

# 專題實作之 Line Chatbot 部署

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# 主題

1. Line Chatbot – 雲端部署
2. Line Chatbot – Domain + NGINX 部署

# Line Chatbot 部署難題

1. 需要可長期持續使用且廉價的硬體環境
2. 需要 Flask as Web Server 的替代方案
3. 需要長期可用的 SSL 網域方案

# Line Chatbot 部署難題

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# 雲端 vs 地端

	Pro	Con
雲端	<ol style="list-style-type: none"><li>無硬體資本支出 (CAPEX)</li><li>無維護所需營運支出 (OPEX)</li><li>較低的維運人力</li><li>擴充彈性</li></ol>	<ol style="list-style-type: none"><li>資料上雲的額外耗費</li><li>長期總花費金額是否較低需細算</li></ol>
地端	<ol style="list-style-type: none"><li>資料不需傳輸可隨時處理</li></ol>	<ol style="list-style-type: none"><li>需硬體與機房</li><li>需維運費用</li><li>需維運人力</li><li>備援與擴充成本高</li></ol>

# 雲端供應商

AWS

Azure

阿里雲

GCP

# Line Chatbot 雲端部屬方案



Solution	Server	Domain + SSL	Pro	Con	Note
Serveo + GCP	GCP (free)	Serveo (free)	<ul style="list-style-type: none"><li>1. 免費</li><li>2. 免改設定</li><li>3. 可長期執行</li></ul>	Serveo 服務可用性堪慮	Serveo 服務常因故暫停 <a href="http://serveo.net">http://serveo.net</a>
Heroku	Heroku (free)		<ul style="list-style-type: none"><li>1. 免費</li><li>2. 免改設定</li><li>3. 可長期執行</li></ul>	<ul style="list-style-type: none"><li>1. 免費資源提供的記憶體有限，不易運行 AI 服務</li><li>2. 服務會被休眠，喚醒服務需要等待導致體驗不佳</li><li>3. 付費服務貴</li></ul>	<a href="http://heroku.com/pricing">http://heroku.com/pricing</a>
ngrok + GCP	GCP (free)	ngrok (free)	免費	<ul style="list-style-type: none"><li>1. ngrok 每次啟動需修改 Line Chatbot 設定</li><li>2. ngrok 無法背景執行，只能短期測試</li><li>3. ngrok 付費服務貴</li></ul>	GCP 需要每年換帳號才能免費執行 <a href="http://ngrok.com/pricing">http://ngrok.com/pricing</a>
idv domain + GCP	GCP (free)	idv domain (NT\$ 400-/year) + SSL (free)	<ul style="list-style-type: none"><li>1. 免改設定</li><li>2. 可長期執行</li><li>3. 服務不休眠</li></ul>	<ul style="list-style-type: none"><li>1. domain 需要年費</li><li>2. 需在付費使用前確認 domain 商支援 CAA 類型設定</li></ul>	GCP 需要每年換帳號才能免費執行

# Line Chatbot 部屬方案

1. 需要可長期持續使用且廉價的硬體環境 → GCP
2. 需要 Flask as Web Server 的替代方案
3. 需要長期可用的 SSL 網域方案

# 目標

## 雲端部署

將 Line Chatbot Service 部屬於雲端 (GCP)

- 能夠於 GCP 建立 VM
- 能夠設定靜態 IP for GCP VM
- 能夠於 GCP VM 架設 Line Chatbot service
- 能夠搭配 ngrok 於 GCP VM 啟動 Line Chatbot service
- 能夠設定 GCP VM SSH 金鑰 for PuTTY & WinSCP

# 架構



# 前置作業

1. Windows 10 64bit (不適用 MAC)
2. GCP account (要能夠完成登入，會需要輸入信用卡號，不會扣錢不用擔心)  
<https://console.cloud.google.com>
3. PuTTY 64bit with PuTTYgen (安裝完畢)  
<https://the.earth.li/~sgtatham/putty/latest/w64/putty-64bit-0.74-installer.msi>
4. (optional) WinSCP (安裝完畢)  
<https://winscp.net/download/WinSCP-5.17.7-Setup.exe>
5. Your Line Chatbot service source (打包好個專或任一 Line Chatbot sample 原始碼)
6. (optional) pip requirements (預先整理個專或任一 Line Chatbot sample 的需求套件  
清單)  
`pip3 freeze > requirements.txt`
7. Your Line Messaging API setting ready (完成個專或任一 Line Chatbot sample 的 Line  
Messaging API 網頁設定)

# 流程





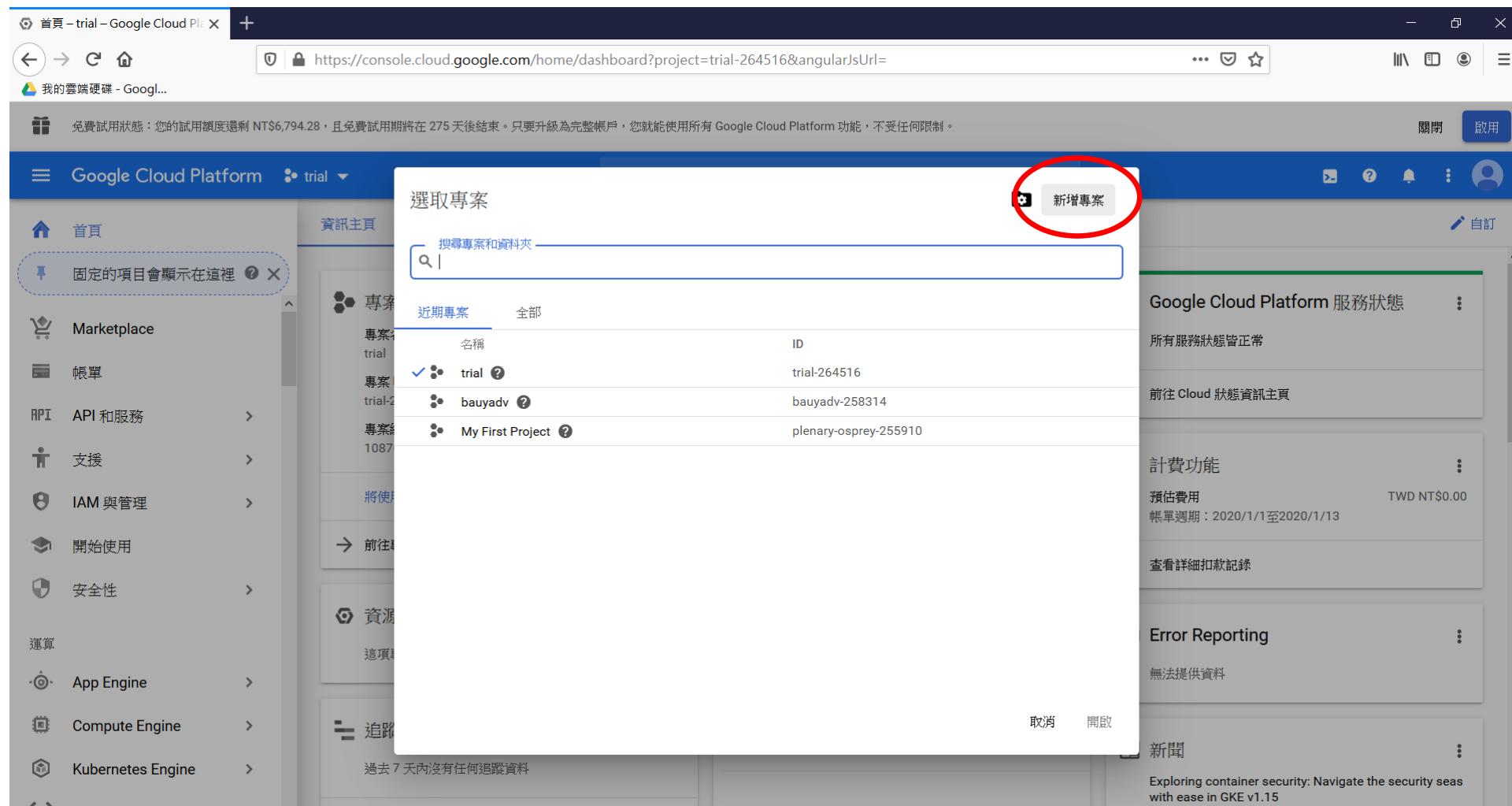
# 新增專案 -1

請自行登入 <https://console.cloud.google.com>

# 新增專案 -2

The screenshot shows the Google Cloud Platform dashboard for the project 'trial'. A red circle highlights the project selector dropdown in the top-left corner of the header bar. The dashboard displays various service status cards: App Engine (No data available), Compute Engine (CPU (%)), Google Cloud Platform Service Status (All services healthy), Billing (Estimated cost: TWD NT\$0.00), Error Reporting (No data), and News (Exploring container security: Navigate the security seas with ease in GKE v1.15). The left sidebar lists navigation items such as Marketplace, Billing, API and Services, Support, IAM and Management, Getting Started, Security, Compute Engine, App Engine, and Kubernetes Engine.

# 新增專案 -3

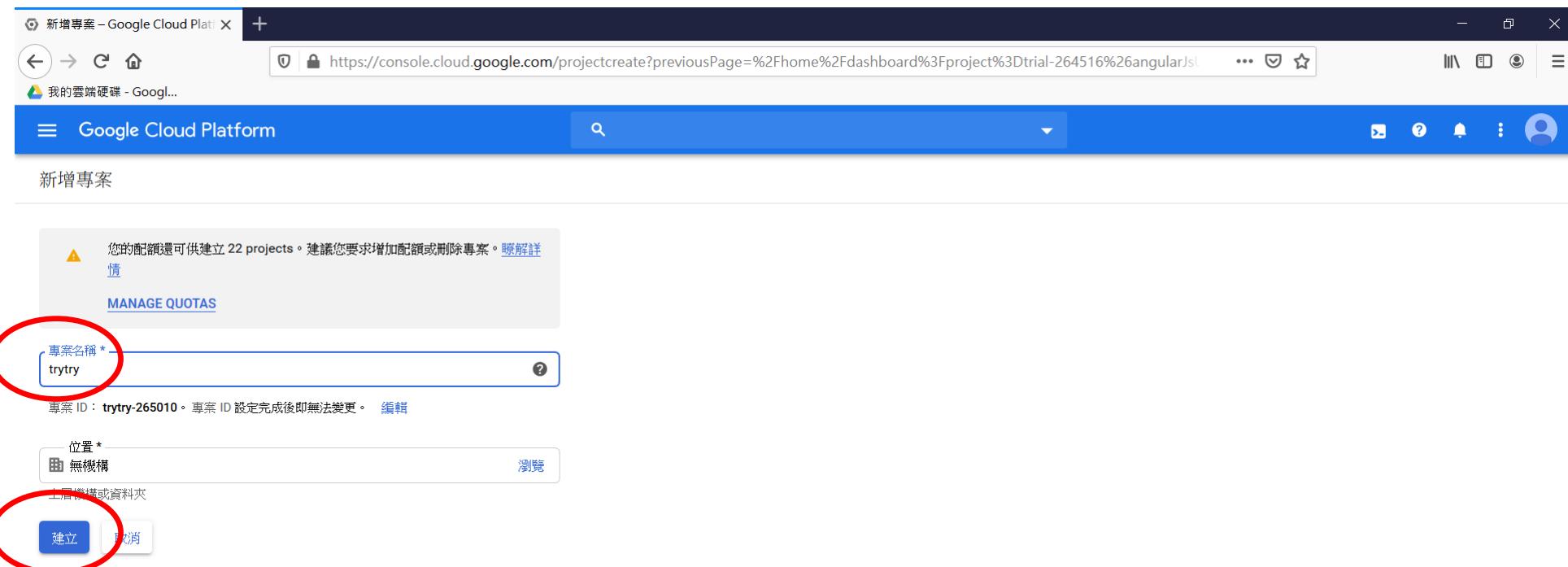


The screenshot shows the Google Cloud Platform dashboard for a project named 'trial'. A modal window titled '選取專案' (Select Project) is open in the center. At the top right of this modal is a button labeled '新增專案' (Create New Project), which is circled in red. The modal contains a search bar and a table listing recent projects:

名稱	ID
trial	trial-264516
bauyadv	bauyadv-258314
My First Project	plenary-osprey-255910

The main dashboard on the right displays various service status, billing information, error reporting, and news cards.

# 新增專案 -4



# 新增專案 -5

The screenshot shows the Google Cloud Platform (GCP) dashboard for a project named "trial". A red circle highlights the project name "trial" in the top navigation bar. Another red circle highlights a notification message: "建立專案: trial" (Project created: trial), which was posted "剛剛" (Just now). The dashboard also displays API usage statistics, billing information (estimated cost: TWD NT\$0.00), error reporting, and news updates.

免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

Google Cloud Platform trial

通知

建立專案: trial  
正在為以下專案啟用 Compute Engine : trial  
建立專案: trial

API API

計費功能

Error Reporting

新聞

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# 新增專案 -6

The screenshot shows the Google Cloud Platform dashboard with a modal window titled "選取專案" (Select Project) overlaid. The modal lists recent projects and allows searching for specific projects. A project named "trytry" is highlighted with a red circle, indicating it is the selected project. The main dashboard background shows service status, billing information, error reporting, and news sections.

名稱	ID
trytry	trytry-265010
trial-264516	trial-264516
bauyadv	bauyadv-258314
My First Project	plenary-osprey-255910

# 新增專案 -7

The screenshot shows the Google Cloud Platform dashboard for the project 'trytry'. The top navigation bar displays the project name 'trytry' with a dropdown arrow, which is circled in red. A message at the top left states: '免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。' (Free trial status: Your trial balance remains NT\$6,791.07, and the free trial period will end in 275 days. Once you upgrade to a full account, you can use all Google Cloud Platform features without any restrictions.) There are 'Enable' and 'Disable' buttons to the right of the message.

The main dashboard area includes the following sections:

- 專案資訊**: Shows the project name 'trytry' and ID 'trytry-265010', along with a link to add users to the project.
- API API**: Displays API usage statistics with a note: 'No data is available for the selected time frame.' It includes a chart showing requests per second over time (5:15, 5:30, 5:45, 6 下午).
- Google Cloud Platform 服務狀態**: Shows all services are normal, with a link to the Cloud Status Information page.
- 計費功能**: Shows estimated costs (TWD NT\$0.00) for the period from January 1, 2020, to January 13, 2020, and a link to view detailed deduction records.
- Error Reporting**: States there are no error traces, with a link to learn how to set up error reporting.
- 新聞**: A news feed section.

The left sidebar lists various Google Cloud services: Marketplace, 帳單, API 和服務, 支援, IAM 與管理, 開始使用, 安全性, 運算, App Engine, Compute Engine, 和 Kubernetes Engine.



# 建立 VM-1

The screenshot shows the Google Cloud Platform dashboard for the project 'trytry'. The top navigation bar includes the project name 'trytry' with a dropdown arrow, which is circled in red. Other items in the top bar are '首頁 - trytry - Google Cloud' (with a refresh icon), a '+' button, a search bar, and user account information.

The left sidebar contains a list of services and projects:

- 首頁
- 固定的項目會顯示在這裡
- Marketplace
- 帳單
- API 和服務
- 支援
- IAM 與管理
- 開始使用
- 安全性
- 運算
- App Engine
- Compute Engine
- Kubernetes Engine

The main content area displays several cards:

- 專案資訊**: 專案名稱 trytry, 專案 ID trytry-265010, 專案編號 885230974976. 按鈕: 將使用者新增至這項專案, 前往專案設定.
- API API**: 要求 (每秒要求數) 1.0, 0.8, 0.6, 0.4, 0.2, 0. 指標: 5:15, 5:30, 5:45, 6 下午. 按鈕: 前往 API 總覽.
- Google Cloud Platform 服務狀態**: 所有服務狀態皆正常. 按鈕: 前往 Cloud 狀態資訊主頁.
- 計費功能**: 預估費用 TWD NT\$0.00, 帳單週期：2020/1/1至2020/1/13. 按鈕: 查看詳細扣款記錄.
- Error Reporting**: 沒有任何錯誤的踪跡。錯誤報告是否已設定完成？. 按鈕: 瞭解如何設定錯誤報告.
- 新聞**

# 建立 VM -2

The screenshot shows the Google Cloud Platform dashboard for the project 'trytry-265010'. The left sidebar has a red circle around the 'Compute Engine' section. The main content area shows the 'VM 執行個體' (VM Instances) section, which is also circled in red. The dashboard includes sections for API, Google Cloud Platform Service Status, Billing, Error Reporting, and News.

首頁 – trytry – Google Cloud

https://console.cloud.google.com/home/dashboard?project=trytry-265010&folder=

我的雲端硬碟 - Google

免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

關閉 啟用

Google Cloud Platform trytry

VM 執行個體

API API

Google Cloud Platform 服務狀態

計費功能

Error Reporting

新聞

活動

VM 執行個體

執行個體範本

單一用戶群節點

磁碟

快照

映像檔

TPU

承諾使用折扣

中繼資料

使用者新增至這項專案

專案設定

區域

網路端點群組

作業

安全掃描

設定

從項目

過去 7 天內沒有任何追蹤資料

首頁 固定的項目會顯示在這裡 Marketplace 帳單 API 和服務 支援 IAM 與管理 開始使用 安全性 運算 App Engine Compute Engine Kubernetes Engine

# 建立 VM -3

The screenshot shows the Google Cloud Platform Compute Engine interface. The left sidebar menu is visible with options like VM 執行個體, 執行個體群組, 執行個體範本, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料, 健康狀態檢查, 區域, Marketplace, and My Cloud硬盘.

The main content area displays the "VM 執行個體" (VM Instances) page. A message at the top states: "正在啟用 Compute Engine，這項作業可能需要幾分鐘的時間才能完成。" Below this, there is a summary card for "Compute Engine VM 執行個體". The card includes a brief description of Compute Engine and three buttons: "建立" (Create), "匯入" (Import), and "進入快速入門導覽課程" (Enter Quickstart Guide).

A red oval highlights a notification message on the right side of the screen: "正在為以下專案啟用 Compute Engine : trytry" and "正在啟用 GCE API...".

The notification list on the right shows the following entries:

- 建立專案 : trytry (3 分鐘前)
- 正在為以下專案啟用 Compute Engine : trial (4 天前)
- 建立專案 : trial (4 天前)

At the bottom right of the notification list is a link: "查看所有活動" (View all activities).

# 建立 VM -4

The screenshot shows the Google Cloud Platform Compute Engine interface. The left sidebar menu is visible, with 'Compute Engine' selected. The main content area displays the 'VM 執行個體' (VM Instances) page. A red circle highlights the '建立' (Create) button at the bottom left of the central panel. Another red circle highlights a notification message in the top right corner.

正在為以下專案啟用 Compute Engine : trytry  
trytry

建立專案 : trytry 5 分鐘前

正在為以下專案啟用 Compute Engine : trial  
trial 4 天前

建立專案 : trial 4 天前

查看所有活動

建立 或 還入 或 進入快速入門導覽課程

# 建立 VM - 5

Compute Engine - trytry - Go x +

我的雲端硬碟 - Google Drive

https://console.cloud.google.com/compute/instancesAdd?project=trytry-265010&folder

免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

關閉 啟用

Google Cloud Platform trytry

建立執行個體

這會成為VM主機名稱，設定完無法更改

如要建立 VM 執行個體，請先選取下列任一選項：

- + 新增 VM 執行個體 從頭建立 VM 執行個體
- [+] 利用範本建立新的 VM 執行個體 利用現有的範本建立 VM 執行個體
- Marketplace 將可立即使用的解決方案部署至 VM 執行個體

名稱  
名稱經設定後即無法變更  
instance-1

區域  
地區經設定後即無法變更  
us-central1 (愛荷華州) us-central1-a

機器設定

機器系列  
一般用途 記憶體最佳化  
適用於一般工作負載的機器類型，已針對費用和彈性進行最佳化  
系列  
N1

採用 Intel Skylake CPU 平台或其前身

機器類型  
n1-standard-1 (1 個 vCPU, 3.75 GB 記憶體)

CPU 平台和 GPU

vCPU  
1

記憶體  
3.75 GB

容器  
 將容器映像檔部署至這個 VM 執行個體。瞭解詳情

# GCP 一律免費方案

<https://cloud.google.com/free/?hl=zh-TW>

## Compute Engine

- 每月 1 個 f1-micro 執行個體
  - 1 顆 CPU
  - 614MB 記憶體
  - 地區限制：us-west1、愛荷華州：us-central1、南卡羅來納州：us-east1
- 每月 30GB HDD
- 每月 1GB 網路輸出流量

# 建立 VM - 6

這會成為VM主機名稱，設定完無法更改

Compute Engine - trytry - Go x +

我的雲端硬碟 - Google...

https://console.cloud.google.com/compute/instancesAdd?project=trytry-265010&folder

免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

關閉 啟用

Google Cloud Platform trytry

建立執行個體

如要建立 VM 執行個體，請先選取下列任一選項：

- + 新增 VM 執行個體 從頭建立 VM 執行個體
- [+] 利用範本建立新的 VM 執行個體 利用現有的範本建立 VM 執行個體
- Marketplace 將可立即使用的解決方案部署至 VM 執行個體

名稱  
名稱經設定後即無法變更  
trytryinst

區域  
地區經設定後即無法變更  
asia-east1 (台灣)

區域  
區域經設定後即無法變更  
asia-east1-c

機器設定  
機器系列  
一般用途 記憶體最佳化 運算最佳化  
適用於一般工作負載的機器類型，已針對費用和彈性進行最佳化  
系列  
N1  
採用 Intel Skylake CPU 平台或其前身

機器類型  
n1-standard-1 (1 個 vCPU, 3.75 GB 記憶體)

CPU 平台和 GPU  
vCPU  
1  
記憶體  
3.75 GB

容器  
將容器映像檔部署至這個 VM 執行個體。瞭解詳情

# 建立 VM - 7

The screenshot shows the 'Compute Engine - trytry - Google Cloud Platform' interface for adding a new instance. The URL in the address bar is <https://console.cloud.google.com/compute/instancesAdd?project=trytry-265010>. A message at the top states: '免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。' (Free trial status: Your free trial balance is NT\$6,791.07, and the free trial period will end in 275 days. Once you upgrade to a full account, you can use all Google Cloud Platform features without any restrictions.)

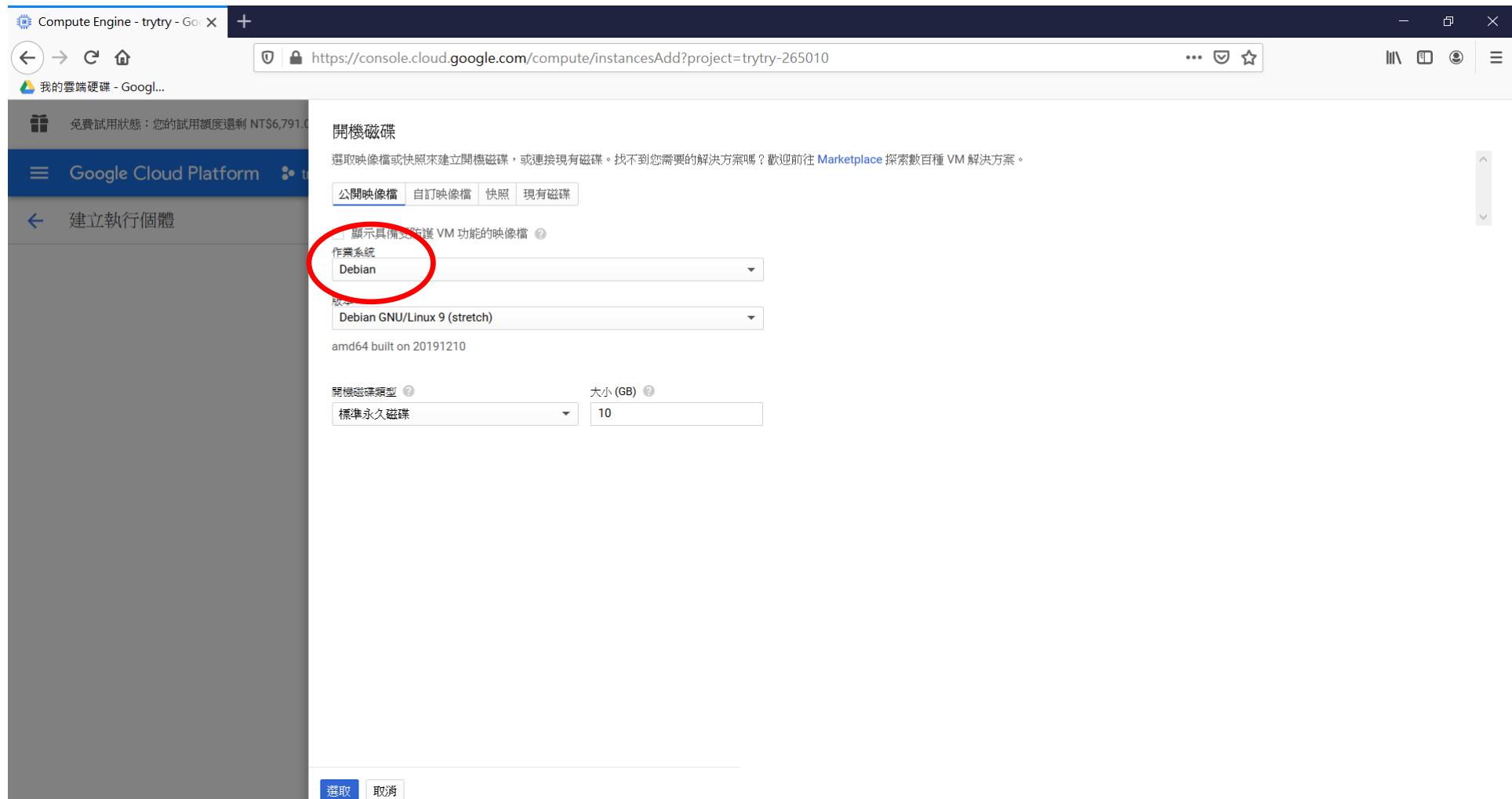
The main form is titled '新的 10 GB 標準永久磁碟' (New 10 GB Standard Persistent Disk) and specifies '映像檔' (Image) as 'Debian GNU/Linux 9 (stretch)'. A red circle highlights the '變更' (Change) button next to the disk configuration.

Below the disk configuration, under '身分及 API 存取權' (Identity & API Permissions), it shows '服務帳戶' (Service Account) set to 'Compute Engine default service account'. Under '存取權範圍' (Scope), the radio button '允許預設存取權' (Allow default access) is selected. Other options include '允許所有 Cloud API 的完整存取權' (Allow full access to all Cloud APIs) and '針對各個 API 設定存取權' (Specify access for individual APIs).

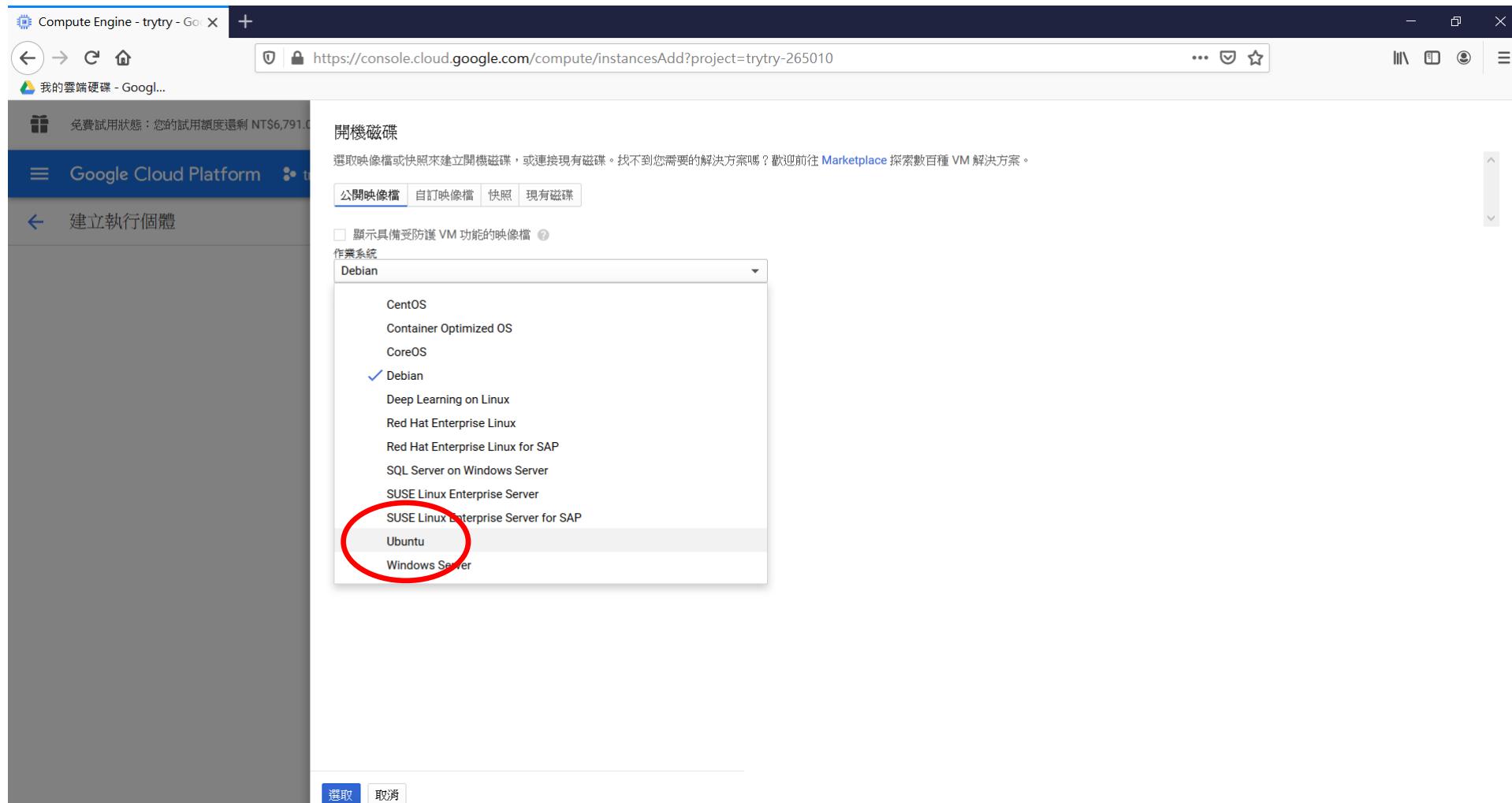
Under '防火牆' (Firewall), there are checkboxes for '允許 HTTP 流量' (Allow HTTP traffic) and '允許 HTTPS 流量' (Allow HTTPS traffic). A link '管理、安全性、磁碟、網路、單獨租用' (Manage, Security, Disk, Network, Separate租用) is also present.

At the bottom, a note says '這個 VM 執行個體將會耗用您的免費試用額度。GCP 免費版' (This VM instance will consume your free trial balance. GCP Free Edition). The '建立' (Create) button is highlighted in blue, while the '取消' (Cancel) button is grey.

# 建立 VM - 8



# 建立 VM -9



# 建立 VM -10

The screenshot shows the Google Cloud Platform Compute Engine interface for creating a new VM. The main window title is "Compute Engine - trytry - Go". The URL in the address bar is <https://console.cloud.google.com/compute/instancesAdd?project=trytry-265010>. The page is titled "建立執行個體" (Create Instance). A dropdown menu on the left shows "我的雲端硬碟 - Google Drive". The main content area is titled "開機磁碟" (Boot Disk) and displays a list of available images. The "Ubuntu" version dropdown is set to "Ubuntu 16.04 LTS". A red circle highlights the "Ubuntu 18.04 LTS" option, which is described as "amd64 bionic image built on 2020-01-08". At the bottom of the dialog, there are "選取" (Select) and "取消" (Cancel) buttons.

