ZABBIX 5.0

MIGRATING FROM MYSQL TO POSTGRESQL

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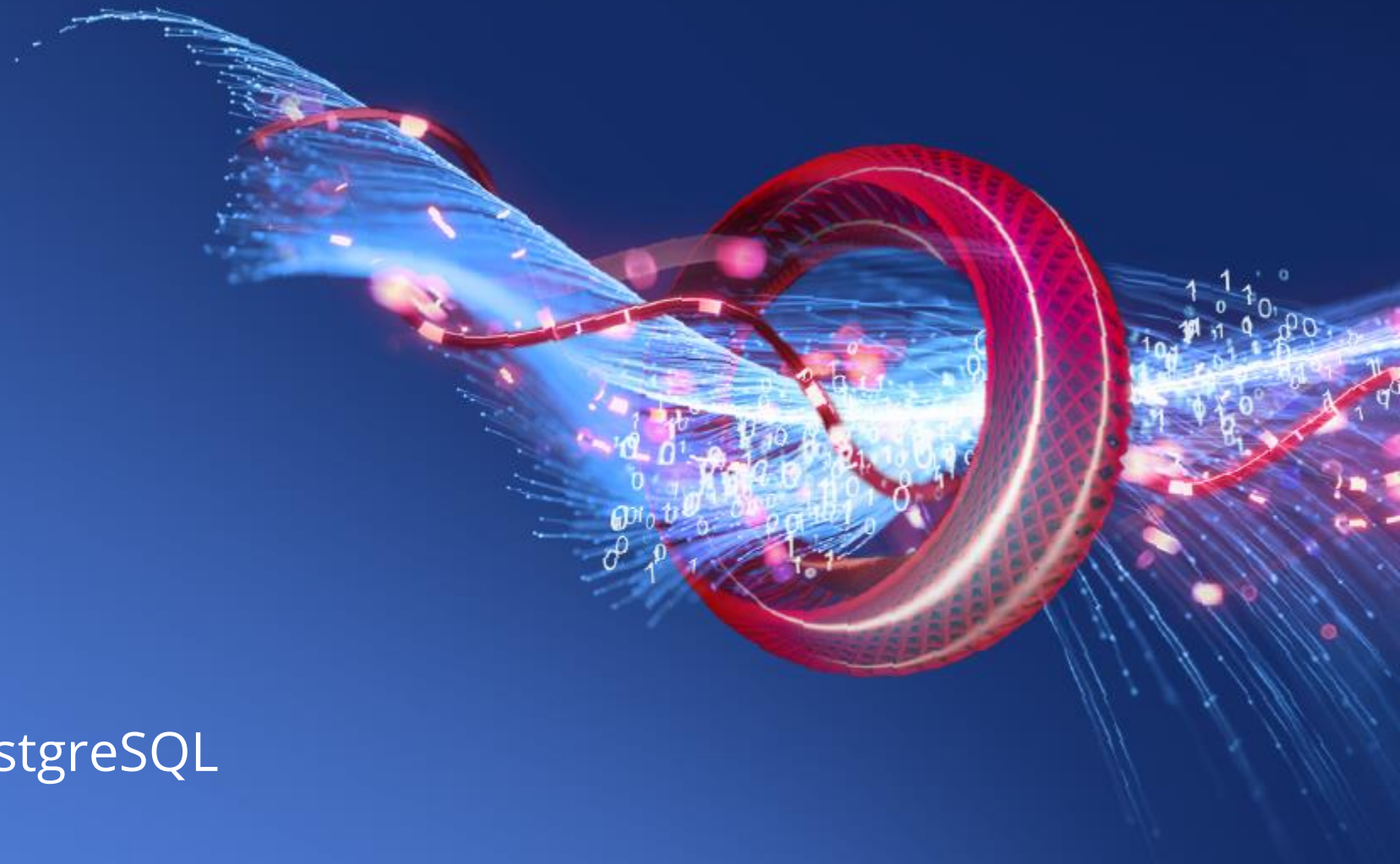
WHY MIGRATE?



- You are better at PostgreSQL
- You are interested in working with TimescaleDB

IS THERE A DIFFERENCE?

