PostgreSQL Parallel Query Count Utility

Version: 1.5.11 | Environment: Division | Date: 20-05-2021

Index

Utility Developed by:

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1. Introduction

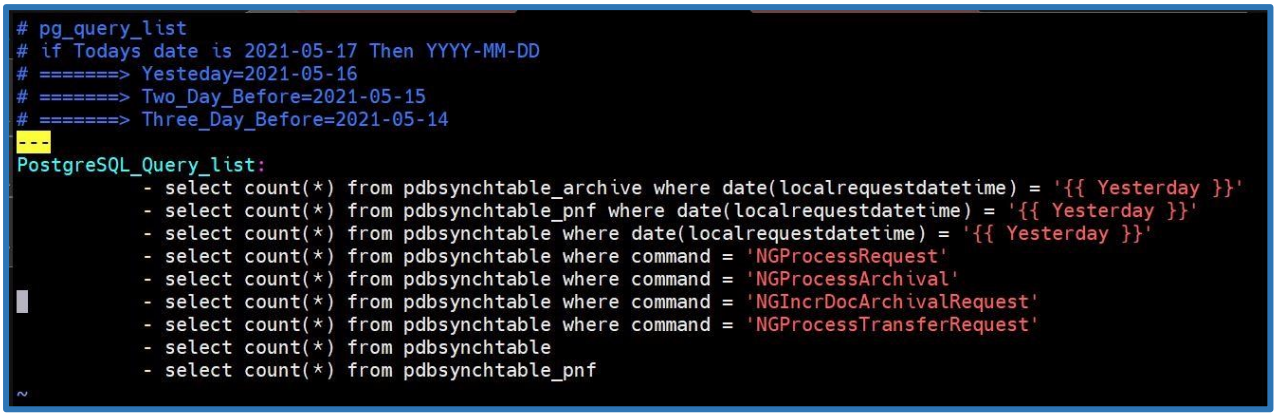
We have an environment where our application and database server are positioned in more than 100 sites each with an application and database server. Getting output from PostgreSQL query count is a routine process. Sometimes we have to share the report to the dev team for further analyses. So, the idea is to make all this process automated. And create swiss army knife which can handle coriander leaf and coconut at the same time. In simple words it can query on 1 DB Server or 100 DB Server with the same level of ease and security.

This Utility can query on all DB Servers PAN India or specific zone all DB Server or custom list like 1/2 DB Server from all zones or only single DB Server. Custom option can query 1 ,2 or any number of sites

2. Purpose

Imagining something and creating something are two different things. There are some tools available which could do these things but they have their own pros and con's. Like we can use shell script/ PostgreSQL scripts, which we have to copy on a remote server and run then users have to copy the result/report file. Whenever the query changes we have copy new file to remote server and copy result/report file again and we also have to tackle changes in query count Let's say we build script to query 5 DB query and we have requirement to get 10 query or 1 query the we have to change overall structure to the script and report/result file.

This Utility is dynamically adjusted itself; it can query 1 DB query as well as 100 DB queries. We only have to change **conf/PG_Query_list.yml** file to add or remove query's , It also can populate some site specific variable like **docode** in query if required. It also can populate common variable like **date** string value if it is a part of query like **"select count(*) from pdbsynchtable_archive where date(localrequestdatetime) ='{{ Yesterday }}'"**



```
# pg_query_list
# if Todays date is 2021-05-17 Then YYYY-MM-DD
# ========> Yesteday=2021-05-16
# ========> Two_Day_Before=2021-05-15
# ========> Three_Day_Before=2021-05-14
---
PostgreSQL_Query_list:
          - select count(*) from pdbsynchtable_archive where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable_pnf where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable where command = 'NGProcessRequest'
          - select count(*) from pdbsynchtable where command = 'NGProcessArchival'
          - select count(*) from pdbsynchtable where command = 'NGIncrDocArchivalRequest'
          - select count(*) from pdbsynchtable where command = 'NGProcessTransferRequest'
          - select count(*) from pdbsynchtable
          - select count(*) from pdbsynchtable_pnf
~
```

To add or remove query we only need modify this **conf/PG_Query_list.yml** file .**The core feature is that it can query to required Database server's simultaneously**. How many servers it can query simultaneously can be adjusted as per requirement default of this is kept 20. If we are querying on less than 20 Database servers' then the total time to get count is equal on 1 database server query time as it is doing this concurrently.

