HTTPS & TLS

HTTPS

HTTPSWebServerEnableHTTPS(certFile, keyFile string) errorHTTPS

openssl

1. RSA

   openssl genrsa -out server.key 2048

   ECDSA

   openssl ecparam -genkey -name secp384r1 -out server.key

2.

   openssl req -new -x509 -key server.key -out server.crt -days 365

3. ()

   openssl rsa -in server.key -out server.key.public

   opensslman openssl(Ubuntu)

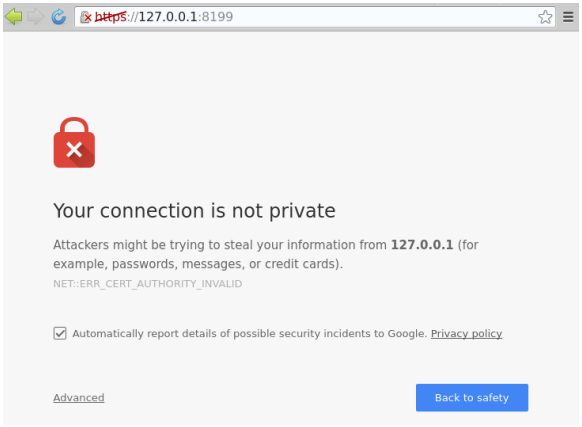
```
$ openssl genrsa -out server.key 2048
Generating RSA private key, 2048 bit long modulus
.......................+++
.....................................................................+++
unable to write 'random state'
e is 65537 (0x10001)

$ openssl req -new -x509 -key server.key -out server.crt -days 365
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:CH
State or Province Name (full name) [Some-State]:SiChuan
Locality Name (eg, city) []:Chengdu
Organization Name (eg, company) [Internet Widgits Pty Ltd]:John.cn
Organizational Unit Name (eg, section) []:Dev
Common Name (e.g. server FQDN or YOUR name) []:John
Email Address []:john@johng.cn

$ openssl rsa -in server.key -out server.key.public
writing RSA key

$ ll
total 20
drwxrwxr-x  2 john john 4096 Apr 23 21:26 ./
drwxr-xr-x 90 john john 4096 Apr 23 20:55 ../
-rw-rw-r--  1 john john 1383 Apr 23 21:26 server.crt
-rw-rw-r--  1 john john 1675 Apr 23 21:25 server.key
-rw-rw-r--  1 john john 1675 Apr 23 21:26 server.key.public
```

ghttp.ServerHTTPS

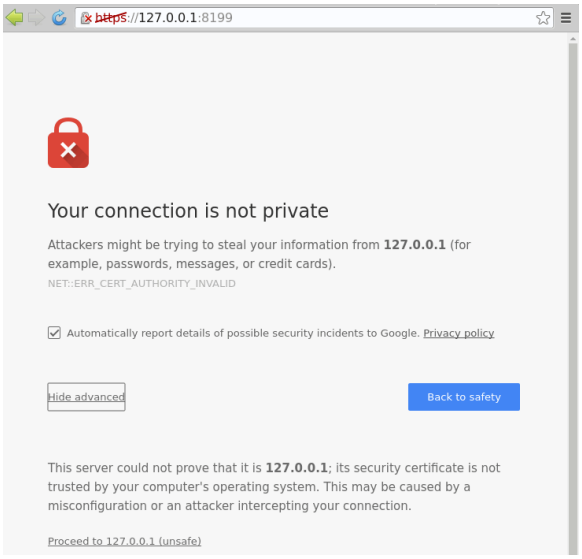
Content Menu

```
package main

import (
    "github.com/gogf/gf/net/ghttp"
)

func main() {
    s := ghttp.GetServer()
    s.BindHandler("/", func(r *ghttp.Request){
        r.Response.Writeln("HTTPS")
    })
    s.EnableHTTPS("/home/john/https/server.crt", "/home/john/https/server.
key")
    s.SetPort(8199)
    s.Run()
}
```

