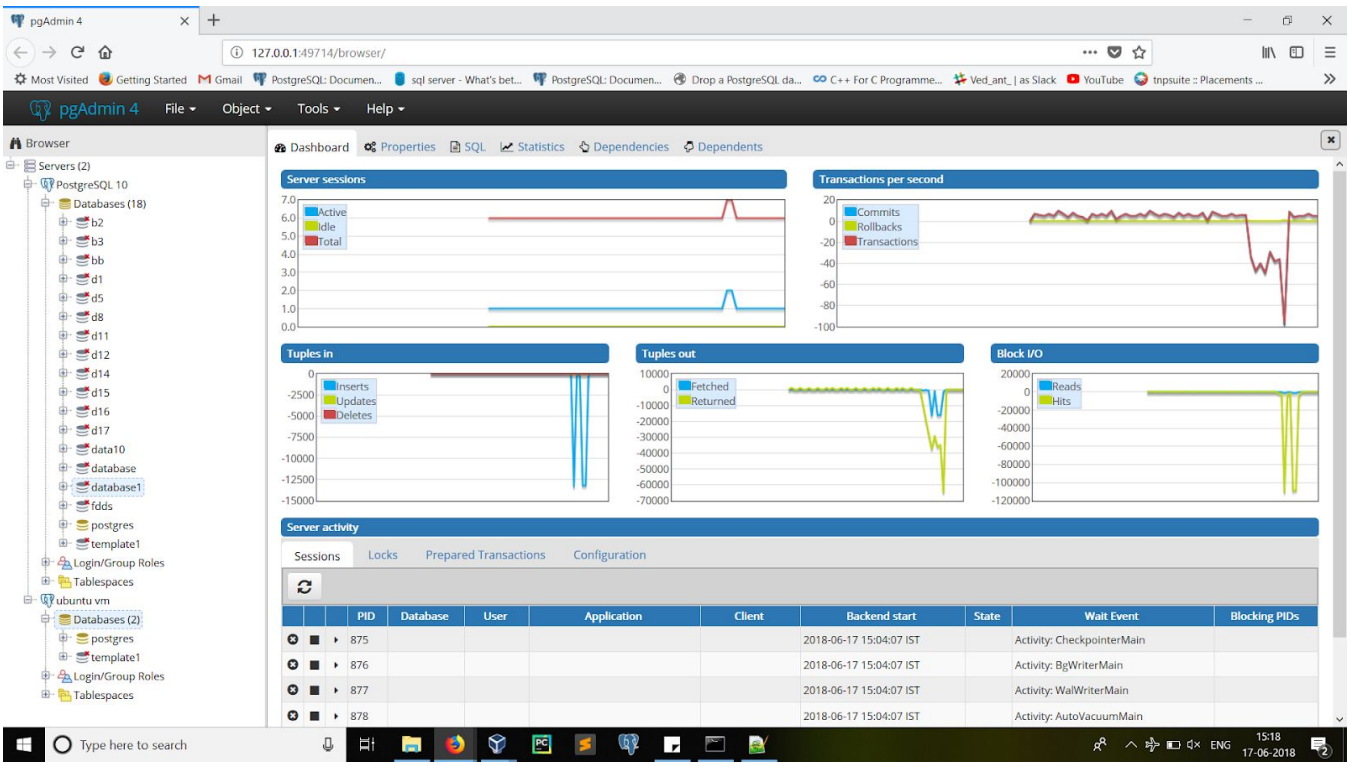
-The above image is the screenshot of the pgadmin4. You need to click the server option on the top left of the page to view the windows and Ubuntu servers.

.

-Next connect to the server both host and Ubuntu by left clicking on the respective server and enter the password that was set, as shown below.

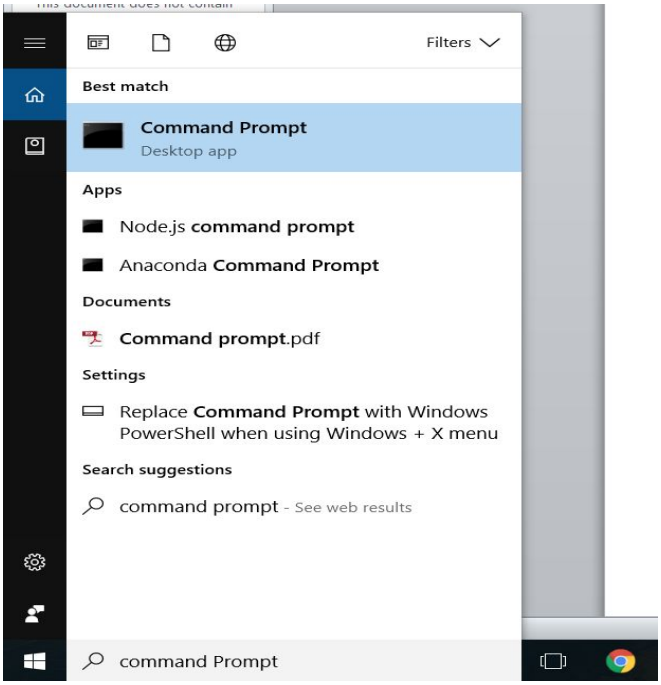


-The below image shows the databases in windows server to the left side of the page.Our task is to transfer this data to Ubuntu server .