開機磁碟

選取映像檔或快照來建立開機磁碟，或連接現有磁碟。找不到您需要的解決方案嗎？歡迎前往 [Marketplace](#) 探索數百種 VM 解決方案。

顯示具備受防護 VM 功能的映像檔

作業系統

Ubuntu

版本

Ubuntu 16.04 LTS

✓ Ubuntu 16.04 LTS  
amd64 xenial image built on 2020-01-08

Ubuntu 18.04 LTS  
amd64 bionic image built on 2020-01-08

Ubuntu 19.04  
amd64 disco image built on 2020-01-08

Ubuntu 19.10  
amd64 eoan image built on 2020-01-07

Ubuntu 16.04 LTS Minimal  
amd64 xenial minimal image built on 2020-01-06

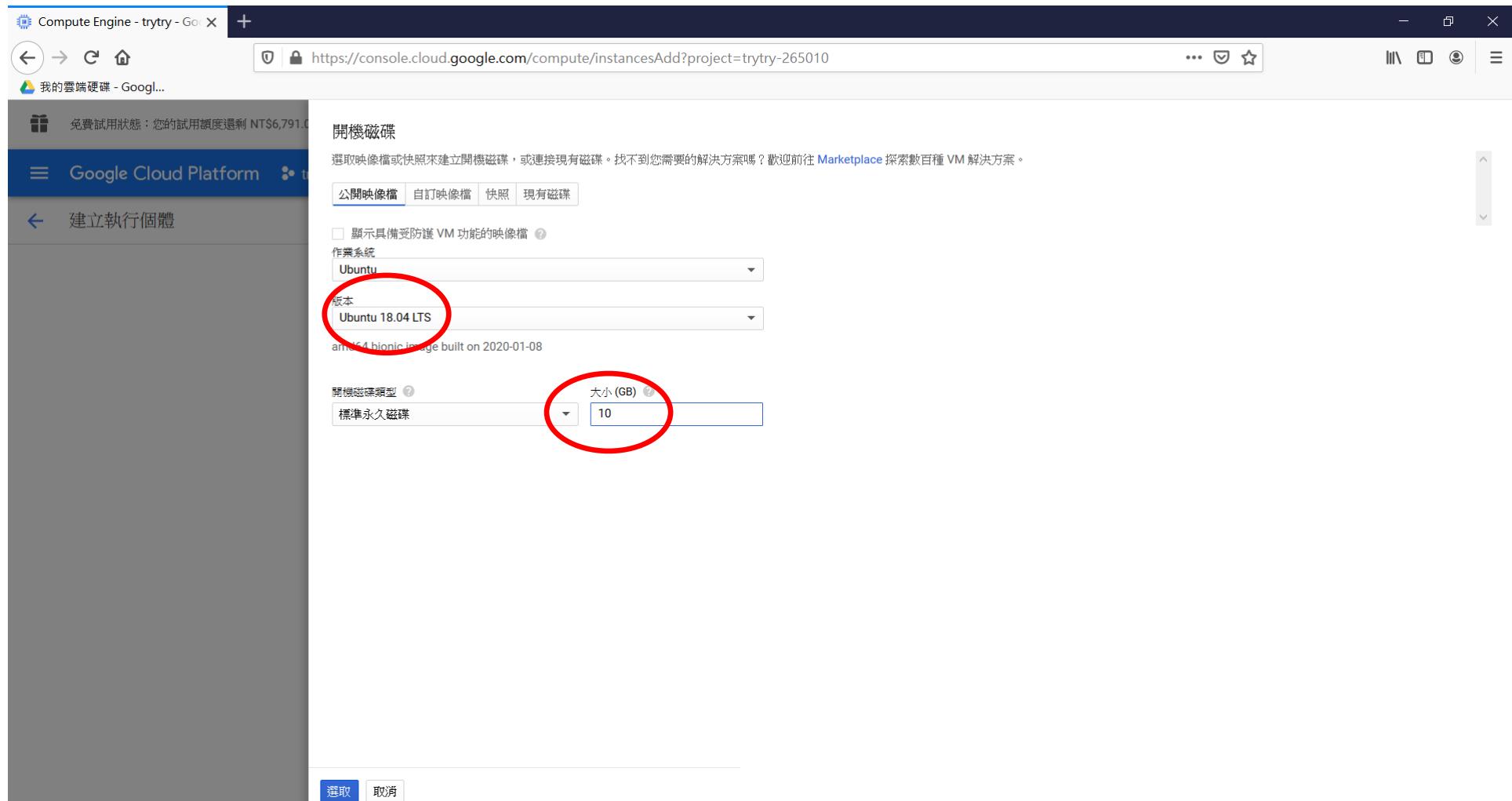
Ubuntu 18.04 LTS Minimal  
amd64 bionic minimal image built on 2020-01-08

Ubuntu 19.04 Minimal  
amd64 disco minimal image built on 2020-01-08

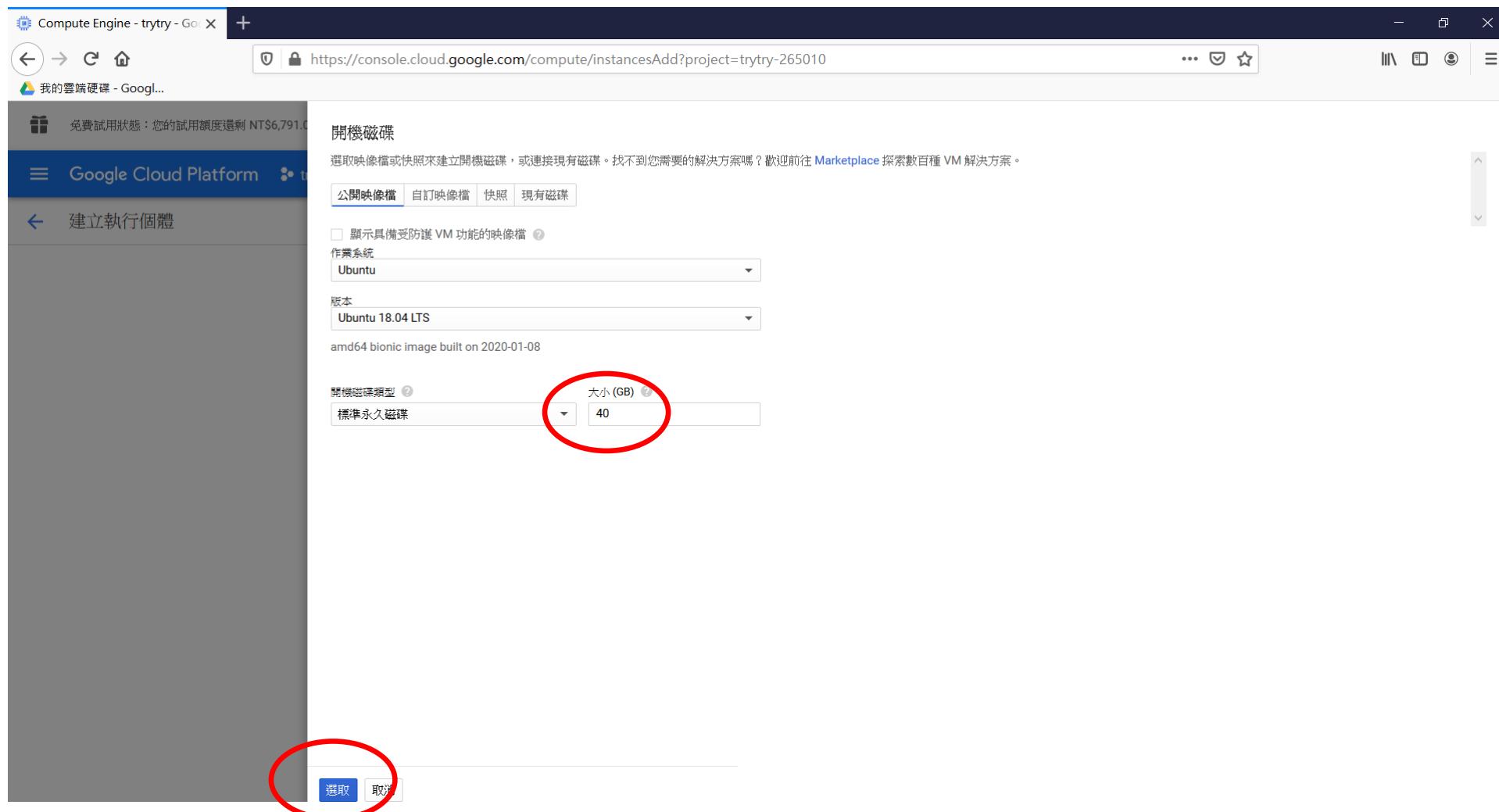
Ubuntu 19.10 Minimal  
amd64 eoan minimal image built on 2020-01-07

選取 取消

# 建立 VM-11



# 建立 VM-12



# 建立 VM -13

Compute Engine - trytry - Google Cloud Platform

https://console.cloud.google.com/compute/instancesAdd?project=trytry-265010

我的雲端硬碟 - Google Drive

免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

關閉 啟用

Google Cloud Platform trytry

建立執行個體

新的 40 GB 標準永久磁碟  
映像檔  
Ubuntu 18.04 LTS

變更

身分及 API 存取權

服務帳戶

Compute Engine default service account

存取權範圍

允許預設存取權

允許所有 Cloud API 的完整存取權

對於各個 API 設定存取權

防火牆

可以新增標記和防火牆規則，允許接受來自網際網路的特定流量

允許 HTTP 流量

允許 HTTPS 流量

管理 安全性、磁碟、網路、單獨租用

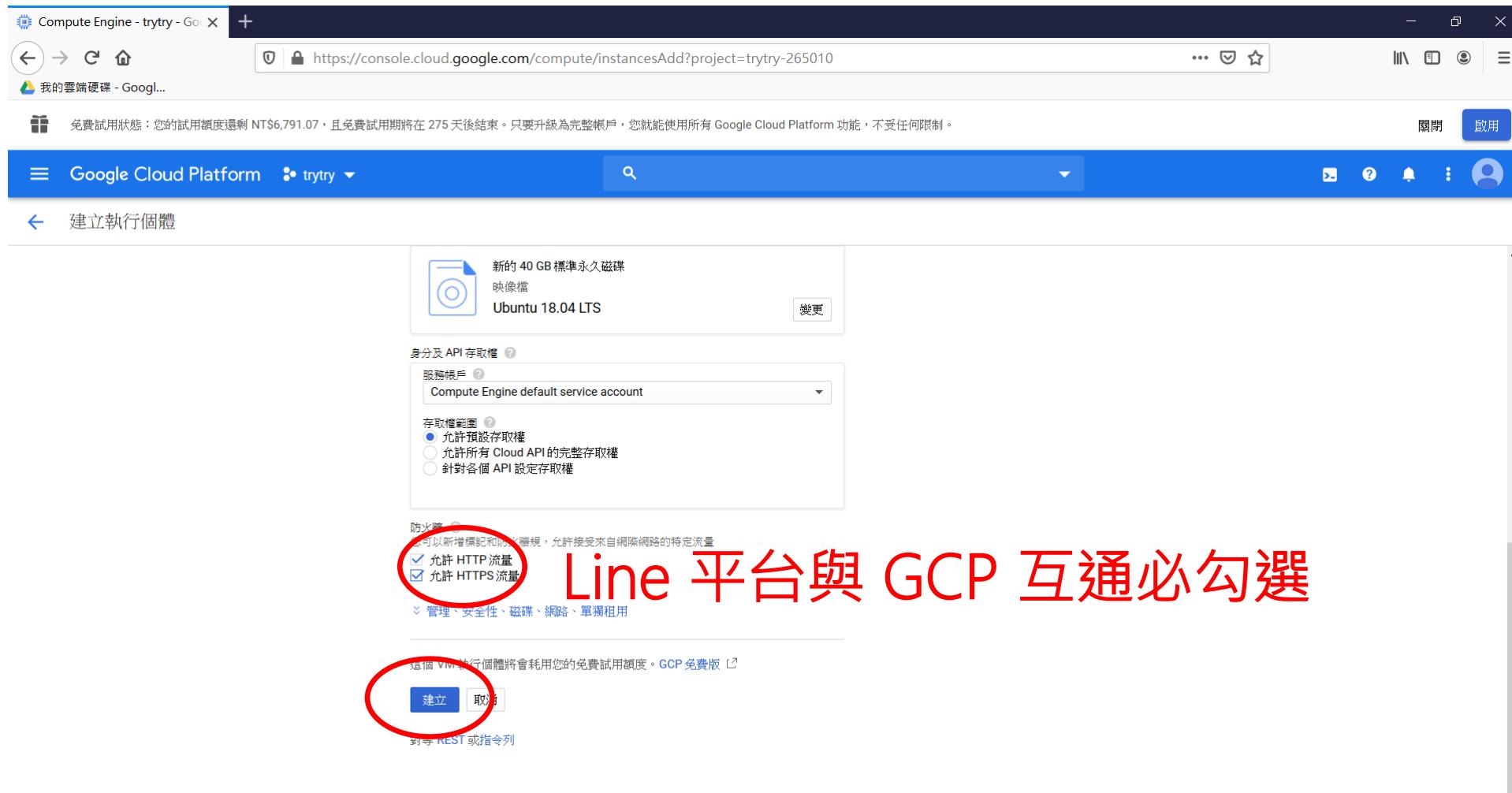
這個 VM 執行個體將會耗用您的免費試用額度。GCP 免費版

建立 取消

對等 REST 或指令列

Line 平台與 GCP 互通必勾選

# 建立 VM-14



# 建立 VM -15

The screenshot shows the Google Cloud Platform Compute Engine Instances page. On the left, there's a sidebar with various options like Compute Engine, VM 執行個體, 執行個體群組, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料, 健康狀態檢查, 區域, Marketplace. The main area is titled 'VM 執行個體' and shows a table with one row:

名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nic0)	35.201.144.19	SSH

A large red oval highlights the first row of the table. To the right of the table, there's a 'Tutorial' sidebar with sections like 啟動專案, 尋找現有的 VM 解決方案, 教學指南與教學課程, 探索工具和 API, 汇入或遷移工作負載, 定價, and several links for connecting to the VM.

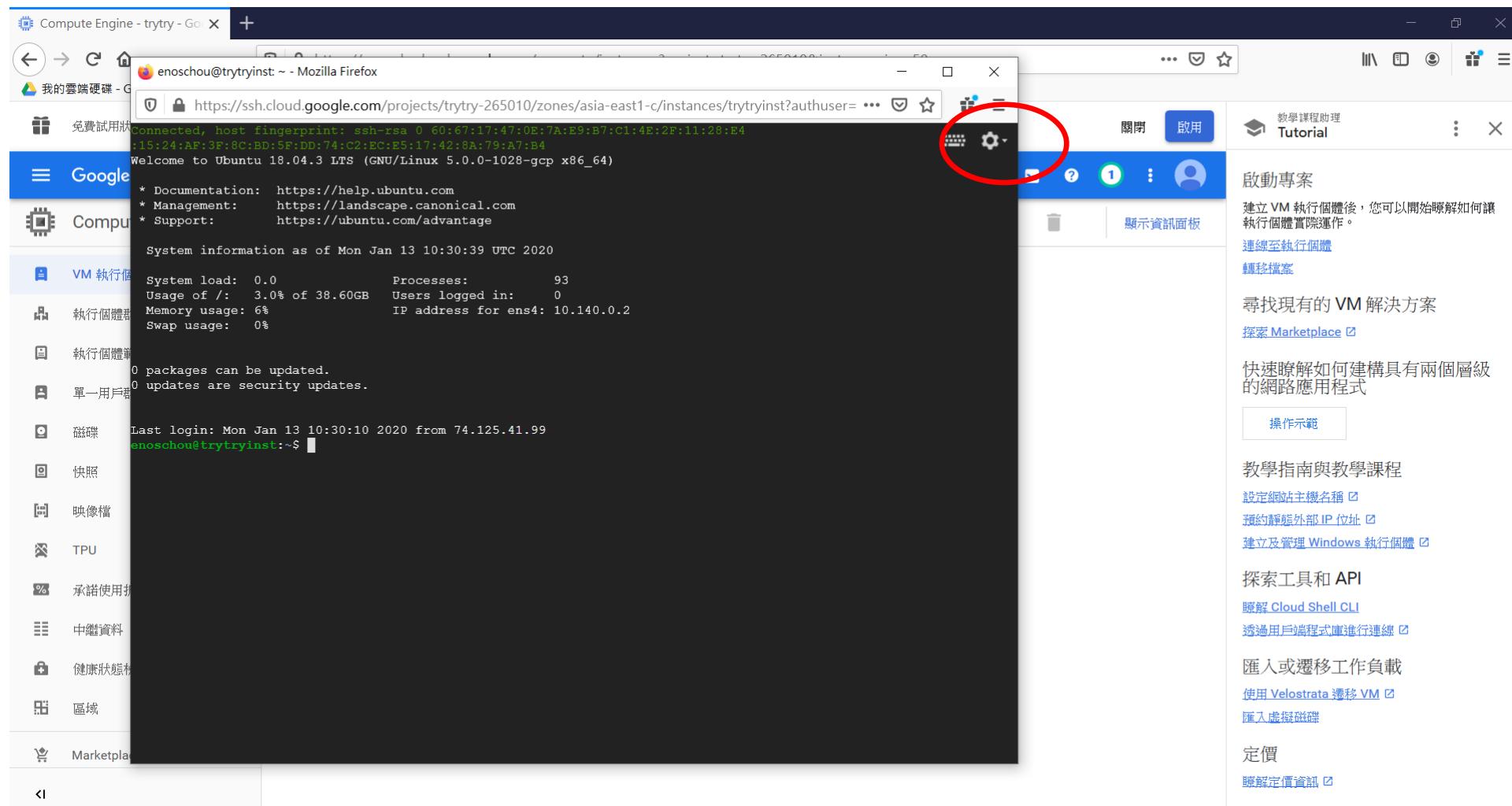


# 上傳 source -1

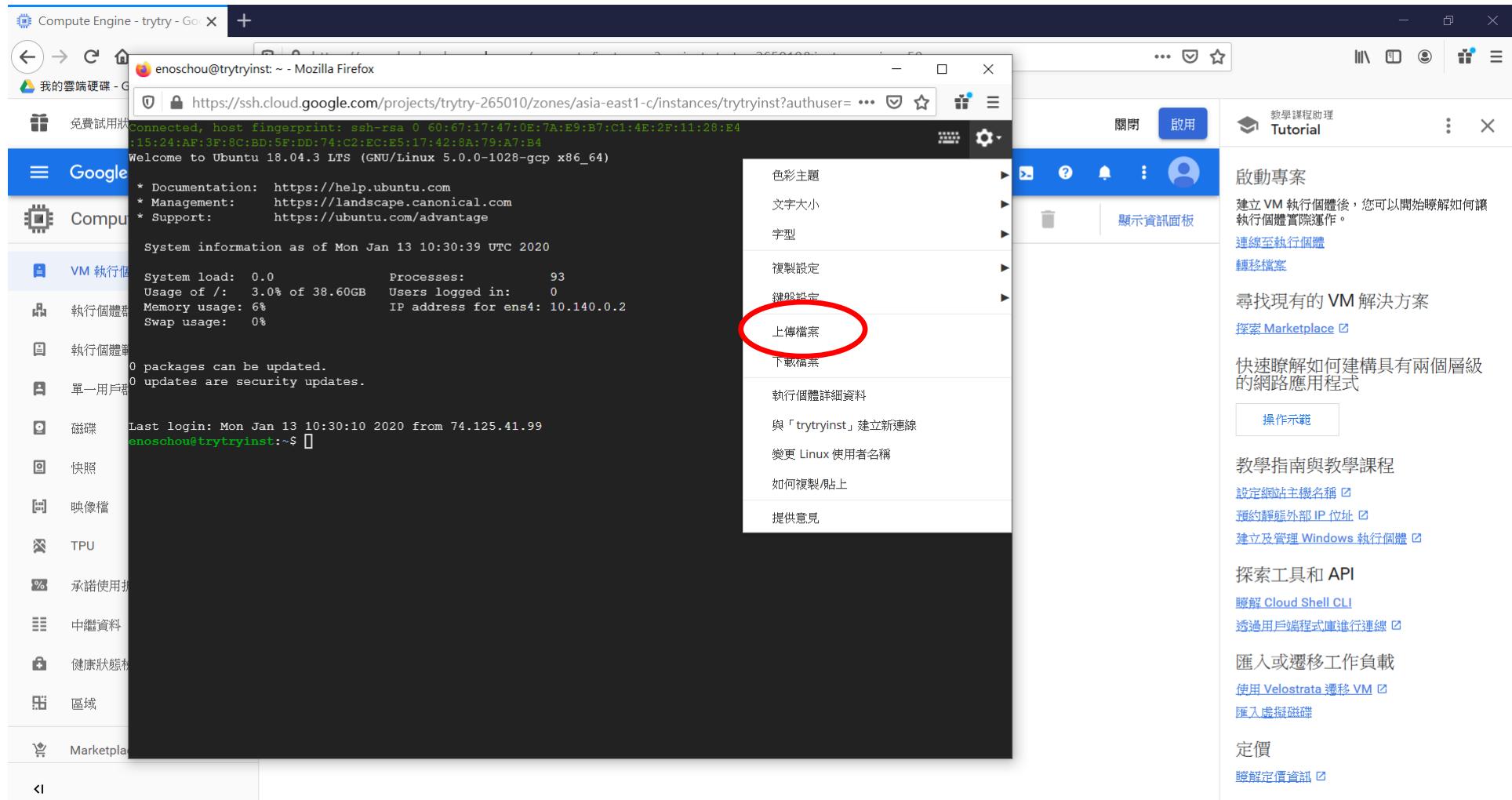
The screenshot shows the Google Cloud Platform Compute Engine Instances page. On the left, there's a sidebar with various options like Compute Engine, VM 執行個體, 執行個體群組, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料, 健康狀態檢查, 區域, Marketplace, and Help & Support. The main area shows a table for VM 執行個體, with one row selected: 'trytryinst' (区域: asia-east1-c, 内部 IP: 10.140.0.2 (nic0), 外部 IP: 35.201.144.19, 连接: SSH). A red circle highlights the 'SSH' button in the '連接' column. To the right, there's a 'Tutorial' sidebar with sections like 啟動專案, 尋找現有的 VM 解決方案, 教學指南與教學課程, 探索工具和 API, 汇入或遷移工作負載, and 定價.