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- From Zabbix DB perspective performance of PostgreSQL and MySQL is almost identical.
- Both require tuning(e.g. buffer and transaction log) and is important.
- Partitioning for MySQL's can be a bit easier than for PostgreSQL.
- PostgreSQL's partitioning supports foreign key
- PostgreSQL can be a bit more stable in case of high IO

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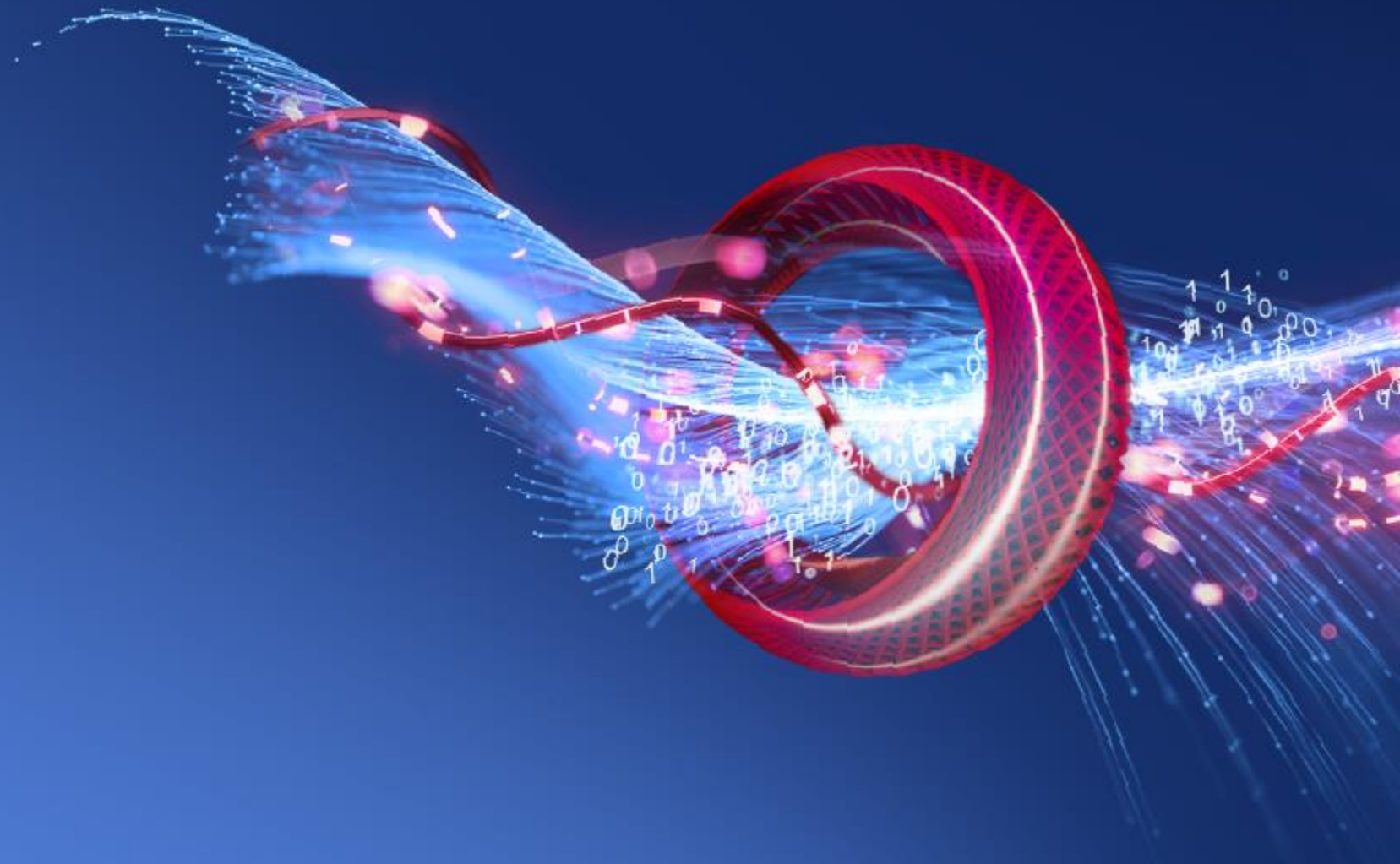
PREPARATIONS



HOW TO PREPARE TO MIGRATION?