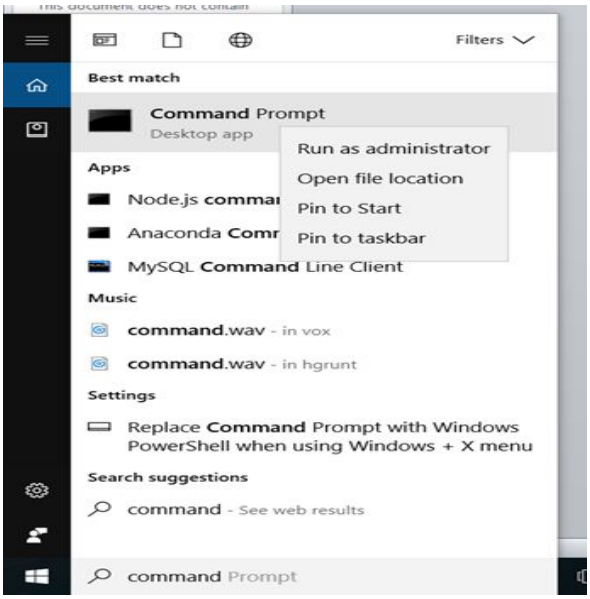


-To start with the data transfer ,here are the following steps to be followed to run the batch script in command prompt.

Step1- Type command prompt on search bar as shown below.



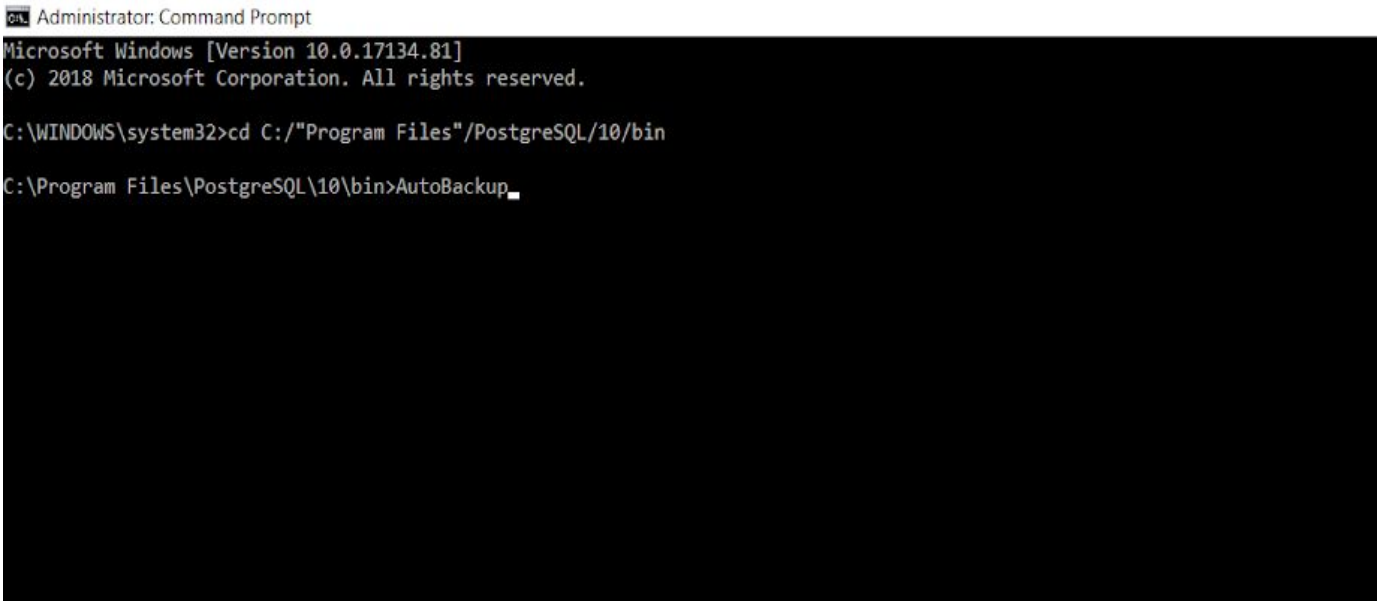
-Next Right click on Command Prompt, Click Run as Administrator and click yes on the popup.



You will see the command prompt screen as shown below.

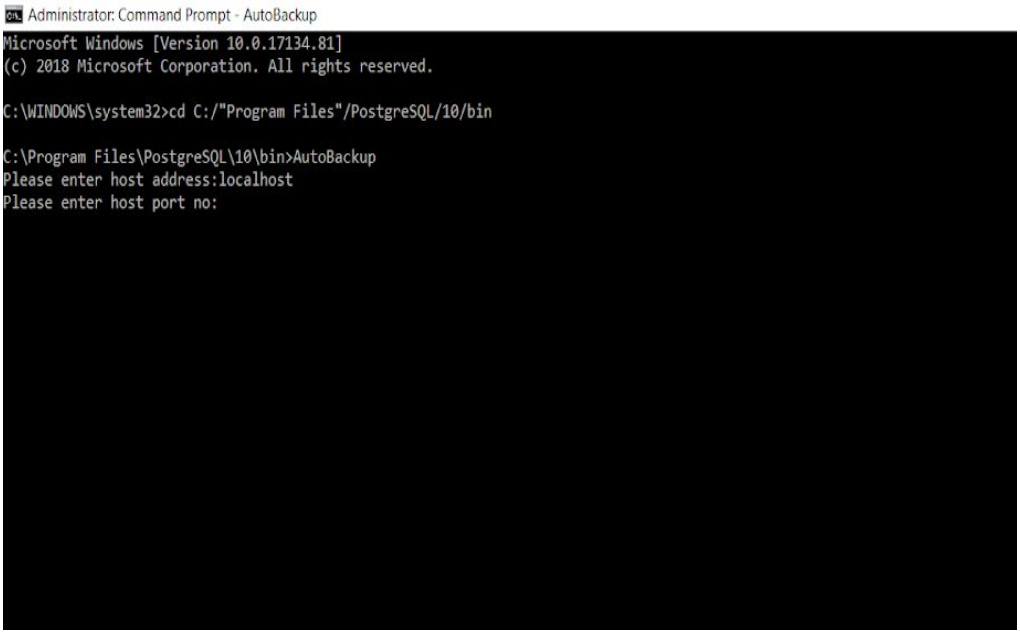
Step2- Then change directory to the base directory where the .bat file is stored i.e. C:/"ProgramFiles"/PostgreSQL/10/bin in this case.

