

Step By Step OpenVPN Configuration on Windows 8 / 10 with GWN 7000

Published September 28, 2018 by: Shi Yiing Tan

On GWN 7000

**Detailed instructions and parameter definitions can be found in our official [GWN 7000 VPN Guide](#) . I will break down the steps through this guide.

Step 1: Generate Self-issued Certificate Authority (CA)

Navigate to System Settings > Cert. Manager > Certificates >> CAs

Step 2: Create user

Navigate to System Settings >> User Manager tab >> Click 'Add' >> to create a new user:

Step 3: Create Client Certificate

Navigate to System Settings > Cert. Manager > Certificates >> Client. Make sure you select 2048 key length to avoid hitting error "OpenSSL: error:140AB18F:SSL routines:SSL_CTX_use_certificate:ee key too small"

The screenshot shows the 'Certificate Manager' interface. On the left sidebar, the 'Cert. Manager' menu item is highlighted with a red box. The main area displays a table of existing certificates with columns for Name and Key Length. An 'Add' button is highlighted with a red box. A modal window titled 'Add' is open, showing a form to create a new certificate. The 'Key Length' dropdown is highlighted with an orange box and set to 2048. The 'Common Name' field is empty, and a red error message 'The field should not be empty' is displayed below it. Other fields include CA Certificate (CA-GS), Certificate Type (Client), Username (ShiYiingLenovo), Digest Algorithm (SHA1), Lifetime (days) (3600), Country Code (US), State or Province (KL), City (KL), and Organization (G). 'Save' and 'Cancel' buttons are at the bottom of the modal.

Step 4: Create OpenVPN Server

Navigate to VPN >> OpenVPN >> Server tab >> Add New .

Please note that you must enter the network range that the GWN7000 will be serving from to the OpenVPN® clients in format x.x.x.x/x.

OpenVPN®

Overview

Router

Routing

Access Points

SSIDs

Clients

VPN

OpenVPN®

L2TP/IPSec

PPTP

IPSec

Firewall

Captive Portal

Bandwidth Rules

Server

+ Add

Name

GS_Office

GS_Office_2

GS_Office_3

shiyiing

Showing 1-4 of 4 records

Edit

Configuration

Clients

PPTP_Test

shiyiing

Encryption Algorithm: BF-CBC

Digest Algorithm: SHA1

TLS Authentication:

Allow Duplicate Client Certificate:

Certificate Authority: CA-GS

Server Certificate: GSOffice

IPv4 Tunnel Network: 10.0.0.0/16

Redirect Gateway:

Automatic Firewall Rule:

Save Cancel

On your Windows



Step 5: To configure the OpenVPN on the phone, you will need to have 2 certificates files and 1 key file.

These files can be downloaded from GWN 7000 Web UI >> System Settings > Cert. Manager

Certificate Manager

CA's Certificates Revoked Certificates

+ Add

Name	Issuer	Expiration	Subject	Actions
CA-GS	self-issued	Feb 24 05:54:28 4755 GMT	C=MY/ST=Kuala Lumpur/L=Kuala Lumpur/O=GS/OU=GS/CN=CA-GS/emailAddress=mohd.hakim...	 

