

Advantech AE Technical Share Document

| Date | 2023/09/07 | Release Note | Internal External | | | | | |
|----------|----------------------------------------------------------|--------------|-------------------|--|--|--|--|--|
| Category | ■FAQ □SOP | Related OS | Win10, Win7 | | | | | |
| Abstract | How to set up dual certification for OpenVPN in Edgelink | | | | | | | |
| Keyword | Edgelink OpenVPN | | | | | | | |
| Related | | | | | | | | |
| Product | ECO-1051 ' ECO-1251 ' | ADAIVI-3600 | | | | | | |

Description:

Edgelink 針對 OpenVPN 連線設定,目前提供 2 種認證機制(二擇一)。

- ◆ 帳密認證 User name/password
- ◆ 金鑰憑證 Crt/Key

但有些 OpenVPN server 要求帳密和金鑰憑證同時認證。所以此文件說明如何設定 Edgelink, 同時提供帳密和金鑰憑證同時認證。此範例使用 ECU-1251 硬體



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Brief Solution - Step by Step:

▶ 請先將電腦 IP 設定和 ECU-1251 的 IP 相同網域並直接連線。此範例架構如下 目前 ECU-1051 LAN1 IP:10.0.0.1

電腦 IP:10.0.0.100



 ◆ 電腦執行 Edgelink Studio 開啟專案,請將 OpenVPN 認證切為 user name/password 模式設定 user name/password 後,將專案下載至 ECU 目的是讓 pass.txt 內容有帳密

| LAN1 LAN2 Wi-Fi | Cellular OpenVPN | L2TP/IPsec | PPPOE Br | idge | | | |
|---------------------|----------------------|----------------|---------------------|--------------------|--------------------------|----------------------------------------|---------|
| 🗹 Enable | | | | | | 🕥 Import Wise-Pa | aas VPN |
| Server IP/Domain: | 10.0.0.100 | | Certification Mode: | User Name/Password | • | | |
| Server Port: | 1194 | | | | CA File Path: | C:\Program Files\OpenVPN\config\ca.crt | |
| Protocol: | ТСР 🔹 | | | • | User Name: | 123 | |
| Cipher: | AES-256-CBC T | | | - | Password: | 456 | |
| Network Name: | tap0 | | | • | | | - |
| LZO Compression: | Inable Enable | | | | 8 | 10.0.0.1 - PuTTY | – 🗆 X |
| Note: When enablin | ng OpenVPN connec | tion, please e | ensure that t | ne device | time is consistent v 123 | ^M -^M | ^ |
| TLS Authentication | | | | | | | |
| C Enable TI S Autho | ntication | | | | ~ | | |
| Auth Eile Dath | C:\Drogram Filos\C | non\/DN\.opm/ | rralkovr(ta kov | | Auth Direction: | | |
| Auti File Paul. | C. (Program Files (C | penven (easy- | ISd (Keys (Ld.Ke) | | Auth Direction. | | |
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| | | | | | ~ | | |
| | | | | | ~ - / | etc/openvpn/pass.txt 2/2 100% | v |
| | | | | | _ | | |



◆ Edgelink 切換至線上監控模式,使用 SSH console 連線至 ECU-1251

- 1) 帳號:root 密碼:無
- 2) 輸入:vi /etc/openvpn/pass.txt

可以確認在 Edgelink 設定的帳密有無寫入 pass.txt

| 1 | | | | | |
|---------------|-----------|-----------------|--------------------------|-------------|------------------------|
| | Onlin | ne H | lelp | | |
| • | 66 | | | > | |
| Add Device | Search | Clear Device | Password Setting | S: Con | SSH insole |
| | | Online | | | 4 |
| Online | Device | | | ~ | * |
| | Online De | evice | | | |
| | ECU-1 | NewNo | 10A(A/B)E de - 10.0.0 | [ECU .1 | U-12 |
| | | - | | 9 | Online Monitor(HTTPS) |
| | | | | 船 | IP Setting |
| | | | | Ċ | Copy IP to Clipboard |
| | | | | Edge 365 | Copy Info to Clipboard |
| | | | | - | Upload Project |
| | | | | I_0 | Modify Password |
| | | | | | SSH Console |
| | | | | X | Delete |
| | | | | _ | |





• 請到電腦下列路徑,找到 client1.ovpn 檔案

C:\Program Files (x86)\Advantech\EdgeLink Studio\Resources\openvpn\client1.ovpn 修改如下藍框並儲存。