名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nic0)	35.201.144.19	SSH

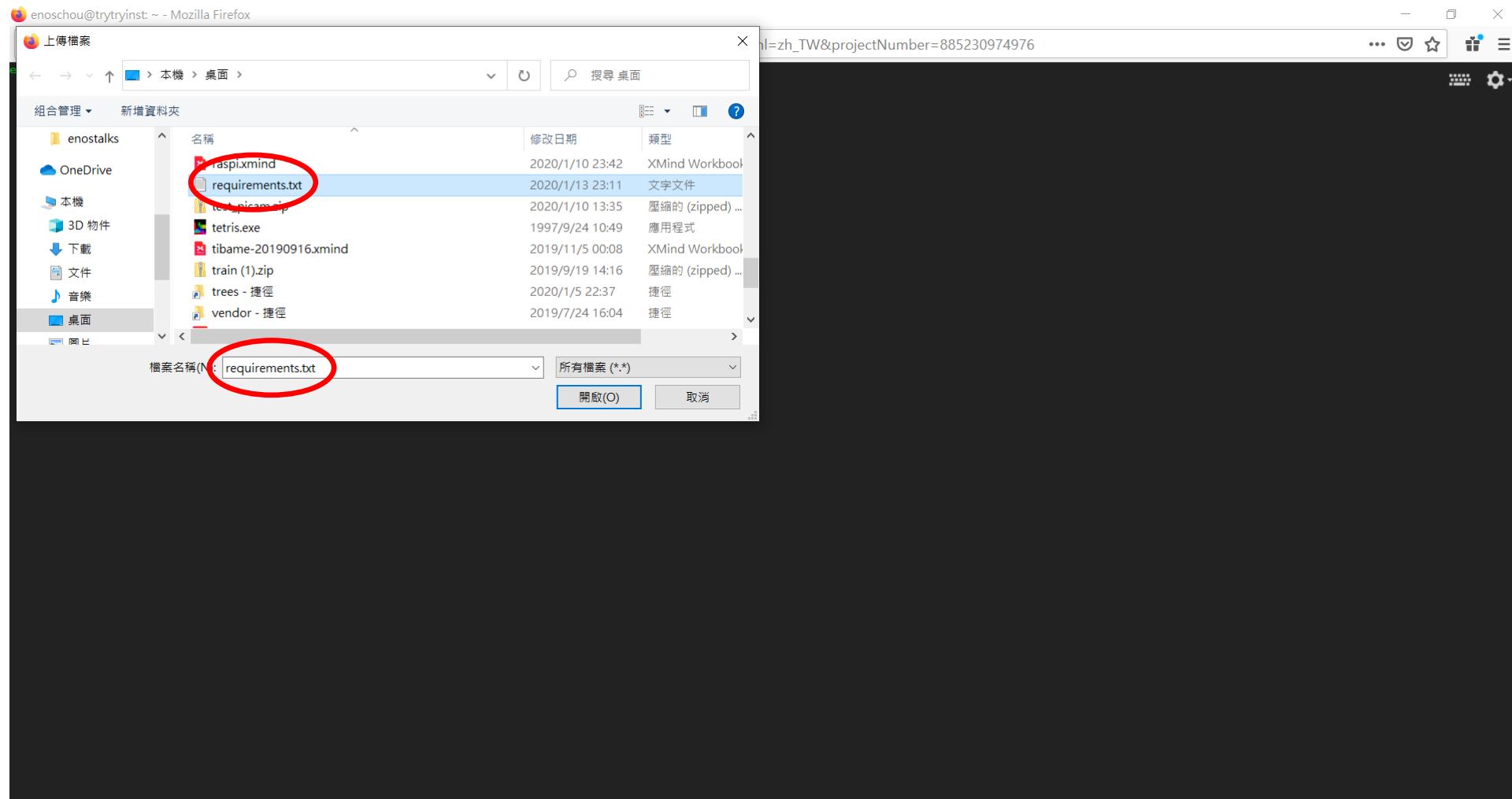
# 上傳 source -2



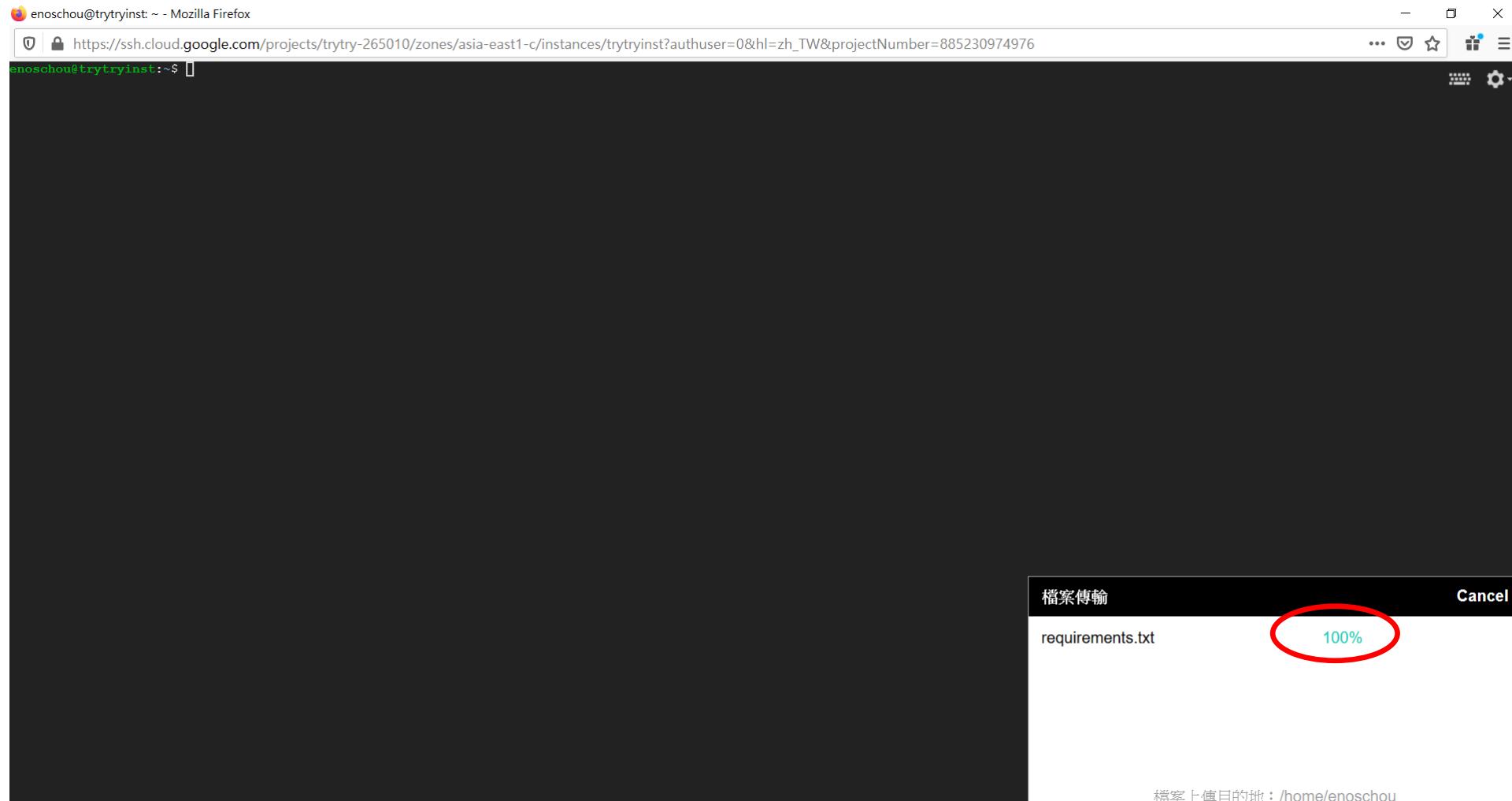
# 上傳 source -3



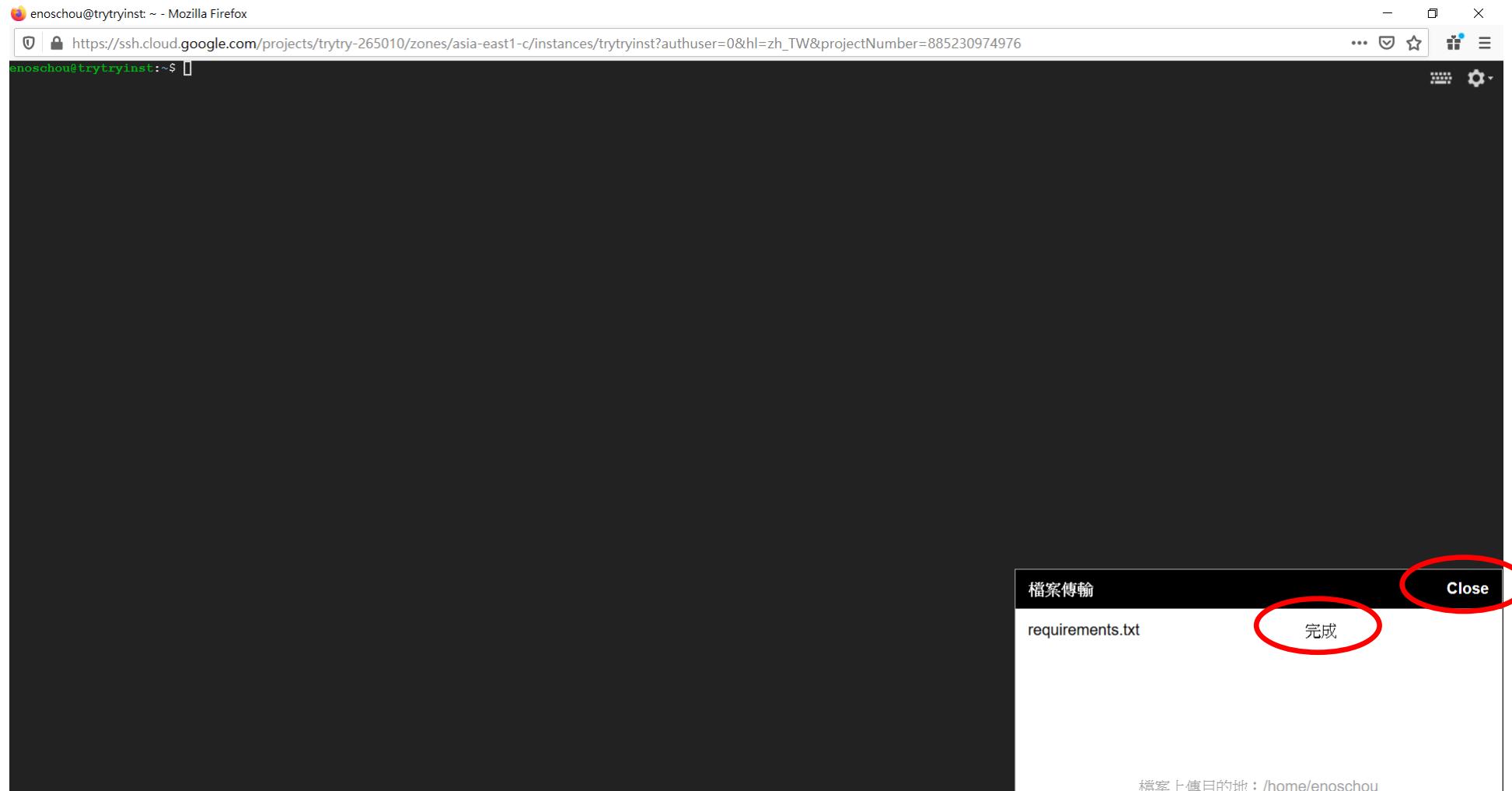
# 上傳 source -4



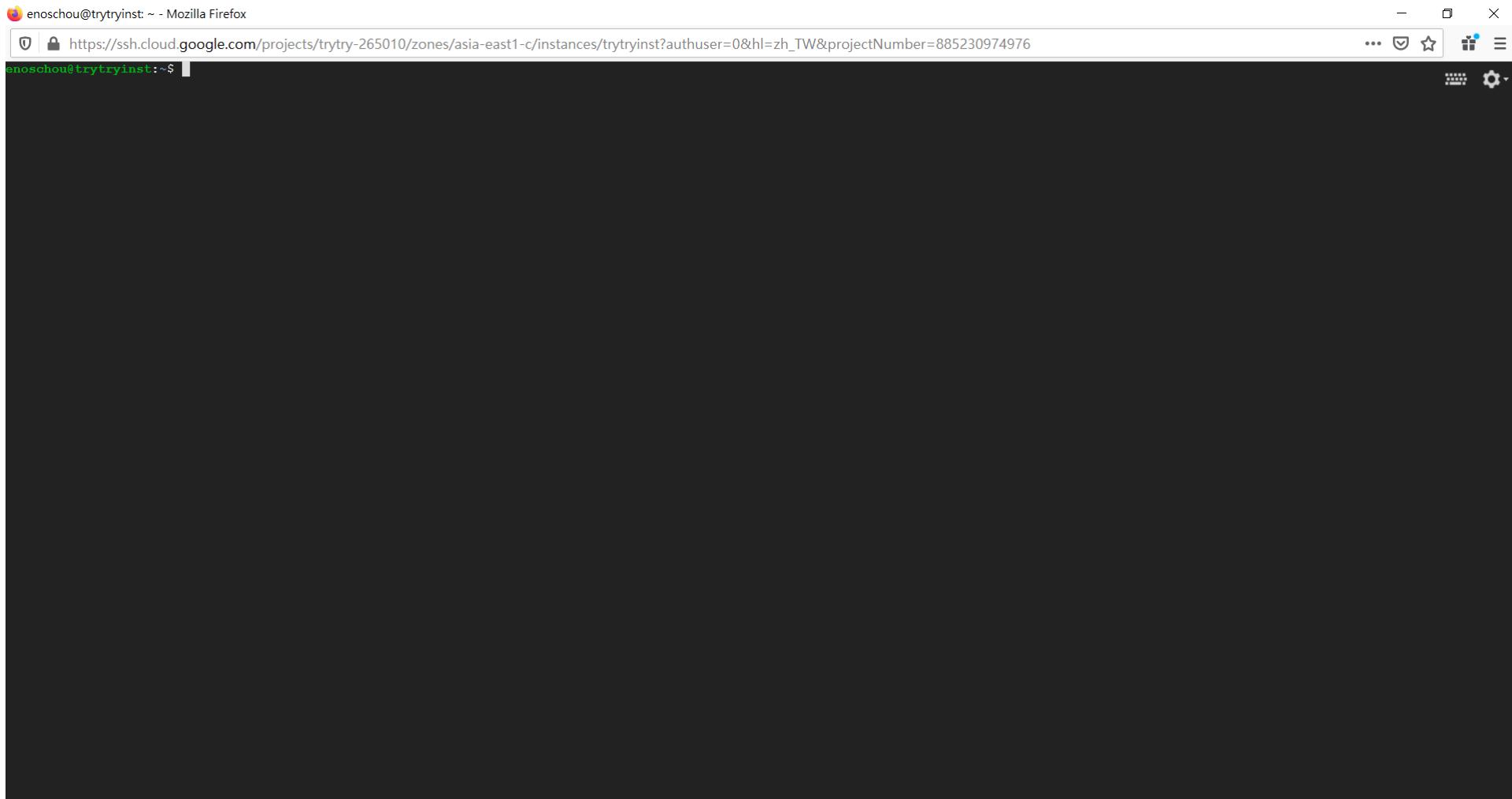
# 上傳 source -5



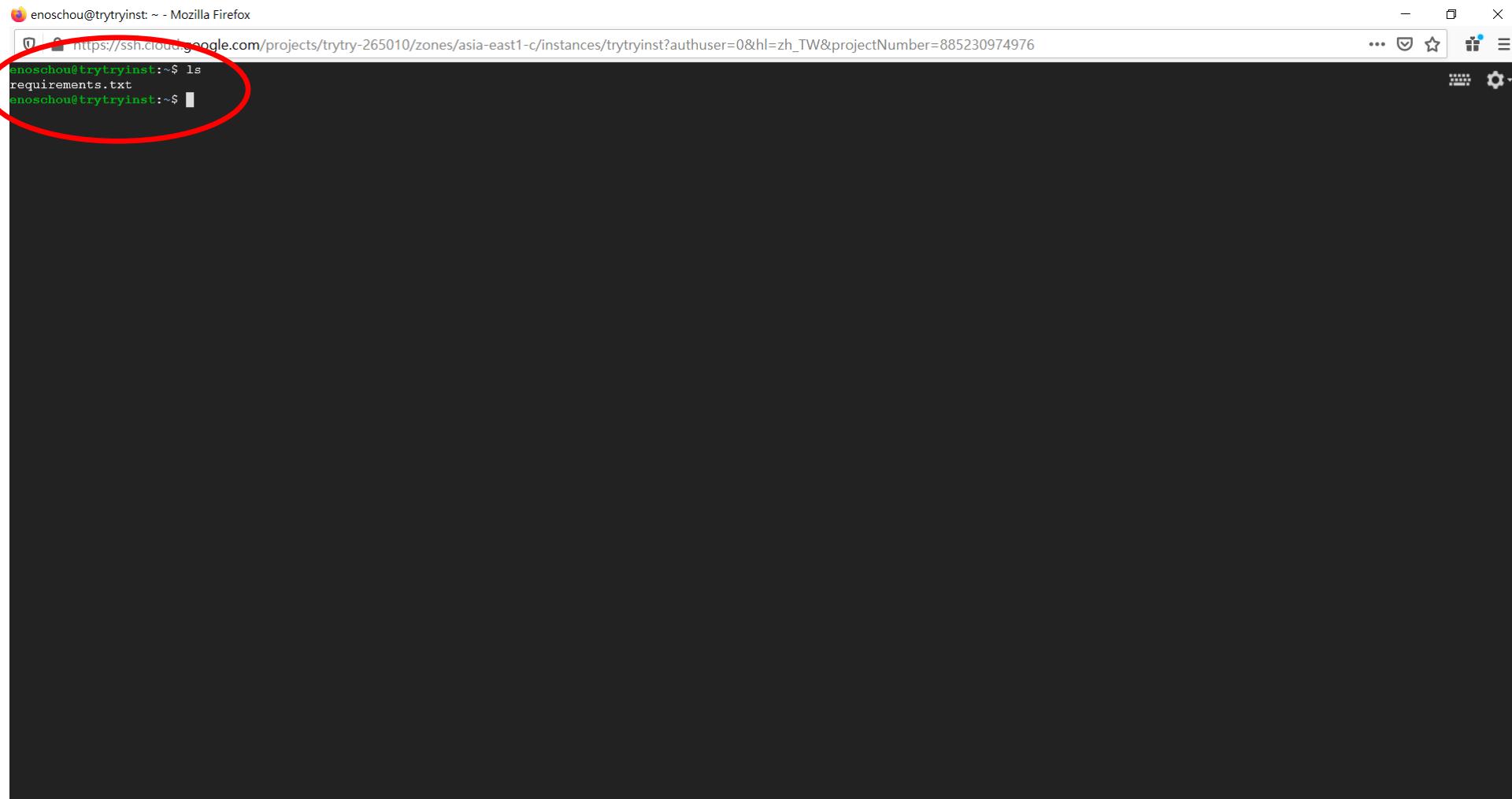
# 上傳 source -6



# 上傳 source -7



# 上傳 source -8



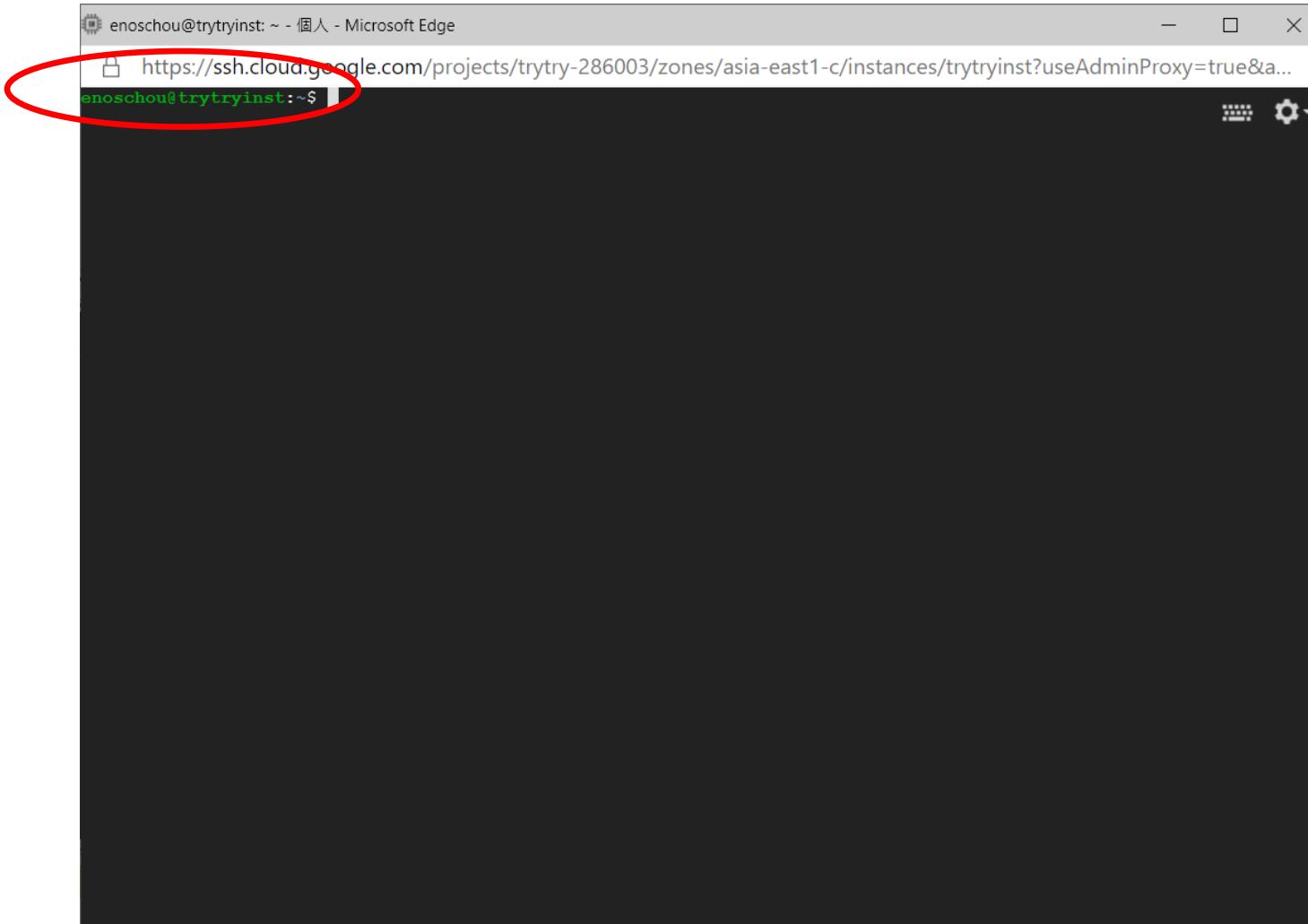
A screenshot of a Firefox browser window displaying a terminal session. The title bar reads "enoschou@trytryinst ~ - Mozilla Firefox". The address bar shows the URL: "https://ssh.cloud.google.com/projects/trytry-265010/zones/asia-east1-c/instances/trytryinst?authuser=0&hl=zh\_TW&projectNumber=885230974976". The terminal window has a black background and white text. A red oval highlights the first two lines of the command output:

```
enoschou@trytryinst:~$ ls  
requirements.txt  
enoschou@trytryinst:~$
```

# 上傳 source -9

請自行上傳你的 Line Chatbot source (建議打包成 zip 或 tar)

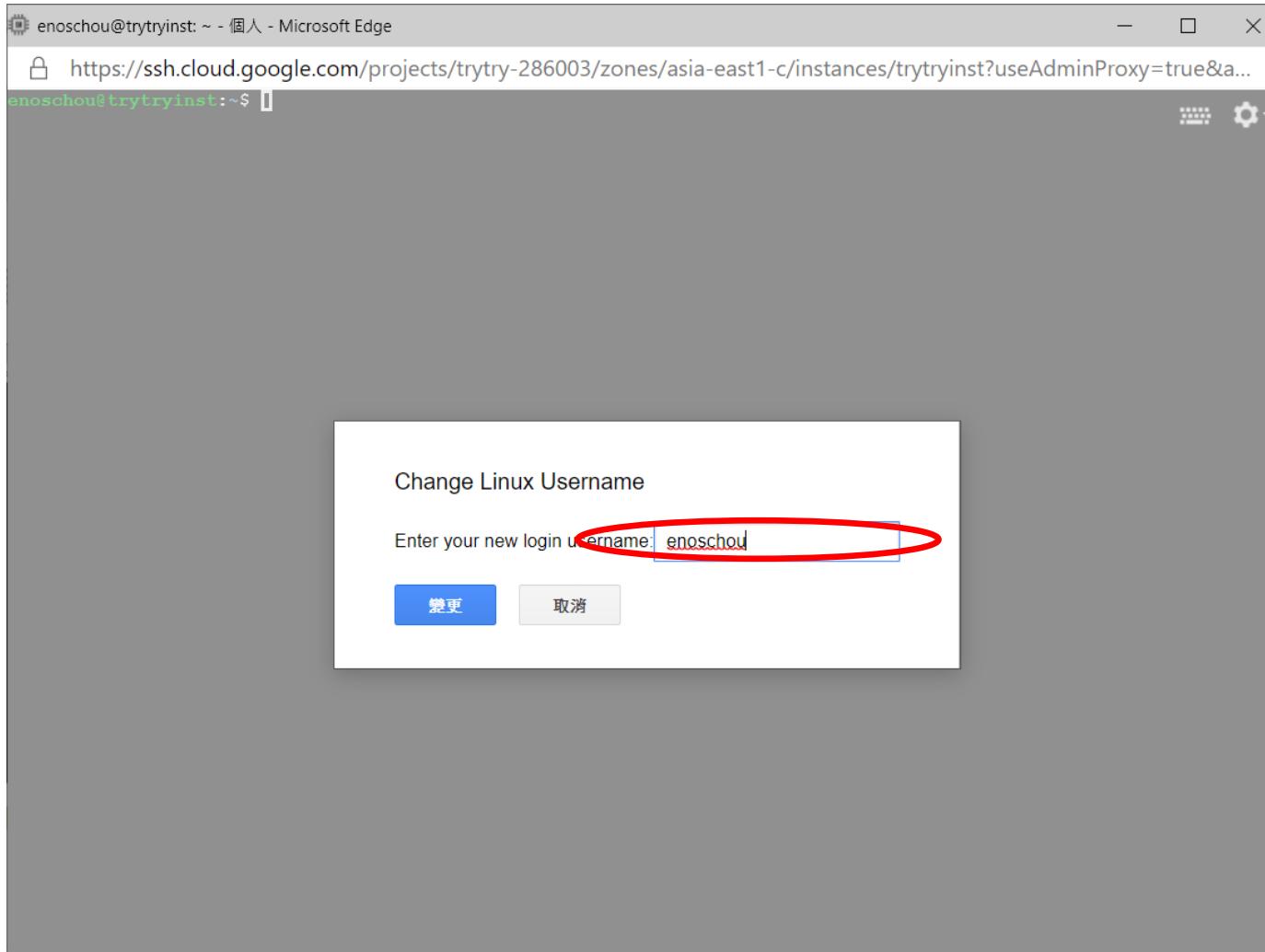
# 密技 – 如果不滿意帳號名稱



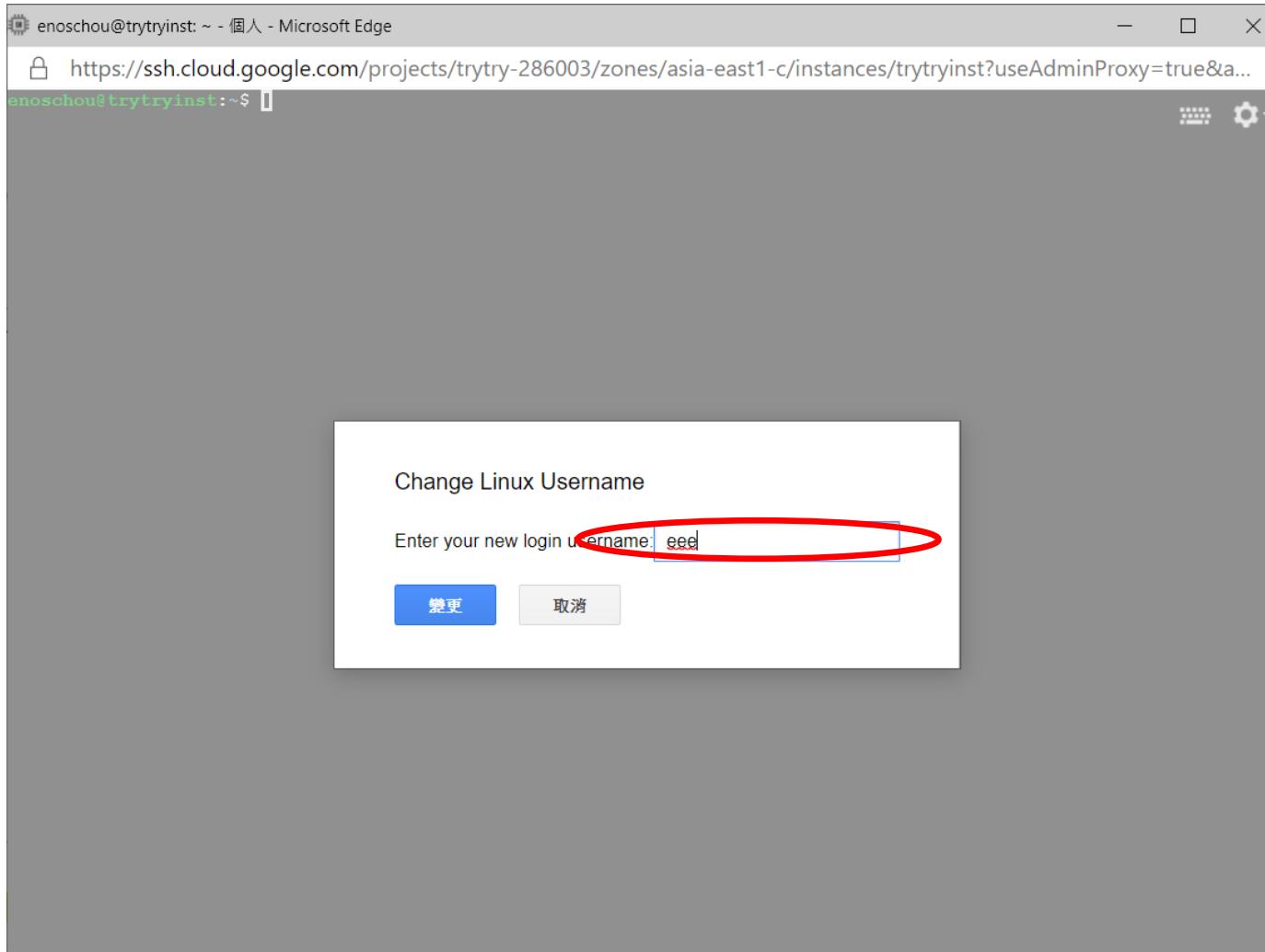
# 密技 – 如果不滿意帳號名稱



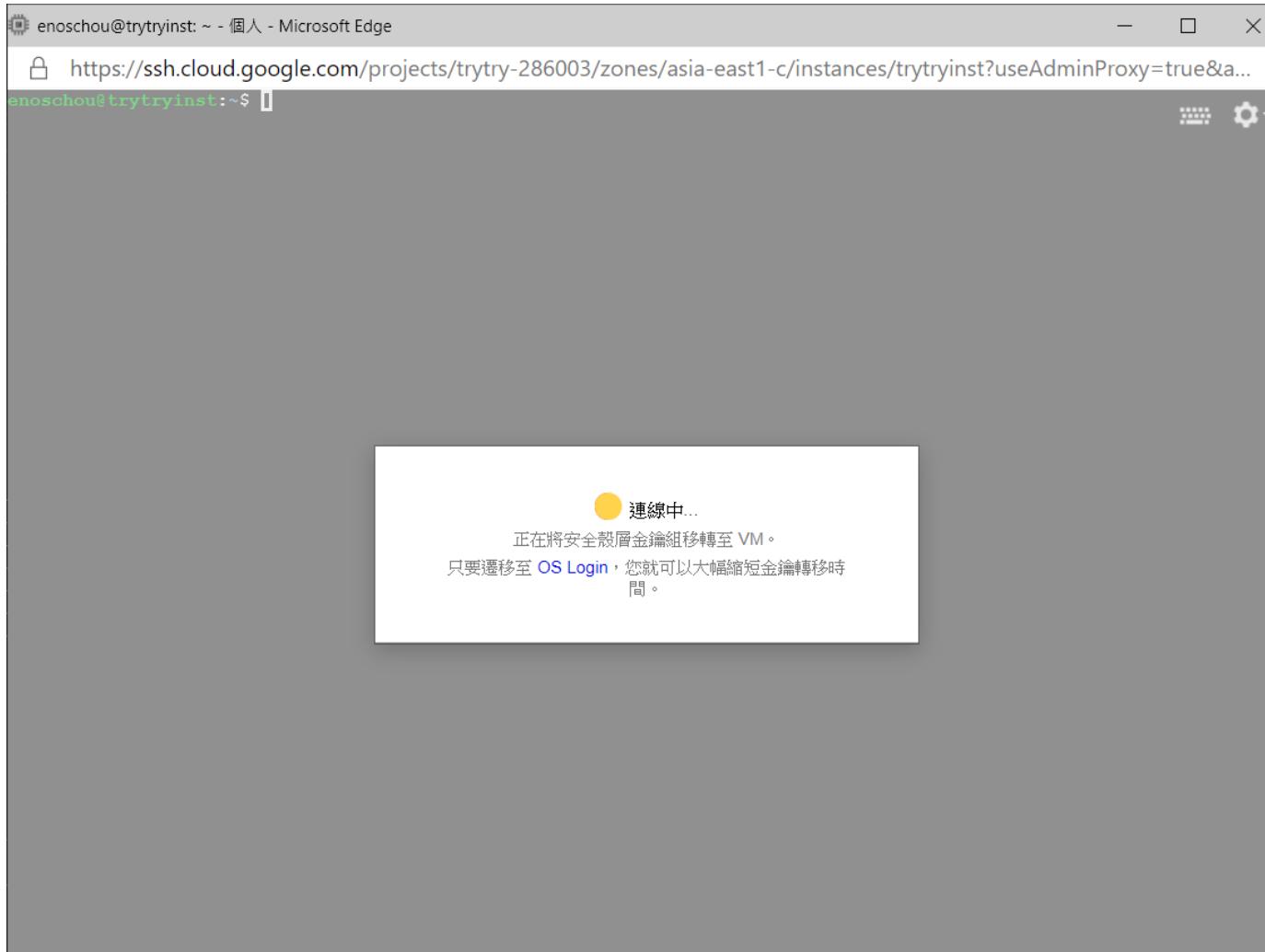
# 密技 – 如果不滿意帳號名稱



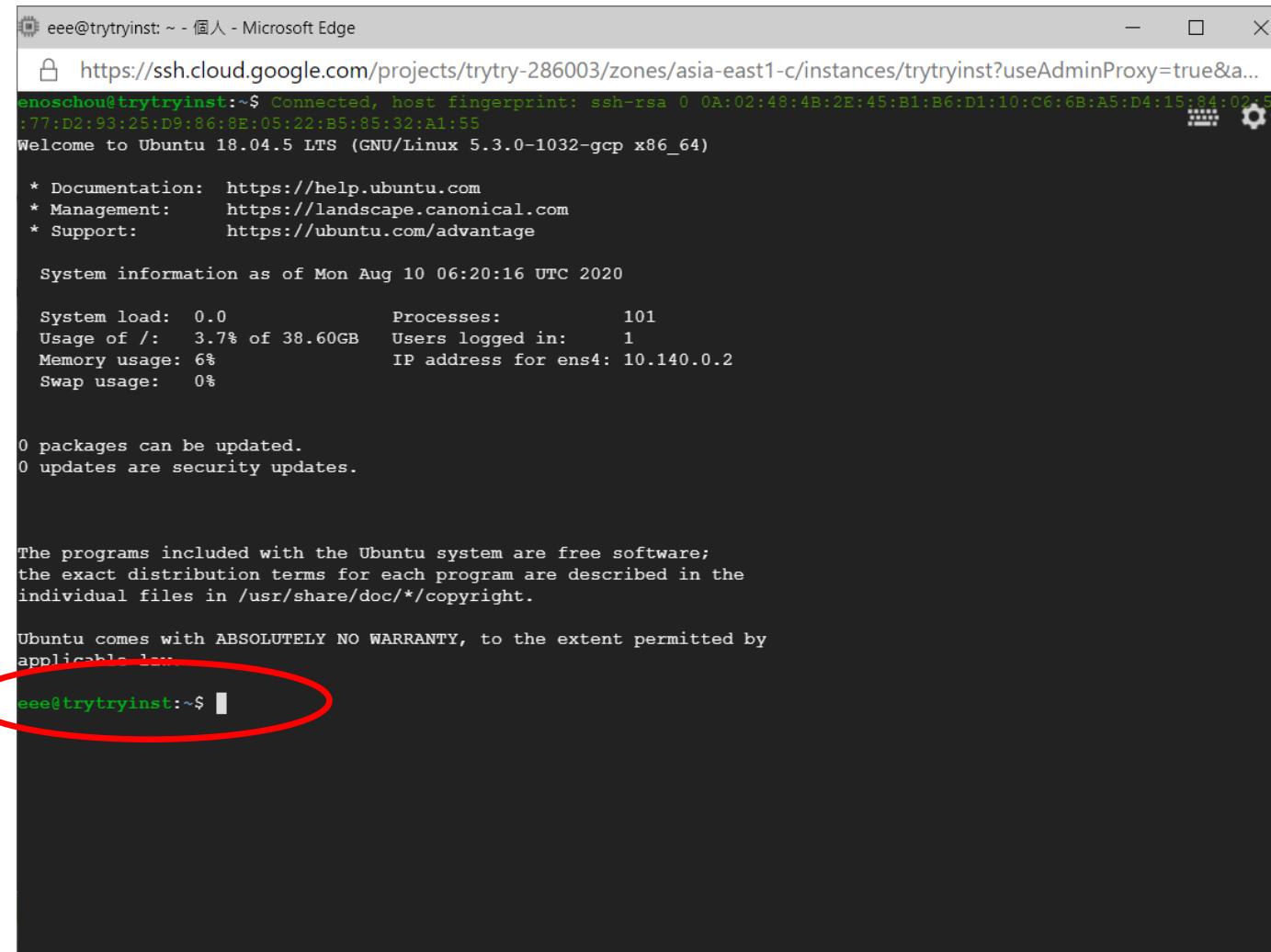
# 密技 – 如果不滿意帳號名稱



# 密技 – 如果不滿意帳號名稱



# 密技 – 如果不滿意帳號名稱



```
eee@trytryinst: ~ - 個人 - Microsoft Edge
https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...
Connected, host fingerprint: ssh-rsa 0 0A:02:48:4B:2E:45:B1:B6:D1:10:C6:6B:A5:D4:15:84:02:5C
:77:D2:93:25:D9:86:0E:05:22:B5:85:32:A1:55
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 5.3.0-1032-gcp x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Mon Aug 10 06:20:16 UTC 2020

System load: 0.0          Processes:      101
Usage of /: 3.7% of 38.60GB  Users logged in: 1
Memory usage: 6%           IP address for ens4: 10.140.0.2
Swap usage: 0%

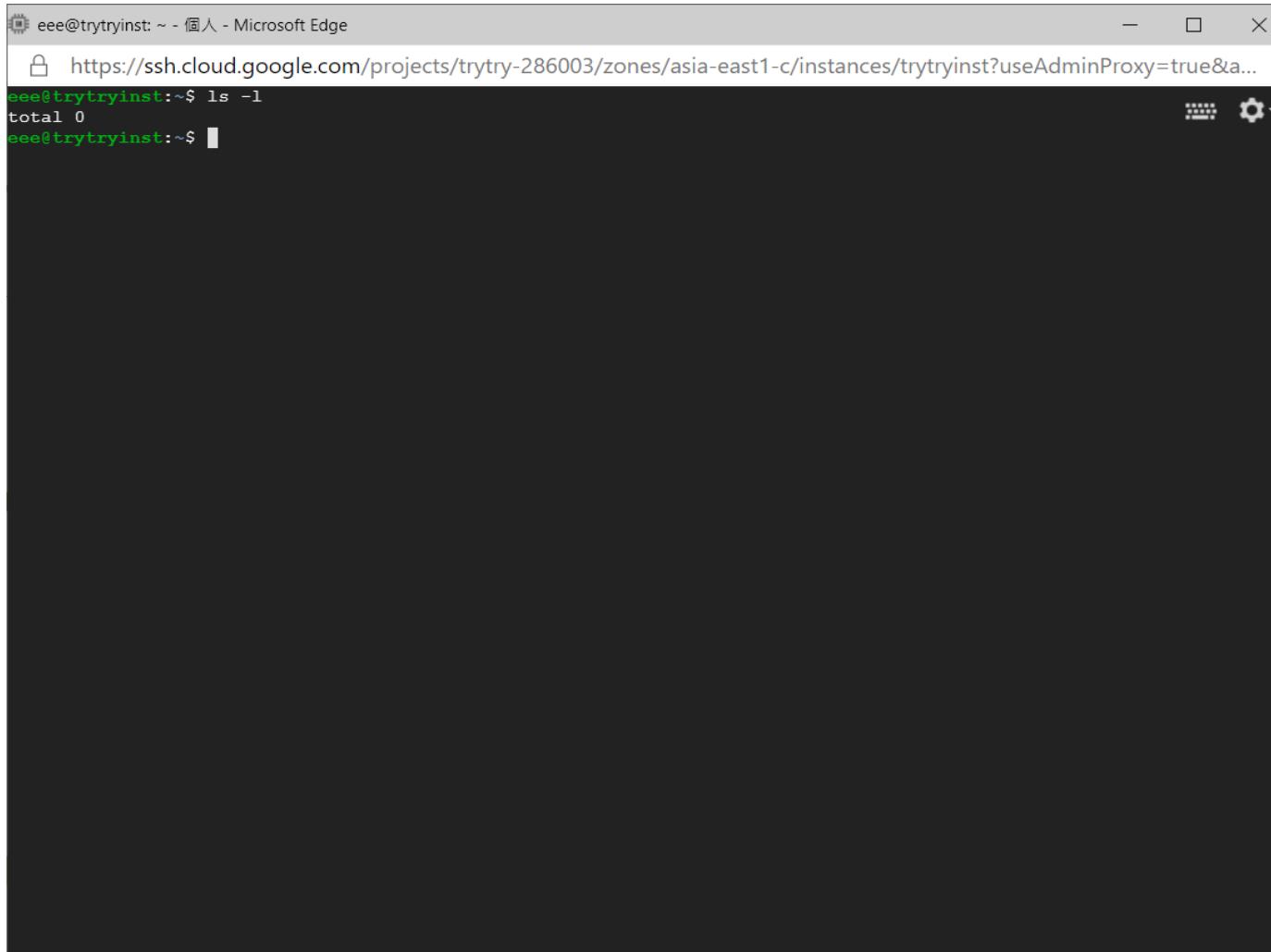
0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

eee@trytryinst:~$
```

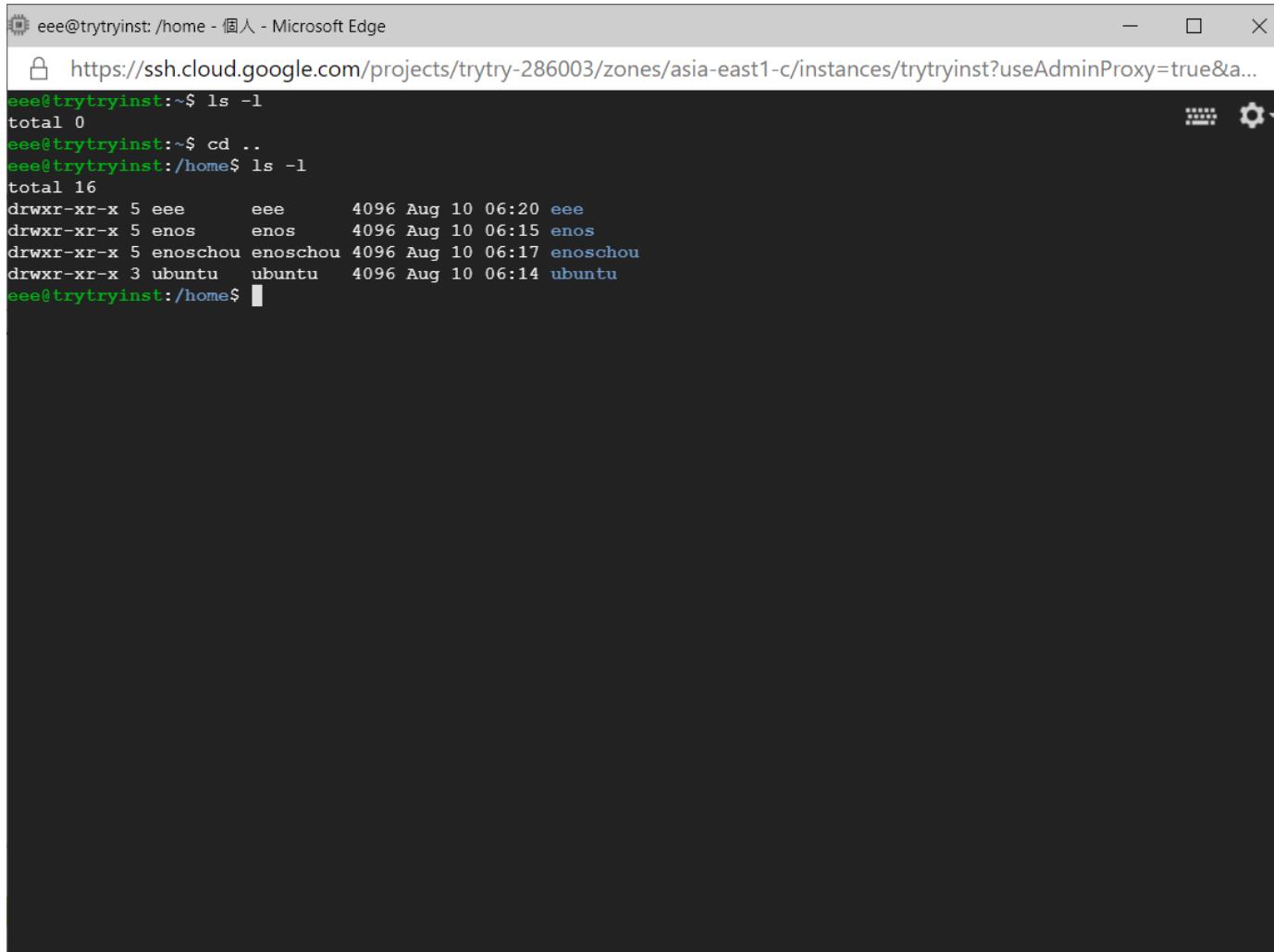
# 密技 – 如果不滿意帳號名稱



The screenshot shows a Microsoft Edge browser window with a terminal session running on a Google Cloud instance. The URL in the address bar is <https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...>. The terminal command entered is `ls -l`, which outputs "total 0".