System Settings

Maintenance

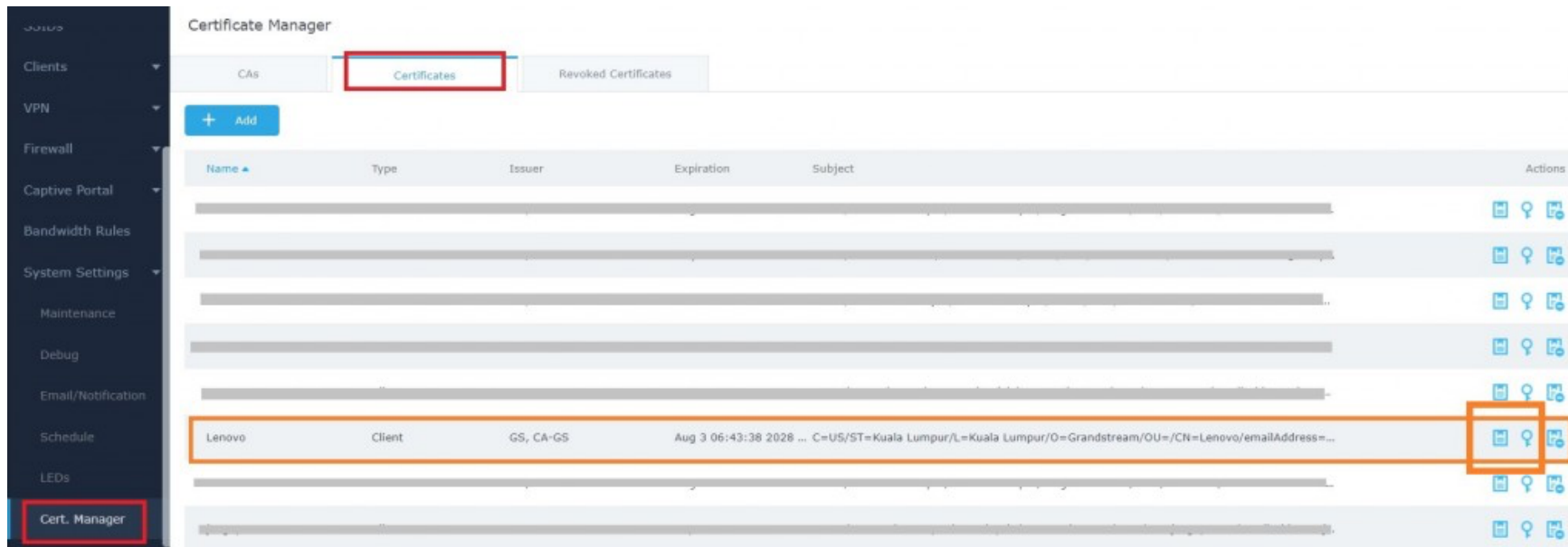
Debug

Email/Notification

Schedule

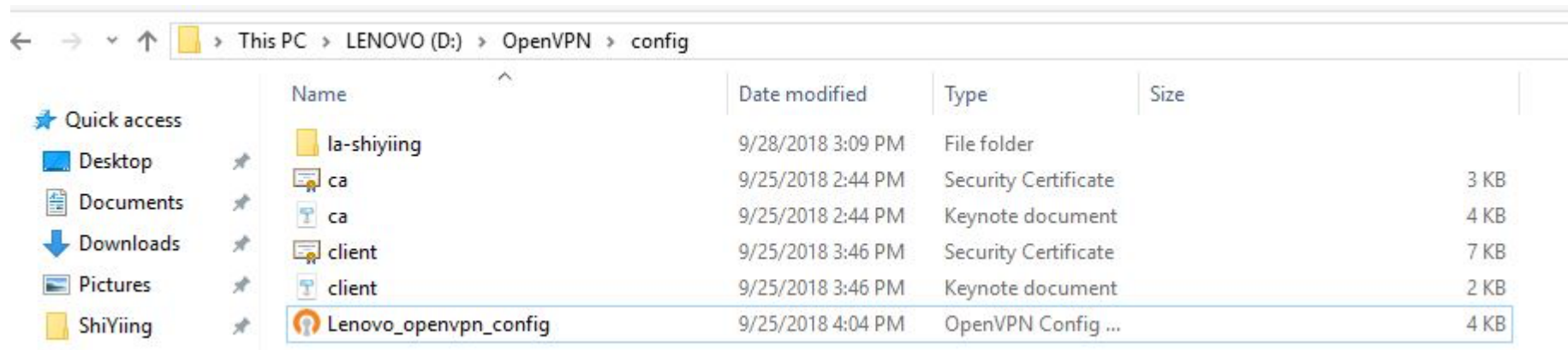
LEDs

Cert. Manager



Step 6: Copy the downloaded files into ../Program Files /OpenVPN folder in your computer.

