

| Sr. No. | Function  | Command   |  |  |                                     |   |
|---------|---|---|--|--|-------------------------------------|---|
|         | PostgreSQL  |   |  |  |                                     |   |
|         | Important commands:   |   |  |  |                                     |   |
| 1       | Login to Ubuntu   | Login through PUTTY software<br>IP : 3.109.170.247<br>Password: ppk file<br>Connection>>SSH>>Auth>>Browse ppk file<br>password: ubuntu  |  |  |                                     |   |
| 2       | Login to PostgreSQL (user: postgres)  | sudo -i -u postgres   |  |  |                                     |   |
| 3       | Open front-end postgres terminal  | psql  |  |  |                                     |   |
| 4       | Connect Thingsboard database  | \c thingsboard  |  |  |                                     |   |
|         |   |   |  |  | Storage Check                       |   |
| 5       | Count of tenants and list   | select count(*) from tenant;<br>select * from tenant limit 10;  |  |  | Logs Data                           | sudo su<br>cd                               |
| 6       | Count of devices  | select count(*) from device;<br>select * from device limit 10;  |  |  | Diskspace con                       | df -lh                                      |
| 7       | Count of assets   | select count(*) from asset<br>select * from asset limit 10;   |  |  | Database cons                       | sudo su<br>cd /var/lib/postgresql<br>du -sh |
| 8       | Check size  | SELECT nspname    '.'    relname AS "relation",pg_size_pretty (pg_relation_size(C.oid)) AS "size" FROM pg_class C LEFT JOIN pg_namespace N ON (N.oid = C.relnamespace) WHERE nspname NOT IN ('pg_catalog', 'information_schema') ORDER BY pg_relation_size(C.oid) DESC LIMIT 20;  |  |  |                                     |   |
| 9       | Delete Records  | Delete from ts_kv where ts<TIMESTAMP_HERE_IN_milliseconds;<br>Delete * from table_name where <condition here>   |  |  |                                     |   |
| 10      | To delete records from all entity within a tenant id and specified timestamp.   | select * from ts_kv where entity_id in (select id from device where tenant_id=) and ts<   |  |  |                                     |   |
| 11      | Delete records based on timestamp in a given interval   | DELETE FROM ts_kv where ts<timestamp_here_in_milliseconds;  |  |  |                                     |   |
| 12      | Delete records from a particular device in a given interval   | DELETE FROM ts_kv where entity_id=' ' and ts<timestamp;   |  |  |                                     |   |
| 13      | Delete records of an entire device from a tenant  | DELETE FROM ts_kv where entity_id in (SELECT id from device where tenant_id= ' ') and ts<;  |  |  |                                     |   |
| 14      | Delete alarm records based on originator  | DELETE FROM alarm where originator_id= ' ';   |  |  | 8a13dd90-a358-11ec-bfff-cfbfd512a91 |   |
| 15      | Delete dashboard records  | DELETE FROM dashboards where tenant_id= ' ';  |  |  |                                     |   |
|         |   |   |  |  |                                     |   |
|         |   | select * from ts_kv where ts>123456 and ts<98765432 order by ts desc  |  |  |                                     |   |
|         | listing in order of entity_id,key and ts  | select *, LAG(bool_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_bool, LAG(long_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_long, LAG(str_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_str, LAG(dbl_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_dbl, LAG(json_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_json from (select * from ts_kv where ts>123456 and ts<98765432 order by ts desc)kk;   |  |  |                                     |   |
|         | filter out repeating rows   | select * from ( select *, LAG(long_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_long, LAG(str_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_str, LAG(dbl_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_dbl from (select * from ts_kv where ts>123456 and ts<98765432 order by ts desc)kk)kv where coalesce(str_v,'1')=coalesce(p_str,'1') and coalesce(dbl_v,2)=coalesce(p_dbl,2) and coalesce(long_v,1)=coalesce(p_long,1);  |  |  |                                     |   |
|         | rechecking again using select   | select * from ts_kv inner join ( select * from ( select *, LAG(long_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_long, LAG(str_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_str, LAG(dbl_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_dbl from (select * from ts_kv where ts>123456 and ts<98765432 order by ts desc)kk)kv where coalesce(str_v,'1')=coalesce(p_str,'1') and coalesce(dbl_v,2)=coalesce(p_dbl,2) and coalesce(long_v,1)=coalesce(p_long,1) )fkv on ts_kv.entity_id = fkv.entity_id and ts_kv.key=fkv.key and ts_kv.ts=fkv.ts;     |  |  |                                     |   |
|         | delete by replacing select with delete  | delete ts_kv from ts_kv inner join ( select * from ( select *, LAG(long_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_long, LAG(str_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_str, LAG(dbl_v, 1) OVER (PARTITION BY entity_id, key order by ts) p_dbl from (select * from ts_kv where ts>123456 and ts<98765432 order by ts desc)kk)kv where coalesce(str_v,'1')=coalesce(p_str,'1') and coalesce(dbl_v,2)=coalesce(p_dbl,2) and coalesce(long_v,1)=coalesce(p_long,1) )fkv on ts_kv.entity_id = fkv.entity_id and ts_kv.key=fkv.key and ts_kv.ts=fkv.ts; |  |  |                                     |   |
|         | <b>Steps to activate License</b>  |   |  |  |                                     |   |
| 1       | Stop your ThingsBoard service   | sudo systemctl stop thingsboard   |  |  |                                     |   |
| 2       | Delete license data file  | sudo rm -f /usr/share/thingsboard/bin/instance-license.data   |  |  |                                     |   |
| 3       | <b>On the License portal locate and deactivate (DO NOT DELETE License KEY, just deactivate current active instance via the license portal to make license key free for usage)</b> |   |  |  |                                     |   |
| 4       | Start ThingsBoard service again   | sudo systemctl start thingsboard  |  |  |                                     |   |