`ls -l`  
檢視新帳號內檔案

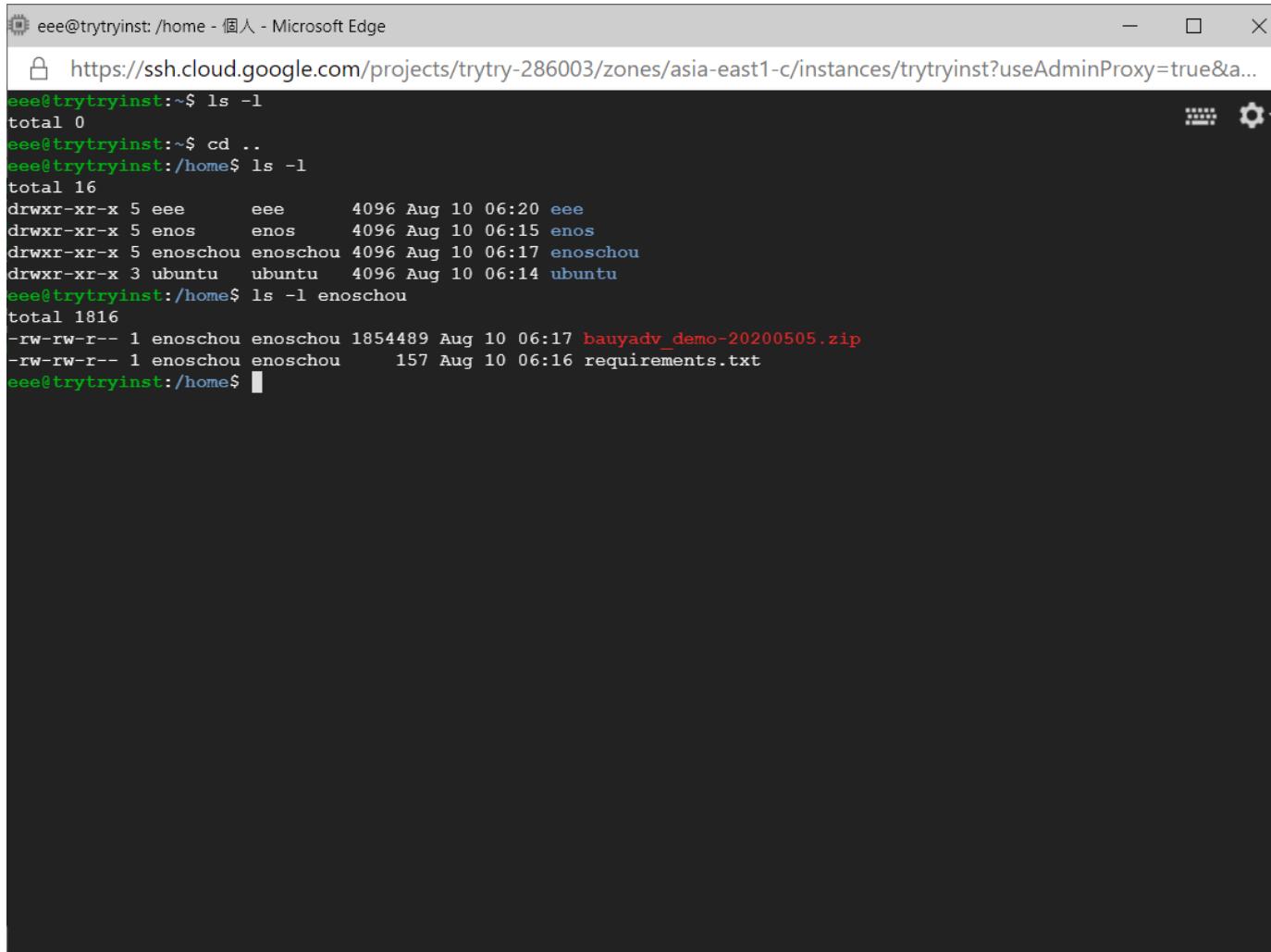
# 密技 – 如果不滿意帳號名稱



```
eee@trytryinst:~/home - 個人 - Microsoft Edge
https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...
eee@trytryinst:~$ ls -l
total 0
eee@trytryinst:~$ cd ..
eee@trytryinst:/home$ ls -l
total 16
drwxr-xr-x 5 eee      eee     4096 Aug 10 06:20 eee
drwxr-xr-x 5 enos     enos    4096 Aug 10 06:15 enos
drwxr-xr-x 5 enoschou enoschou 4096 Aug 10 06:17 enoschou
drwxr-xr-x 3 ubuntu   ubuntu   4096 Aug 10 06:14 ubuntu
eee@trytryinst:/home$
```

cd ..  
ls -l  
回上一層檢視所有帳號

# 密技 – 如果不滿意帳號名稱

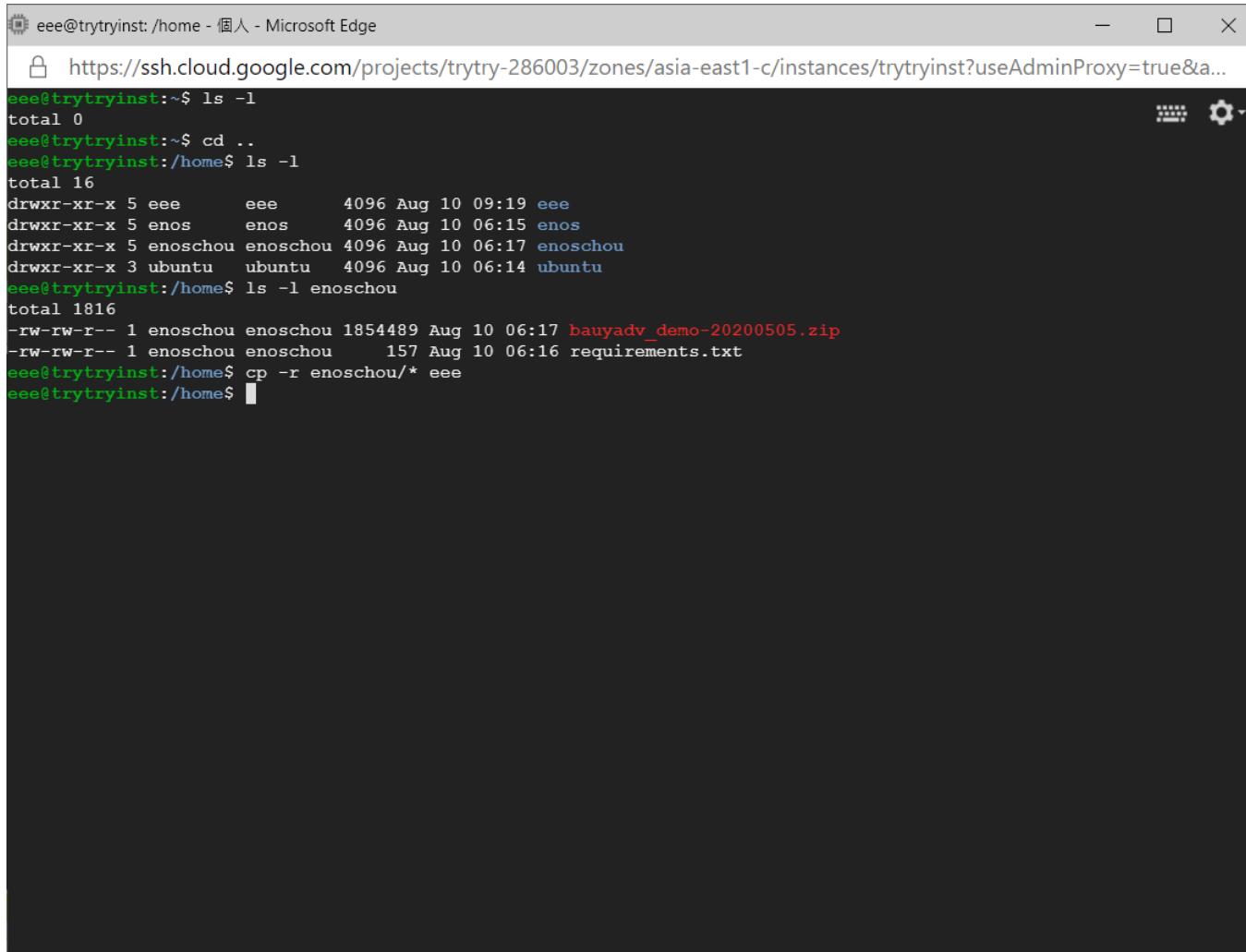


The screenshot shows a terminal window titled 'eee@trytryinst: /home - 個人 - Microsoft Edge' with the URL 'https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...'. The terminal displays the following command and its output:

```
eee@trytryinst:~$ ls -l
total 0
eee@trytryinst:~$ cd ..
eee@trytryinst:/home$ ls -l
total 16
drwxr-xr-x 5 eee      eee      4096 Aug 10 06:20 eee
drwxr-xr-x 5 enos     enos     4096 Aug 10 06:15 enos
drwxr-xr-x 5 enoschou enoschou 4096 Aug 10 06:17 enoschou
drwxr-xr-x 3 ubuntu   ubuntu   4096 Aug 10 06:14 ubuntu
eee@trytryinst:/home$ ls -l enoschou
total 1816
-rw-rw-r-- 1 enoschou enoschou 1854489 Aug 10 06:17 bauyadv_demo-20200505.zip
-rw-rw-r-- 1 enoschou enoschou    157 Aug 10 06:16 requirements.txt
eee@trytryinst:/home$
```

ls -l 舊帳號  
檢視舊帳號內檔案

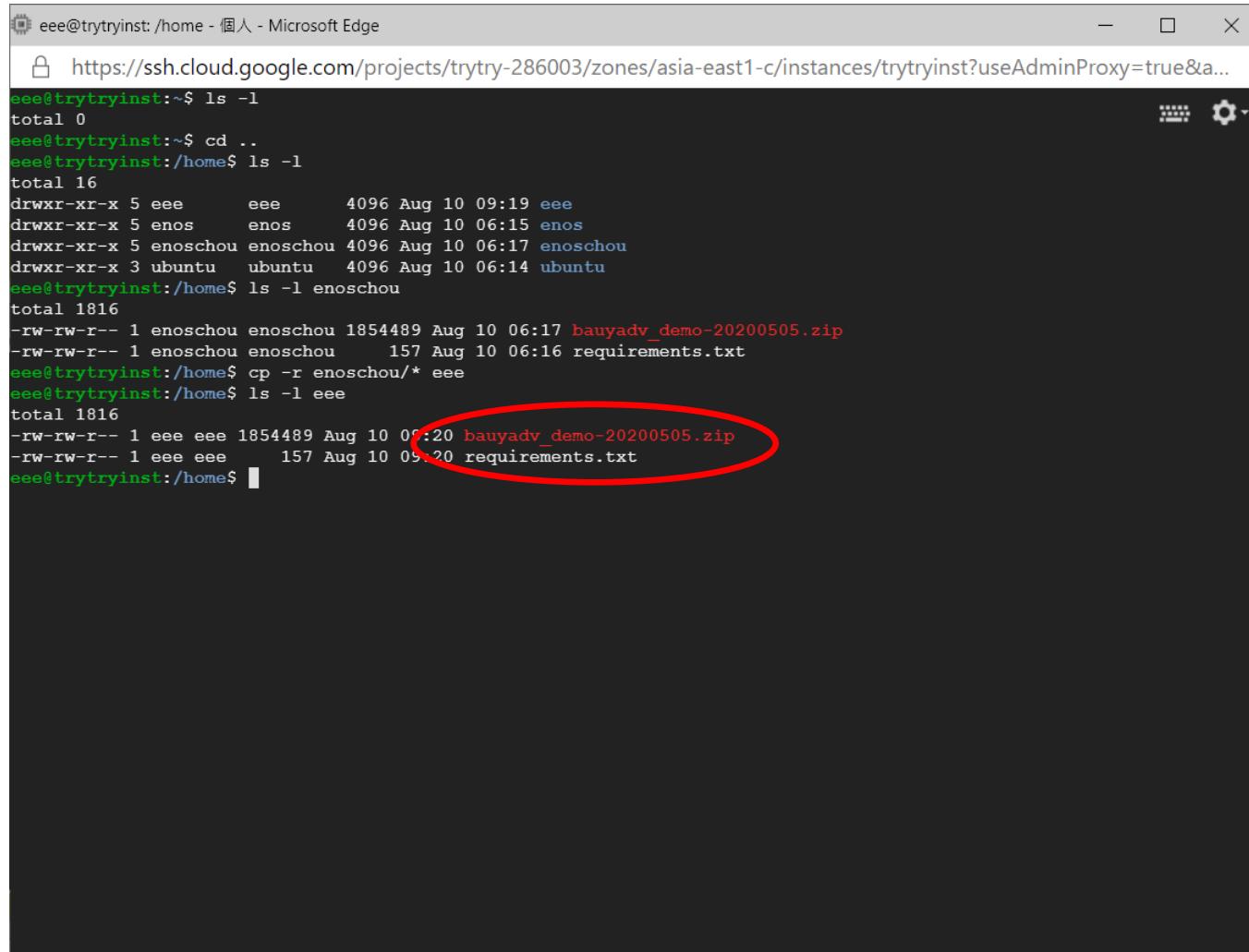
# 密技 – 如果不滿意帳號名稱



```
eee@trytryinst:~/home - 個人 - Microsoft Edge
https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...
eee@trytryinst:~$ ls -l
total 0
eee@trytryinst:~$ cd ..
eee@trytryinst:/home$ ls -l
total 16
drwxr-xr-x 5 eee      eee      4096 Aug 10 09:19 eee
drwxr-xr-x 5 enos     enos     4096 Aug 10 06:15 enos
drwxr-xr-x 5 enoschou enoschou 4096 Aug 10 06:17 enoschou
drwxr-xr-x 3 ubuntu   ubuntu   4096 Aug 10 06:14 ubuntu
eee@trytryinst:/home$ ls -l enoschou
total 1816
-rw-rw-r-- 1 enoschou enoschou 1854489 Aug 10 06:17 bauyadv_demo-20200505.zip
-rw-rw-r-- 1 enoschou enoschou    157 Aug 10 06:16 requirements.txt
eee@trytryinst:/home$ cp -r enoschou/* eee
eee@trytryinst:/home$
```

cp -r 舊帳號/\* 新帳號  
將舊帳號檔案複製到新帳號

# 密技 – 如果不滿意帳號名稱



```
eee@trytryinst:~/home - 個人 - Microsoft Edge
https://ssh.cloud.google.com/projects/trytry-286003/zones/asia-east1-c/instances/trytryinst?useAdminProxy=true&a...
eee@trytryinst:~$ ls -l
total 0
eee@trytryinst:~$ cd ..
eee@trytryinst:/home$ ls -l
total 16
drwxr-xr-x 5 eee      eee      4096 Aug 10 09:19 eee
drwxr-xr-x 5 enos     enos     4096 Aug 10 06:15 enos
drwxr-xr-x 5 enoschou enoschou 4096 Aug 10 06:17 enoschou
drwxr-xr-x 3 ubuntu   ubuntu   4096 Aug 10 06:14 ubuntu
eee@trytryinst:/home$ ls -l enoschou
total 1816
-rw-rw-r-- 1 enoschou enoschou 1854489 Aug 10 06:17 bauyadv_demo-20200505.zip
-rw-rw-r-- 1 enoschou enoschou    157 Aug 10 06:16 requirements.txt
eee@trytryinst:/home$ cp -r enoschou/* eee
eee@trytryinst:/home$ ls -l eee
total 1816
-rw-rw-r-- 1 eee      eee      1854489 Aug 10 09:20 bauyadv_demo-20200505.zip
-rw-rw-r-- 1 eee      eee      157 Aug 10 09:20 requirements.txt
eee@trytryinst:/home$
```

ls -l 新帳號  
重新檢視新帳號內的檔案



# 設定靜態 IP -1

The screenshot shows the Google Cloud Platform Compute Engine VM Instances page. The URL in the browser is <https://console.cloud.google.com/compute/instances?project=trytry-265010&instancesize=50>. A red circle highlights the three-dot menu icon next to the instance details for 'trytryinst'.

名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nic0)	35.201.144.19	SSH

# 設定靜態 IP -2

The screenshot shows the Google Cloud Platform Compute Engine interface. On the left, the sidebar is expanded to show 'VM 執行個體' (VM Instances). In the main area, a table lists a single instance named 'trytryinst'. The instance is located in the 'asia-east1-c' zone, has an internal IP of '10.140.0.2 (nic0)' and an external IP of '35.201.144.19'. The 'SSH' connection status is shown as '連接' (Connected). A context menu is open over the instance row, with the '查看網路詳細資料' (View Network Details) option highlighted by a red oval.

名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nic0)	35.201.144.19	SSH 連接

# 設定靜態 IP -3

The screenshot shows the Google Cloud Platform interface for managing VPC networks. The left sidebar is titled 'VPC 網路' and includes options like '外部 IP 位址' (External IP Address), which is circled in red. The main content area is titled '網路介面詳細資料' (Network Interface Details) and shows the configuration for the interface 'nic0'. It lists the following details:

名稱	網路	子網路	主要內部 IP	別名 IP 範圍	外部 IP	網路服務級別	IP 轉送
nic0	default	default	10.140.0.2	-	35.201.144.19 (臨時)	專業版	已停用

Below this, there's a section for 'VM 執行個體詳細資料' (VM Instance Details) showing the instance 'trytryinst' with the IP '885230974976-compute@developer.gserviceaccount.com'.

At the bottom, there are two tables for '防火牆規則和路徑詳細資料' (Firewall Rules and Routes) and '封包鏡像' (Traffic Mirroring). The first table shows rules for HTTP, HTTPS, ICMP, and internal traffic, while the second table shows a rule for RDP.

# 設定靜態 IP -4

The screenshot shows the Google Cloud Platform interface for managing VPC networking addresses. The left sidebar is titled 'VPC 網路' and contains the following items:

- VPC 網路
- 外部 IP 位址** (selected)
- 防火牆規則
- 路徑
- VPC 網路對等互連
- 共用 VPC
- 無伺服器虛擬私人雲端存取
- 封包鏡像

The main content area is titled '外部 IP 位址' and shows a table of addresses. One row is highlighted with a red circle around the '類型' (Type) column, which is set to '臨時' (Temporary). The table data is as follows:

名稱	外部位址	地區	類型	版本	使用者	網路級別	標籤
-	35.201.144.19	asia-east	臨時	IPv4	VM 執行個體 trytryinst (「asia-east1-c」區域)		

# 設定靜態 IP - 5

The screenshot shows the Google Cloud Platform interface for managing VPC networking addresses. The left sidebar is titled 'VPC 網路' and includes options like '外部 IP 位址', '防火牆規則', '路徑', 'VPC 網路對等互連', '共用 VPC', '無伺服器虛擬私人雲端存取', and '封包鏡像'. The main content area is titled '外部 IP 位址' and shows a table of addresses. A specific row is highlighted, with the '靜態' (Static) status column circled in red. The table columns include: 名稱 (Name), 外部位址 (External IP), 地區 (Region), 靜態 (Static), 版本 (Version), 使用者 (User), 網路級別 (Network Level), and 標籤 (Labels). The highlighted row shows: -, 35.201.144.19, asia-east1, 靜態 (Static), IPv4, VM 執行個體 trytryinst (在 asia-east1-c 區域).

名稱	外部位址	地區	靜態	版本	使用者	網路級別	標籤
-	35.201.144.19	asia-east1	靜態 臨時	IPv4	VM 執行個體 trytryinst (在 asia-east1-c 區域)		

# 設定靜態 IP -6

The screenshot shows the Google Cloud Platform VPC Networking Addresses page. The left sidebar is titled 'VPC 網路' and contains the following items: 'VPC 網路' (selected), '外部 IP 位址' (selected), '防火牆規則', '路徑', 'VPC 網路對等互連', '共用 VPC', '無伺服器虛擬私人雲端存取', and '封包鏡像'. The main content area is titled '外部 IP 位址' and includes buttons for '+ 保留靜態位址', '重新整理', and '釋放靜態位址'. A message at the top states: '免費試用狀態：您的試用額度還剩 NT\$6,791.07，且免費試用期將在 275 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。' Below this is a search bar and a toolbar with icons for '顯示資訊面板' and '瞭解詳情'. A modal dialog box is centered over the page, titled '保留新的靜態 IP 位址'. It has a field labeled '名稱' containing 'trytryip' (which is circled in red) and a '說明 (選填)' field. At the bottom right of the dialog are '取消' and '保留' buttons.

# 設定靜態 IP -7

The screenshot shows the Google Cloud Platform VPC Networking Addresses page. The left sidebar is titled 'VPC 網路' and has a '外部 IP 位址' section selected. The main content area shows a table with one row:

名稱	外部位址	地區	類型	版本	使用者	網路級別	標籤
trytryip	35.201.144.19	asia-east1	靜態				

A red circle highlights a status message at the bottom left: '正在建立「trytryip」位址...' (Creating 'trytryip' IP address...).

# 設定靜態 IP -8

The screenshot shows the Google Cloud Platform interface for managing VPC networking addresses. The left sidebar is titled 'VPC 網路' and includes options like '外部 IP 位址', '防火牆規則', '路徑', 'VPC 網路對等互連', '共用 VPC', '無伺服器虛擬私人雲端存取', and '封包鏡像'. The main content area is titled '外部 IP 位址' and shows a table of addresses. A specific row is highlighted with a red oval: 'trytry 35.201.144.19 asia-east1-st1 靜態 IPv4 VM 執行個體 trytryinst (asia-east1-c 區域) 專業版 變更'. The URL in the browser bar is https://console.cloud.google.com/networking/addresses/list?project=trytry-265010&addressesTablesize=50.

名稱	外部位址	地區	類型	版本	使用者	網路級別	標籤
trytry	35.201.144.19	asia-east1-st1	靜態	IPv4	VM 執行個體 trytryinst (asia-east1-c 區域)	專業版	變更



# 安裝軟體 -1

更新 ubuntu 套件資料庫

```
sudo apt-get update
```

安裝 ngrok

```
wget https://bin.equinox.io/c/4VmDzA7iaHb/ngrok-stable-linux-amd64.zip
```

```
sudo apt-get install unzip
```

```
unzip ngrok-stable-linux-amd64.zip
```

安裝 pip3

```
sudo apt-get install python3-pip
```

安裝 python 套件

你可以一個一個套件慢慢安裝，也可以

```
pip3 install -r requirements.txt
```

# 安裝軟體 -2

- 自行部署你的 Line Chatbot source
- 如果需要文字編輯器，可用 nano 或 vi (免安裝)，或安裝 joe (sudo apt-get install joe)

# 安裝軟體 -3

如果 opencv 報錯，試試

```
sudo apt-get install -y libsm6 libxext6 libxrender-dev
```

# 安裝軟體 -4

順道改時區

```
sudo timedatectl set-timezone Asia/Taipei
```



# 啟動 Line Chatbot Service

啟動 ngrok

```
./ngrok http 5000 (or your port)
```

依 ngrok 輸出調整 Line Chatbot source & Line Messaging API 設定

啟動 Line Chatbot

開啟新的 Web SSH session

```
python3 your_python_name.py
```

# 服務驗證

利用 Line 自行驗證服務是否正常運作



# 設定 PuTTY -1

利用 PuTTYgen 建立金鑰

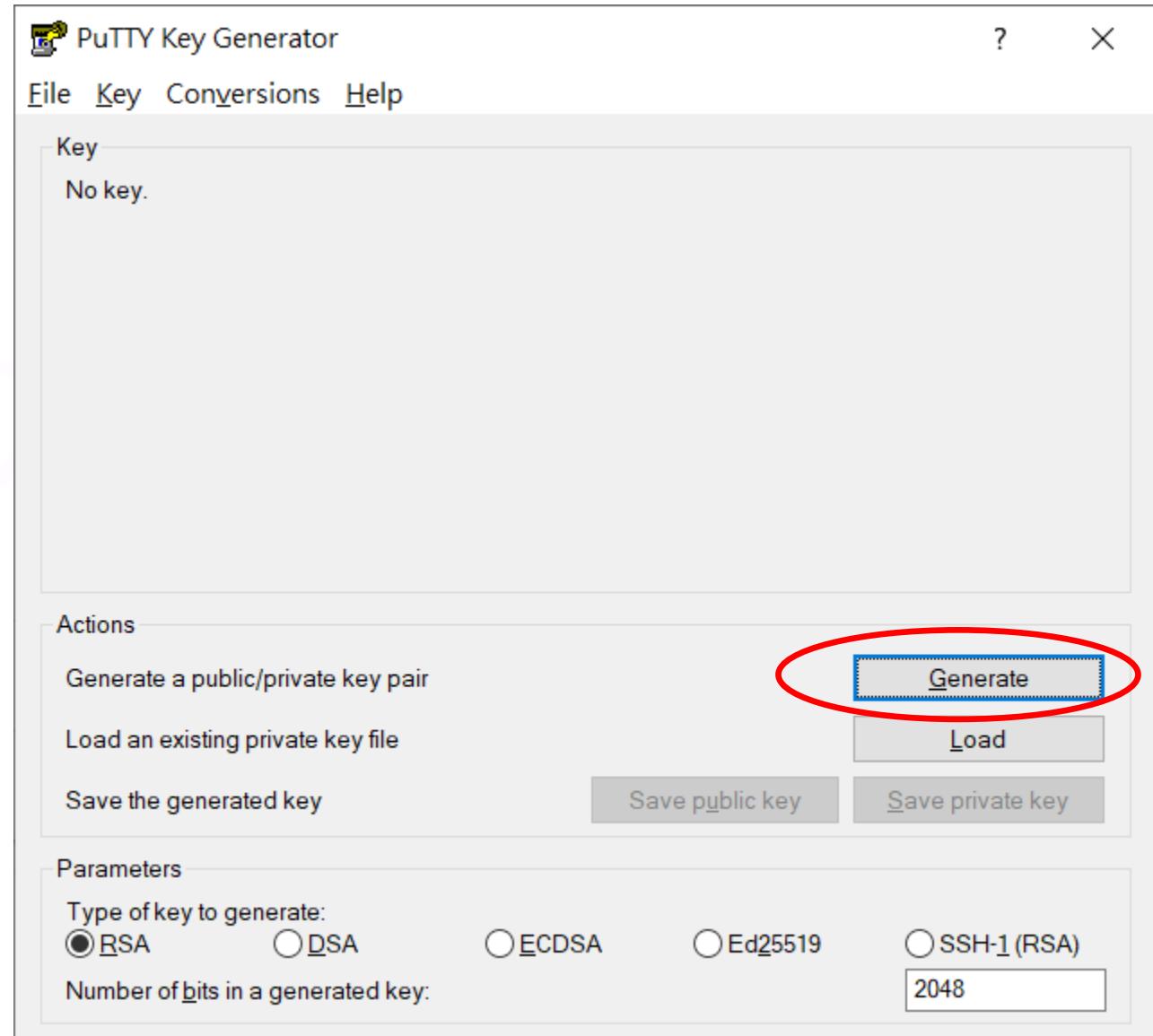
<https://cloud.google.com/compute/docs/instances/adding-removing-ssh-keys?hl=zh-tw#createsshkeys>

設定 PuTTY

<https://cloud.google.com/compute/docs/instances/connecting-advanced?hl=zh-tw#thirdpartytools>

