Haproxy Load balancer setup (Use Wisense's haproxy.cfg):

https://thingsboard.io/docs/user-guide/install/pe/add-haproxy-ubuntu/

https://certbot.eff.org/lets-encrypt/ubuntubionic-haproxy

Certbot steps:

1. If certbot certificates are already installed, avoid **rm -rf /etc/letsencrypt** command in the next step. If thingsboard documentation is followed, ensure this trap is avoided.
2. username $ sudo mkdir -p /usr/local/etc/letsencrypt \
   && sudo mkdir -p /usr/share/tb-haproxy/letsencrypt \
   && sudo rm -rf /etc/letsencrypt \
   && sudo ln -s /usr/share/tb-haproxy/letsencrypt /etc/letsencrypt \
   && sudo mkdir -p /usr/share/tb-haproxy/certs.d
3. username $ cat <<EOT | sudo tee /usr/local/etc/letsencrypt/cli.ini
   authenticator = standalone
   agree-tos = True
   http-01-port = 8090
   tls-sni-01-port = 8443
   non-interactive = True
   preferred-challenges = http-01
   EOT
4. username $ cat <<EOT | sudo tee /usr/bin/haproxy-refresh
   #!/bin/sh

   HA_PROXY_DIR=/usr/share/tb-haproxy
   LE_DIR=/usr/share/tb-haproxy/letsencrypt/live
   DOMAINS=\$(ls -I README \${LE_DIR})
   # update certs for HA Proxy
   for DOMAIN in \${DOMAINS}
   do
   cat \${LE_DIR}/\${DOMAIN}/fullchain.pem \${LE_DIR}/\${DOMAIN}/privkey.pem >
   \${HA_PROXY_DIR}/certs.d/\${DOMAIN}.pem
   done
   # restart haproxy
   exec service haproxy restart
   EOT

5. username $ cat <<EOT | sudo tee /usr/bin/certbot-certonly
   #!/bin/sh

   /usr/bin/certbot certonly -c /usr/local/etc/letsencrypt/cli.ini "\$@"
   EOT

6. username $ cat <<EOT | sudo tee /usr/bin/certbot-renew

```
#!/bin/sh

/usr/bin/certbot -c /usr/local/etc/letsencrypt/cli.ini renew "\$@"
EOT
```

7. username $ sudo chmod +x /usr/bin/haproxy-refresh /usr/bin/certbot-certonly /usr/bin/certbot-renew

8. username $ cat <<EOT | sudo tee /etc/cron.d/certbot

```
# /etc/cron.d/certbot: crontab entries for the certbot package
#
# Upstream recommends attempting renewal twice a day
#
# Eventually, this will be an opportunity to validate certificates
# haven't been revoked, etc.  Renewal will only occur if expiration
# is within 30 days.
SHELL=/bin/sh
PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin

0 */12 * * * root test -x /usr/bin/certbot && perl -e 'sleep int(rand(3600))' && certbot -c /usr/local/etc/letsencrypt/cli.ini -q renew && haproxy-refresh
EOT
```

9. If certificates was not installed previously:
   username $ sudo certbot-certonly --domain your_domain --email your_email

10. username $ sudo mkdir /usr/share/tb-haproxy/certs.d/
    username $ sudo haproxy-refresh