3. How it Works

Utility is built with bash and some other open-source tools which are free to use.

Note: It does not interrupt any other operation. It's a simply query as we do regularly by logging in the remote DB servers via ssh

4. Utility Versions Available

I have created 4 git Branches (Versions) of the utility

1. **Master Branch** :
   Status: Ready
   Only Prints output on stdout (which is Terminal in this case) in organized manner

2. **Query_xlsx_report Branch**:
   Status : Ready
   Apart from printing on stdout it also generates CSV/XLSX Report for analysis or sharing.

3. **Telegram-report Branch**:
   Status: Ready
   Apart from printing on stdout it also generates CSV/XLSX Report and sends the CSV and XLSX file to Telegram Group.

4. **Mail-Report Branch**:
   Status : Ready
   Apart from printing on stdout it also generates CSV/XLSX Report and sends the CSV and XLSX file to mail recipient list with detailed scan information.

5. Mail-report Branch (version):

We will see the Mail-Report (version) branch in detail, we will see the demonstration of getting output from all DB Server from zone . Since we can only access my own DO DB Server at the time of demonstration, we want to explore the option of getting output from more than one site.

For the purpose of demonstration, I have changed the utility inventory IP Address of the sites which I don't have access to at the moment.

For Example:
Aurangabad DB Actual IP Addr : **10.0.242.20**
I have changed in my utility inventory to : **10.0.242.55** since this IP is not available the task will fail for the DO .This way we can have a demonstration of all DB's query in WZ zone without accessing them.

Listing of Utility Folder

```
185 root@p902vl λ  (.../Developement/portable_postgresql_query_checker 0a88b73 ma
#  ll
otal 24
rwxr-xr-x 2 root root    92 May 20 13:11 conf/
rwxr-xr-x 8 root root   189 May 20 12:40 Module/
rwxr----- 1 root root 21935 May 20 12:54 porteble_postgresql_query_report.sh*

185 root@p902vl λ  (.../Developement/portable_postgresql_query_checker 0a88b73 ma
```

We will use this file "conf/PG_Query_list.yml" to query from Database servers . We can change the query whenever we want. Or we can add and remove query's

```
# pg_query_list
# if Todays date is 2021-05-17 Then YYYY-MM-DD
# ========> Yesteday=2021-05-16
# ========> Two_Day_Before=2021-05-15
# ========> Three_Day_Before=2021-05-14
---
PostgreSQL_Query_list:
          - select count(*) from pdbsynchtable_archive where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable_pnf where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable where date(localrequestdatetime) = '{{ Yesterday }}'
          - select count(*) from pdbsynchtable where command = 'NGProcessRequest'
          - select count(*) from pdbsynchtable where command = 'NGProcessArchival'
          - select count(*) from pdbsynchtable where command = 'NGIncrDocArchivalRequest'
          - select count(*) from pdbsynchtable where command = 'NGProcessTransferRequest'
          - select count(*) from pdbsynchtable
          - select count(*) from pdbsynchtable_pnf
          - select count(0) from pdbsynchtable where requesttype='T'
~
```

Now lets run the utility we query on all DB under WZ , Since we have changed actual IP From utility inventory we will get host not reachable in remark for other than NANDED do . If utility inventory was correct it would have taken the same execution time since this utility query in parallel for 20 Database servers at a time.

Let's run the utility now,

Now Step 1 Choose zone

```
2185 root@p902vl λ  (.../Developement/portable_postg
 #  ./porteble_postgresql_query_report.sh
================================================
Portable PostgreSQL Query Checker : 1.5.11

________________________________________________
By: Santosh Kulkarni
Mob: 9960708564 Mail: Santosh.Kulkarni4u@gmail.com
================================================
================================================
Running in Interactive  mode version 1.5.11
================================================
NO | Zone Name (Choose ZONE)
------------------------------------------
 0) 0_Pan_INDIA
 1) Custom
 2) CZ
 3) ECZ
 4) EZ
 5) NCZ
 6) NZ
 7) SCZ
 8) SZ
 9) WZ
10) Exit
------------------------------------------------------
Choose only zone numbers from 0 to 10 : 9
------------------------------------------------------
You have Selected: WZ
------------------------------------------
```

Now Step 2 Choose DB's from WZ

That's it user don't need to do anything more utility will query 10 query's from **conf/PG_Query_list.yml** file as shown above. And it will generate CSV and XLSX files and send mail as well.