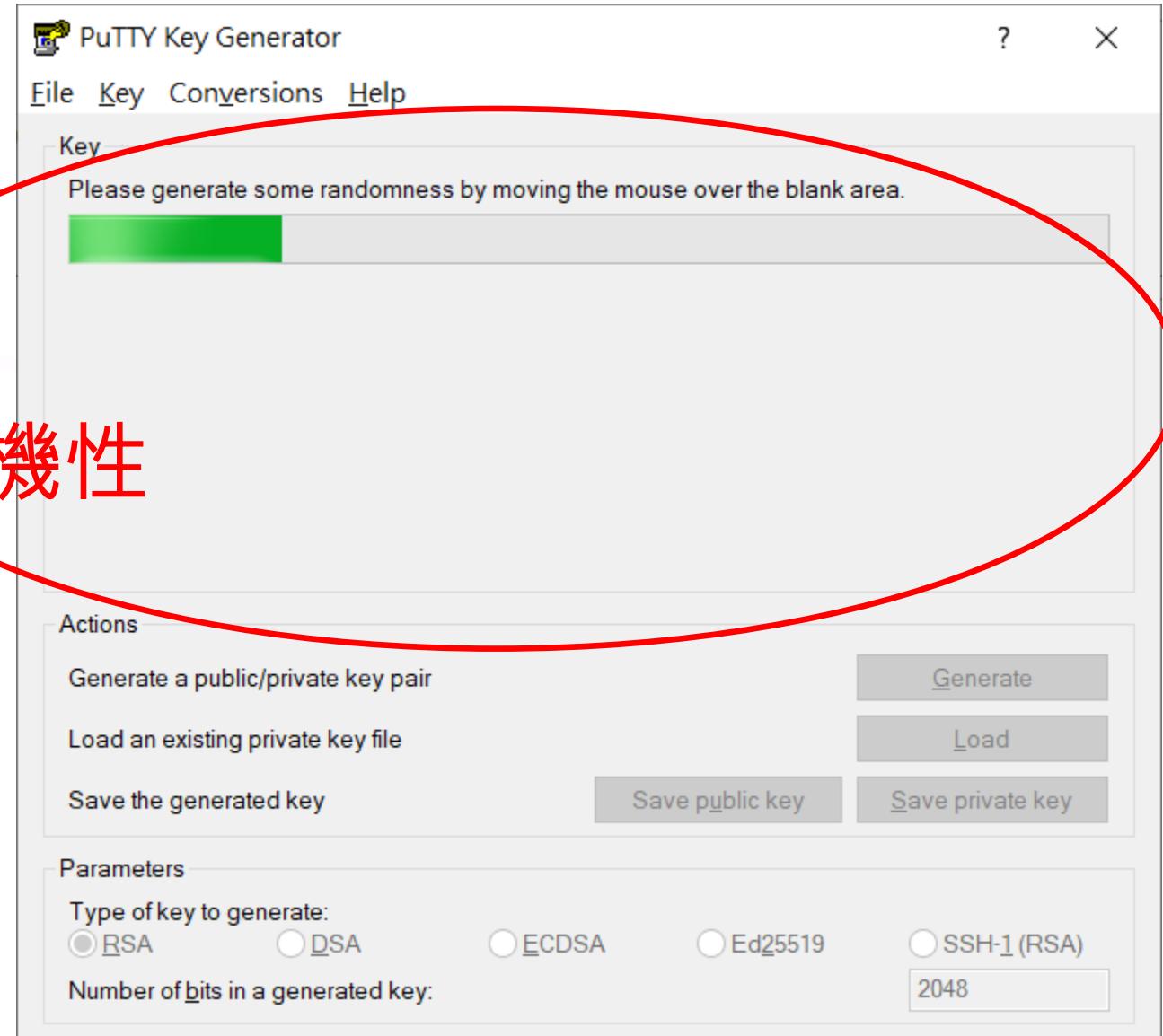
# 設定 PuTTY -2

執行 PuTTYgen

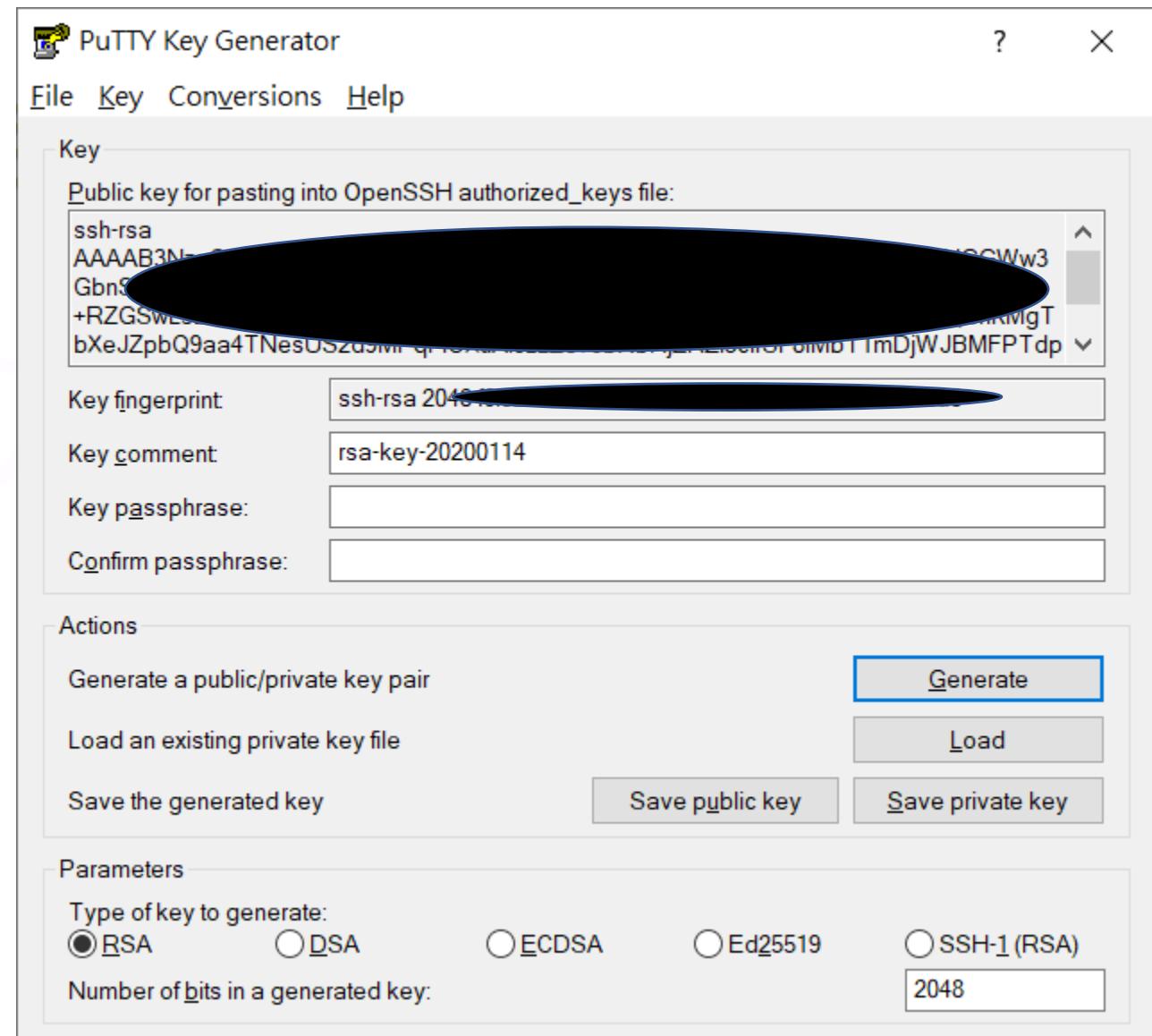


# 設定 PuTTY -3

同時滑動滑鼠增加隨機性

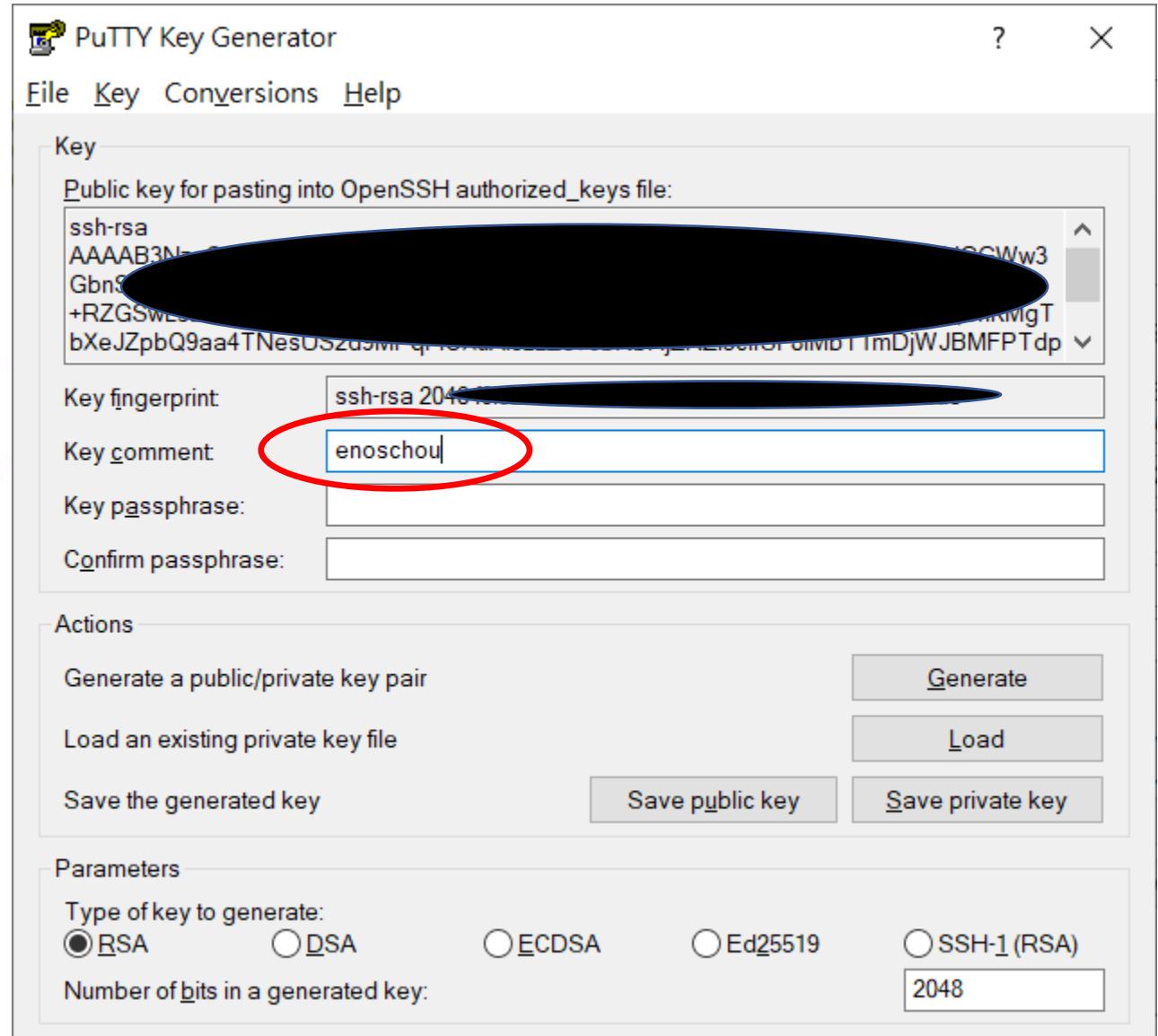


# 設定 PuTTY -4



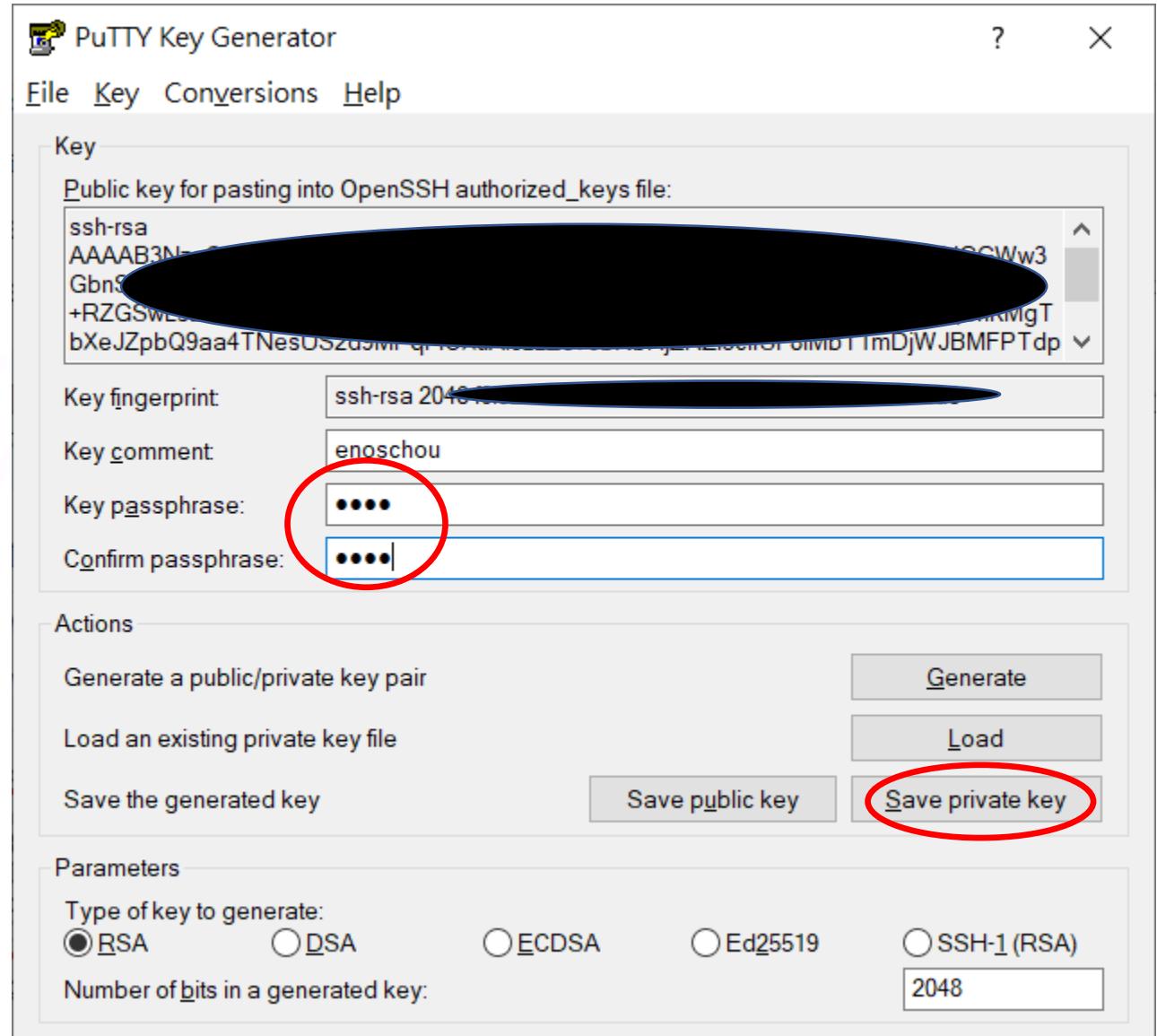
# 設定 PuTTY -5

必須是帳號名稱

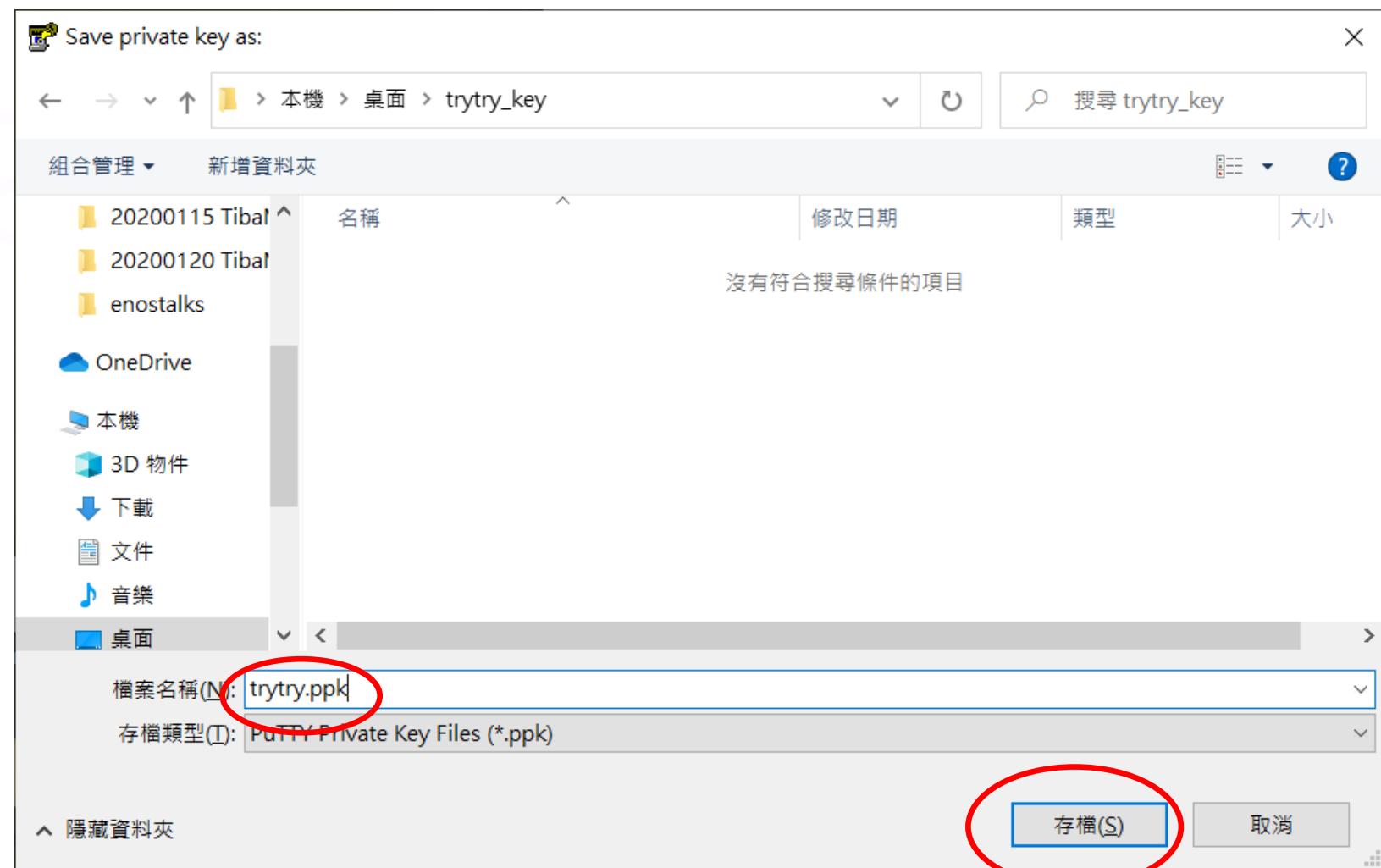


# 設定 PuTTY –6

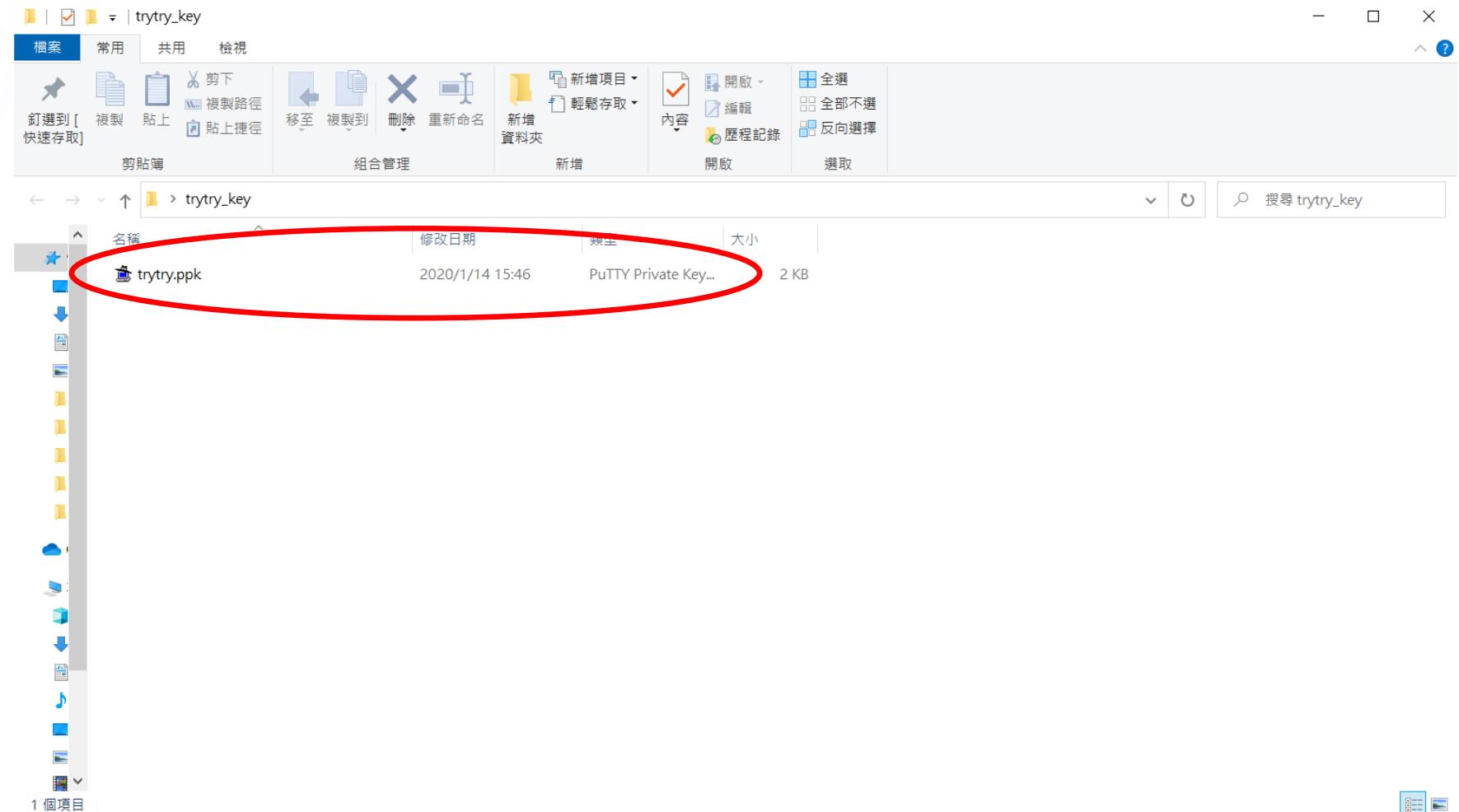
視需要多設一道密碼



# 設定 PuTTY -8

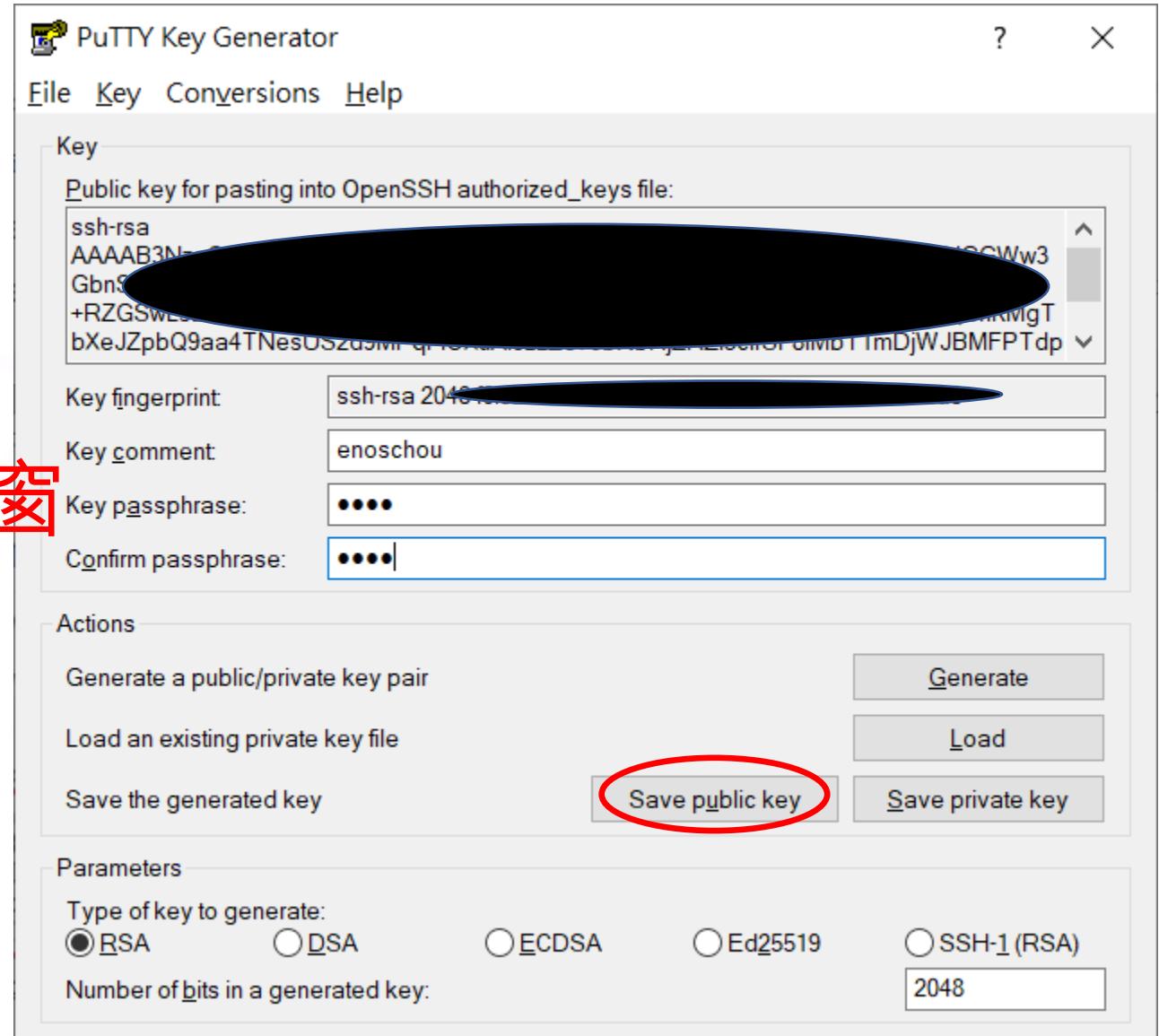


# 設定 PuTTY -9

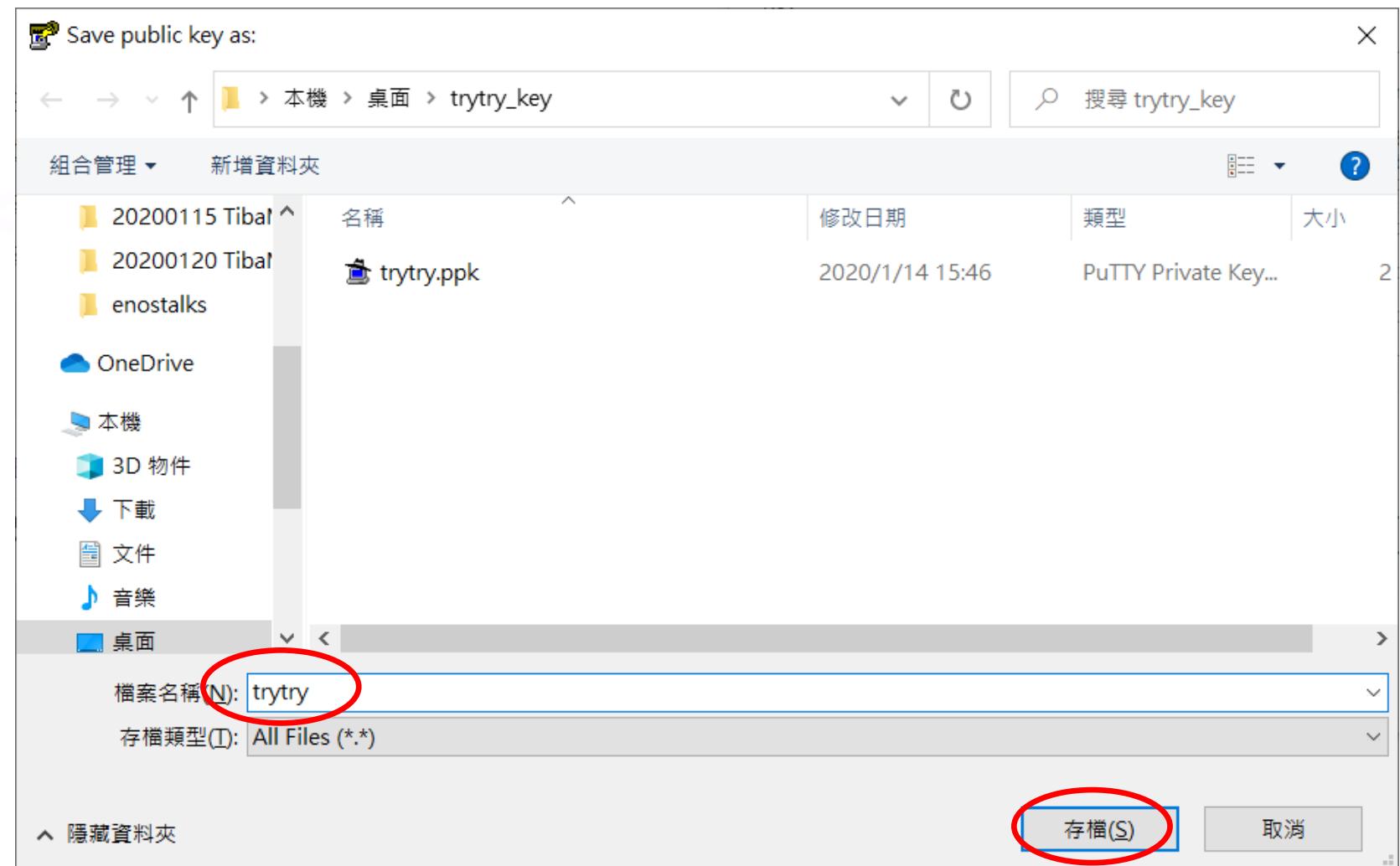


# 設定 PuTTY -10

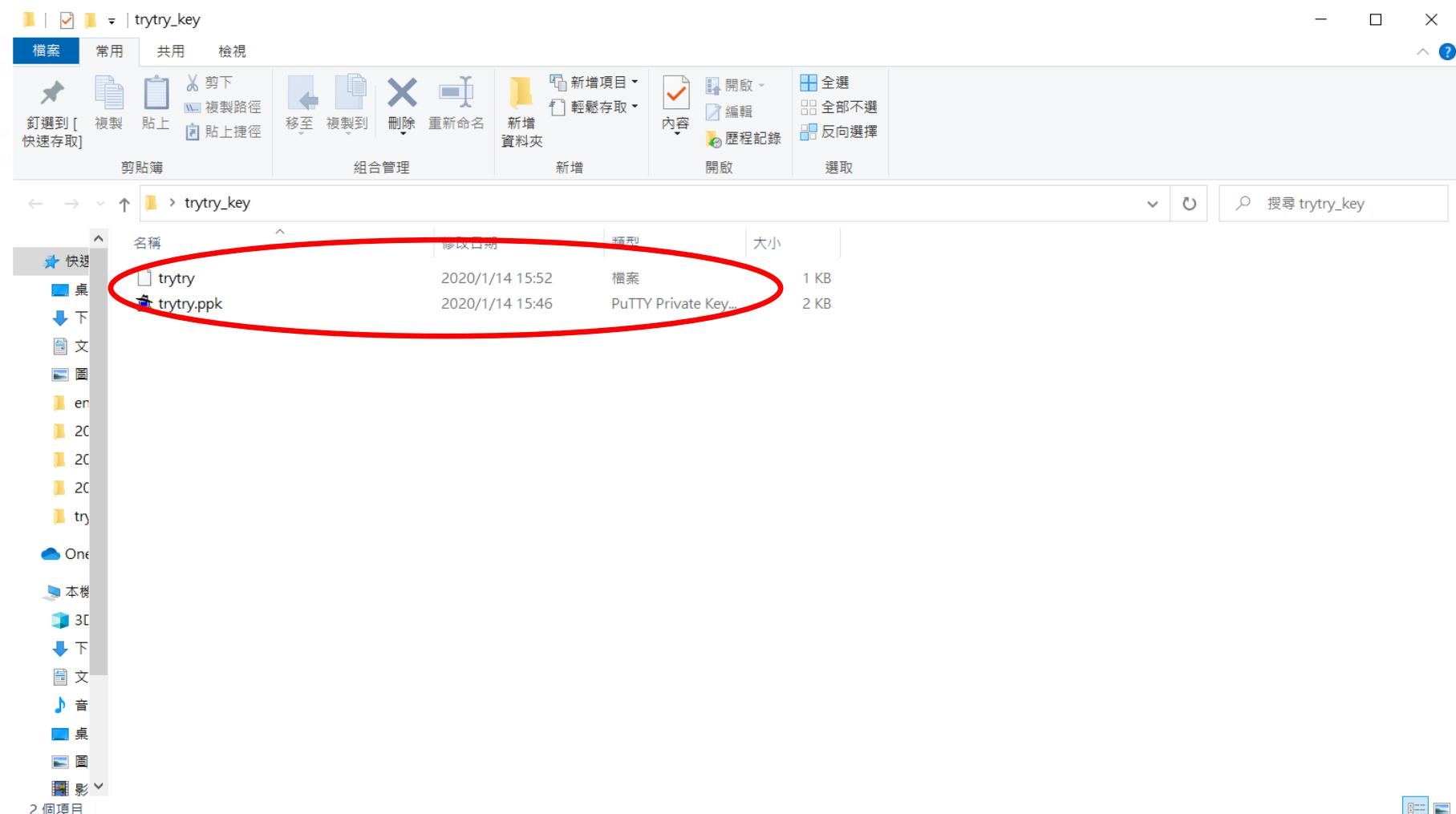
儲存完暫時不要關視窗



# 設定 PuTTY -11



# 設定 PuTTY -12



# 設定 PuTTY -13

The screenshot shows the Google Cloud Platform dashboard for the project 'trytry-265010'. The left sidebar is collapsed, and the main area displays the following sections:

- Compute Engine**: Shows a CPU utilization chart with a single sharp spike around 3:15. The Y-axis ranges from 0 to 1.50e-2. Below the chart, it says 'instance/cpu/utilization: 9e-4'.
- Google Cloud Platform 服務狀態**: Shows all services are normal. A link to '前往 Cloud 狀態資訊主頁' is provided.
- 計費功能**: Shows estimated costs at TWD NT\$0.00 for the period from 2020/1/1 to 2020/1/13. A link to '查看詳細扣款記錄' is provided.
- Error Reporting**: Shows no error reports. A link to '瞭解如何設定錯誤報告' is provided.
- 新聞**: Shows news items.

A red circle highlights the '中繼資料' (Relay Data) option under the 'VM 執行個體' (Compute Engine) section in the sidebar menu.

# 設定 PuTTY -14

The screenshot shows a browser window for the Google Cloud Platform Compute Engine metadata page. The URL is <https://console.cloud.google.com/compute/metadata?project=trytry-265010>. The page displays a sidebar with various Compute Engine options like VM 執行個體, 安全殼層金鑰, and 中繼資料. The '中繼資料' option is highlighted with a red circle. The main content area shows the 'Compute Engine 中繼資料' section with a note about using it for VM execution instances and a '新增中繼資料' button.

Compute Engine - trytry - Go x +

我的雲端硬碟 - Google Drive

https://console.cloud.google.com/compute/metadata?project=trytry-265010

免費試用狀態：您的試用額度還剩 NT\$6,732.39，且免費試用期將在 274 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。

關閉 啟用

Google Cloud Platform trytry

Compute Engine 中繼資料

VM 執行個體 安全殼層金鑰

執行個體群組

執行個體範本

單一用戶群節點

磁碟

快照

映像檔

TPU

承諾使用折扣

中繼資料

健康狀態檢查

區域

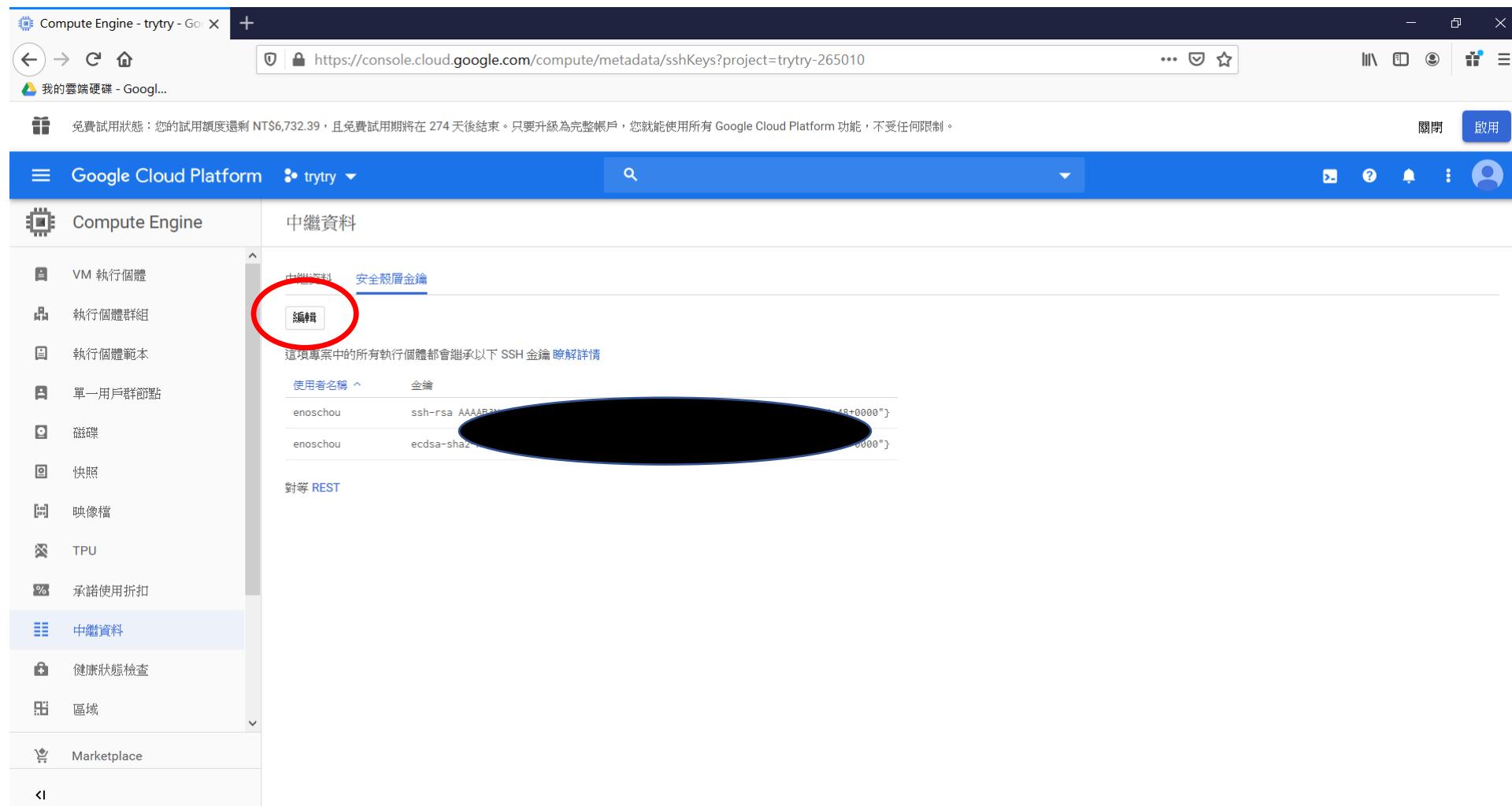
Marketplace

Compute Engine 中繼資料

您可以使用 Compute Engine 中繼資料來指定鍵/值組合，供專案中所有的 VM 執行個體使用。VM 執行個體可視需要查詢中繼資料，也可以等候變更通知。[瞭解詳情](#)

新增中繼資料

# 設定 PuTTY - 15



The screenshot shows the Google Cloud Platform Compute Engine metadata editor. The left sidebar lists various project settings like VM instances, execution groups, and disk images. The main panel is titled '中繼資料' (Relay Data) and shows the '安全殼層金鑰' (SSH Keys) tab selected. A red circle highlights the '編輯' (Edit) button. Below it, a note states: '這項專案中的所有執行個體都會繼承以下 SSH 金鑰' (All instances in this project will inherit the following SSH keys). Two key entries are listed: one for user 'enoschou' using 'ssh-rsa' and another for 'ecdsa-sha2-nistp256'. The entire list of keys is obscured by a large black oval.

# 設定 PuTTY - 16

The screenshot shows the Google Cloud Platform Compute Engine interface for managing SSH keys. The left sidebar lists Compute Engine resources: VM 執行個體, 執行個體群組, 執行個體範本, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料 (selected), 健康狀態檢查, 區域, Marketplace. The main content area shows two SSH keys for the user 'enoschou'. The first key is labeled '安全殼層金鑰' and has its content redacted. The second key is also redacted. At the bottom, there is a blue button with a plus sign and the text '+ 新增項目' which is circled in red.