Files required : ca.crt , ca.key, client.crt , client.key, openvpn config file (.ovpn)



Step 7: Go to this [link](#) and download Windows file. Modify your openvpn config file (.ovpn) to match the OpenVPN server IP and cert files name

```

1 #####
2 # Sample client-side OpenVPN 2.0 config file
3 #
4 # This file is only written for OpenVPN #
5 # client application to connect to GWN7000 #
6 # OpenVPN server. This file has only been #
7 # tested with Windows OpenVPN GUI Clients. #
8 # Please make sure that you have modified it #
9 # according to your GWN7000 server #
10 # configuration, before you load it to your #
11 # openvpn client application. #
12 #####
13
14 client
15
16 # GWN7000 uses TUN mode.
17 # Please keep it as TUN.
18 ;dev tap0
19 dev tun
20
21 # GWN7000 uses TUN mode.
22 # Please keep this line commented.
23 ;dev-node TAP-Windows Adapter V9
24
25 # <==NEED CONFIG! MATCH SERVER "Protocol"
26 # Are we connecting to a TCP or
27 # UDP server? Use the same setting as
28 # on the GWN7000 server protocol.
29 ;proto tcp
30 proto udp
31
32 # <==NEED CONFIG!!!
33 # The hostname/IP and port of the server.
34 # example
35 # remote a.b.c.d 1194
36 # or remote www.myvpn.com 1194
37 remote 211.24.117.95 1194 # WAN IP address and port number
38
39 # Keep trying indefinitely to resolve the
40 # host name of the OpenVPN server. Very useful
41 # on machines which are not permanently connected
42 # to the internet such as laptops.
43 ;resolve-retry infinite
44
45 # Most clients don't need to bind to
46 # a specific local port number.
47 nobind
48
49 # Try to preserve some state across restarts.
50 persist-key
51 persist-tun
52
53 # Wireless networks often produce a lot
54 # of duplicate packets. Set this flag
55 # to silence duplicate packet warnings.
56 ;mute-replay-warnings
57
58 # <==NEED CONFIG!
59 # SSL/TLS parms.
60 # Download your certificates from GWN7000's
61 # Cert. Manager.
62 # Please make sure the path of those three files
63 # can be reached.
64 ca ca.crt
65 cert client.crt
66 key client.key
67
68 # Verify server certificate by checking
69 # that the certificate has the nsCertType
70 # field set to "server". This is an
71 # important precaution to protect against
72 # a potential attack.
73 ;remote-cert-tls server
74
75 # <==NEED CONFIG! MATCH SERVER "TLS Authentication"
76 # If a tls-auth key is used on the server
77 # then every client must also have the key.
78 ;tls-auth C:\keys\tca.key 1
79
80 # <==NEED CONFIG! MATCH SERVER "Encryption Algorithm"
81 # Select a cryptographic cipher.
82 # If the cipher option is used on the server
83 # then you must also specify it here.
84 # example:
85 # cipher AES-256-CBC
86 ;cipher x
87
88 # <==NEED CONFIG! MATCH SERVER "LZO Compression"
89 # Configure compression on the VPN link.
90 # GWN7000 has LZO Compression enabled
91 # as default.
92 comp-lzo
93
94 # Set log file verbosity.
95 verb 3
96
97 # Silence repeating messages
98 ;mute 20

```

Interface	Status	IPv4	IPv6	Uptime
TimeDotCom	✓	211.24.117.95	fe80::54a3:e81:4a94:6f6	

Certificate Manager

CAs
Certificates
Revoked Certificates

+ Add

Name	Issuer	Expiration	Subject	Actions
CA-GS	self-issued	Feb 24 05:54:28 4755 GMT	C=MY/ST=Kuala Lumpur/L=Kuala Lumpur/O=GS/OU=GS/CN=CA-GS/emailAddress=mohd.hakim...	📄 🔍

