Textkernel

As far as I learn

- %20 growing yearly
- Probably its data is growing more
- Under current circumstances (pandemic) can grow faster
- AI base tech. company, to connect jobs and jobseeker.
- DBs: Postgresql, ELK, Cassandra, partly mysql
- Multicultural work environment

Mustafa YAVUZ

Describes himself DB Dev&Ops.

Extensive experience.

Both RDBMS&NoSQL

Computer Engineer

My Strategy Summarize

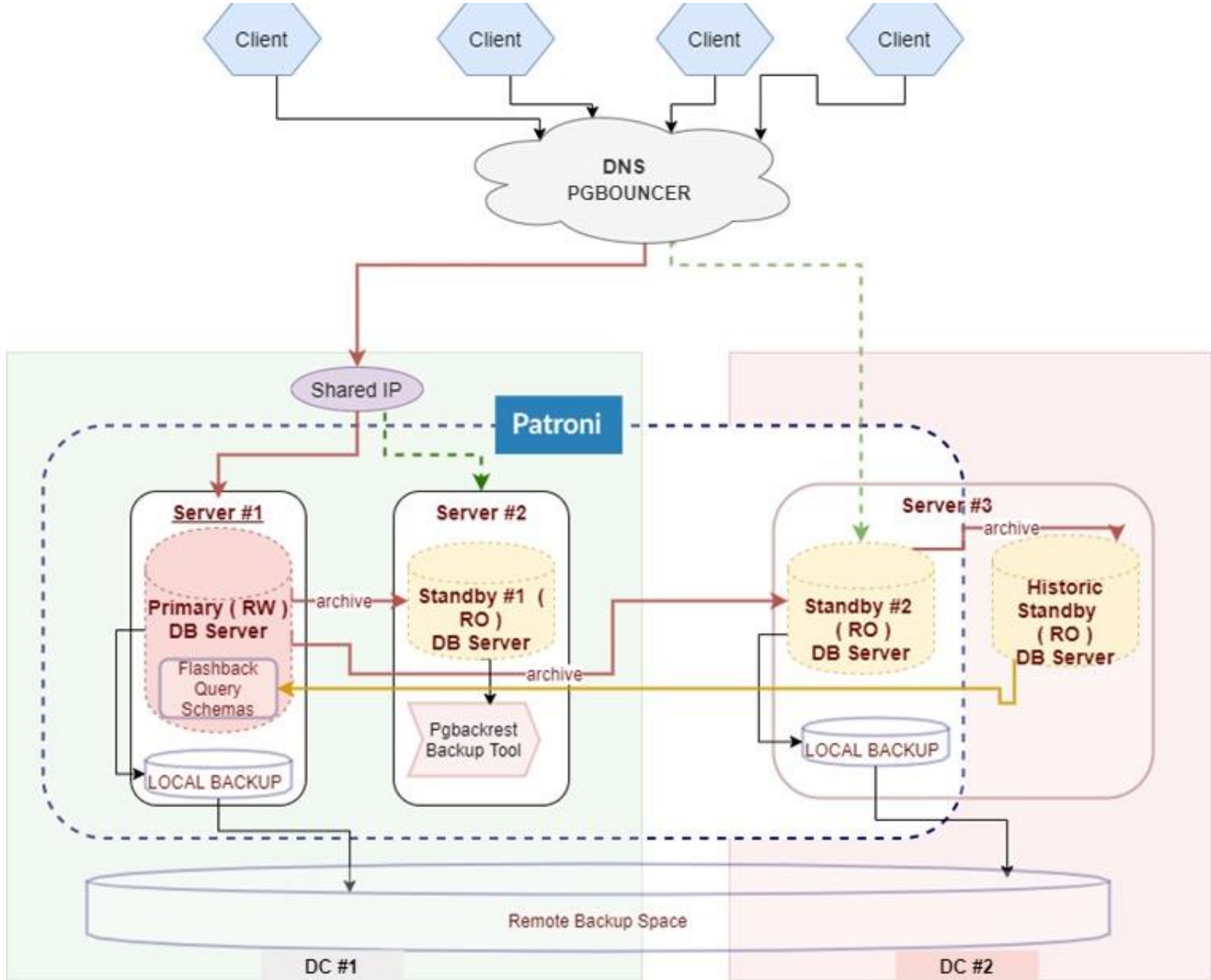
- Keep Somethings (If it is good)
- Improve Somethings (If it would be better)

How can I contribute The Company

- High Availibility & Backup
- Monitoring & Performance Tuning
- Automaiton&Configuration&Maintenance
- Alarm&Notification
- Security&Audit
- Cost Efficiency