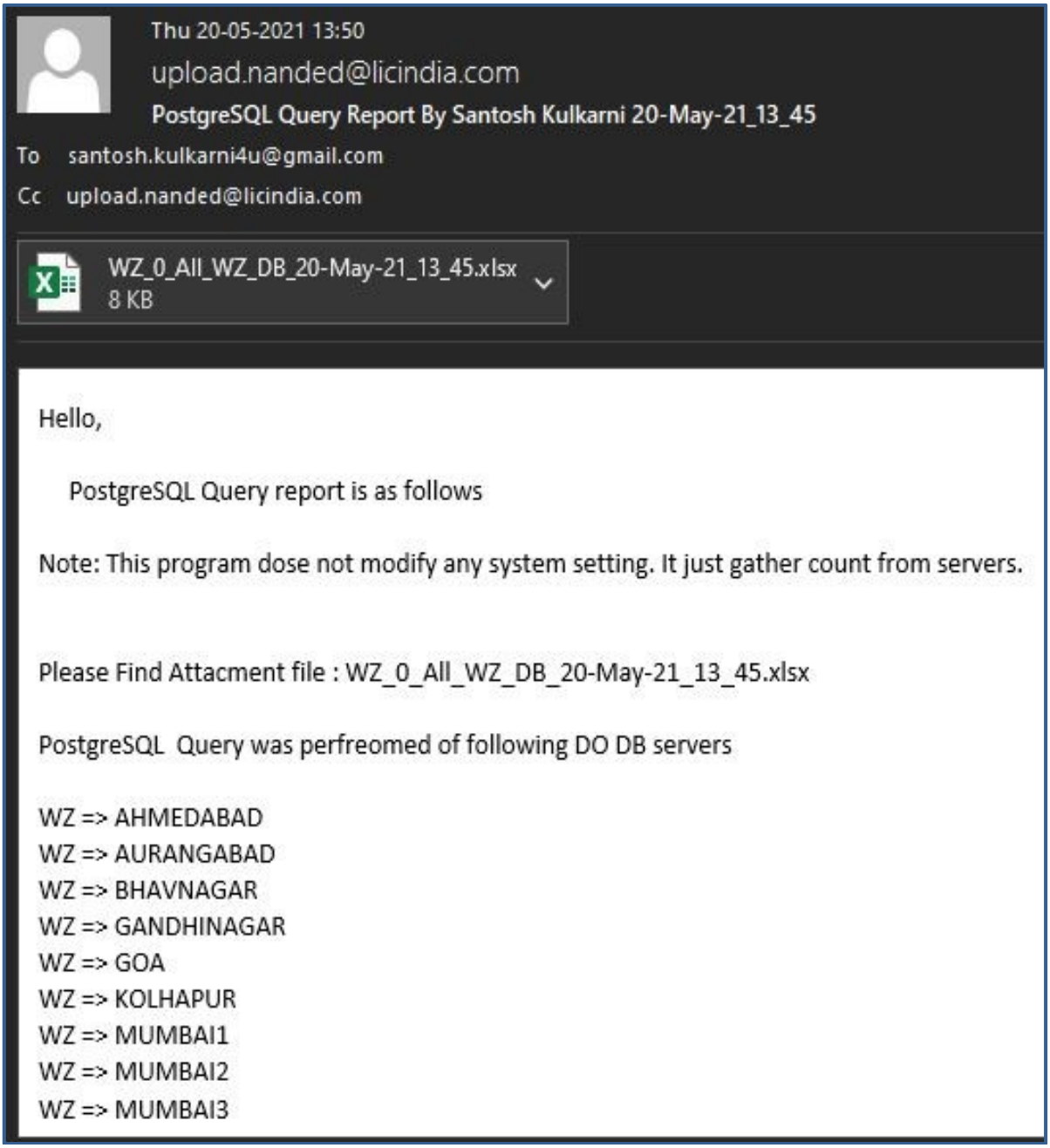
```
--------------------------------------------------------------
Please wait while PostgreSQL query is being done concurrently.
--------------------------------------------------------------
It will query on 20 Database server's simultaneously.
-----------------------------------------------------------------------------------------------
Real-time PostgreSQL Query Count for WZ zone 0_All_WZ_DB do at 20-May-21_13_45
-----------------------------------------------------------------------------------------------
Zone | doname      | DB IP Addr   | Hostname | Count  |  Query Used : Status at 20-May-21_13_45
-----------------------------------------------------------------------------------------------
WZ   | AHMEDABAD   | 10.0.114.55  | P083DB   |        |
WZ   | AURANGABAD  | 10.0.242.55  | P098DB   |        |
WZ   | BHAVNAGAR   | 10.1.50.55   | P801DB   |        |
WZ   | GANDHINAGAR | 10.1.114.55  | P085DB   |        |
WZ   | GOA         | 10.0.50.55   | P093DB   |        |
WZ   | KOLHAPUR    | 10.1.178.55  | P090DB   |        |
WZ   | MUMBAI1     | 10.5.114.55  | P091DB   |        |
WZ   | MUMBAI2     | 10.5.178.55  | P088DB   |        |
WZ   | MUMBAI3     | 10.5.242.55  | P089DB   |        |
WZ   | MUMBAI4     | 10.6.50.55   | P901DB   |        |
WZ   | MUMBAISSS   | 10.6.114.55  | P903DB   |        |
WZ   | NADIAD      | 10.1.242.55  | P802DB   |        |
WZ   | NAGPUR      | 10.2.50.55   | P097DB   |        |
WZ   | NANDED      | 10.2.114.20  | p902db01 | 0      |  'select count(*) from pdbsynchtable where date(localrequestdatetime) = '2021-05-19''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 111    |  'select count(*) from pdbsynchtable_pnf where date(localrequestdatetime) = '2021-05-19''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 118    |  'select count(*) from pdbsynchtable where command = 'NGIncrDocArchivalRequest''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 1726   |  'select count(*) from pdbsynchtable'