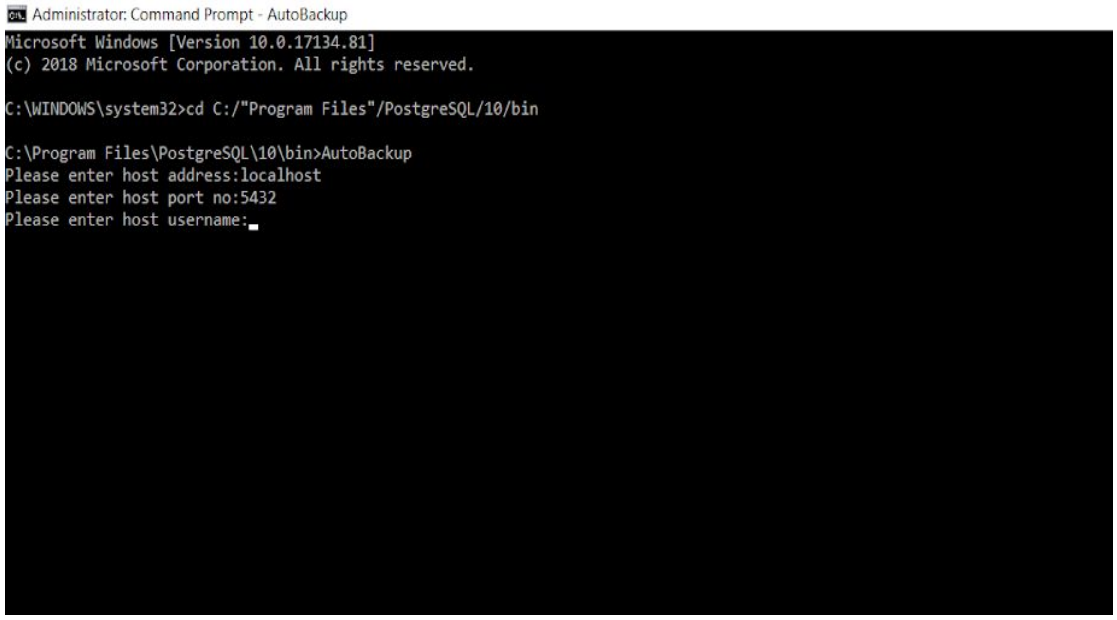
Step3- Type the name of the bat file and press enter as shown below . *Here it is AutoBackup.



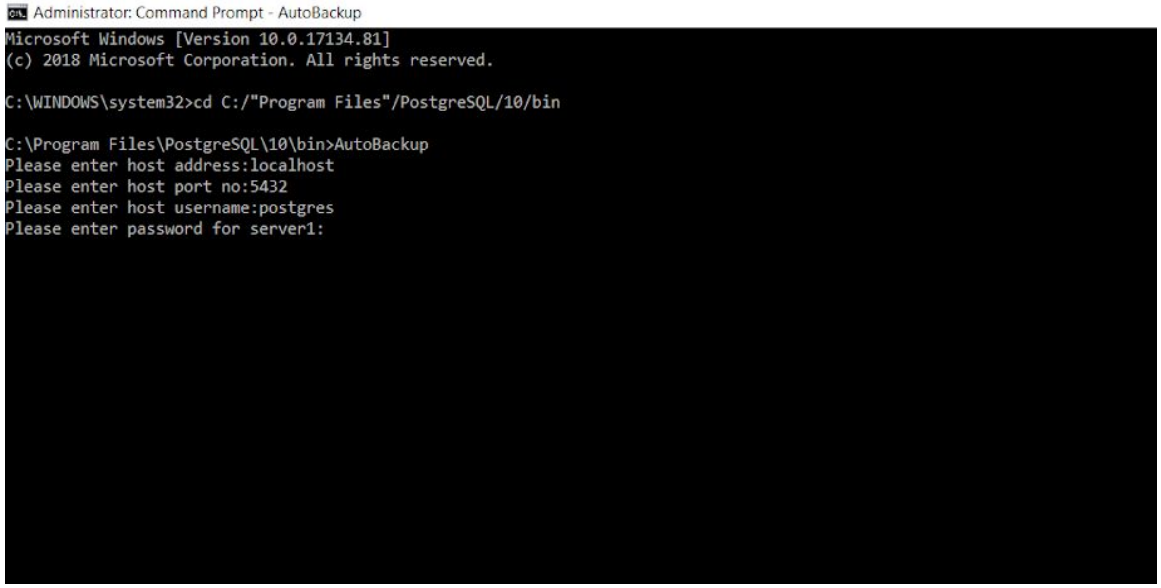
Step4- Then you will see the below asking for host address. Enter the host address and press enter.(* Here it is localhost).

-Then it will ask for host port number as shown below. Enter the port number and press enter. (*Here the port no is 5432.)