# 設定 PuTTY -17

The screenshot shows the Google Cloud Platform Compute Engine metadata SSH keys page. The URL is <https://console.cloud.google.com/compute/metadata/sshKeys?project=trytry-265010>. The page displays two SSH keys for the user 'enoschou':

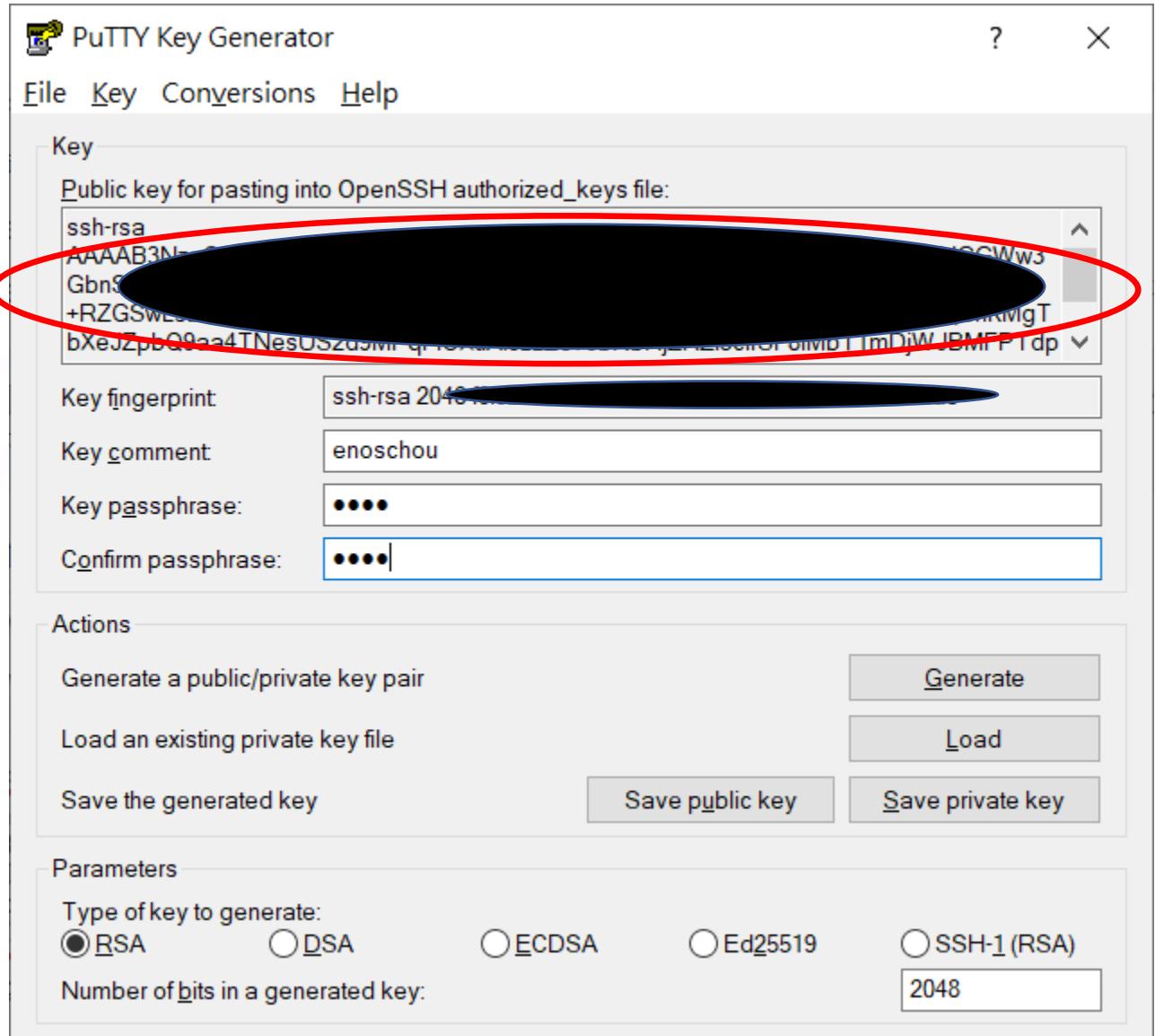
```
ssh-rsa AAAAB3NzaC1yc2EAAQEA...JLWFGzneVKYgxPFHIdvQ  
JBOM1+ggAC...  
wdAgut...  
LmQ4jJ...  
wVJlutTmlwgEy...  
{"key": "ssh-rsa AAAAB3NzaC1yc2EAAQEA...JLWFGzneVKYgxPFHIdvQ  
JBOM1+ggAC...  
wdAgut...  
LmQ4jJ...  
wVJlutTmlwgEy...  
"username": "enoschou@yahoo.com.tw", "expireOn": "2020-01-15T14:54:45+0000"}  
ecdsa-sha2-nistp256 AAAAE2Vz7NUlVn...A...Thm]ZdHAvNTYAAABBBM351ZEApf  
51UPZPJU...  
gle-s...  
{"key": "ecdsa-sha2-nistp256 AAAAE2Vz7NUlVn...A...Thm]ZdHAvNTYAAABBBM351ZEApf  
51UPZPJU...  
gle-s...", "username": "enoschou@yahoo.com.tw", "expireOn": "2020-01-15T14:54:45+0000"}  
輸入公開安全殼層金鑰
```

The sidebar on the left shows Compute Engine resources: VM 執行個體, 執行個體群組, 執行個體範本, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料 (selected), 健康狀態檢查, 區域, Marketplace.

At the bottom, there are '儲存' and '取消' buttons, and a '+ 新增項目' button.

# 設定 PuTTY -18

複製這段



# 設定 PuTTY - 19

The screenshot shows the Google Cloud Platform Compute Engine interface for managing SSH keys. The left sidebar is titled 'Compute Engine' and lists options like VM 執行個體, 執行個體群組, 執行個體範本, 單一用戶群節點, 磁碟, 快照, 映像檔, TPU, 承諾使用折扣, 中繼資料 (selected), 健康狀態檢查, 區域, and Marketplace. The main content area is titled '中繼資料' and shows a list of keys under the user 'enoschou'. Three key entries are shown, each with a large black oval redaction over its content. A red oval highlights the bottom-left '儲存' (Save) button at the bottom of the list. A large red circle with the text '貼到這' (Paste here) is overlaid on the bottom right of the screen.

# 設定 PuTTY - 20

The screenshot shows the Google Cloud Platform Compute Engine metadata SSH keys page. The URL is <https://console.cloud.google.com/compute/metadata/sshKeys?project=trytry-265010>. A message at the top says "免費試用狀態：您的試用額度還剩 NT\$6,732.39，且免費試用期將在 274 天後結束。只要升級為完整帳戶，您就能使用所有 Google Cloud Platform 功能，不受任何限制。" There is a "關閉" (Close) button next to it.

The main content area shows the "中繼資料" (Relay Data) section under the "Compute Engine" project. It lists three SSH keys:

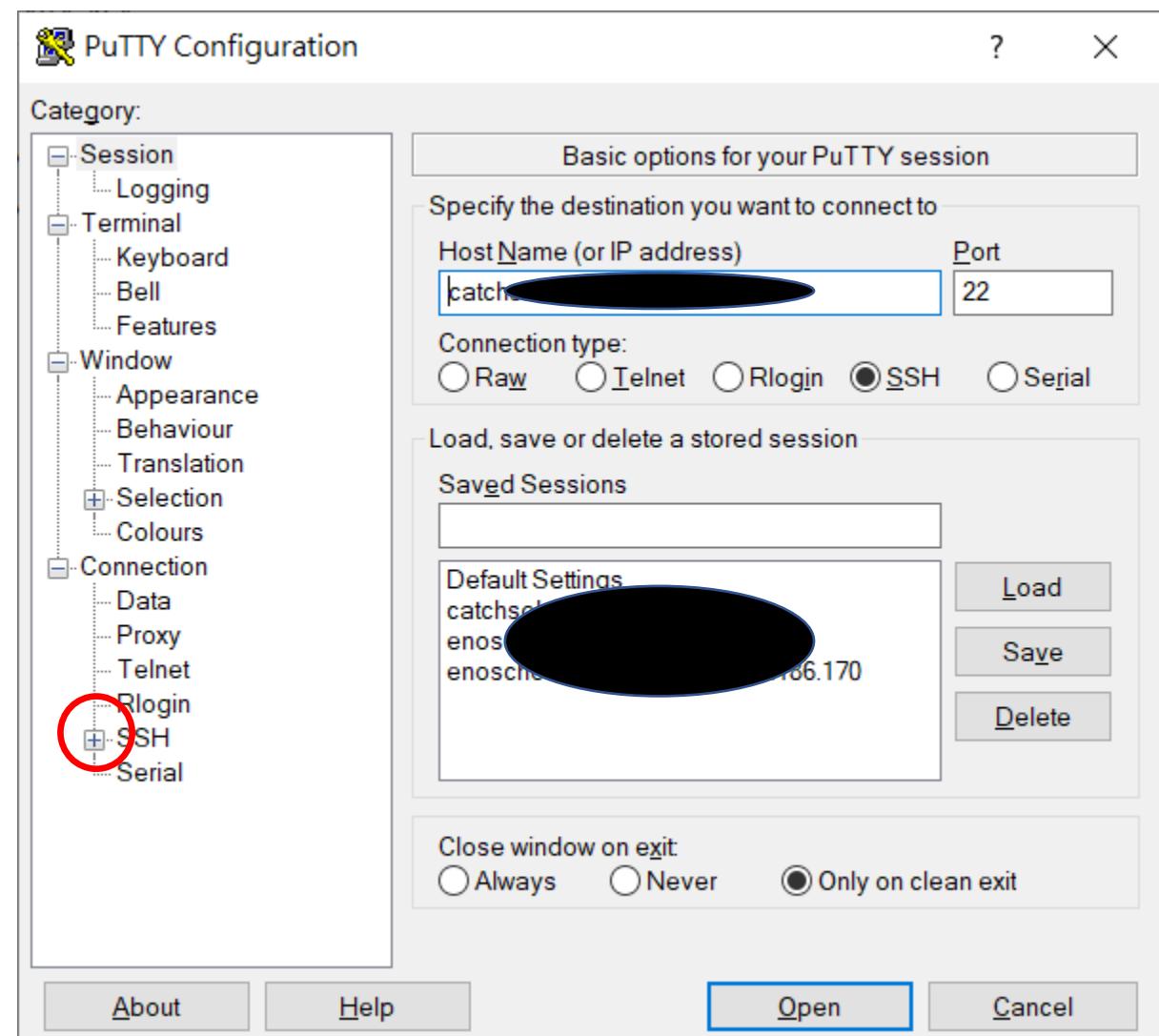
使用者名稱	金鑰
enoschou	ssh-rsa AAAAB3NzaC1E3P0k...YT14:54:48+0000"]
enoschou	ecdsa-sha2-nistp256 ...000"]
enoschou	ssh-rsa AAAAB3NzaC1E3P0k...m775Q== enoschou

A red oval highlights the third row of the table, which contains the public key for user 'enoschou'.

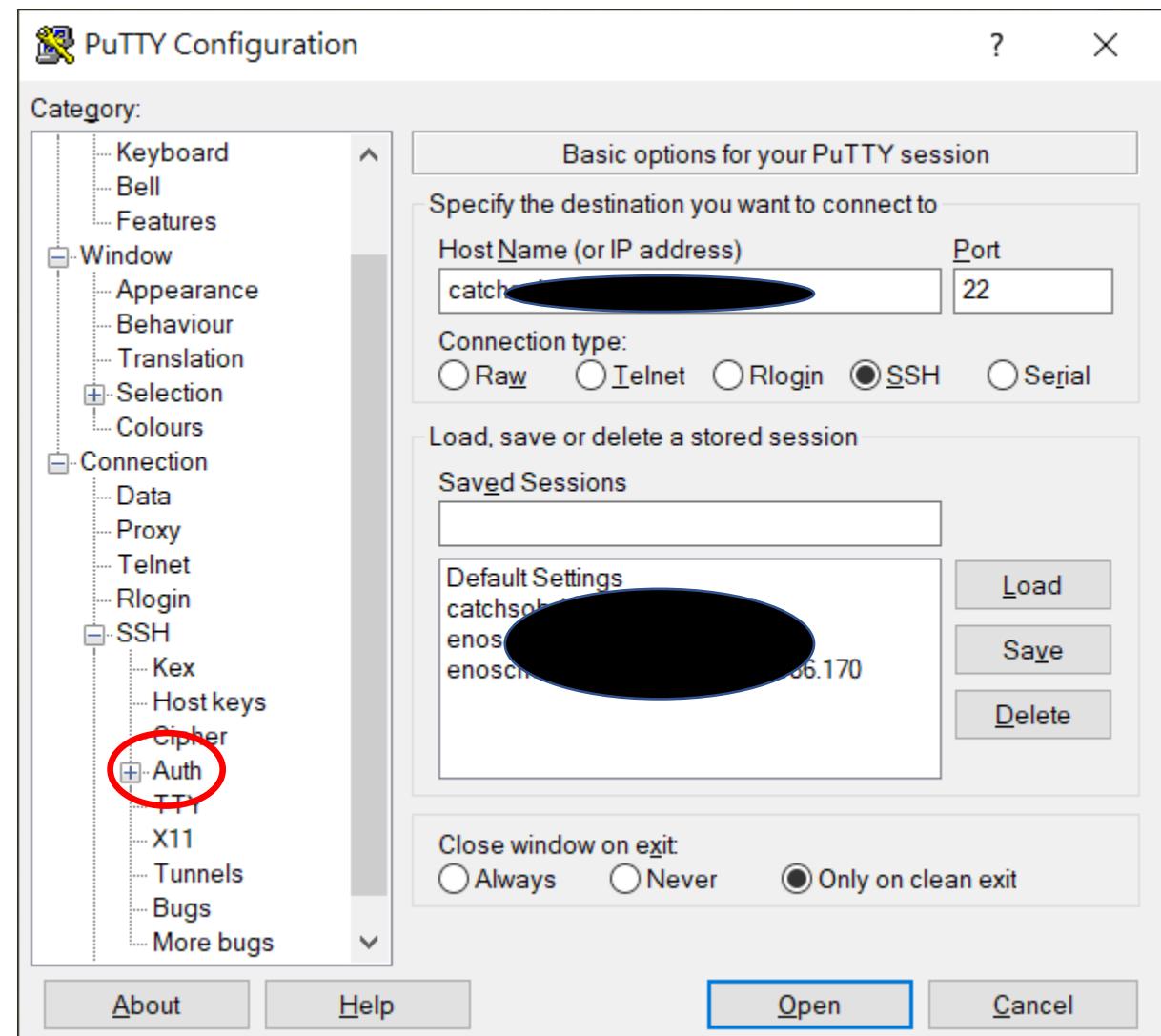
A progress bar at the bottom left indicates "正在儲存 SSH 金鑰..." (Saving SSH key...).

# 設定 PuTTY -21

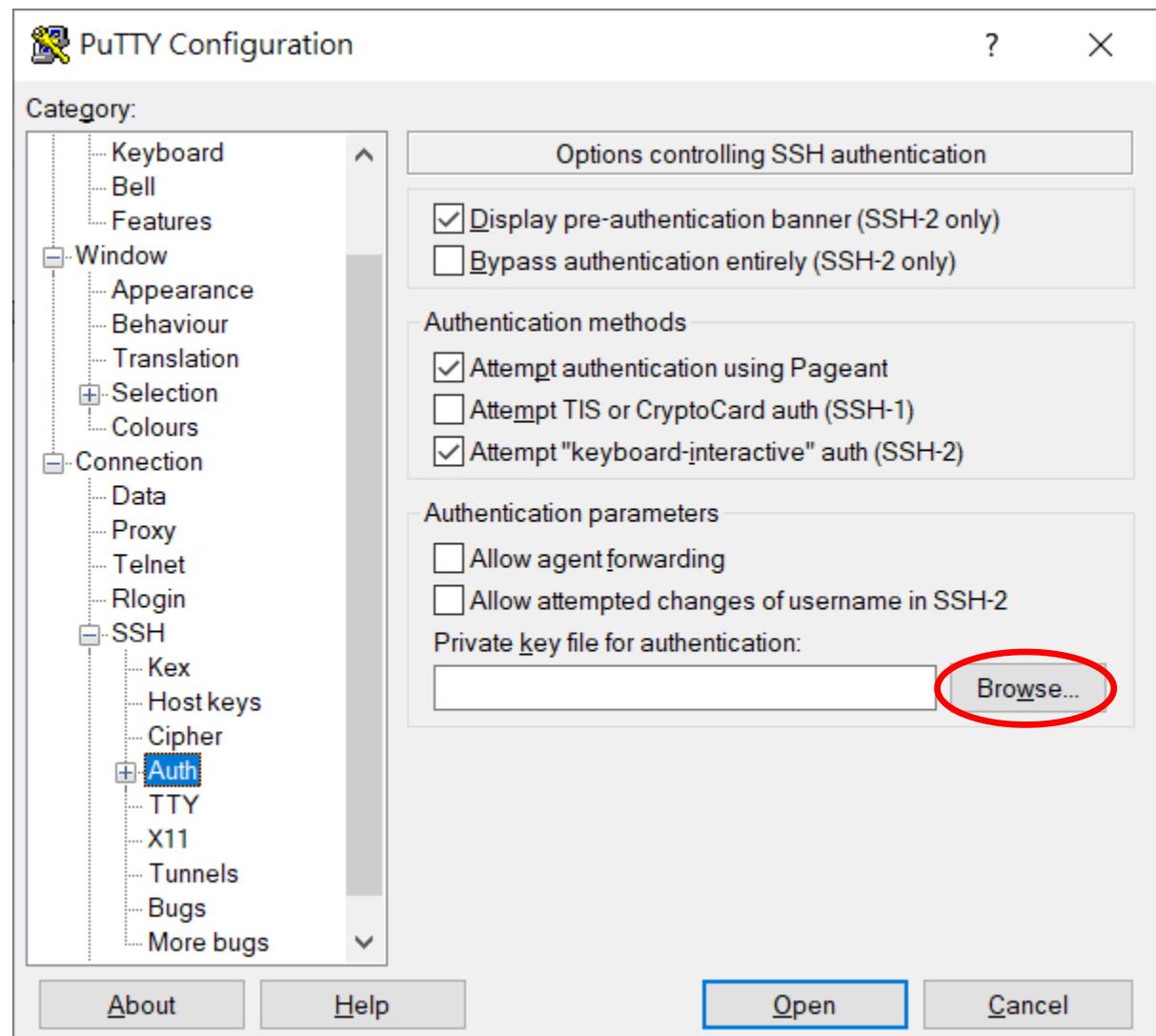
執行 PuTTY



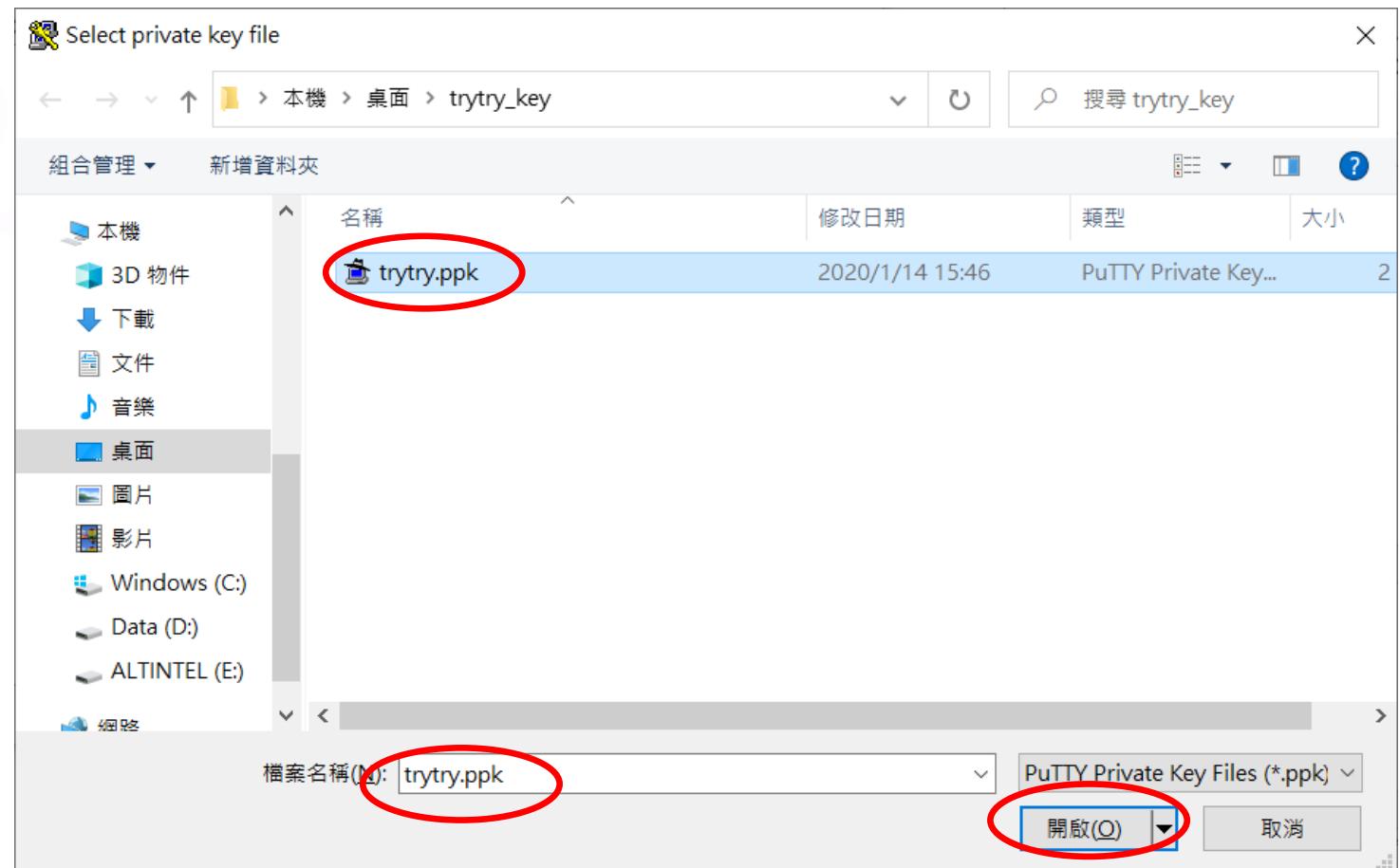
# 設定 PuTTY -22



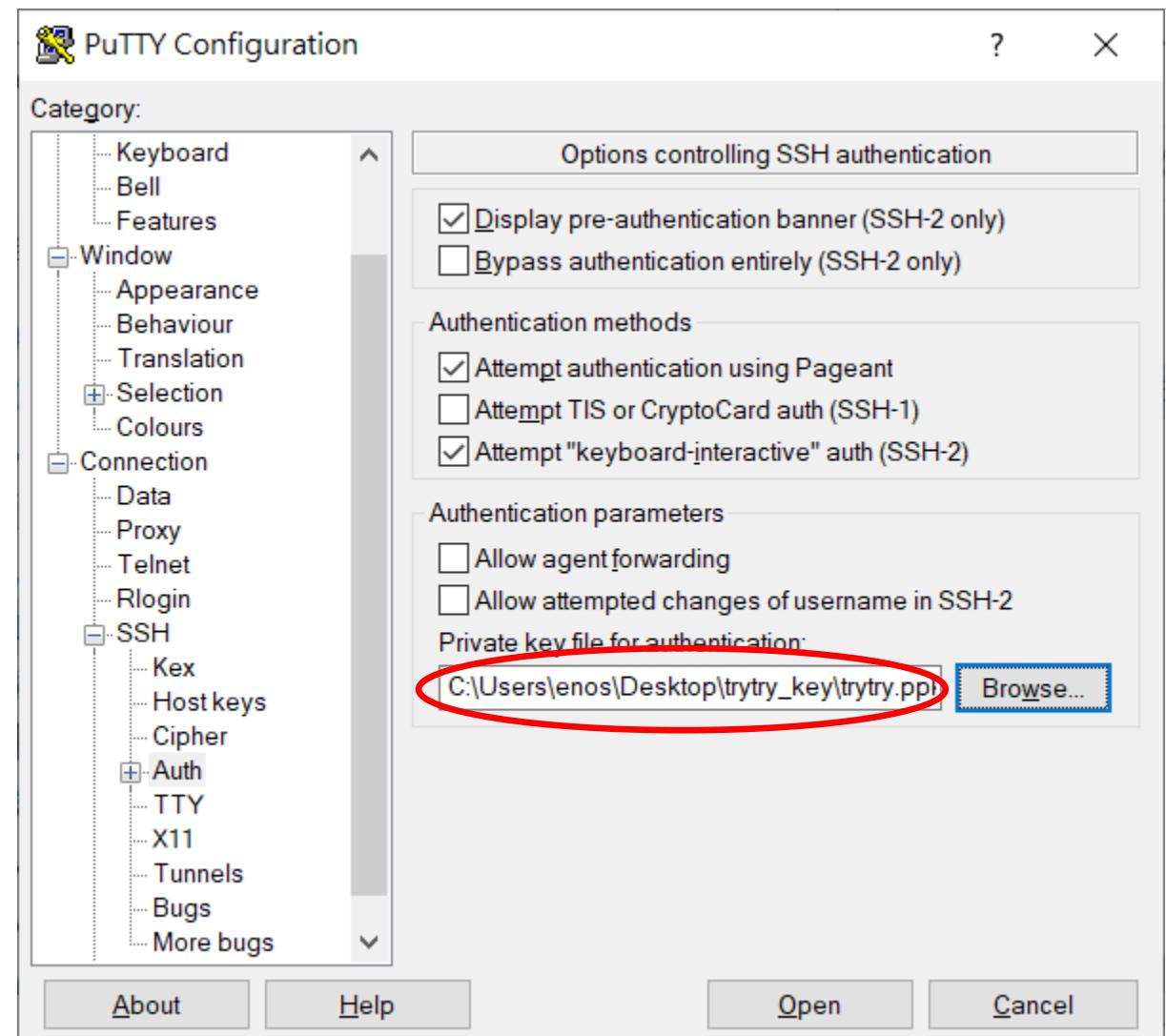
# 設定 PuTTY – 23



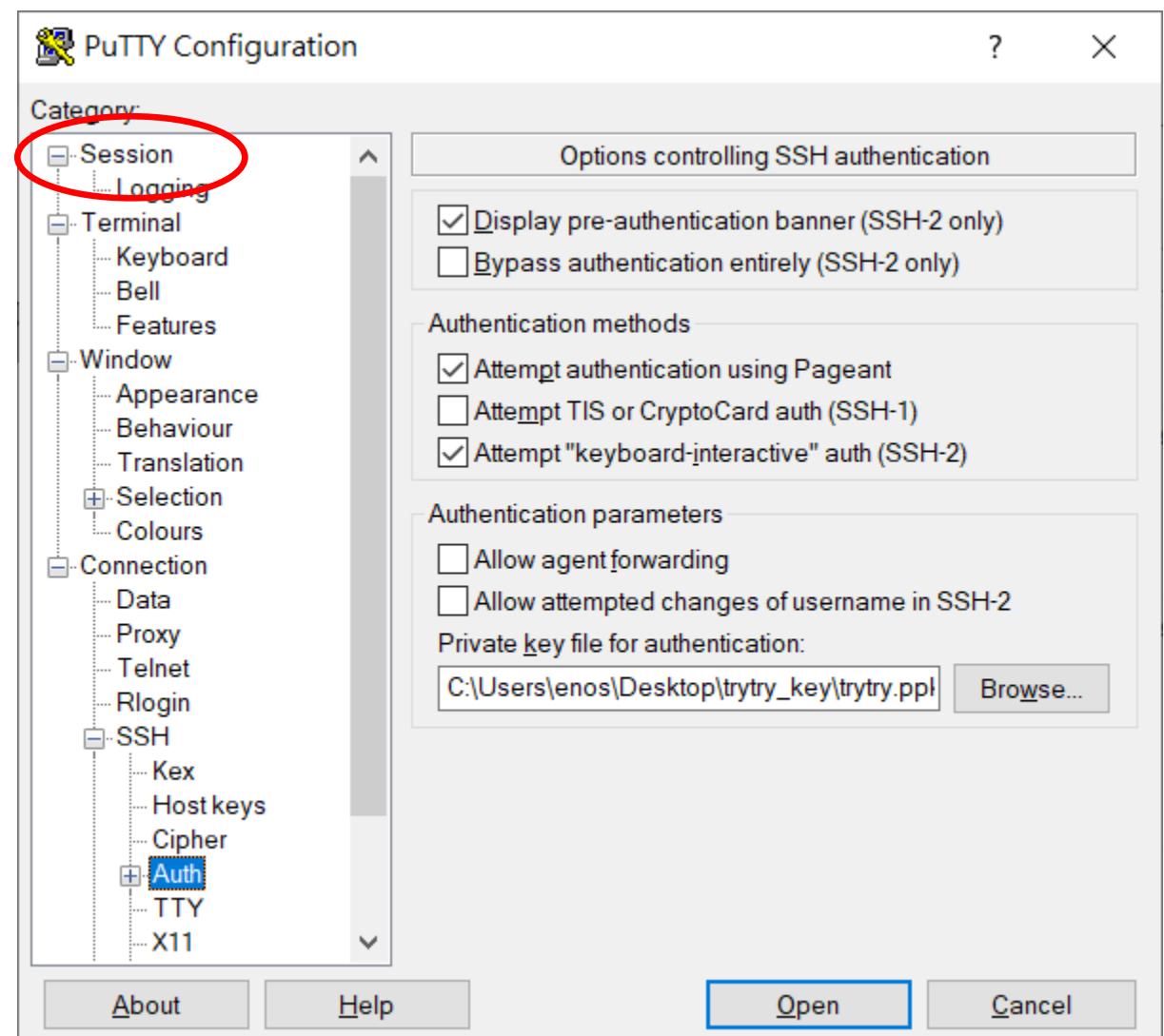
# 設定 PuTTY -24



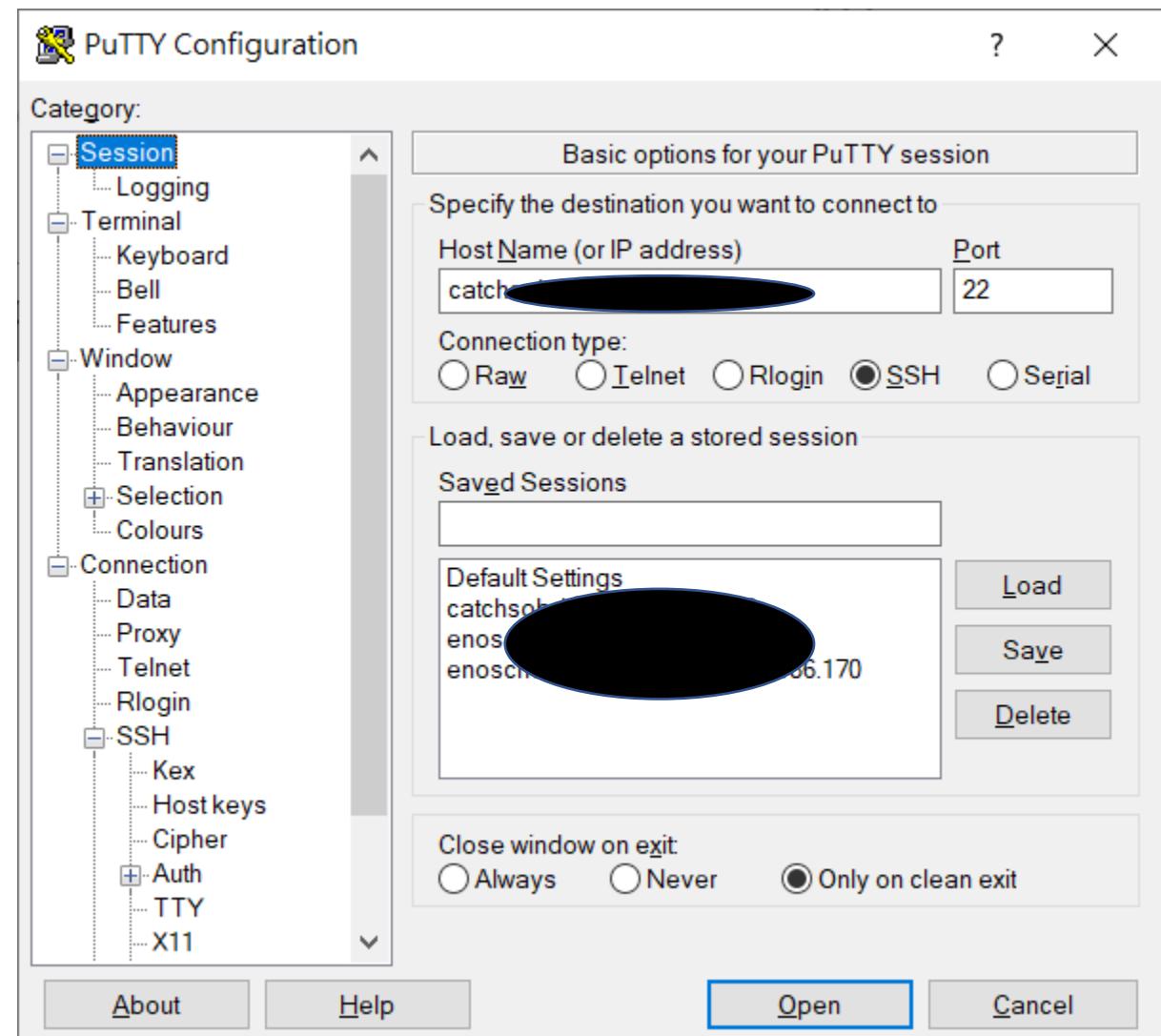
# 設定 PuTTY – 25



# 設定 PuTTY -26



# 設定 PuTTY -27

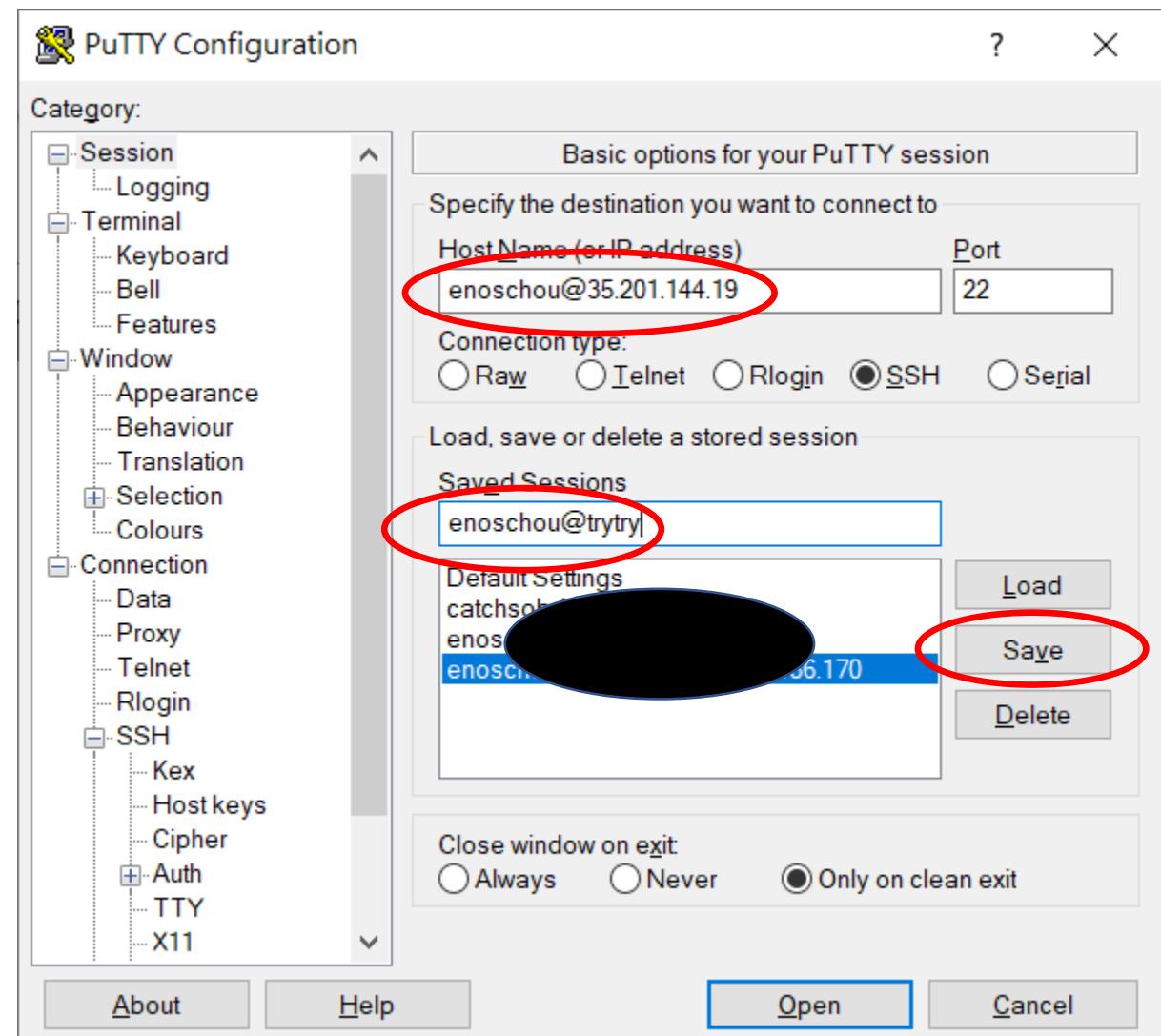


# 設定 PuTTY - 28

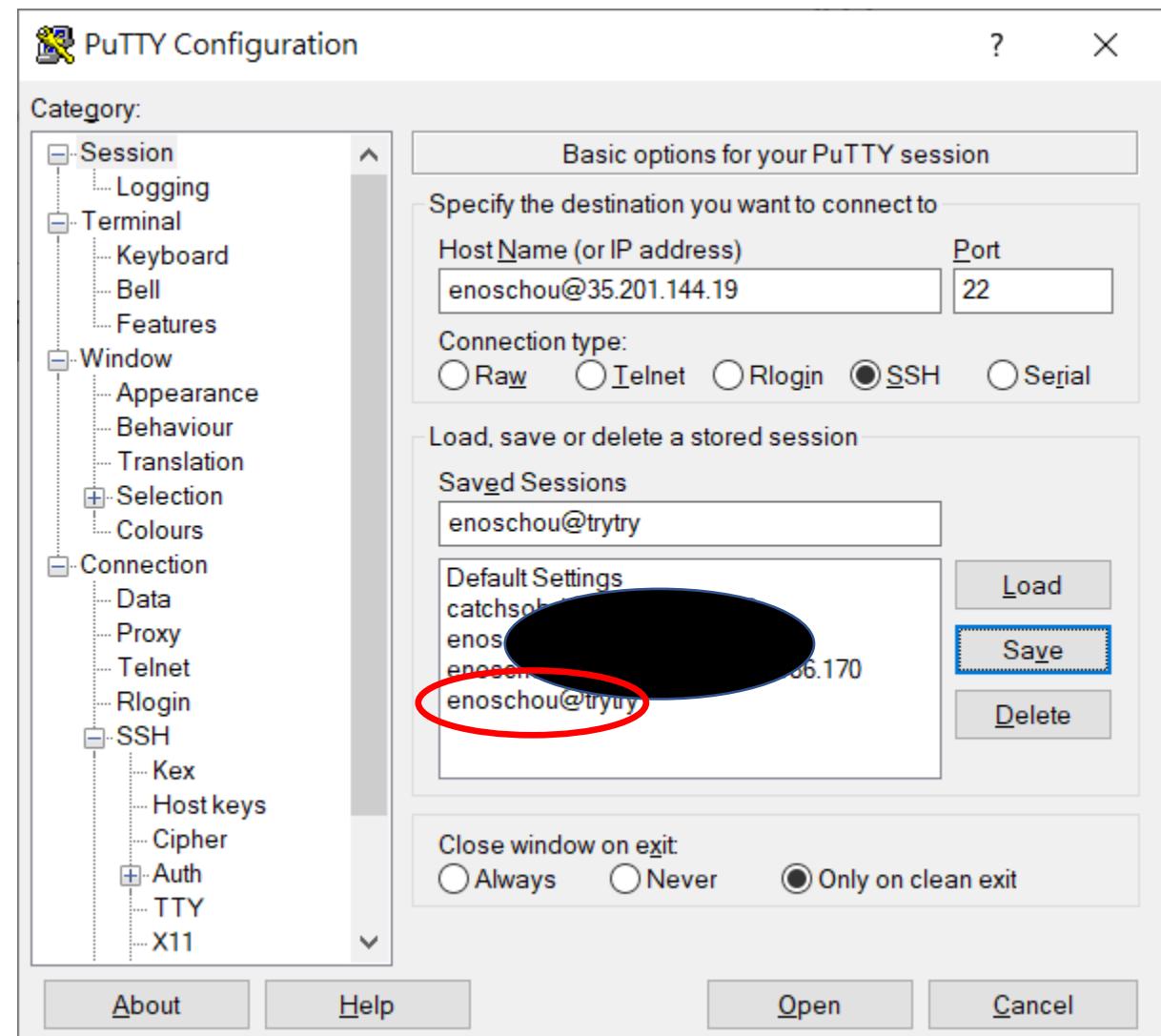
The screenshot shows the Google Cloud Platform Compute Engine Instances page. The URL in the browser is <https://console.cloud.google.com/compute/instances?project=trytry-265010&instancesize=50>. A red circle highlights the external IP address 35.201.144.19 under the 'trytryinst' VM row.