CAs
Certificates
Revoked Certificates

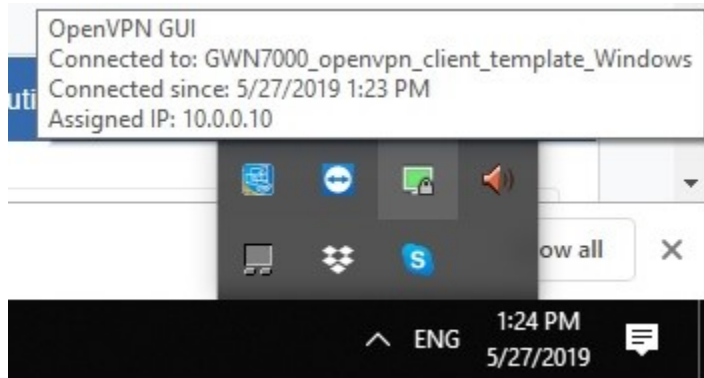
+ Add

Name	Type	Issuer	Expiration	Subject	Actions
	Client	GS, CA-GS	Aug 3 07:43:51 2028 ...	C=US/ST=kuala lumpur/L=kuala lumpur/O=grandstream/OU=/CN=1024/emailAddress=shi...	📄 🔍 🔗
	Client	GS, CA-GS	Aug 3 07:44:34 2028 ...	C=US/ST=kuala lumpur/L=kuala lumpur/O=grandstream/OU=/CN=2048/emailAddress=shi...	📄 🔍 🔗
	Client	GS, CA-GS	May 25 02:34:07 2022...	C=MY/ST=Damansara/L=Damansara/O=GS/OU=/CN=GSClient/emailAddress=user1@comp...	📄 🔍 🔗
	Server	GS, CA-GS	Feb 24 05:57:27 4755 ...	C=MY/ST=Kuala Lumpur/L=Kuala Lumpur/O=GS/OU=/CN=GSoffice/emailAddress=mohd.h...	📄 🔍 🔗
	Client	GS, CA-GS	Feb 24 06:01:06 4755 ...	C=MY/ST=Kuala Lumpur/L=Kuala Lumpur/O=GS/OU=/CN=HakimiCert/emailAddress=mohd...	📄 🔍 🔗
	Client	GS, CA-GS	Sep 26 04:10:56 2017...	C=US/ST=Selangor/L=Sungai Buloh/O=Grandstream/OU=/CN=JazCert/emailAddress=jaz.c...	📄 🔍 🔗
ShiYingWindows10	Client	GS, CA-GS	May 26 04:21:39 2020...	C=MY/ST=Kuala Lumpur/L=Kuala Lumpur/O=Grandstream/OU=/CN=ShiYingWindows10/e...	📄 🔍 🔗

**These required files are stored under OpenVPN > config folder

Name	Date modified	Type	Size
ca	5/27/2019 12:30 PM	Security Certificate	3 KB
client	5/27/2019 12:21 PM	Security Certificate	7 KB
client	5/27/2019 12:21 PM	Keynote document	2 KB
GWN7000_openvpn_client_template_Windows	5/27/2019 12:51 PM	OpenVPN Config File	3 KB

Step 8: Connect OpenVPN application installed in your laptop. Connected device will be assigned with new IP address.



Successfully connected to OpenVPN and computer is assigned with a new IP

Step 9: Navigate to GWN 7000 Web Interface >> VPN >> OpenVPN >> click Edit button >> Clients tab >> to find out the client's real address

The screenshot shows the GWN7000 web interface. The top navigation bar includes the GWN7000 logo, firmware version (1.0.6.28), time (2019-05-27 13:28), search icon, refresh icon, session duration (15s), language (English), and user (admin). The left sidebar lists various configuration sections: Overview, Router, Routing, Access Points, SSIDs, Clients, VPN, OpenVPN@ (selected), L2TP/IPSec, PPTP, IPSec, Firewall, Captive Portal, Bandwidth Rules, System Settings, and Alert/Notification. The main content area is titled 'OpenVPN@' and shows a 'Server' configuration page with an 'Add' button and a list of servers: GS_Office, GS_Office_2, GS_Office_3, and shiyiling. A modal window titled 'Edit' is open, showing the 'Clients' tab. The modal contains a table with the following data:

Name	Real Address
ShiYingWindows10	192.168.0.145:65289

The modal also has 'Save' and 'Cancel' buttons at the bottom. The background interface shows a list of clients with 'Actions' (edit, share, delete) for each entry and a 'Per Page: 10' dropdown.