`EnableHTTPSs.SetPort(8199)HTTPSs.SetHTTPSPort(8199)`WebServerHTTPHTTPS https://127.0.0.1:8199/



HTTPSHTTPS



`AdvancedProceed to 127.0.0.1 (unsafe)`

HTTPSHTTP

HTTPHTTPSWebServer`ghttp` “”WebServerHTTPSHTTP

```
package main

import (
    "github.com/gogf/gf/net/ghttp"
)

func main() {
    s := ghttp.GetServer()
    s.BindHandler("/", func(r *ghttp.Request){
        r.Response.Writeln("HTTPHTTPS")
    })
    s.EnableHTTPS("/home/john/https/server.crt", "/home/john/https/server.
key")
    s.SetHTTPSPort(443)
    s.SetPort(80)
    s.Run()
}
```

http://127.0.0.1/ https://127.0.0.1/ WebServer80443root/

HTTPS

```
func (s *Server) EnableHTTPS(certFile, keyFile string) error
func (s *Server) SetHTTPSPort(port ...int) error
```

HTTPSWebServerHTTPSSetPortHTTPWebServerHTTPSHTTP

Let’s Encrypt

SSL

1. DV SSL ：https://cloud.tencent.com/product/ssl
2. Let’s Encrypt：https://letsencrypt.org/
3. CloudFlare SSL：https://www.cloudflare.com/
4. StartSSL：https://www.startcomca.com/
5. WosignSSL：https://www.wosign.com/
6. loovit.net AlphaSSL：https://www.lowendtalk.com/entry/register?Target=discussion%2Fcomment%2F2306096

Let's Encrypt

Let’s Encrypthttps://letsencrypt.org/

UbuntuLet's Encryptgf

Certbot

Certbothttps://certbot.eff.org/

Let’s Encryptcertbot

```
sudo apt-get update
sudo apt-get install software-properties-common
sudo add-apt-repository ppa:certbot/certbot
sudo apt-get update
sudo apt-get install certbot
```

```
certbot certonly --standalone -d  --staple-ocsp -m  --agree-tos
```

```
root@ip-172-31-41-204:~# certbot certonly --standalone -d goframe.org --
staple-ocsp -m john@goframe.org --agree-tos
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator standalone, Installer None
Starting new HTTPS connection (1): acme-v02.api.letsencrypt.org
Obtaining a new certificate
Performing the following challenges:
http-01 challenge for goframe.org
Waiting for verification...
Cleaning up challenges

IMPORTANT NOTES:
 - Congratulations! Your certificate and chain have been saved at:
   /etc/letsencrypt/live/goframe.org/fullchain.pem
   Your key file has been saved at:
   /etc/letsencrypt/live/goframe.org/privkey.pem
   Your cert will expire on 2019-01-25. To obtain a new or tweaked
   version of this certificate in the future, simply run certbot
   again. To non-interactively renew *all* of your certificates, run
   "certbot renew"
 - If you like Certbot, please consider supporting our work by:

   Donating to ISRG / Let's Encrypt:   https://letsencrypt.org/donate
   Donating to EFF:                    https://eff.org/donate-le

/etc/letsencrypt/

/etc/letsencrypt/live/goframe.org/fullchain.pem
/etc/letsencrypt/live/goframe.org/privkey.pem
```

```
package main

import (
    "github.com/gogf/gf/net/ghttp"
)

func main() {
    s := ghttp.GetServer()
    s.BindHandler("/", func(r *ghttp.Request){
        r.Response.Writeln("HTTPS")
    })
    s.EnableHTTPS("/etc/letsencrypt/live/goframe.org/fullchain.pem", "/etc
/letsencrypt/live/goframe.org/privkey.pem")
    s.Run()
}
```

3

certbot renew

crontab

```
# `gf`WebServer
0 0 * * * certbot renew --quiet --renew-hook "kill -SIGUSR1 $(pidof )"
```