High Availibility & Backup

- Automated Primary Secondry switches (HA)
- Client Isolation (With DNS & Shared IP) (HA)
- Backup for Hardware Failure
- Backup for Disaster Recovery (Multi DC)
- Backup for Application Level Mistakes (Historical Standby)


Client
Client
Client
Client
DNS
PGBOUNCER
Shared IP
Patroni
Server #1
Primary (RW)
DB Server
Flashback
Query
Schemas
LOCAL BACKUP
archive
Server #2
Standby #1 (
RO)
DB Server
Pgbackrest
Backup Tool
archive
Server #3
archive
Standby #2
(RO)
DB Server
Historic
Standby
(RO)
DB Server
LOCAL BACKUP
Remote Backup Space
DC #1
DC #2

Advanced Monitoring & Performance Tuning

- Metrics Monitoring (Grafana & Elastic & Metricbeat)
- Log Monitoring (Kibana & Elastic & Filebeat)
- DB Log Analytic (pgbadger)
- Query Details (Powa)
- OS level (pg_top, pg_activity)
- Central Monitoring DB (support for Grafana Screens)
- DB&OS Tuning Parameters (OLTP – OLAP&Analytic)

Metric Monitoring

SOX Compliance & Log Monitoring

DB Log Analyze

Query Analyze

Grafana

Kibana

Apache Web Server

Powa Web Server

5 Node ELK & Logstash Cluster (Evreka)

Postgresql Log Analitic (pg_badger)

Powa Query Base Analyze

Metrics

Logs

Powa Collector

Server

Server

Server

Server

Server

Server

POSTGRESQL SERVERS

Dashboard

Host [redacted]01 | Database [redacted] | User All

Last 1 hour

Replication GAP

[redacted]02
517 µs

[redacted]03
11.5 ms

Dead Locks
0

Disk Usage (/)
7.2%

/pgdata
27%

/backup
47%

nfsbackup
24%

[redacted]
586 GB

[redacted]
747 GB

Cluster Si
1.33

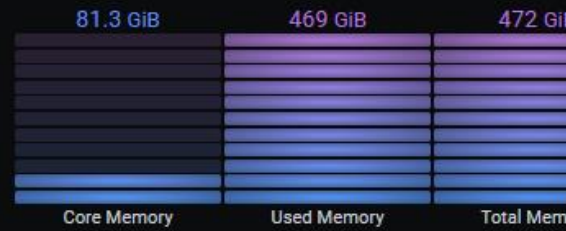
Replication GAP for OLAP
[redacted]

Client Connection

CPU Usage %

Memory Hit Ratio
[redacted]
97.78%

Memory Hit Ratio
[redacted]
96.94%

Memory Status


[redacted] User Connections Percentage

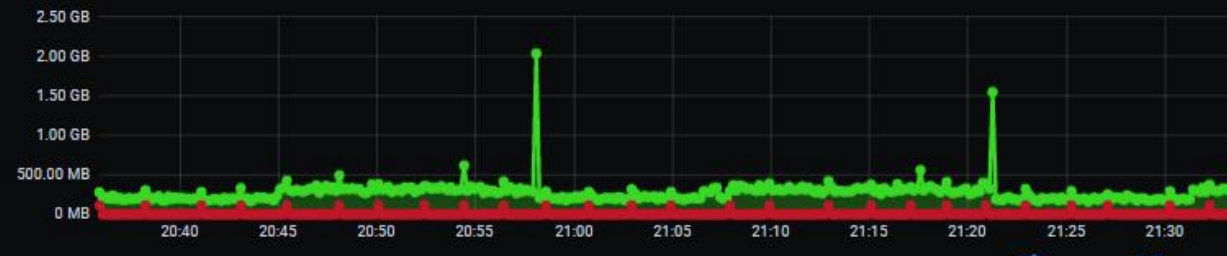
	current	percentage
[redacted]	1.984 K	55.1%
[redacted]	152	4.2%
[redacted]	709	19.7%
[redacted]	51	1.4%
[redacted]	383	10.6%
ope[redacted]	266	7.4%
[redacted]	20	0.6%
[redacted]	36	1.0%
[redacted]	0	0.0%

Need To Be Vacuumed Tables

Schema	Table	Live_Tuples	Dead_Tuples	Last Autovacuum Dat
[redacted]	[redacted]	55152103	3195989	2021-02-14T15:17:47.040
[redacted]	[redacted]	6840233	361519	2021-02-13T15:56:29.435
[redacted]	[redacted]	100286183	317217	2021-02-13T17:23:49.152
[redacted]	[redacted]	80861	216084	2021-02-14T18:34:40.235
[redacted]	[redacted]	3058733	198567	2021-02-14T10:18:57.942