| | | | | | | | | | × | |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------|----|------|--------|-------------|--------|-------|---|
| 6) Advanter | ch > EdgelinkStudio > Resources > open | /pn | | | | | <u>بة</u> ي | 提录 one | ▼ (?) | |
| | | (P) | | | | | • • | | ~ | |
| | 名構 | 修改日期 | 親型 | 大小 | | | | | | |
| | 👩 client1.ovpn | 2023/5/18 下午 05:53 | OpenVPN Confi | | 4 KB | | | | | |
| | vpn-start.sh | 2022/10/28 下午 06:16 | SH 檔案 | | 1 KB | | | | | |
| | vpn-start-br0.sh | 2022/10/28 下午 06:16 | SH 檔案 | | 1 KB | | | | | |
| | vpn-stop.sh | 2022/10/28 下午 06:16 | SH 福宾 | | 1 KB | | | | | |
| | vpn-stop-br0.sh 2022/10/28 下午 06:16 SH 福案 1 KB | | | | | | | | | |
| | //// client1.ovpn - 記事本 | | | | | | | | | |
| | 檔案(E) 編輯(E) 格式(Q) 檢視(V) 說明(H) | | | | | | | | | |
| ף ; | persist-key persist-tun | | | | | | | | | |
| # # # # ;; | ⁴ If you are connecting through as ⁴ HTTP proxy to reach the actual O ⁵ server, put the proxy server/IP ⁴ port number here. See the man p ⁴ if your proxy server requires ⁵ authentication. ⁵ http-proxy-retry # retry on connecting thtp-proxy [proxy server] [proxy | n DpenVPN and page ection failures port #] | | | | | | | | |
| # # # ; | # Wireless networks often produce a lot # of duplicate packets. Set this flag # to silence duplicate packet warnings. ;nute-replay-warnings | | | | | | | | | |
| | SSL/TLS parms. See the server config file for a description. It's best to use a separate .crt/.key file pair for each client. A single ca file can be used for all clients a /etc/openvpn/ca_openvpn.crt isCertFile)cert /etc/openvpn/clients uth-user-pass /etc/openvpn/pass. | nore 8. ent_openvpn.crt nt_openvpn.key | | | | | | | | |
| | ⁴ Verify server certificate by che ⁴ certicate has the correct key us ⁴ This is an important precaution ⁵ a potential attack discussed her ⁶ http://openvpn.net/howto.html#p ⁷ | ecking that the sage set. to protect agains re: witm | t | | | | | | | |
| # | ⁷ To use this feature, you will ne | eed to generate | | | | | | | | |
| | - | | | | Unix | : (LF) | | 第 91 列 | 」第1名 | Ŧ |
| | | | | | | | | | | |



◆ 電腦重啟 EdgeLink Studio,開啟專案 OpenVPN 認證切為 CRT/Key Pair 模式 選擇 CA/CERT/Key 檔案所放置本機路徑後,將專案下載至 ECU。

| N1 LAN2 V | Vi-Fi | Cellular | OpenVPN | L2TP/IPsec | PPPOE | Bridge | | | | |
|------------------------------------------------------|--------------------------------------|-------------|------------|----------------|-----------|----------------|-------------------------------------------------|------------------------------------------------|----------------------|--|
| 🗹 Enable | | | | | | | | n | Import Wise-Paas VPI | |
| Server IP/Doma | iin: | 10.0.0 | .100 | | | | Certification Mode: | CRT/Key Pair | 1 | |
| Server Port: | | 1194 | | | | | CA File Path: | C:\Program Files\OpenVPN\co | nfig\ca.crt | |
| Protocol: | | ТСР | | | | • | CERT File Path: | C:\Program Files\OpenVPN\easy-rsa\keys\client1 | | |
| Cipher: | | AES-256-CBC | | | • | KEY File Path: | C:\Program Files\OpenVPN\config\client1.key ··· | | | |
| Network Name: | | tap0 | | | | • | | | | |
| | | _ | hla | | | | | | | |
| LZO Compressio | n: | 🗹 Ena | ible | | | | | | | |
| LZO Compressio Note: When er | on: nablin on | g OpenV | PN connect | tion, please e | nsure tha | t the devic | e time is consistent with | the server time! | | |
| LZO Compressio Note: When er TLS Authenticatio | on: nablin on Auther | g OpenV | PN connect | tion, please e | isure tha | t the devic | e time is consistent with | the server time! | | |

- ▶ Edgelink studio 切換至線上監控模式,使用 SSH console 連線至 ECU-1251
 - 1) 帳號:root 密碼:無
 - 輸入:vi /etc/openvpn/client.ovpn 內容。有順利修改完成,系統會吃 CA/CERT/Key 和 pass.txt 後續系統就會依據此 client.ovpn 連線 open server。

| ₽ 10.0.0.1 - PuTTY | | × |
|------------------------------------------------------------------------------------------------------------|--|--------|
| <pre>login as: root root@10.0.0.1's password: root@ecu1251-169531:~# vi /etc/openvpn/client.ovpn</pre> | | ~ |
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```
🚰 10.0.0.1 - PuTTY
# on machines which are not permanently connected
# to the internet such as laptops.
resolv-retry infinite
# Most clients don't need to bind to
# a specific local port number.
nobind
# Downgrade privileges after initialization (non-Windows only)
;user nobody
group nobody;
# Try to preserve some state across restarts.
persist-key
;persist-tun
# If you are connecting through an
# HTTP proxy to reach the actual OpenVPN
# server, put the proxy server/IP and
# port number here. See the man page
# if your proxy server requires
# authentication.
;http-proxy-retry # retry on connection failures
;http-proxy [proxy server] [proxy port #]
# Wireless networks often produce a lot
# of duplicate packets. Set this flag
# to silence duplicate packet warnings.
;mute-replay-warnings
# SSL/TLS parms.
# See the server config file for more
# description. It's best to use
# a separate .crt/.key file pair
# for each client. A single ca
# file can be used for all clients.
ca /etc/openvpn/ca openvpn.crt
cert /etc/openvpn/client openvpn.crt
key /etc/openvpn/client_openvpn.key
auth-user-pass /etc/openvpn/pass.txt
# Verify server certificate by checking that the
 certicate has the correct key usage set.
# This is an important precaution to protect against
 a potential attack discussed here:
 /etc/openvpn/client.ovpn 96/131 73%
```

Contact Window and File Link:

If you have any questions, please contact Stanley. Huang #6035