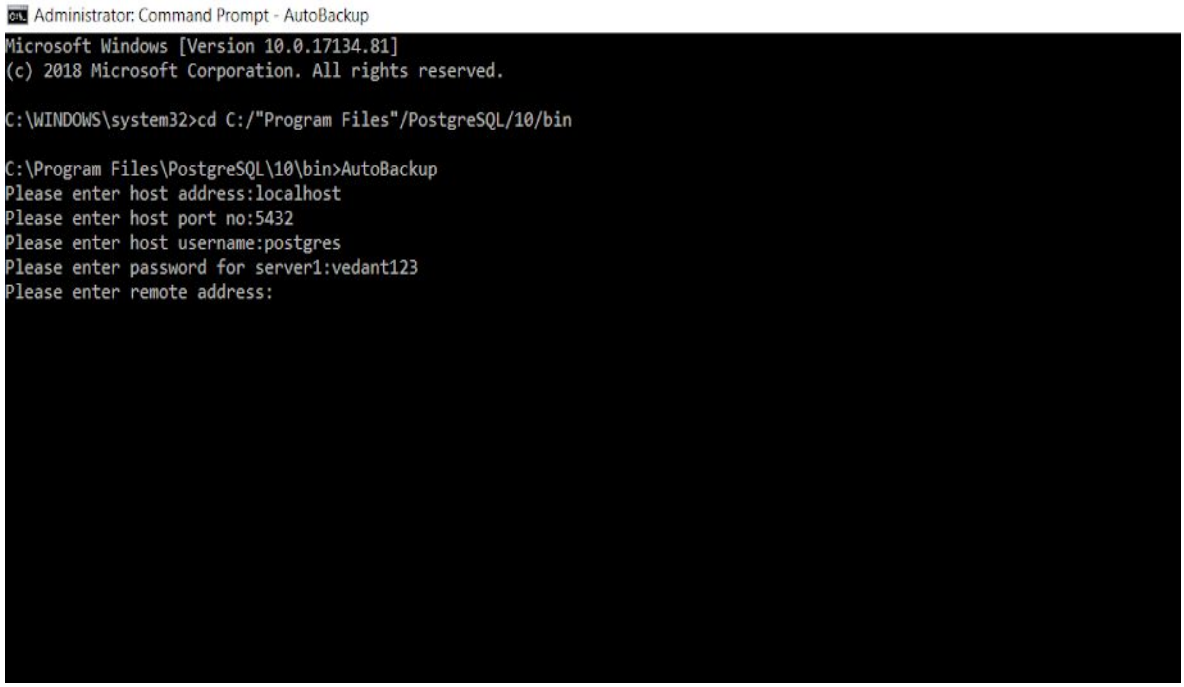




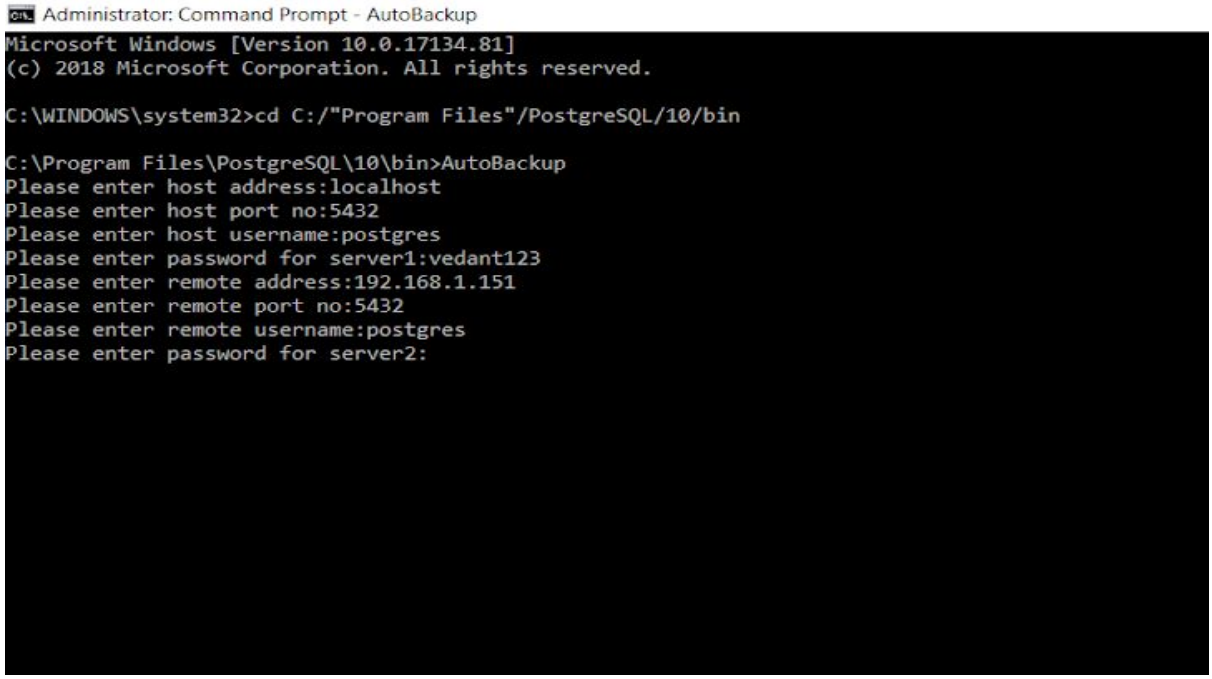
-Similarly you will be asked to type the host username as shown above. Type the username and press enter.(*Here it is postgres),