SETUP

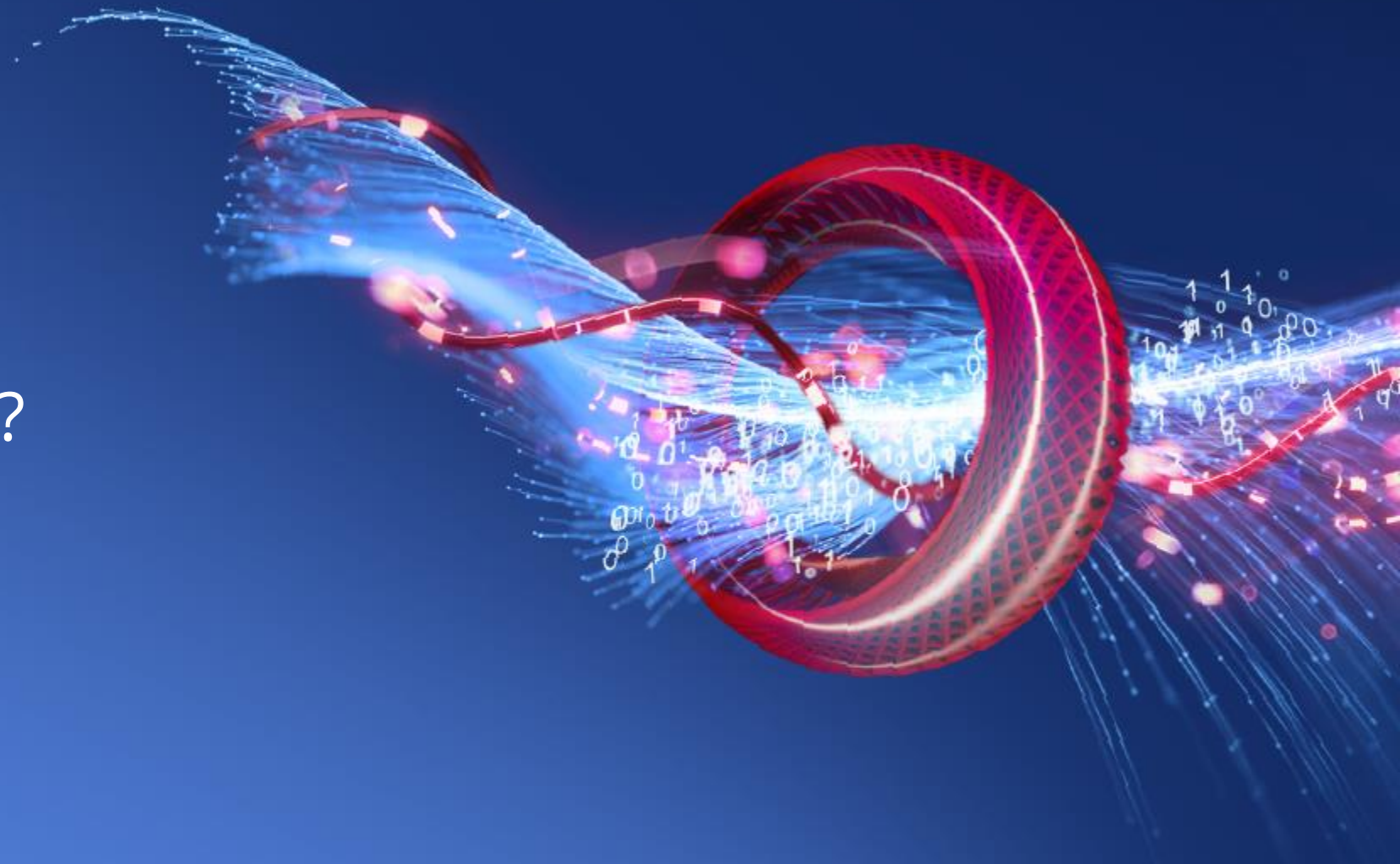
- Zabbix 5.0
- Centos 7
- MariaDB 5.5.65

WHAT IS REQUIRED?

- PostgreSQL
- PGloader
- Zabbix source code

03

HOW TO MIGRATE?



HOW TO MIGRATE?