WZ   | NANDED      | 10.2.114.20  | p902db01 | 2096   |  'select count(*) from pdbsynchtable_archive where date(localrequestdatetime) = '2021-05-19''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 219    |  'select count(*) from pdbsynchtable where command = 'NGProcessRequest''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 456182 |  'select count(*) from pdbsynchtable_pnf'
WZ   | NANDED      | 10.2.114.20  | p902db01 | 517    |  'select count(0) from pdbsynchtable where requesttype='T''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 549    |  'select count(*) from pdbsynchtable where command = 'NGProcessTransferRequest''
WZ   | NANDED      | 10.2.114.20  | p902db01 | 840    |  'select count(*) from pdbsynchtable where command = 'NGProcessArchival''
WZ   | NASIK       | 10.2.178.55  | P096DB   |        |
WZ   | PUNE1       | 10.2.242.55  | P095DB   |        |
WZ   | PUNE2       | 10.6.178.55  | P904DB   |        |
WZ   | RAJKOT      | 10.3.50.55   | P081DB   |        |
WZ   | SATARA      | 10.3.114.55  | P094DB   |        |
WZ   | SURAT       | 10.3.178.55  | P086DB   |        |
WZ   | THANE       | 10.3.242.55  | P092DB   |        |
WZ   | VADODARA    | 10.4.50.55   | P087DB   |        |
-----------------------------------------------------------------------------------------------
Query Took : 0 days: 0 hours: 4 minutes: 29 seconds
-----------------------------------------------------------------------------------------------
Xlsx Report saved at: Module/Report/XLSX_Report/WZ_0_All_WZ_DB_20-May-21_13_45.xlsx
-----------------------------------------------------------------------------------------------

2185 root@p902vl λ  (.../Developement/portable_postgresql_query_checker d4a5ff9 mail-report✓ | By: Santosh Kulkarni |)
 #
```