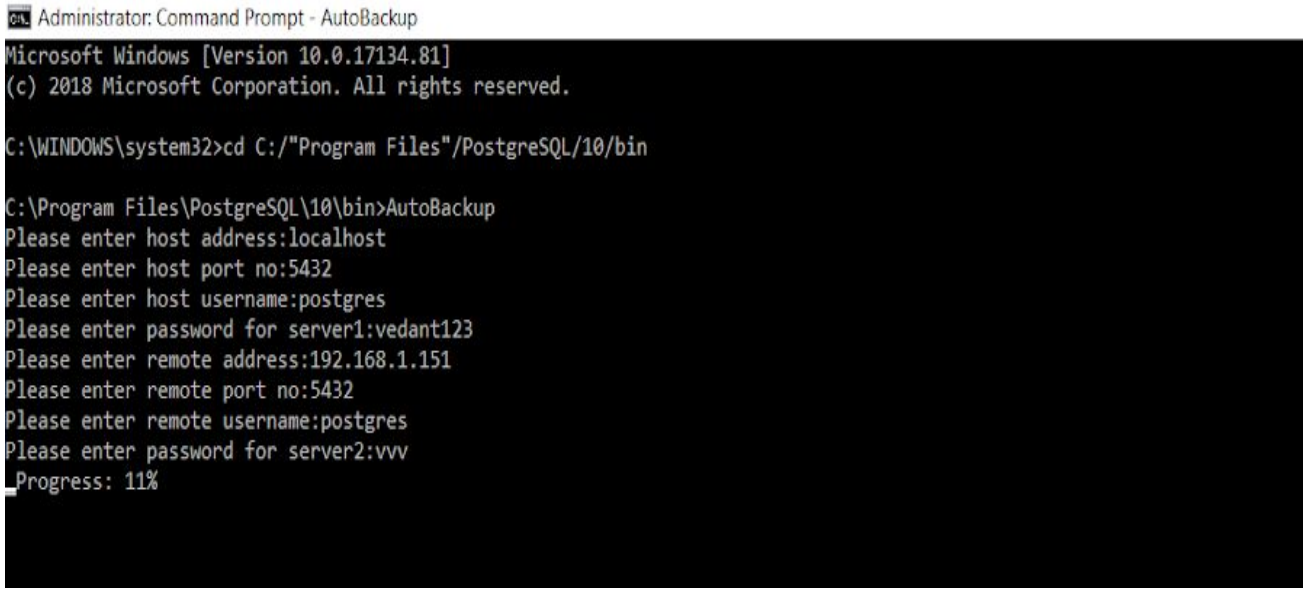
-Then you need to type the password for server1 as shown above. (*That is the host server) and press enter.



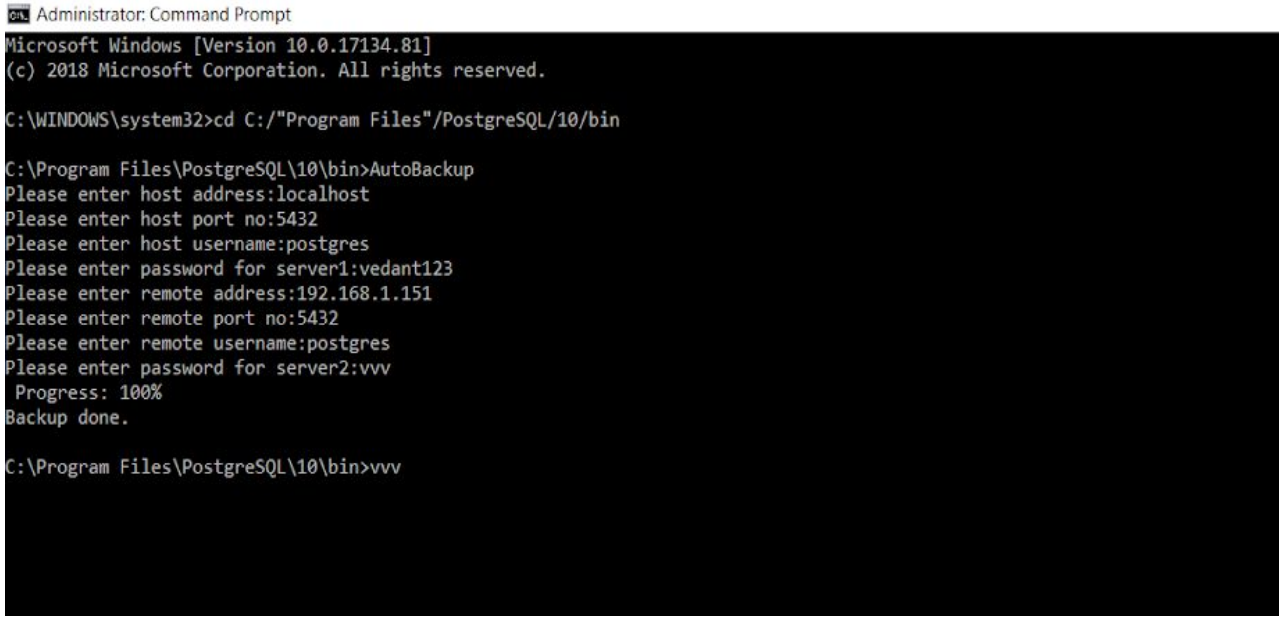
-Followed by that you have to give the remote address.



-Similarly input the details as shown above that is remote address(* here it is192.168.1.151), remote port no(*5432),remote username(*postgres) and password for server 2(*vvv) and press enter.