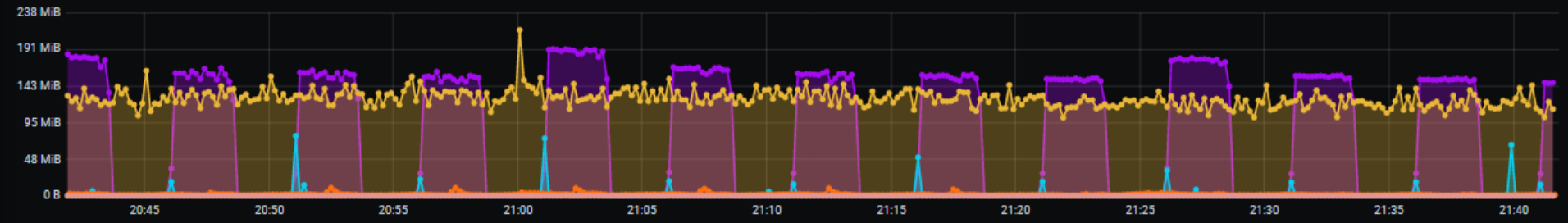
Connections

	min	max	current
Active Connection	0	13	3
Idle Connection	0	4 K	4 K
Idle in Transaction Connection	0	10	2
Idle in Transaction (Aborted) Connection	0	0	0
Empty Connection	0	4	0
Disabled Connection	0	0	0
fastpath function call	0	0	0

Blocks Hit / Read


	min	max
Block Hit	162.628 MB	2.028 GB

Buffers



	min	max	avg
Written during checkpoint	0 B	191.1 MiB	80.6 MiB
Allocated	101.7 MiB	215.8 MiB	126.5 MiB
written directly by a backend.	0 B	78.1 MiB	1.5 MiB
bgwriter.buffers.clean	624 KiB	10.3 MiB	2.0 MiB
Fsync calls by a backend	0 B	0 B	0 B

Database Rows Fetched

	min	max	avg
Rows Fetched	23.3 K	172.4 K	58.0 K

Size of Temp Files

	max	current
Temp files size	0 GB	0 GB

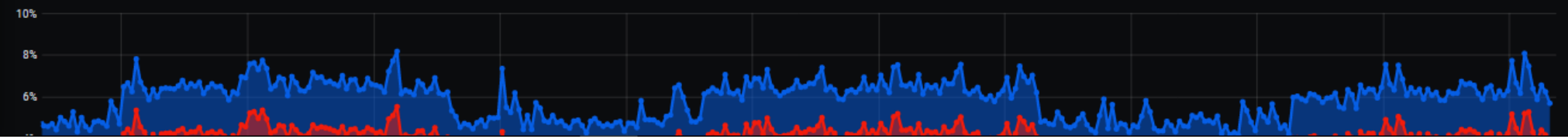
Database Rows Returned

Rows Returned

Commit / Rollback Transactions

	min	max	avg
Commit Transactions	4.543 K	6.072 K	5.167 K

Detailed CPU Usage %



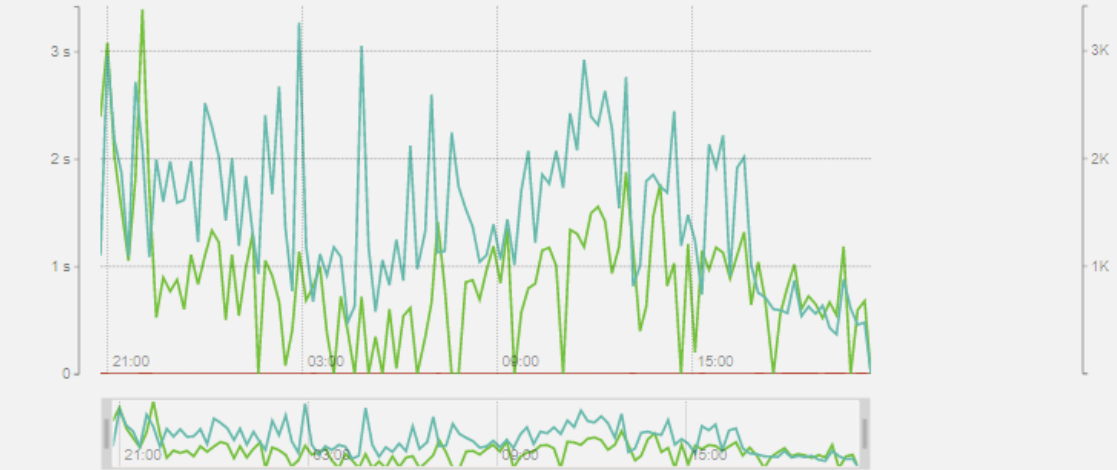
	min	max	avg	current
Total	4.19%	8.18%	5.88%	5.71%
iowait	0.23%	0.87%	0.33%	0.30%
nice	0%	0.01%	0.00%	0%
kernel system	1.72%	2.91%	2.03%	1.84%
user	2.36%	5.55%	3.78%	3.80%