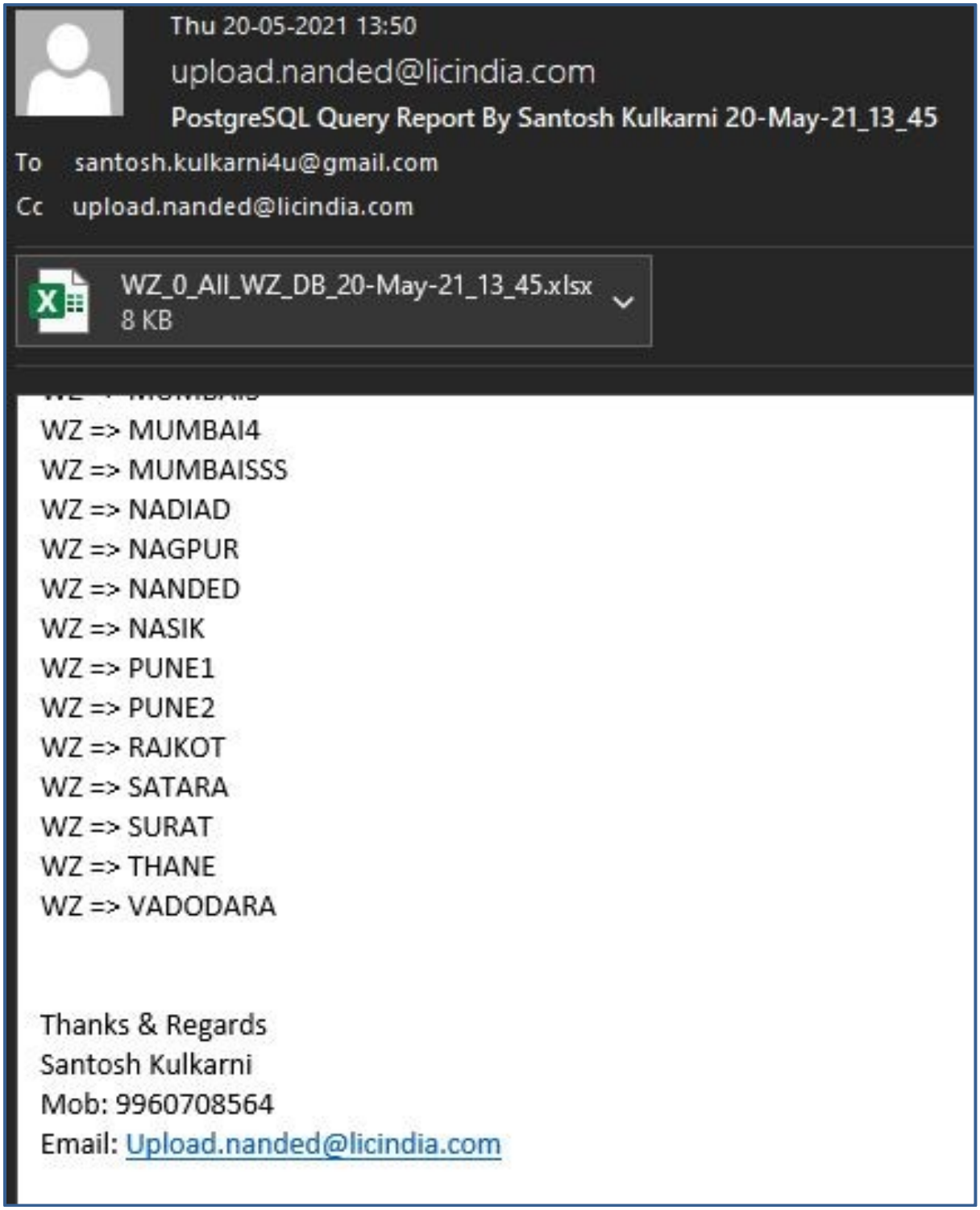
Total runtime 4 Min 30 Seconds including querying to above listed DB server,s Generating CSV/XLSX file and sending mail . Its Super-fast.