PREPARATIONS

1. Adding the PostgreSQL repo and installing it

```
# yum install https://download.postgresql.org/pub/repos/yum/reporpms/EL-7-x86_64/pgdg-redhat-repo-latest.noarch.rpm

# yum install postgresql12-server

# /usr/pgsql-12/bin/postgresql-12-setup initdb

# systemctl enable postgresql-12
# systemctl start postgresql-12
```

2. Installing pgloader

```
# yum install pgloader

# pgloader -V
# pgloader version "3.6.2"
```

PREPARATIONS

1. Creating a directory to work in

```
# mkdir myzabbix-pgzabbix

# cd myzabbix-pgzabbix
```

2. Downloading the Zabbix source code

```
# yum install wget

# wget https://cdn.zabbix.com/zabbix/sources/stable/5.0/zabbix-5.0.1.tar.gz
```

3. Unpacking

```
# tar -zxvf zabbix-5.0.1.tar.gz
```

PREPARATIONS

1. Splitting the default schema.sql into create.sql and alter.sql

```
# cd myzabbix-pgzabbix/zabbix-5.0.1/database/postgresql/

# sed -n '/CREATE.*/,/INSERT.*$/p' schema.sql | head -n-1 > create.sql

# grep ALTER schema.sql > alter.sql
```

2. Creating a user and DB in PostgreSQL

```
# sudo -u postgres createuser --pwprompt zabbix

# sudo -u postgres createdb -O zabbix zabbix
```

PREPARATIONS

1. In the same directory in which we have create.sql and alter.sql, create script zabbix_migrate.load

```
LOAD DATABASE
  FROM mysql://zabbix:zabbix-password@localhost/zabbix
  INTO postgresql://zabbix:zabbix-password@localhost/zabbix
WITH include no drop,
     truncate,
     create no tables,
     create no indexes,
     no foreign keys,
     reset sequences,
     data only
SET maintenance_work_mem TO '1024MB', work_mem to '256MB'
ALTER SCHEMA 'zabbix' RENAME TO 'public'
BEFORE LOAD EXECUTE create.sql
AFTER LOAD EXECUTE alter.sql;
```

MIGRATION

1. Stop Zabbix server

```
# systemctl stop zabbix-server
```

2. Run pgloader

```
# pgloader zabbix-migrate.load
```

3. We are seeing warnings, but that's okay

```
2020-06-17T22:23:12.726000+01:00 WARNING Source column "public"."widget_field".
c"."widget_field"."type".
2020-06-17T22:23:12.726000+01:00 WARNING Source column "public"."widget_field".
ublic"."widget_field"."value_int".
2020-06-17T22:23:12.726000+01:00 WARNING Source column "public"."widget_field".
mn "public"."widget_field"."value_groupid".
```

4. Results can be seen

```
                            ---------  ---------  ---------  --------------
         COPY Threads Completion          0          4                     11.983s
                Reset Sequences           0          3                      0.051s
               Install Comments           0          0                      0.000s
                     after load           0        223                      2.424s
                            ---------  ---------  ---------  --------------
              Total import time           ✓     557393    22.2 MB          14.458s
```