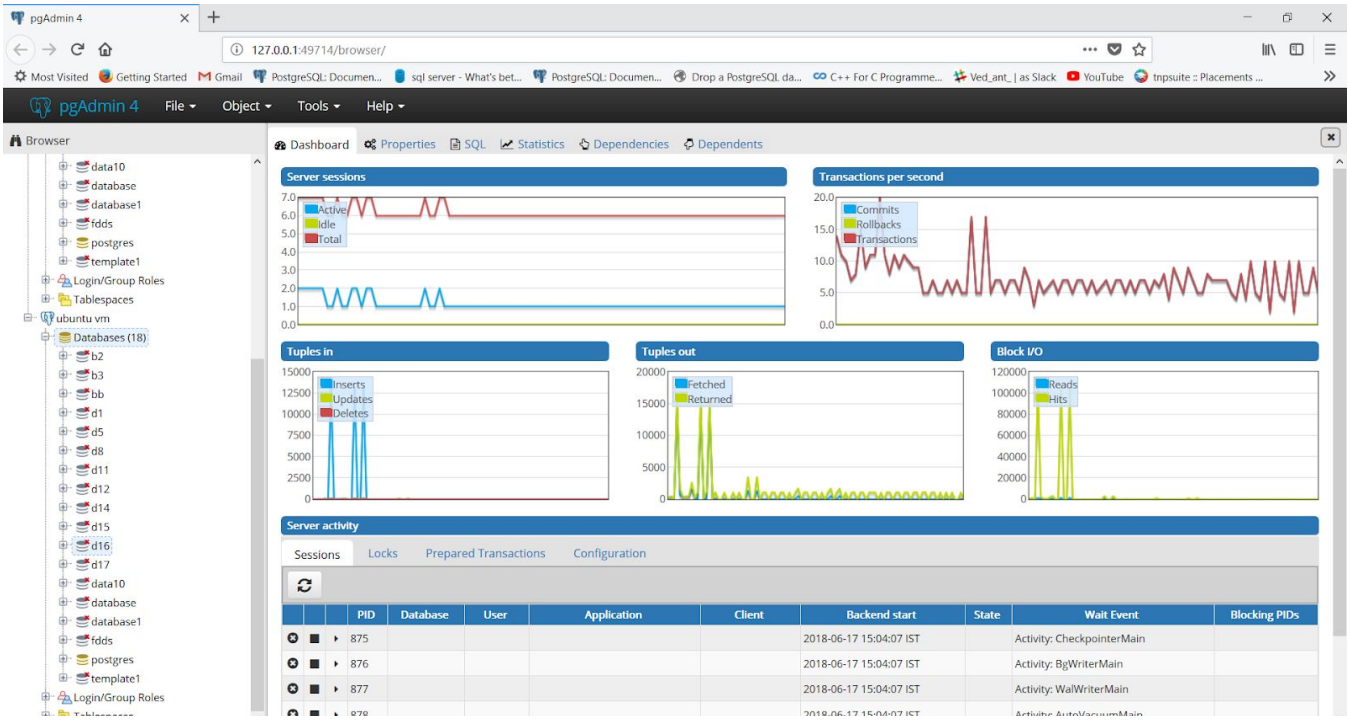


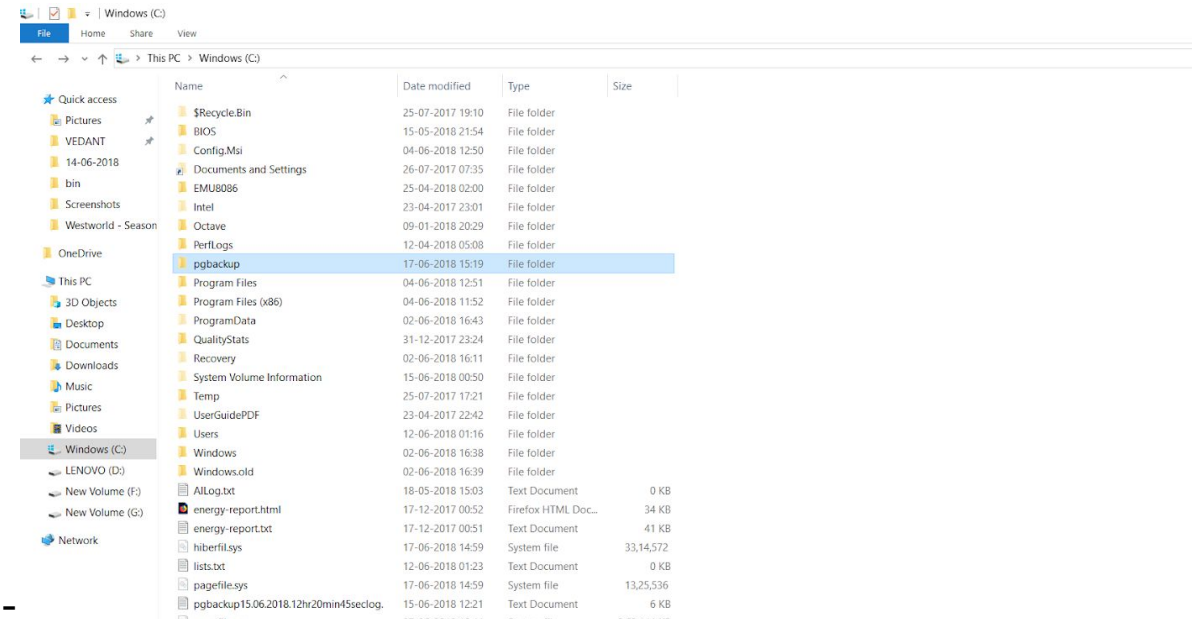
Then process of transfer starts. You can see the progress meter on the command prompt screen.