Let's see the xlsx report . **Module/Report/XLSX_Report/WZ_0_All_WZ_DB_20-May-21_13_45.xlsx**

Zon	dcco de	doname	server_role	DB IP Ac	Query Time Stamp	Hostna me	Database Name	Query Output Count	Query Used	Remark
WZ	081	RAJKOT	DBClusterActiveNod	10.3.50.55	20-May-21_13_4	P081DB				Host Not Reacheble
WZ	083	AHMEDABA	DBClusterActiveNod	10.0.114.55	20-May-21_13_4	P083DB				Host Not Reacheble
WZ	085	GANDHINA	DBClusterActiveNod	10.1.114.55	20-May-21_13_4	P085DB				Host Not Reacheble
WZ	086	SURAT	DBClusterActiveNod	10.3.178.55	20-May-21_13_4	P086DB				Host Not Reacheble
WZ	087	VADODARA	DBClusterActiveNod	10.4.50.55	20-May-21_13_4	P087DB				Host Not Reacheble
WZ	088	MUMBAI2	DBClusterActiveNod	10.5.178.55	20-May-21_13_4	P088DB				Host Not Reacheble
WZ	089	MUMBAI3	DBClusterActiveNod	10.5.242.55	20-May-21_13_4	P089DB				Host Not Reacheble
WZ	090	KOLHAPUR	DBClusterActiveNod	10.1.178.55	20-May-21_13_4	P090DB				Host Not Reacheble
WZ	091	MUMBAI1	DBClusterActiveNod	10.5.114.55	20-May-21_13_4	P091DB				Host Not Reacheble
WZ	092	THANE	DBClusterActiveNod	10.3.242.55	20-May-21_13_4	P092DB				Host Not Reacheble
WZ	093	GOA	DBClusterActiveNod	10.0.50.55	20-May-21_13_4	P093DB				Host Not Reacheble
WZ	094	SATARA	DBClusterActiveNod	10.3.114.55	20-May-21_13_4	P094DB				Host Not Reacheble
WZ	095	PUNE1	DBClusterActiveNod	10.2.242.55	20-May-21_13_4	P095DB				Host Not Reacheble
WZ	096	NASIK	DBClusterActiveNod	10.2.178.55	20-May-21_13_4	P096DB				Host Not Reacheble
WZ	097	NAGPUR	DBClusterActiveNod	10.2.50.55	20-May-21_13_4	P097DB				Host Not Reacheble
WZ	098	AURANGAB	DBClusterActiveNod	10.0.242.55	20-May-21_13_4	P098DB				Host Not Reacheble
WZ	801	BHAVNAGA	DBClusterActiveNod	10.1.50.55	20-May-21_13_4	P801DB				Host Not Reacheble
WZ	802	NADIAD	DBClusterActiveNod	10.1.242.55	20-May-21_13_4	P802DB				Host Not Reacheble
WZ	901	MUMBAI4	DBClusterActiveNod	10.6.50.55	20-May-21_13_4	P901DB				Host Not Reacheble
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	0	'select count(*) from pdbsynchtable where date(localrequestdatetime) = '2021-05-19''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	111	'select count(*) from pdbsynchtable_pnf where date(localrequestdatetime) = '2021-05-19''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	118	'select count(*) from pdbsynchtable where command = 'NGIncrDocArchivalRequest''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	1726	'select count(*) from pdbsynchtable'	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	2096	'select count(*) from pdbsynchtable_archive where date(localrequestdatetime) = '2021-05-19''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	219	'select count(*) from pdbsynchtable where command = 'NGProcessRequest''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	456182	'select count(*) from pdbsynchtable_pnf'	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	517	'select count(0) from pdbsynchtable where requesttype='T''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	549	'select count(*) from pdbsynchtable where command = 'NGProcessTransferRequest''	
WZ	902	NANDED	DBClusterActiveNod	10.2.114.20	20-May-21_13_4	p902db0	division_902	840	'select count(*) from pdbsynchtable where command = 'NGProcessArchival''	
WZ	903	MUMBAISS	DBClusterActiveNod	10.6.114.55	20-May-21_13_4	P903DB				Host Not Reacheble
WZ	904	PUNE2	DBClusterActiveNod	10.6.178.55	20-May-21_13_4	P904DB				Host Not Reacheble