RE-CHECKING

```
maintenance_from    | integer                  |           | not null | 0                      | plain    |              |
ipmi_errors_from    | integer                  |           | not null | 0                      | plain    |              |
snmp_errors_from    | integer                  |           | not null | 0                      | plain    |              |
ipmi_error          | character varying(2048)  |           | not null | ''::character varying  | extended |              |
snmp_error          | character varying(2048)  |           | not null | ''::character varying  | extended |              |
jmx_disable_until   | integer                  |           | not null | 0                      | plain    |              |
jmx_available       | integer                  |           | not null | 0                      | plain    |              |
jmx_errors_from     | integer                  |           | not null | 0                      | plain    |              |
jmx_error           | character varying(2048)  |           | not null | ''::character varying  | extended |              |
name                | character varying(128)   |           | not null | ''::character varying  | extended |              |
flags               | integer                  |           | not null | 0                      | plain    |              |
templateid          | bigint                   |           |          |                        | plain    |              |
description         | text                     |           | not null | ''::text               | extended |              |
tls_connect         | integer                  |           | not null | 1                      | plain    |              |
tls_accept          | integer                  |           | not null | 1                      | plain    |              |
tls_issuer          | character varying(1024)  |           | not null | ''::character varying  | extended |              |
tls_subject         | character varying(1024)  |           | not null | ''::character varying  | extended |              |
tls_psk_identity    | character varying(128)   |           | not null | ''::character varying  | extended |              |
tls_psk             | character varying(512)   |           | not null | ''::character varying  | extended |              |
proxy_address       | character varying(255)   |           | not null | ''::character varying  | extended |              |
auto_compress       | integer                  |           | not null | 1                      | plain    |              |
discover            | integer                  |           | not null | 0                      | plain    |              |
Indexes:
    "hosts_pkey" PRIMARY KEY, btree (hostid)
    "hosts_1" btree (host)
    "hosts_2" btree (status)
    "hosts_3" btree (proxy_hostid)
    "hosts_4" btree (name)
    "hosts_5" btree (maintenanceid)
Foreign-key constraints:
    "c_hosts_1" FOREIGN KEY (proxy_hostid) REFERENCES hosts(hostid)
    "c_hosts_2" FOREIGN KEY (maintenanceid) REFERENCES maintenances(maintenanceid)
    "c_hosts_3" FOREIGN KEY (templateid) REFERENCES hosts(hostid) ON DELETE CASCADE
Referenced by:
    TABLE "applications" CONSTRAINT "c_applications_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "autoreg_host" CONSTRAINT "c_autoreg_host_1" FOREIGN KEY (proxy_hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "drules" CONSTRAINT "c_drules_1" FOREIGN KEY (proxy_hostid) REFERENCES hosts(hostid)
    TABLE "group_prototype" CONSTRAINT "c_group_prototype_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "host_discovery" CONSTRAINT "c_host_discovery_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "host_discovery" CONSTRAINT "c_host_discovery_2" FOREIGN KEY (parent_hostid) REFERENCES hosts(hostid)
    TABLE "host_inventory" CONSTRAINT "c_host_inventory_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "host_tag" CONSTRAINT "c_host_tag_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "hostmacro" CONSTRAINT "c_hostmacro_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "hosts" CONSTRAINT "c_hosts_1" FOREIGN KEY (proxy_hostid) REFERENCES hosts(hostid)
    TABLE "hosts" CONSTRAINT "c_hosts_3" FOREIGN KEY (templateid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "hosts_groups" CONSTRAINT "c_hosts_groups_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "hosts_templates" CONSTRAINT "c_hosts_templates_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "hosts_templates" CONSTRAINT "c_hosts_templates_2" FOREIGN KEY (templateid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "httptest" CONSTRAINT "c_httptest_2" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "interface" CONSTRAINT "c_interface_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "items" CONSTRAINT "c_items_1" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "lld_override_optemplate" CONSTRAINT "c_lld_override_optemplate_2" FOREIGN KEY (templateid) REFERENCES hosts(hostid)
    TABLE "maintenances_hosts" CONSTRAINT "c_maintenances_hosts_2" FOREIGN KEY (hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "opcommand_hst" CONSTRAINT "c_opcommand_hst_2" FOREIGN KEY (hostid) REFERENCES hosts(hostid)
    TABLE "optemplate" CONSTRAINT "c_optemplate_2" FOREIGN KEY (templateid) REFERENCES hosts(hostid)
    TABLE "screens" CONSTRAINT "c_screens_1" FOREIGN KEY (templateid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "task" CONSTRAINT "c_task_1" FOREIGN KEY (proxy_hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
    TABLE "widget_field" CONSTRAINT "c_widget_field_3" FOREIGN KEY (value_hostid) REFERENCES hosts(hostid) ON DELETE CASCADE
```

A BIT MORE OF RE-CHECKING

23269	1592227969	0	136380984
31129	1592227969	12.4298095703125	136431172
23270	1592227970	0	137239896
31130	1592227970	0.36117265235391677	137290370
31011	1592227971	0	138603635
25371	1592227971	0	138616784
31012	1592227972	0	140274435
31072	1592227972	30.542634000000007	140631993
31013	1592227973	0	141245449
10073	1592227973	1.1819641414622033	141264065
23273	1592227973	12.431907653808594	141274420
31014	1592227974	0	141880662
10074	1592227974	0	141899771
23274	1592227974	0	141913658
31135	1592227975	0	142733002
10075	1592227975	0	142766133
23275	1592227975	0.2216546269926503	142793306
31136	1592227976	0.2216546269926503	143406494
10076	1592227976	0.4661249638671019	143450775
23276	1592227976	0.24871826171875	143494775
31137	1592227977	0.25081634521484375	144238188
10077	1592227977	0.04994163240764782	144268763
23277	1592227977	1.764600899390716	144333164
31018	1592227978	12.43600845336914	145288880
10078	1592227978	0.16647062165123577	145311145
31019	1592227979	0.39054713794277507	145765902
29162	1592227982	0.268276	149146486
29823	1592227983	0	149259219
29163	1592227983	354.328873496089	149528576
31024	1592227984	0	150226345
29164	1592227984	0	150618585
31025	1592227985	0.2216546269926503	151480705
29165	1592227985	0	151604853
31026	1592227986	0.2655029296875	152556662
29166	1592227986	0.033518	152858985
29167	1592227987	0	154439526
29168	1592227988	0	155982606
29169	1592227989	0	157480167