-The above image shows the 100% completion of transfer of data.

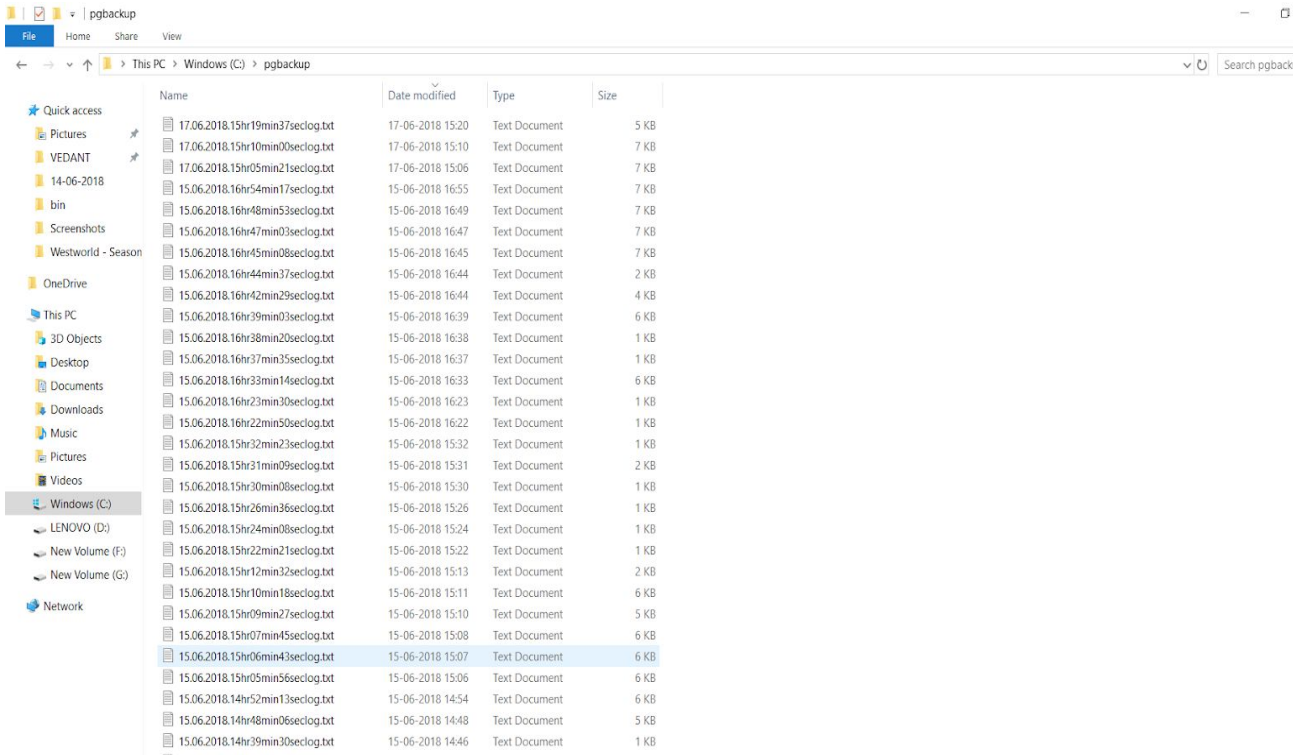
-Then open the pgadmin4. You can see the transfer of databases from windows(host) to ubuntu server on the left side of the screen.





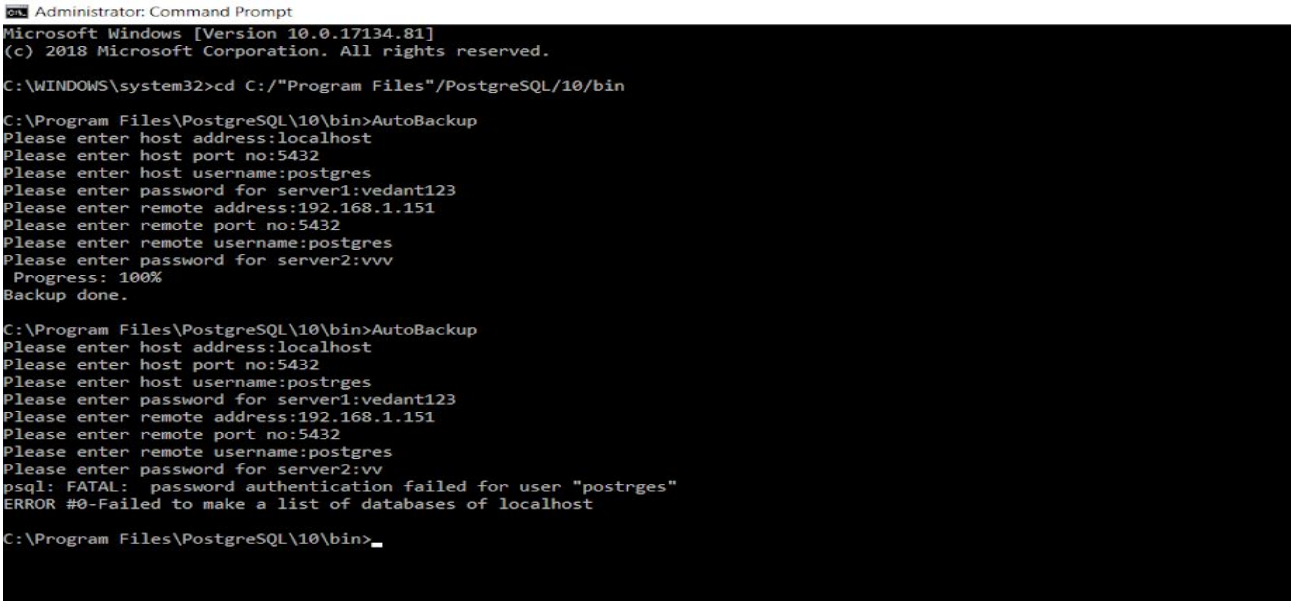
-

- You can go and view the backup file in the folder pgbackup saved in log file format according to time.