Let see how mail will look like


Thu 20-05-2021 13:50
upload.nanded@licindia.com
PostgreSQL Query Report By Santosh Kulkarni 20-May-21_13_45
To santosh.kulkarni4u@gmail.com
Cc upload.nanded@licindia.com
WZ_0_All_WZ_DB_20-May-21_13_45.xlsx
8 KB
Hello,
PostgreSQL Query report is as follows
Note: This program dose not modify any system setting. It just gather count from servers.
Please Find Attacment file : WZ_0_All_WZ_DB_20-May-21_13_45.xlsx
PostgreSQL Query was perfreomed of following DO DB servers
WZ => AHMEDABAD
WZ => AURANGABAD
WZ => BHAVNAGAR
WZ => GANDHINAGAR
WZ => GOA
WZ => KOLHAPUR
WZ => MUMBAI1
WZ => MUMBAI2
WZ => MUMBAI3


Thu 20-05-2021 13:50
upload.nanded@licindia.com
PostgreSQL Query Report By Santosh Kulkarni 20-May-21_13_45
To santosh.kulkarni4u@gmail.com
Cc upload.nanded@licindia.com
WZ_0_All_WZ_DB_20-May-21_13_45.xlsx
8 KB
WZ => MUMBAI4
WZ => MUMBAISSS
WZ => NADIAD
WZ => NAGPUR
WZ => NANDED
WZ => NASIK
WZ => PUNE1
WZ => PUNE2
WZ => RAJKOT
WZ => SATARA
WZ => SURAT
WZ => THANE
WZ => VADODARA
Thanks & Regards
Santosh Kulkarni
Mob: 9960708564
Email: Upload.nanded@licindia.com

Some other zone sample interfaces

```
By: Santosh Kulkarni
Mob: 9960708564 Mail: Santosh.Kulkarni4u@gmail.com
================================================
================================================
Running in Interactive  mode version 1.5.11
================================================
NO | Zone Name (Choose ZONE)
----------------------------------------
 0) 0_Pan_INDIA
 1) Custom
 2) CZ
 3) ECZ
 4) EZ
 5) NCZ
 6) NZ
 7) SCZ
 8) SZ
 9) WZ
10) Exit
------------------------------------------------------------
Choose only zone numbers from 0 to 10 : 7
------------------------------------------------------------
You have Selected: SCZ
----------------------------------------
NO | Division Name (Choose DONAME)
----------------------------------------
 0) 0_All_SCZ_DB
 1) BELGAUM
 2) BENGALURU1
 3) BENGALURU2
 4) DHARWAD
 5) HYDERABAD
 6) KADAPA
 7) KARIMNAGAR
 8) MACHILIPATNAM
 9) MYSORE
10) NELLORE
11) RAICHUR
12) RAJAHMUNDRY
13) SECUNDERABAD
14) SHIMOGA
15) UDUPI
16) VISAKHAPATNAM
17) WARANGAL
18) Exit
------------------------------------------------------------
Choose DONAME from SCZ zone Use numbers only from 0 to 18 :
```

```
================================================
Portable PostgreSQL Query Checker : 1.5.11
------------------------------------------------
By: Santosh Kulkarni
Mob: 9960708564 Mail: Santosh.Kulkarni4u@gmail.com
================================================
================================================
Running in Interactive  mode version 1.5.11
================================================
NO | Zone Name (Choose ZONE)
----------------------------------------
 0) 0_Pan_INDIA
 1) Custom
 2) CZ
 3) ECZ
 4) EZ
 5) NCZ
 6) NZ
 7) SCZ
 8) SZ
 9) WZ
10) Exit
------------------------------------------------------------
Choose only zone numbers from 0 to 10 : 8
------------------------------------------------------------
You have Selected: SZ
----------------------------------------
NO | Division Name (Choose DONAME)
----------------------------------------
 0) 0_All_SZ_DB
 1) CHENNAI1
 2) CHENNAI2
 3) COIMBATORE
 4) ERNAKULAM
 5) KOTTAYAM
 6) KOZHIKODE
 7) MADURAI
 8) SALEM
 9) THANJAVUR
10) THRISSUR
11) TIRUNELVELI
12) TRIVANDRUM
13) VELLORE
14) Exit
------------------------------------------------------------
Choose DONAME from SZ zone Use numbers only from 0 to 14 :
```