FINAL STEPS

1. Removing Zabbix server for MySQL

```
# yum remove Zabbix-server-mysql
```

2. Removing front-end for MySQL

```
# yum remove zabbix-web-*
```

3. Installing Zabbix server to work with PostgreSQL

```
# yum install zabbix-server-pgsql
```

4. Installing front-end to work with PostgreSQL

```
# yum install zabbix-web-pgsql-scl zabbix-apache-conf-scl
```

FINAL STEPS

1. Editing new zabbix_server.conf

```
# vi /etc/zabbix/zabbix_server.conf
```

2. Adding our new DB access data

```
# DBPassword=zabbix
```

3. Deleting previous front-end configuration

```
# rm /etc/zabbix/web/zabbix.conf.php
```

4. Uncomment the time zone again

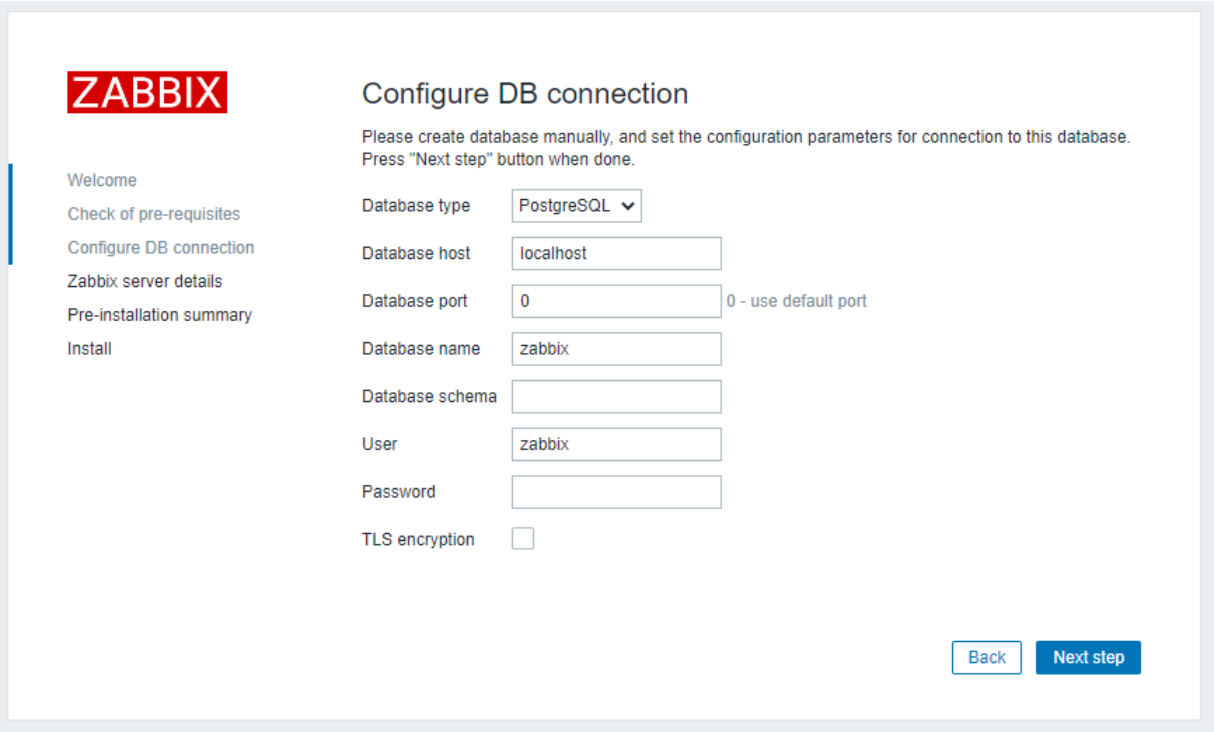
```
# vi /etc/httpd/conf.d/zabbix.conf
```