名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nic0)	35.201.144.19	SSH

# 設定 PuTTY – 29



# 設定 PuTTY – 30



# 設定 PuTTY -31



A screenshot of a PuTTY terminal window titled "35.201.144.19 - PuTTY". The window shows the following text output:

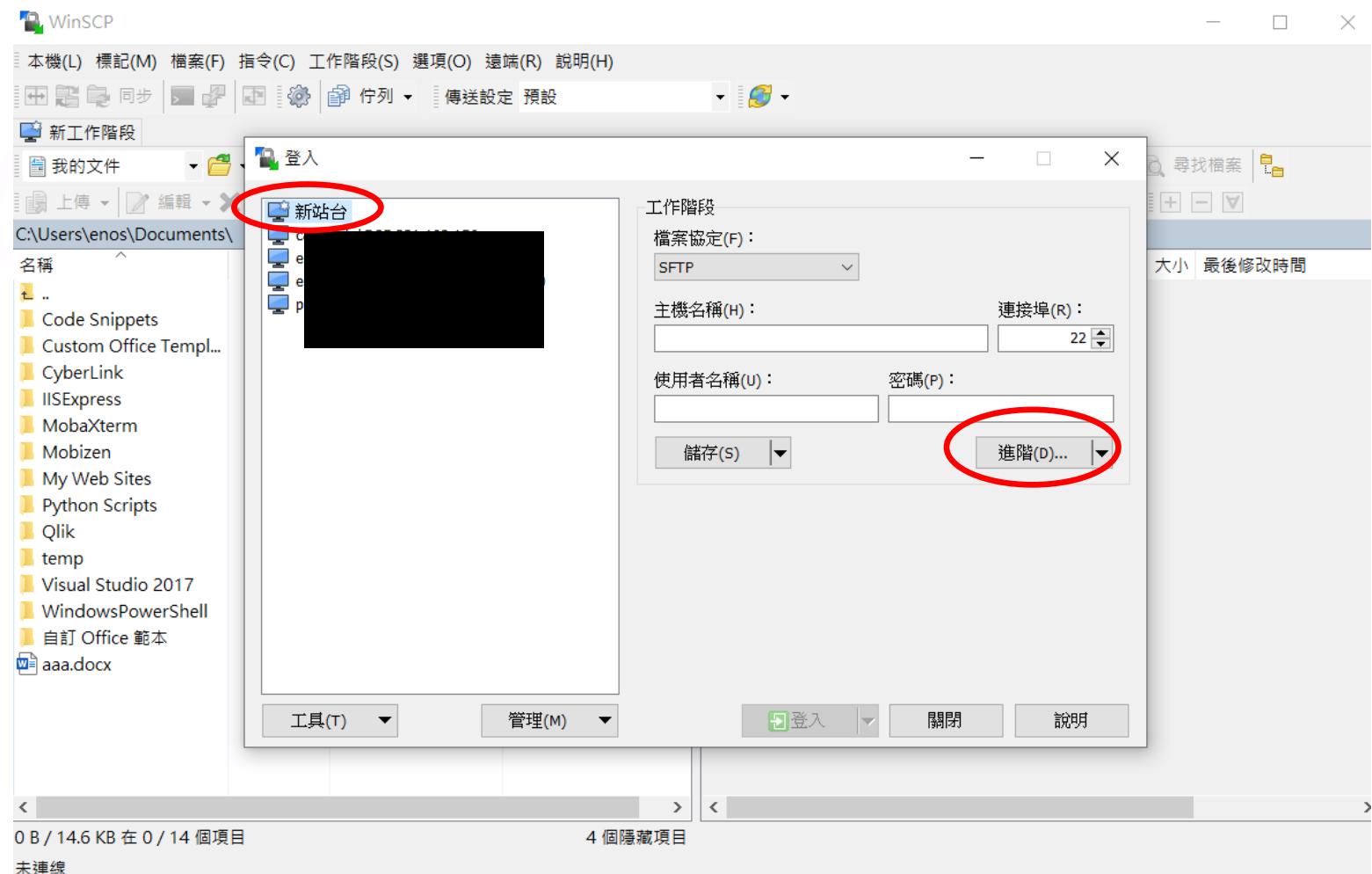
```
Using username "enoschou".
Authenticating with public key "enoschou"
Passphrase for key "enoschou": █
```

The terminal has a black background with white text. The PuTTY logo icon is visible in the top-left corner of the window frame.

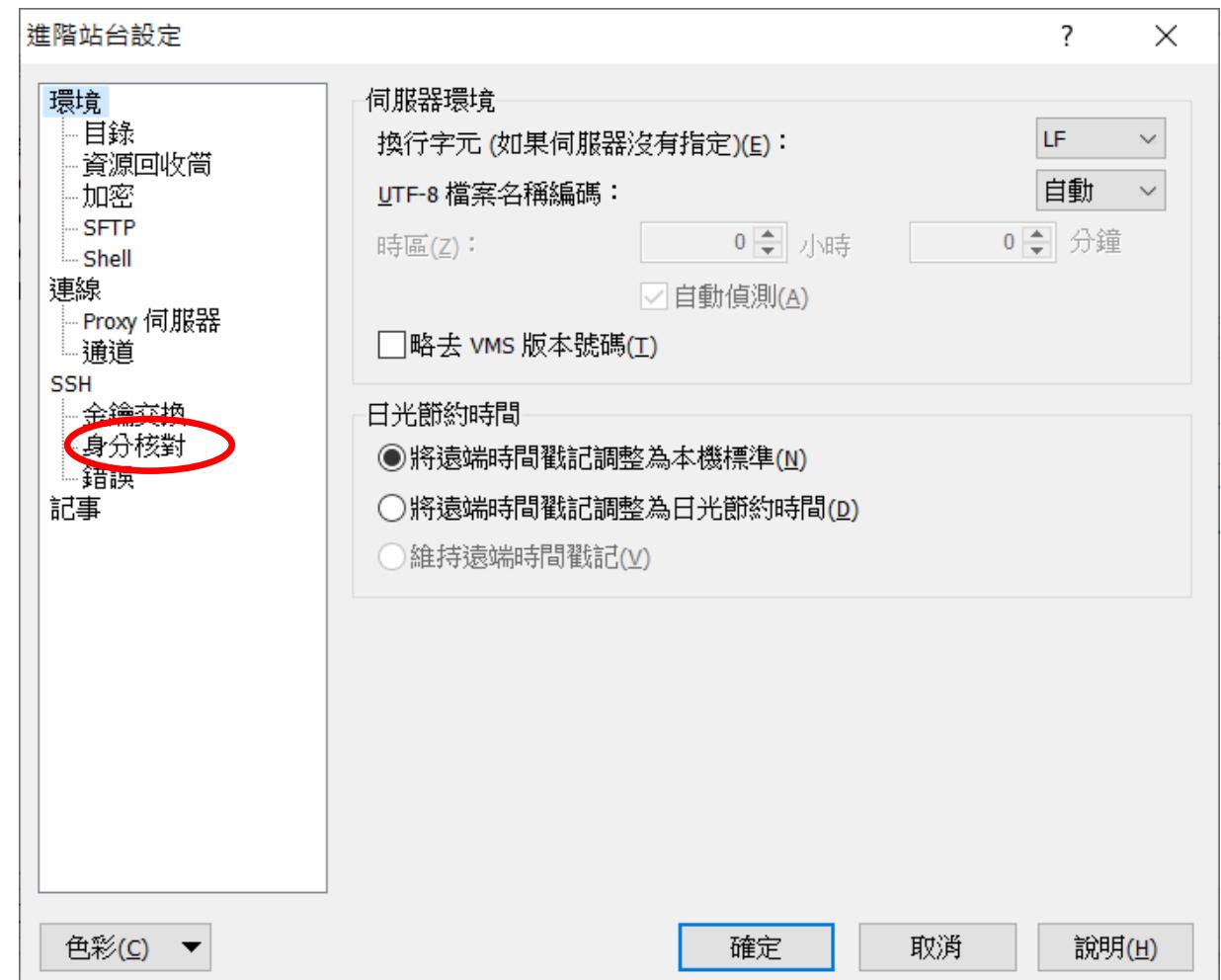
# 設定 WinSCP

與 PuTTY 的設定類似，可自行嘗試

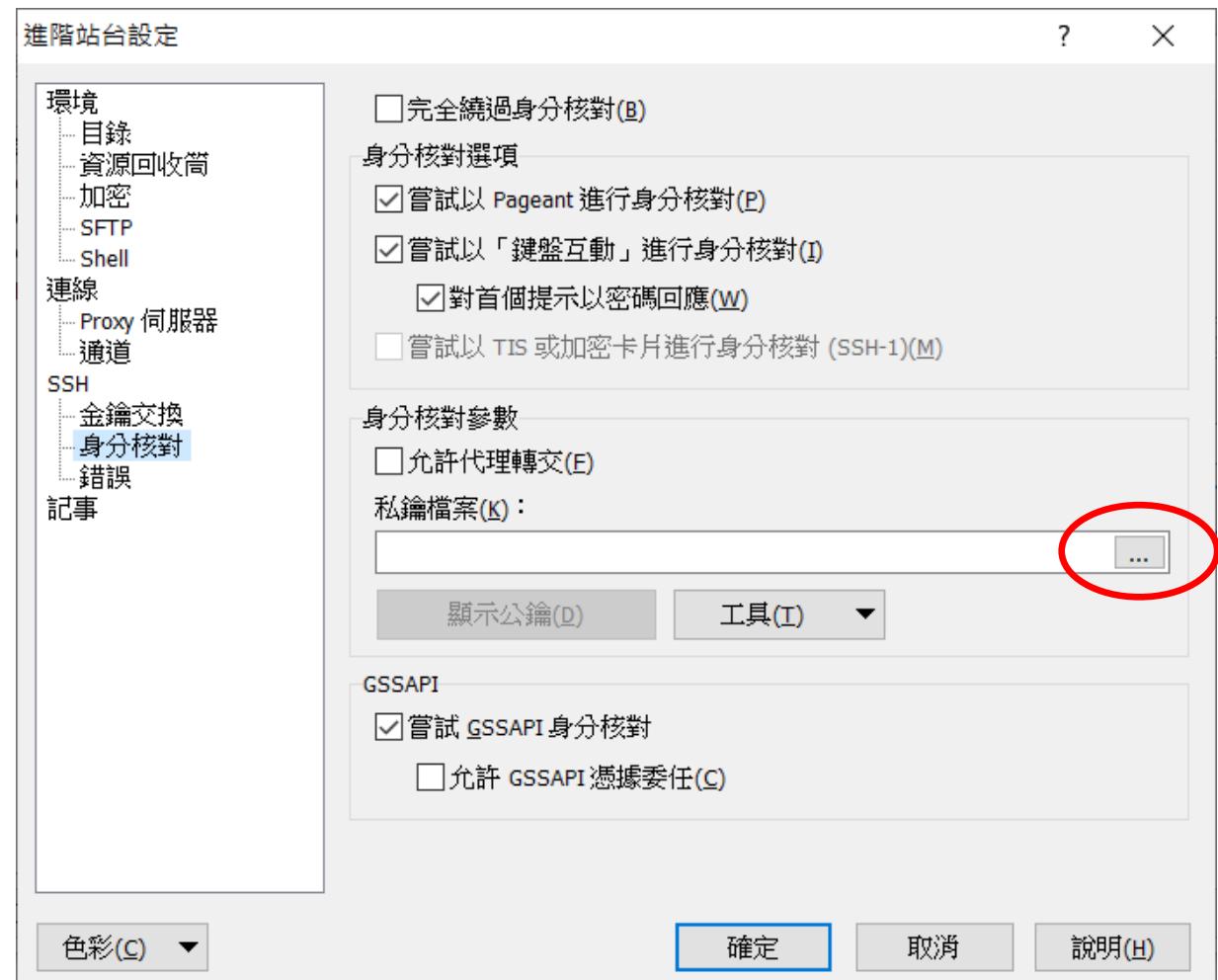
# 設定 WinSCP -1



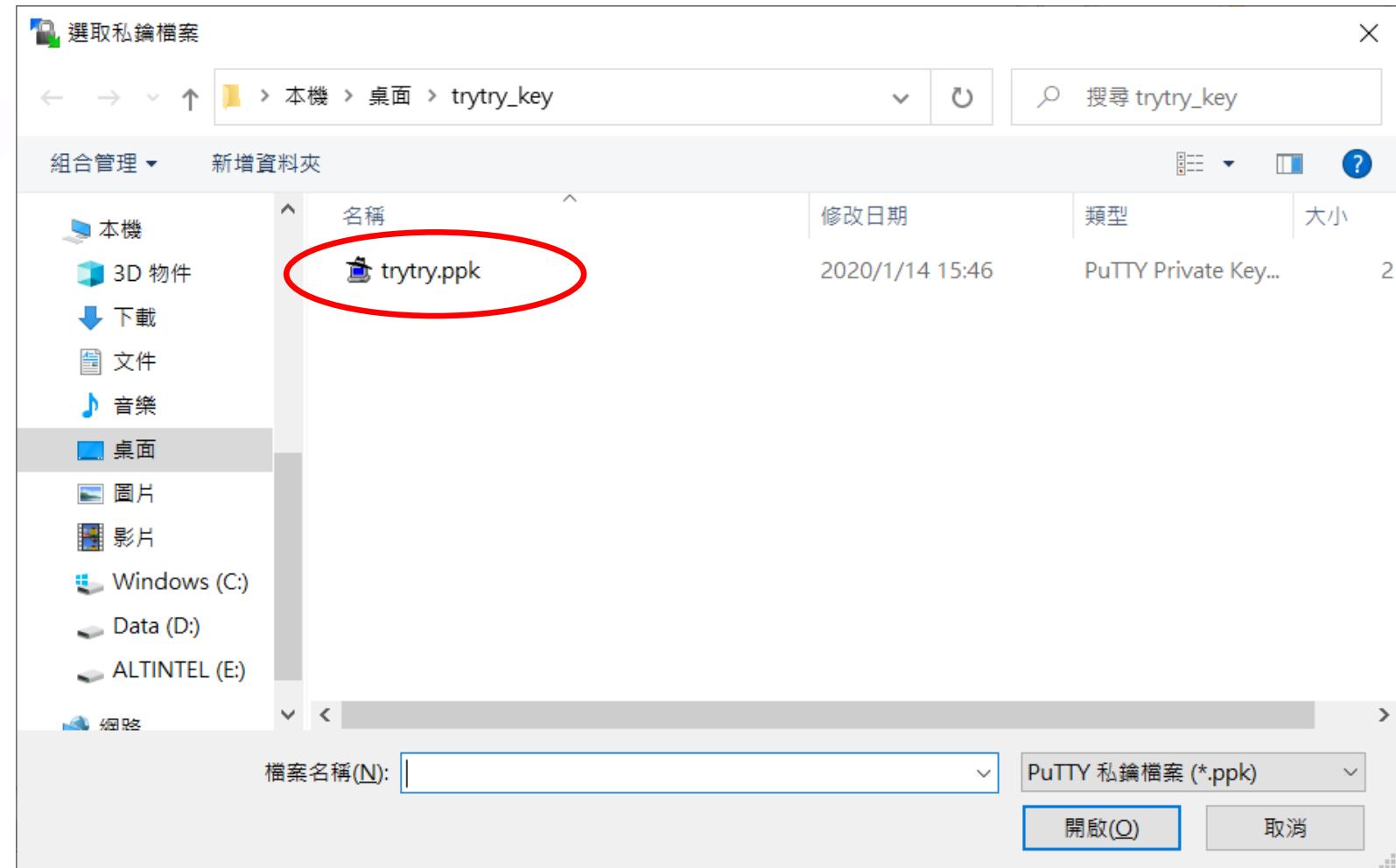
# 設定 WinSCP – 2



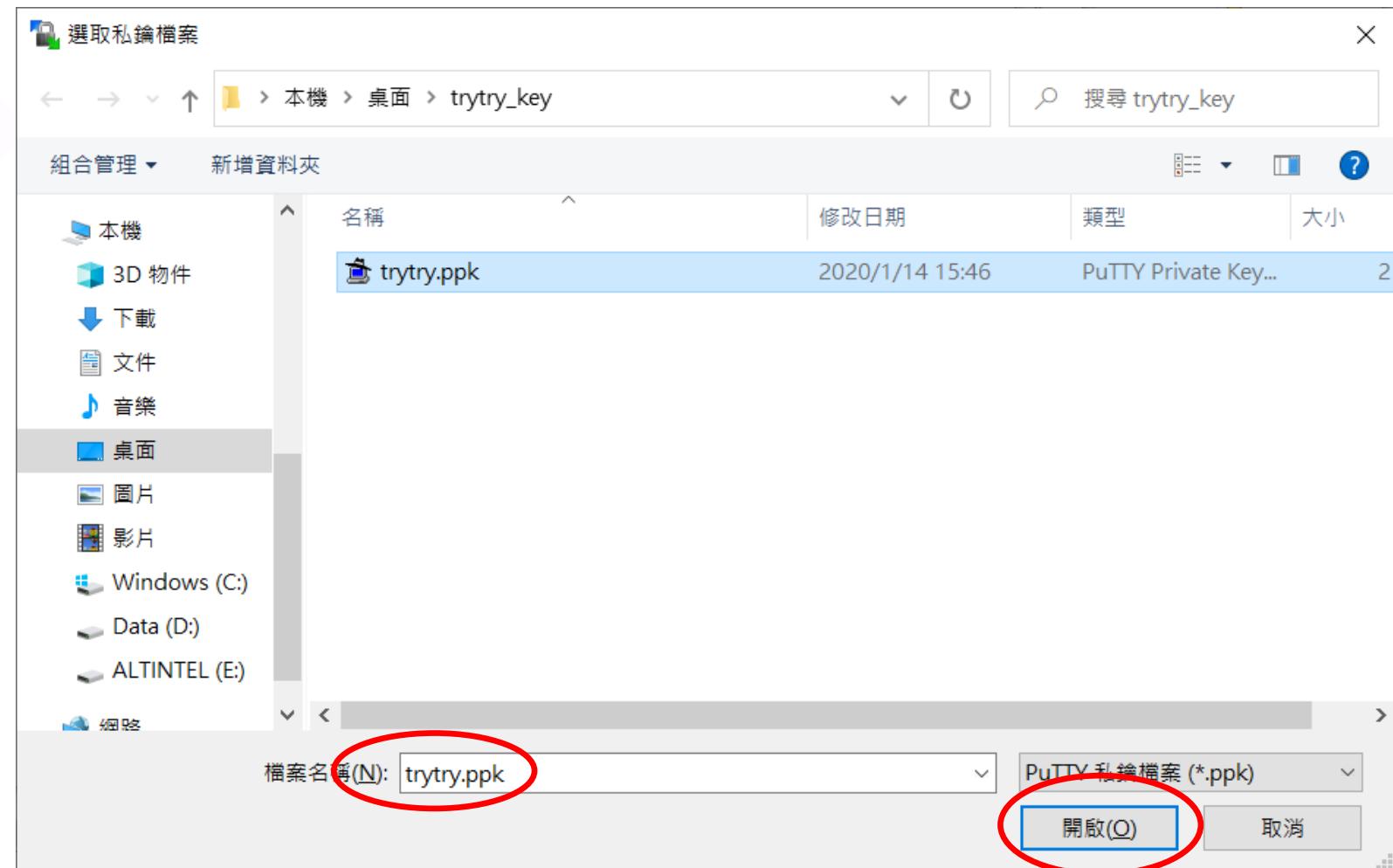
# 設定 WinSCP –3



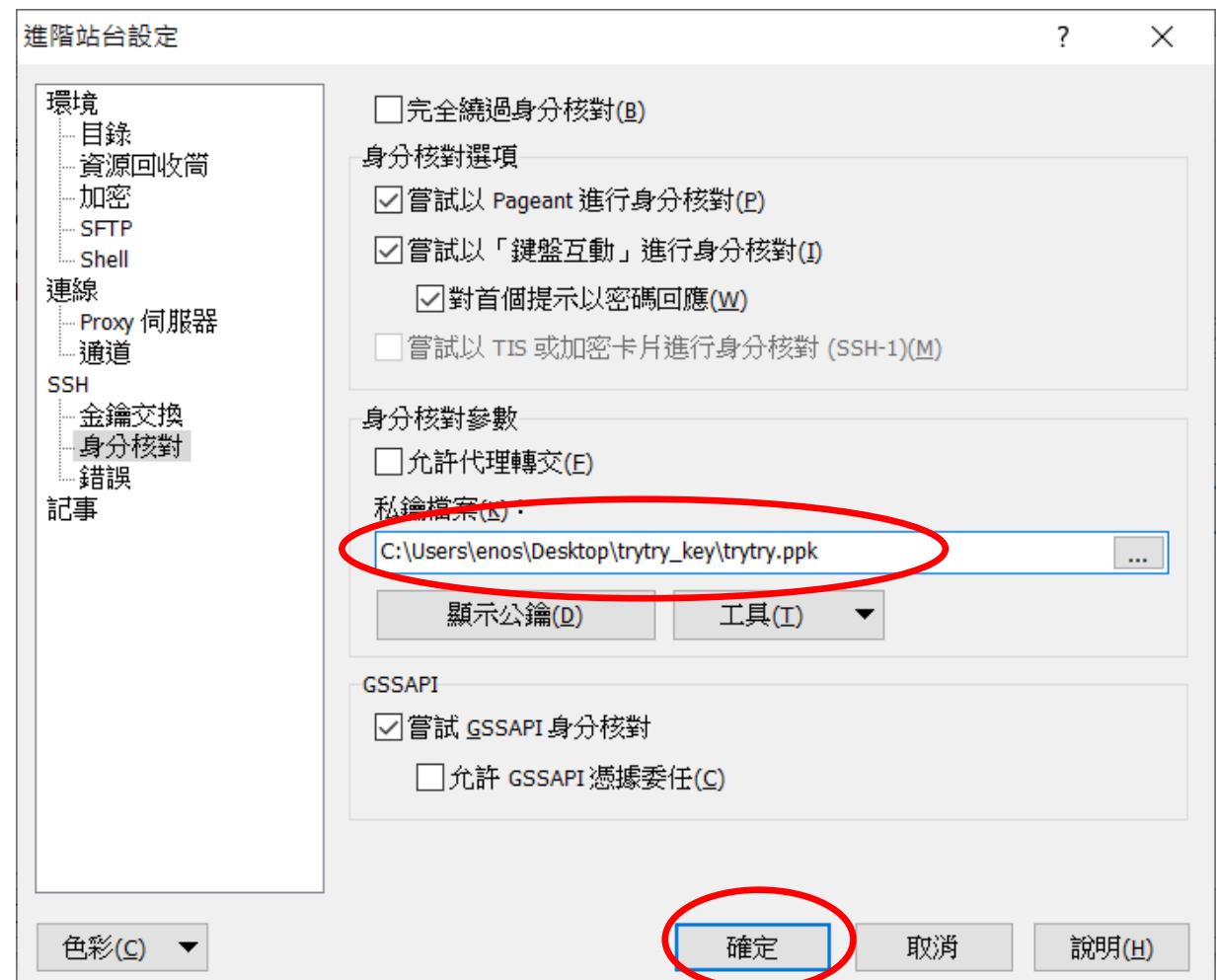
# 設定 WinSCP – 4



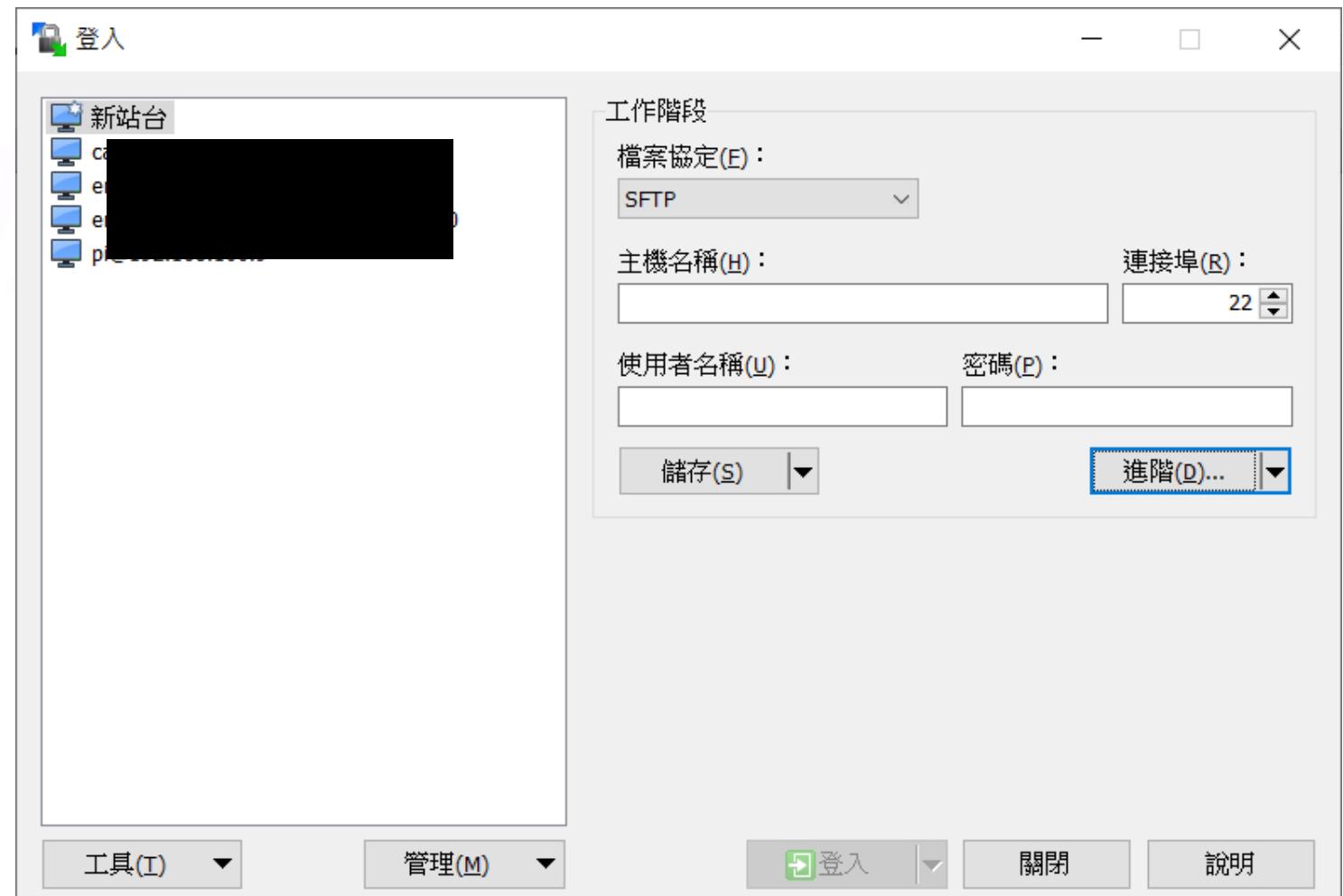
# 設定 WinSCP – 5



# 設定 WinSCP –6



# 設定 WinSCP – 8



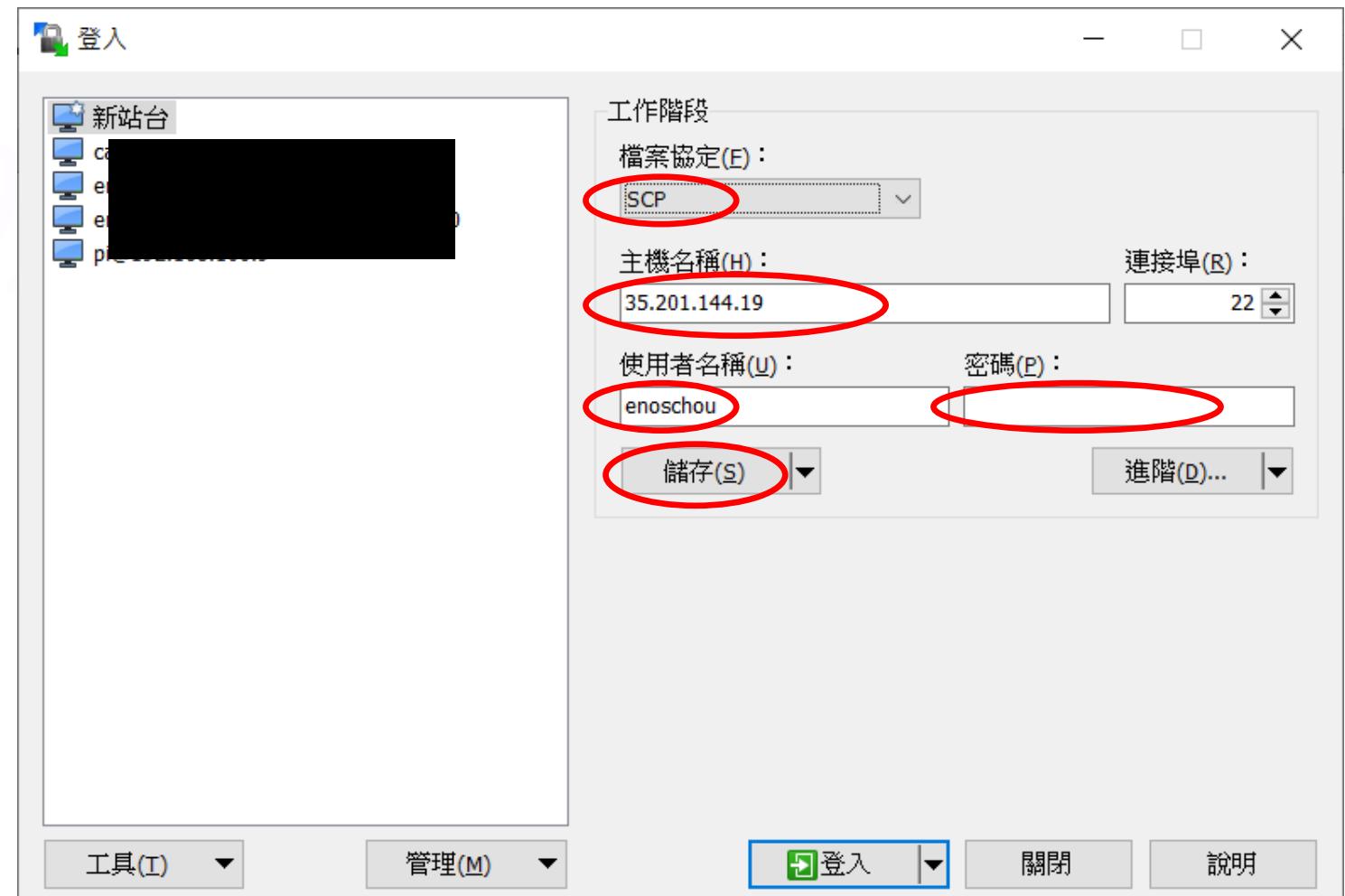
# 設定 WinSCP - 9

The screenshot shows the Google Cloud Platform Compute Engine VM Instances page. The left sidebar is titled 'Compute Engine' and includes options like 'VM 執行個體', '執行個體群組', '執行個體範本', '單一用戶群範點', '磁碟', '快照', '映像檔', 'TPU', '承諾使用折扣', '中繼資料', '健康狀態檢查', '區域', 'Marketplace'. The main content area is titled 'VM 執行個體' and shows a table with one row. The row contains the following information:

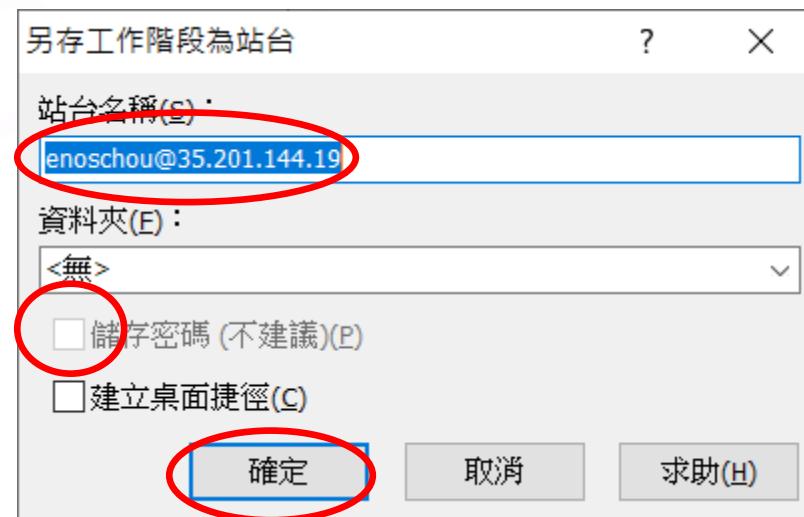
名稱	區域	建議	使用者	內部 IP	外部 IP	連接
trytryinst	asia-east1-c			10.140.0.2 (nsg 0)	35.201.144.19	SSH

The 'External IP' field, which contains '35.201.144.19', is circled in red.

