


```
#> ./run.sh
```

```
?? SSL ???
```

```
NOTE: ? Host ??????
```

```
#> docker exec -it postfix openssl req -x509 -nodes -days 3650 -newkey rsa:2048 \
-keyout /etc/postfix/certs/smtp-mydomain-com.key \
-out /etc/postfix/certs/smtp-mydomain-com.crt
```

```
TIP?
```

```
??? .crt ? .key ??????????
```

```
- Host OS: data/certs
```

```
- Container OS: /etc/postfix/certs
```

```
SSL ????? SMTP ????????????????????
```

```
?? DKIM ??
```

```
? Host ??????
```

```
docker exec -it postfix sh -c "cd /etc/opendkim/domainkeys && opendkim-genkey -t -s mail -d
mydomain.com"
```

```
TIP?
```

```
??? .private ????.txt ??????????
```

```
- Host OS: data/domainkeys
```

```
- Container OS: /etc/postfix/domainkeys
```

```
.txt ?????????????? DNS Zone?
```

```
?? container
```

```
?? SSL ??? DKIM ?????? container ??????????
```

```
./stop.sh
```

```
./run.sh
```

```
???????????????
```

```
???? container ???
```

```
postfix:
```

```
#> docker exec -it postfix ps -ef | grep postfix
root    54   51  0 07:11 ?        00:00:00 /bin/bash /opt/postfix.sh
root    125   1  0 07:11 ?        00:00:00 /usr/lib/postfix/master
postfix 127  125  0 07:11 ?        00:00:00 pickup -l -t unix -u
postfix 128  125  0 07:11 ?        00:00:00 qmgr -l -t unix -u
```

opendkim:

```
#> docker exec -it postfix ps -ef | grep opendkim
opendkim 55 51 0 07:11 ? 00:00:00 /usr/sbin/opendkim -f
opendkim 66 55 0 07:11 ? 00:00:00 /usr/sbin/opendkim -f
```

/var/log/mail.log:

```
#> docker exec -it postfix tail -20 /var/log/mail.log
Jan 2 07:11:14 a037fd779eaa opendkim[66]: OpenDKIM Filter v2.9.1 starting (args: -f)
Jan 2 07:11:15 a037fd779eaa postfix/master[125]: daemon started -- version 2.11.0, configuration /etc/postfix
```

TIP?
 ?????? sasl ?????????? saslauthd ??????????

mail.log ?? ... doesn't resolve to XXX.XXX.XXX.XXX ??????????????????
 ?????????????????? FQDN?????????????????

??????????????????

- ??????????
- ??????????????????
- ??????????????????

?? SPF?DKIM ? DMARC ??

- [?????????DMARC?????????????????](#)
- [?????????????????????DMARC?SPF?DKIM](#)

?? SPF ??

SPF ?? SMTP ?? IP????????? IP ??????????????????????????

? DNS Zone ???? TXT ????????

- Type: TXT
- Name: mydomain.com ?? @
- Value: v=spf1 a mx ip4:123.123.123.123 ~all

123.123.123.123 ? SMTP ????

????? IP ?????????????????? ip4:123.123.123.123 ip4:111.111.111.111

?? SPF ?????????? [Google: ?? SPF ??????????????????](#)

??????

1. ? openssl ?? SMTP ????

????????? base64 ??

user: alang@mydomain.com

pass: yourpass

```
$> echo -ne '\000alang@mydomain.com\000yourpass' | openssl base64
AGFsYW5nQG15ZG9tYWluLmNvbQB5b3VycGFzcw==
```

??? perl ???

?????? @ ??????? \

```
$> perl -MMIME::Base64 -e \ 'print encode_base64("\0alang\@mydomain.com\0yourpass");'
AGFsYW5nQG15ZG9tYWluLmNvbQB5b3VycGFzcw==
```

?? smtp ??

- SMTP ?????smtp.mydomain.com
- submission ???587

```
$> openssl s_client -quiet -starttls smtp -connect smtp.mydomain.com:587
depth=0 C = TW, ST = TY, L = TaoYuan, O = RAIDA, OU = Admin, CN = smtp.osslab.tw
verify error:num=18:self signed certificate
verify return:1
depth=0 C = TW, ST = TY, L = TaoYuan, O = RAIDA, OU = Admin, CN = smtp.osslab.tw
verify return:1
250 DSN
```

????????? base64??

```
AUTH PLAIN AGFsYW5nQG15ZG9tYWluLmNvbQB5b3VycGFzcw==
```

????????????

235 2.7.0 Authentication successful

????? quit

2. ????? Gmail ??

???? Gmail ?????????????? Gmail ?????????? SPF/DKIM/DMARC ??????????????????????

- ?????????????????? STARTTLS ?????????????????? Mozilla Thunderbird?
 - Gmail ????
 - ?? alang@mydomain.com
- NOTE??? Thunderbird ???

Thunderbird SMTP ???

- Port: 587
- SMTP ???smtp.mydomain.com
- ??????STARTTLS
- ?????????? container ?????????????? alang@mydomain.com

TIP?

????????? SSL/TLS?????????????

????????Thunderbird ?????????????????? container ??????????

???? self-signed ?????????????????????????????????????? [thunderbird-smtp.png](#) ?

?? DNS ??

? DNS ?????????? TXT ??????????????????

????????? Linux ??????????

SPF record

\$> dig +short TXT mydomain.com

DKIM key

\$> dig +short TXT mail._domainkey.mydomain.com

DMARC

\$> dig +short TXT _dmarc.mydomain.com