FINAL STEPS

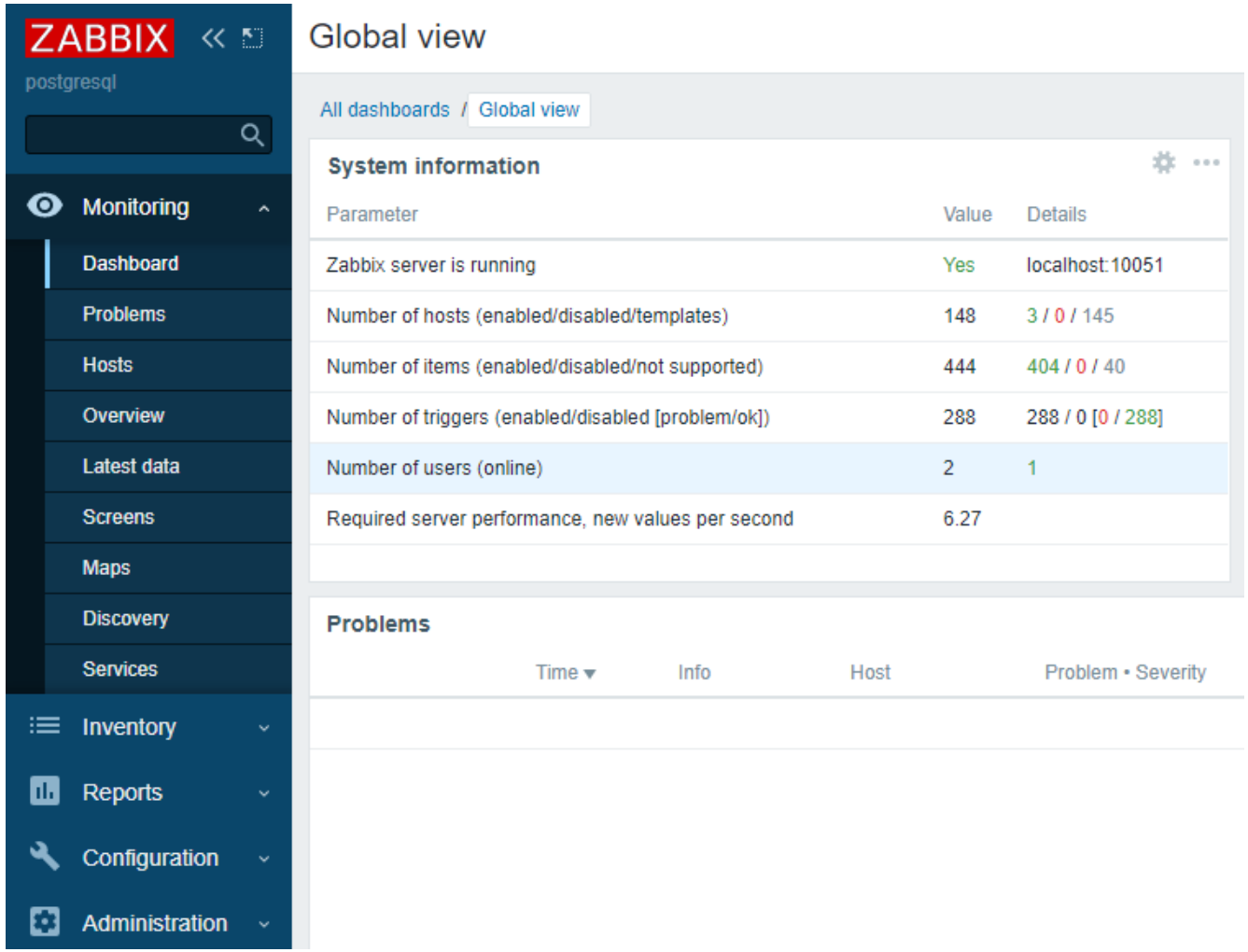
1. Start Zabbix server, restart the httpd

```
# systemctl restart zabbix-server httpd
```

2. Configure the front-end once again, but this time for PostgreSQL



AND AGAIN RE-CHECKING



THE LAST STEP

1. Stop the MySQL

```
# systemctl stop mariadb
```

CONGRATULATIONS, YOU HAVE MIGRATED

Thank you!