-The exact log.txt file looks like the below image.

```
17.06.2018.15hr10min00seclog.txt - Notepad
File  Edit  Format  View  Help
| pid | pg_terminate_backend
-----+----------------------
(0 rows)

DROP DATABASE
Backup started: 17-06-2018 15:10:00.33
DATABASE NAME: d15
 pid | pg_terminate_backend
-----+----------------------
(0 rows)

CREATE DATABASE
SET
SET
SET
SET
SET
 set_config
------------

(1 row)

SET
SET
SET
CREATE EXTENSION
COMMENT
End of backup
 pid | pg_terminate_backend
-----+----------------------
(0 rows)

DROP DATABASE
Backup started: 17-06-2018 15:10:00.33
DATABASE NAME: d16
 pid | pg_terminate_backend
-----+----------------------
(0 rows)

CREATE DATABASE
SET
SET
SET
```



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17134.81]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:/"Program Files"/PostgreSQL/10/bin

C:\Program Files\PostgreSQL\10\bin>AutoBackup
Please enter host address:localhost
Please enter host port no:5432
Please enter host username:postgres
Please enter password for server1:vedant123
Please enter remote address:192.168.1.151
Please enter remote port no:5432
Please enter remote username:postgres
Please enter password for server2:vvv
 Progress: 100%
Backup done.

C:\Program Files\PostgreSQL\10\bin>AutoBackup
Please enter host address:localhost
Please enter host port no:5432
Please enter host username:postrges
Please enter password for server1:vedant123
Please enter remote address:192.168.1.151
Please enter remote port no:5432
Please enter remote username:postgres
Please enter password for server2:vv
psql: FATAL:  password authentication failed for user "postrges"
ERROR #0-Failed to make a list of databases of localhost

C:\Program Files\PostgreSQL\10\bin>
```

6) Error case- If error occurs it shows error on screen and terminates.

7) Summary- The above documentation is the first attempt to automate the effective transfer of data from windows server to Ubuntu server using batch script with features like progress meter, saving log files and taking dynamic input.

9) Resource and references-:

1. https://www.postgresql.org/
2. https://www.virtualbox.org/
3. http://suite.opengeo.org/docs/latest/dataadmin/pgGettingStarted/pgadmin.html
4. https://stackoverflow.com/questions/18580066/how-to-allow-remote-access-to-postgresql-database
5. https://support.plesk.com/hc/en-us/articles/115003321434-How-to-enable-remote-access-to-PostgreSQL-server-
6. https://github.com/fabioboris/postgresql-backup-restore-scripts/blob/master/pgsql_backup.sh
7. https://stackoverflow.com/questions/1237725/copying-postgresql-database-to-another-server
8. https://github.com/fabioboris/postgresql-backup-restore-scripts/blob/master/pgsql_restore.sh
9. https://gist.github.com/matthewlehner/3091458

10. http://www.postgresqltutorial.com/postgresql-copy-database/

11. https://stackoverflow.com/questions/3498877/how-do-i-move-a-database-from-one-server-to-another-in-pgsql

12. https://stackoverflow.com/questions/13552773/create-database-tables-etc-in-one-script-postgresql

13. https://www.dbrnd.com/2016/02/postgresql-script-to-create-a-copy-of-the-existing-database/

14. https://www.vultr.com/docs/how-to-backup-and-restore-postgresql-databases-on-ubuntu-16-04

15. https://www.vultr.com/docs/how-to-backup-and-restore-postgresql-databases-on-ubuntu-16-04

16.https://www.tutorialspoint.com/batch_script/batch_script_operators.htm

17.https://gist.github.com/delameko/bd3aa2a54a15c50c723f0eef8f583a44

18. https://www.codeproject.com/Tips/458884/Auto-Backup-for-PostgreSQL

19. https://www.codingepiphany.com/2014/01/13/batch-script-for-transferring-files-from-windows-machines-to-linux-file-server/

20. https://www.dbrnd.com/2016/08/postgresql-9-5-insert-if-not-exists-update-if-exists-insert-on-conflict-do-update-do-nothing/

21. https://dba.stackexchange.com/questions/180318/postgres-update-a-table-only-if-it-exists

22. https://stackoverflow.com/questions/155932/how-do-you-loop-through-each-line-in-a-text-file-using-a-windows-batch-file

23. https://gallery.technet.microsoft.com/scriptcenter/Compare-two-databases-for-b44e7afa

24. https://dba.stackexchange.com/questions/95236/how-can-i-compare-the-schema-of-two-databases

25. https://it.toolbox.com/question/which-is-faster-update-or-insert-in-oracle-and-why-030808

26. http://community.teradata.com/t5/Tools-Utilities/delete-insert-vs-update/td-p/12619

27. https://www.drupal.org/project/drupal/issues/1800286

28. http://www.tomsguide.com/forum/242329-49-batch-programming-error-handling-start-command