PoWA Server (localhost:5433) Configuration Reload collector Logout

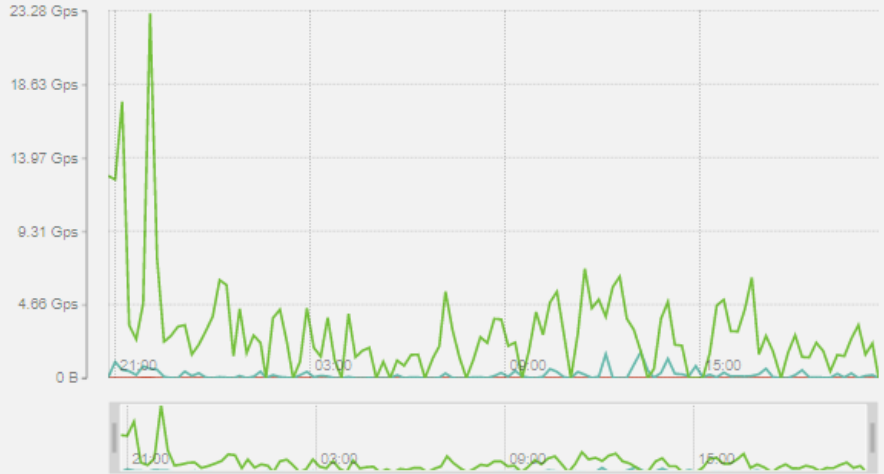
2021-02-12 20:41:15 2021-02-13 20:41:15

General Overview | Database Objects | System resources | Wait Events

Calls (On database elysion)



Blocks (On database)



Details for all queries

Export CSV

Query	Execution #	Execution Time	Execution Avg time	I/O Time Read	I/O Time Write	Blocks Read	Blocks Hit	Blocks Dirtied	Blocks Written	Temp blocks Read	Temp blocks Written
SELECT * FROM " WHERE "P " <= $1 AND " IS NU…	168,052.00	3 hours 34 min	76 ms 608 µs	27 ms 246 µs	0	53.09 M	19.76 T	71.63 M	0 B	0 B	0 B
SELECT p."C ", p." ", p." ", p." .	45,687.00	3 hours 2 min	239 ms 661 µs	27 ms 71 µs	438 µs	15.20 M	36.12 T	278.99 M	136.00 K	0 B	0 B
SELECT s."Text", s."T " as "Value" FROM (SELECT U." ", U."Disp…	54,027.00	1 hour 5 min	73 ms 196 µs	757 ms 426 µs	0	27.52 M	59.48 T	64.00 K	0 B	0 B	0 B
select * from e "C_ WHERE "Par…	72.00	52 min 52 s	44 s 65 ms	1 hour 18 min	1 s 191 ms	9.01 T	763.31 G	375.90 M	1.45 G	0 B	0 B
SELECT * FROM on."NF :O…	207.00	47 min 23 s	13 s 734 ms	8 min 20 s	65 ms 178 µs	1.19 T	13.49 T	27.20 M	77.70 M	0 B	0 B
SELECT s." ", s."S …	6,964.00	46 min 38 s	401 ms 833 µs	152 ms 277 µs	0	31.57 M	2.90 T	0 B	0 B	0 B	0 B
select " C…	359.00	44 min 26 s	7 s 428 ms	4 s 157 ms	59 ms 864 µs	3.90 G	8.03 T	176.41 M	88.08 M	0 B	0 B
select count(*) from e	50.00	39 min 12 s	47 s 56 ms	59 min 39 s	1 s 80 ms	6.30 T	478.14 G	158.13 M	1022.96 M	0 B	0 B

Alarm&Notification

- Grafana alarms for Performance issius
- Ent. with company alarm infra.
- Daily routine reports

Automaiton&Configuration (with CI&CD)

- Ansible (Mostly)
- Python (When it is needed.)
- DB level Programing. (plpgsql)

Security&Audit

- Server&Network Level Controls.
- DB Level Control (SSL if needed, pg_hba etc.)
- Audit with ELK (Elasticsearh&Logstash&Kibana)

Cost

- No Software Cost (using OpenSource solutions)
- Cost balanced solutions