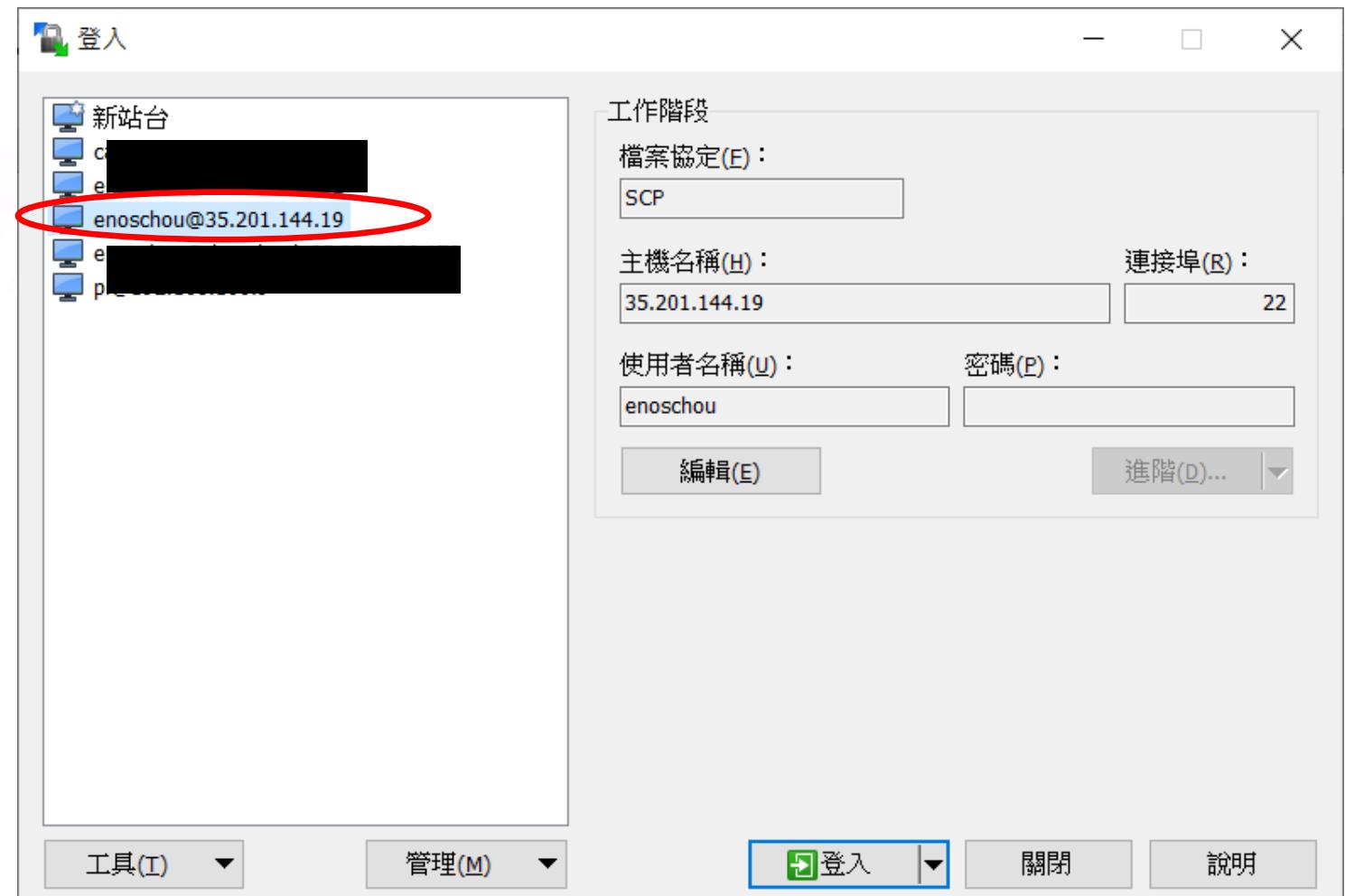
# 設定 WinSCP – 10



# 設定 WinSCP -11

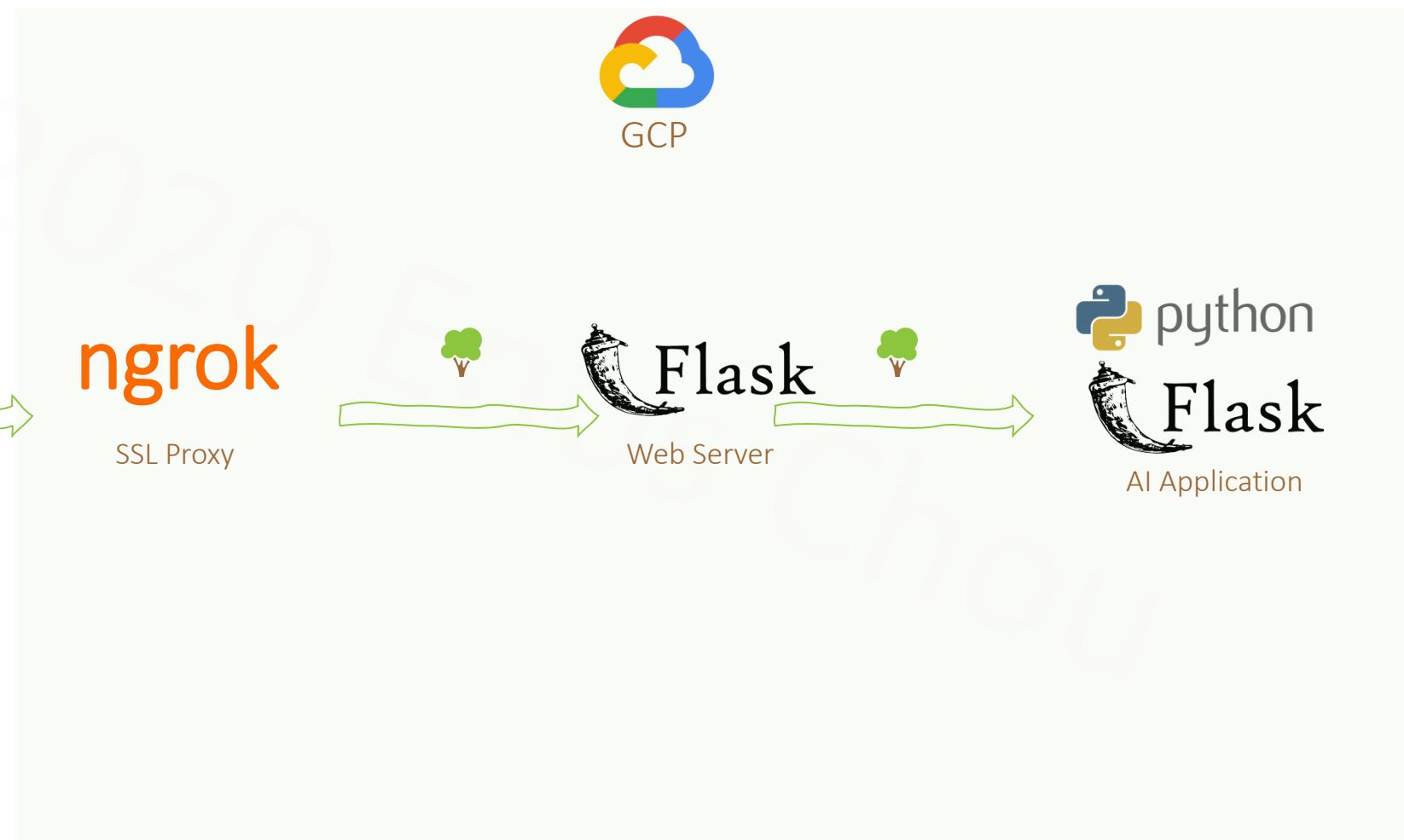
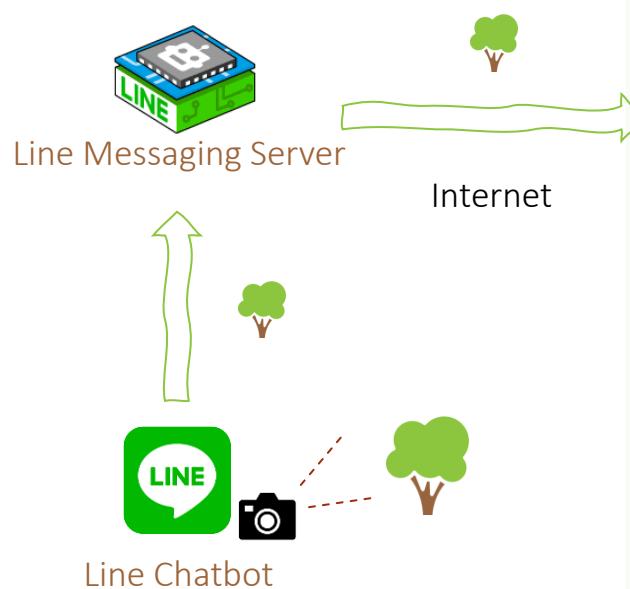


# 設定 WinSCP – 12





# 完成架構



# Line Chatbot 部屬難題

1. 需要可長期持續使用且廉價的硬體環境
2. 需要 Flask as Web Server 的替代方案
3. 需要長期可用的 SSL 網域方案

# Line Chatbot 部屬方案

1. 需要可長期持續使用且廉價的硬體環境 → GCP
2. 需要 Flask as Web Server 的替代方案
3. 需要長期可用的 SSL 網域方案

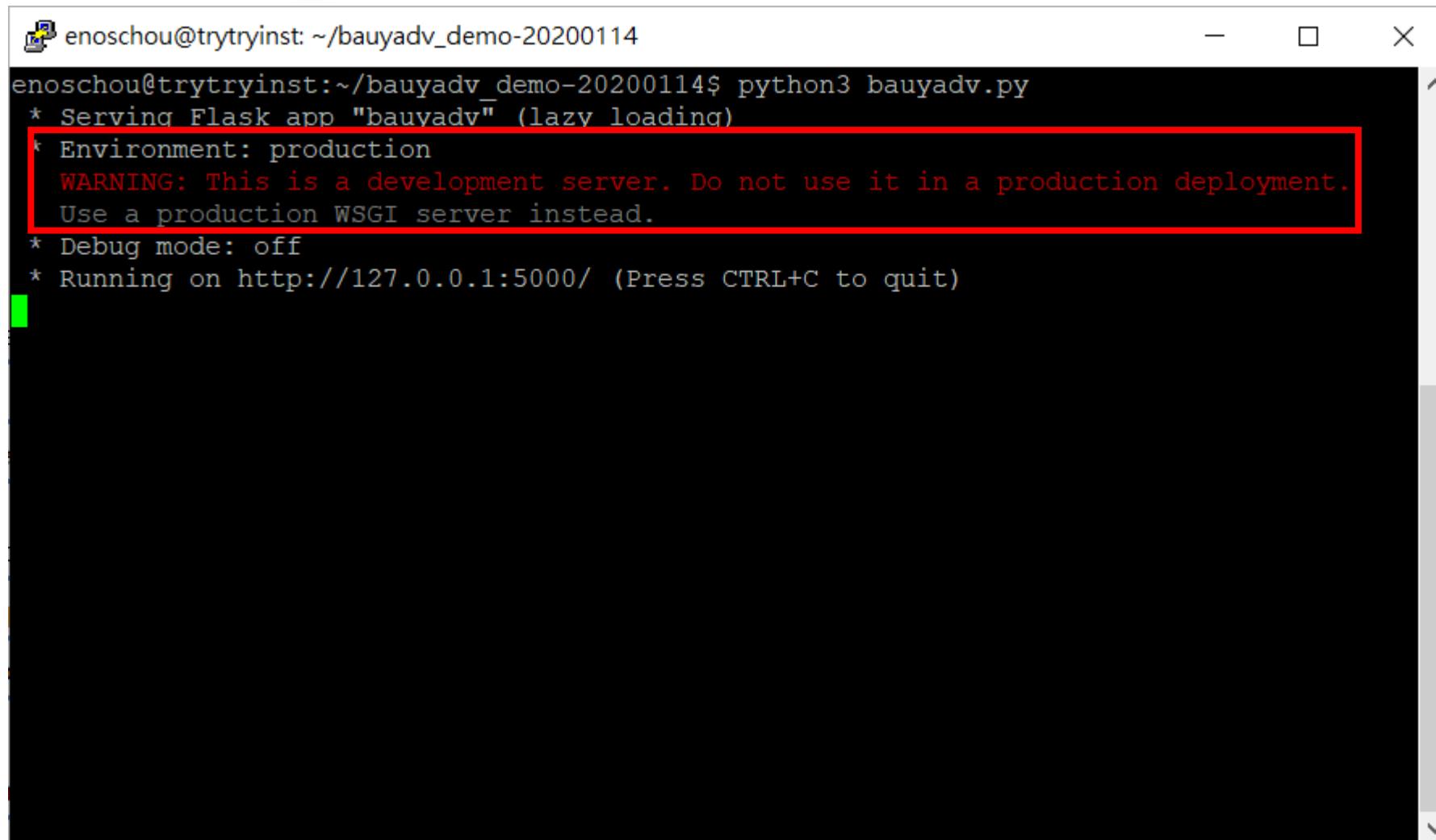
# Line Chatbot 部屬難題

1. 需要可長期持續使用且廉價的硬體環境 → GCP
2. 需要 Flask as Web Server 的替代方案
3. 需要長期可用的 SSL 網域方案

# 看看 Flask 的 Code

```
app = Flask(__name__, static_url_path = "/", static_folder = "./static") #建立一個 APP  
...  
...  
if __name__ == "__main__": app.run() #建立一個 Web Server
```

# Flask 不適合做為 Web Server



A screenshot of a terminal window titled "enoschou@trytryinst: ~/bauyadv\_demo-20200114". The window contains the following text:

```
enoschou@trytryinst:~/bauyadv_demo-20200114$ python3 bauyadv.py
 * Serving Flask app "bauyadv" (lazy loading)
 * Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

The warning message "WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead." is highlighted with a red rectangular box.

# Web Server 架構



# Web Server Idea



# Web Server Idea



主流 Web Server : Apache, NGINX

# Web Server Idea



# Web Server Idea



WSGI: Web Server Gateway Interface

© 2020 Enos Chou

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# Web Server Idea



# Line Chatbot 部屬難題

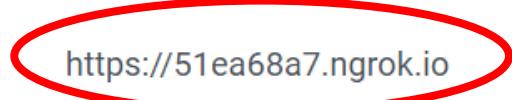
1. 需要可長期持續使用且廉價的硬體環境 → GCP
2. 需要 Flask as Web Server 的替代方案 → NGINX
3. 需要長期可用的 SSL 網域方案

# Line Messaging API 的 SSL 需求

Available APIs ②

- REPLY\_MESSAGE
- PUSH\_MESSAGE

**Webhook settings**

Webhook URL ② <https://51ea68a7.ngrok.io> 

**需要 domain name + SSL 憑證**

Verify Edit

Use webhook ② 

# Line Chatbot 雲端部屬方案



Solution	Server	Domain + SSL	Pro	Con	Note
Serveo + GCP	GCP (free)	Serveo (free)	<ul style="list-style-type: none"><li>1. 免費</li><li>2. 免改設定</li><li>3. 可長期執行</li></ul>	Serveo 服務可用性堪慮	Serveo 服務常因故暫停 <a href="http://serveo.net">http://serveo.net</a>
Heroku	Heroku (free)		<ul style="list-style-type: none"><li>1. 免費</li><li>2. 免改設定</li><li>3. 可長期執行</li></ul>	<ul style="list-style-type: none"><li>1. 免費資源提供的記憶體有限，不易運行 AI 服務</li><li>2. 服務會被休眠，喚醒服務需要等待導致體驗不佳</li><li>3. 付費服務貴</li></ul>	<a href="http://heroku.com/pricing">http://heroku.com/pricing</a>
ngrok + GCP	GCP (free)	ngrok (free)	免費	<ul style="list-style-type: none"><li>1. ngrok 每次啟動需修改 Line Chatbot 設定</li><li>2. ngrok 無法背景執行，只能短期測試</li><li>3. ngrok 付費服務貴</li></ul>	GCP 需要每年換帳號才能免費執行 <a href="http://ngrok.com/pricing">http://ngrok.com/pricing</a>
idv domain + GCP	GCP (free)	idv domain (NT\$ 400-/year) + SSL (free)	<ul style="list-style-type: none"><li>1. 免改設定</li><li>2. 可長期執行</li><li>3. 服務不休眠</li></ul>	<ul style="list-style-type: none"><li>1. domain 需要年費</li><li>2. 需在付費使用前確認 domain 商支援 CAA 類型設定</li></ul>	GCP 需要每年換帳號才能免費執行

# Line Messaging API 憑證廠商白名單

[https://developers.line.biz/media/messaging-api/build-bot/ca\\_root\\_v2.txt](https://developers.line.biz/media/messaging-api/build-bot/ca_root_v2.txt)

# 一線品牌憑證價格

Verisign (Symantec)

<https://www.websecurity.digicert.com/zh/tw/ssl-certificate>

DigiCert

[https://www.digicert.com/compare-and-buy-ssl-certificates/?gclid=Cj0KCQiAmZDxBRDIARIsABnkbYQ4ToS3vTDNi3J7iYirXPbhuZxD3TZhtOE\\_KoEbPjyD3chy8PiAJCcaAuZUEALw\\_wcB&ef\\_id=Cj0KCQiAmZDxBRDIARIsABnkbYQ4ToS3vTDNi3J7iYirXPbhuZxD3TZhtOE\\_KoEbPjyD3chy8PiAJCcaAuZUEALw\\_wcB:G:s&s\\_kwcid=AL!6100!3!147173744383!e!!g!!digi%20cert&campaignid=27009954&adgroupid=15154486274](https://www.digicert.com/compare-and-buy-ssl-certificates/?gclid=Cj0KCQiAmZDxBRDIARIsABnkbYQ4ToS3vTDNi3J7iYirXPbhuZxD3TZhtOE_KoEbPjyD3chy8PiAJCcaAuZUEALw_wcB&ef_id=Cj0KCQiAmZDxBRDIARIsABnkbYQ4ToS3vTDNi3J7iYirXPbhuZxD3TZhtOE_KoEbPjyD3chy8PiAJCcaAuZUEALw_wcB:G:s&s_kwcid=AL!6100!3!147173744383!e!!g!!digi%20cert&campaignid=27009954&adgroupid=15154486274)

# Line Chatbot 部屬難題

1. 需要可長期持續使用且廉價的硬體環境 → GCP
2. 需要 Flask as Web Server 的替代方案 → NGINX
3. 需要長期可用的 SSL 網域方案 → idv domain + Certbot

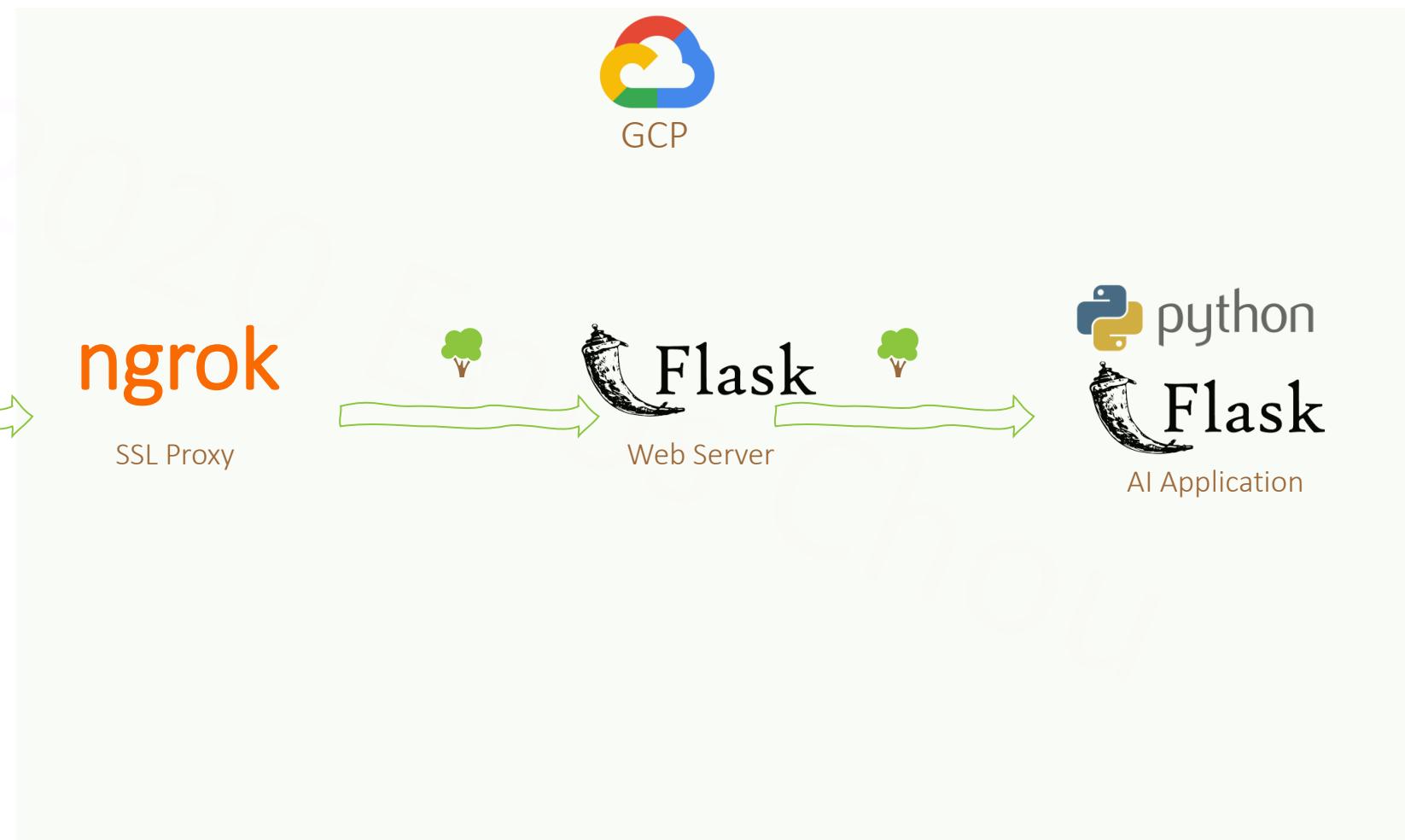
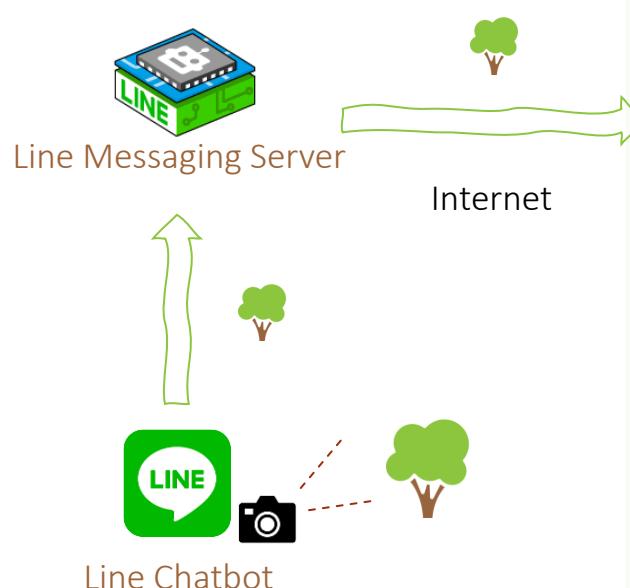
# 目標

## Domain, NGINX 部署

將 Line Chatbot Service 部屬於雲端 (GCP) 並解決 Web Server 與憑證問題

- 能夠申請 domain name – read only
- 能夠設定 domain name CAA – read only
- 能夠 (於 GCP VM) 架設 NGINX & uWSGI for Line Chatbot service
- 能夠架設 Certbot
- 能夠搭配 NGINX (於 GCP VM) 啟動 Line Chatbot service

# 前回架構

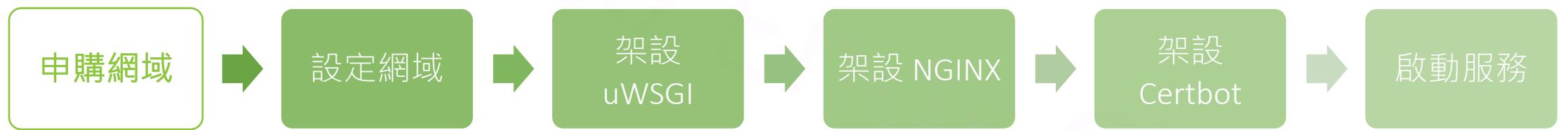


# 目標架構



# 流程





# 申購網域 -1

PC home 加值服務

<http://myname.pchome.com.tw/>

# 申購網域 -2

The screenshot shows the PChome Online 買網址 (Buy Domain) website interface. The top navigation bar includes links for '買網址首頁', '顧客中心', '常見問題', '連絡客服', and 'PChome'. The main content area features a search bar with placeholder text '請輸入您想要購買的網域名稱' and a green '購買' button. Below the search bar, there are several sections for different domain types:

- 台灣域名:** .com.tw, .net.tw, .org.tw, .idv.tw, .game.tw, .tw(英文)
- 城市域名:** .taipei, .taipei (中文)
- 中國域名:** .cn, .com.cn, .net.cn, .org.cn, .cn(中文)
- 國際域名:** .com, .net, .org, .biz, .info, .cc, .asia, .com(中文), .me, .com.my, .my, .name, .tv, .tv(中文)
- 新頂級域名:** .bar, .bike, .blue, .cafe, .cash, .center, .codes, .coffee, .company, .cool, .directory, .email, .estate, .gallery, .gifts, .guru, .house, .insure, .land, .legal, .life, .loans, .media, .money, .one, .pet, .photography, .photos, .pink, .place, .red, .rentals, .run, .show, .solar, .space, .style, .supply, .systems, .team, .technology, .tips, .today, .vision, .voyage, .works, .world, .xyz, .zone

At the bottom left, there are notes about querying multiple domains and tips for domain names. On the right side, there are three columns of links:

- 會員登入:** 登入續購・設定DNS及轉址, 修改域名註冊資料・移轉, 登入
- 新手上路:** 網址費用, 總覽及產品介紹, 網址續用繳費, 網址續用流程, 轉入網址, 文件表單下載, 常見問題, 域名應用方法, 連絡客服 / 上傳文件
- 工具使用:** whois查詢, 異體字查詢, 動態DNS程式下載, 中文轉碼punycode
- 相關辦法說明:** 註冊業務管理規章, 網址爭議處理辦法, 消費爭議處理辦法

# 申購網域 -3

The screenshot shows the PChome Online 廉價家庭-買網址 website. The main page title is "PChome 買網址 登入". The URL in the address bar is "myname.pchome.com.tw". The main content area is titled "Buy Your Domain" and "與全球網路接軌並快速行銷，打造個人品牌及企業化第一步". It features a search bar with "www.trytry" and a "購買" button. Below the search bar, there are several sections of checkboxes for different domain types:

- 台灣域名:  .com.tw  .net.tw  .org.tw  .idv.tw  .game.tw  .tw(英文)
- 城市域名:  .taipei  .taipei (中文)
- 中國域名:  .cn  .com.cn  .net.cn  .org.cn  .cn(中文)
- 國際域名:  .com  .net  .org  .biz  .info  .cc  .asia  
 .com(中文)  .me  .com.my  .my  .name  .tv  .tv(中文)
- 新頂級域名:  .bar  .bike  .blue  .cafe  .cash  .center  
 .codes  .coffee  .company  .cool  .directory  .email  
 .estate  .gallery  .gifts  .guru  .house  .insure  
 .land  .legal  .life  .loans  .media  .money  
 .one  .pet  .photography  .photos  .pink  
 .place  .red  .rentals  .run  .show  
 .solar  .space  .style  .supply  .systems  
 .team  .technology  .tips  .today  .vision  
 .voyage  .works  .world  .xyz  .zone

At the bottom left, there are notes: \* 自行輸入多筆查詢, \* 域名申請查詢：例如申請 abc.com.tw 則輸入 abc → 勾選 com.tw → 按下 購買, and \* 網域名就是 網路門牌、網路的房地產，有了它代表您願意永續經營您的網站！

On the right side, there are three columns of links:

- 會員登入**: 登入續購・設定DNS及轉址, 修改域名註冊資料・移轉, 登入, 加入會員 | 查帳號 | 查密碼
- 新手上路**: 網址費用, 網名及產品介紹, 網址續用繳費, 網址續用流程, 轉入網址, 文件表單下載, 常見問題, 域名應用方法, 連絡客服 / 上傳文件
- 工具使用**: whois查詢, 異體字查詢, 動態DNS程式下載, 中文轉碼punycode
- 相關辦法說明**: 註冊業務管理規章, 網址爭議處理辦法, 消費爭議處理辦法

# 申購網域 -4



PChome Online 網路家庭-買網址 | myname.pchome.com.tw/buy/dn\_choose.htm

PChome 買網址 登入

管理我的網址 | 購買與續用 | 價格與教學 | 工具使用 | 尋求幫助

PChome > 買網址

選擇網址

選擇 訂入 填寫 確認 付費 完成

網址名稱	購買年限	管理費
<input checked="" type="checkbox"/> trytry.idv.tw	一年IDV.TW網址\$400	400

總計 NT\$400 元

請檢查您的網址名稱「拼字正確無誤」、「確認購買年限」，一經購買後基於管理全球國際域名之 ICANN 純政策規定，域名註冊後無法退費。

若您一次要購買多筆網址，部分為公司所有，部分為個人所有，請您分開成兩次訂購，一次訂購將造成所有域名之歸屬權為公司。

申請以下 tw 類型，必需符合 [TWNIC 規定之身份資格](#)，若因資格不符被檢舉，或日後要申請更改資料，您需提出正式立案證書或執照，賣網址才可依註冊規定辦理。  
[com.tw 公司或商號] [net.tw 具電信執照者] [org.tw 財團法人或非營利社團法人]

依照.TW 註冊局規定：為避免申請人重複未繳費註冊，而影響他人申請註冊權益，如同一申請人對特定域名有連續三次申請未繳費之情形，將拒絕該申請人申請該特定域名。

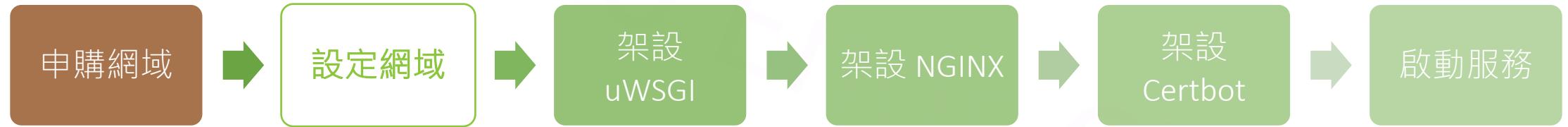
繳款方式：信用卡線上付款、ATM(提款機)轉帳、WEBATM轉帳。受限確認交易安全性程序，信用卡僅限台灣核發之卡片。

國際域名限用信用卡付款，若.TW 域名與國際域名一起購買時，付費方式將僅限用信用卡。

若您負責替公司管理域名，請建立一個公司專屬的管理信箱，勿使用私人帳號，避免日後產生員工離職及域名轉讓需提正式文件問題。

# 申購網域 -5

略



# 設定網域 -0 (refer to Seednet)

The screenshot shows a web browser window for Seednet domain registration. The URL is <https://service.seed.net.tw/register-cgi/rgnewassignip>. The page title is "Seednet 網域名稱申請". The header includes the FET logo and links for "中文版 | English" and "首頁 > 域名申請". The main content area is titled "個人網域名稱異動" and displays a table of DNS records. A red circle highlights a dropdown menu next to the first record, which contains options: A, MX, CNAME, AAAA, TXT, and SRV. The table has columns for the record name (e.g., .enad.idv.tw), type, and other fields.

# 設定網域 -1

PChome Online 加值服務 × PChome Online 網路家庭-買網址 | +

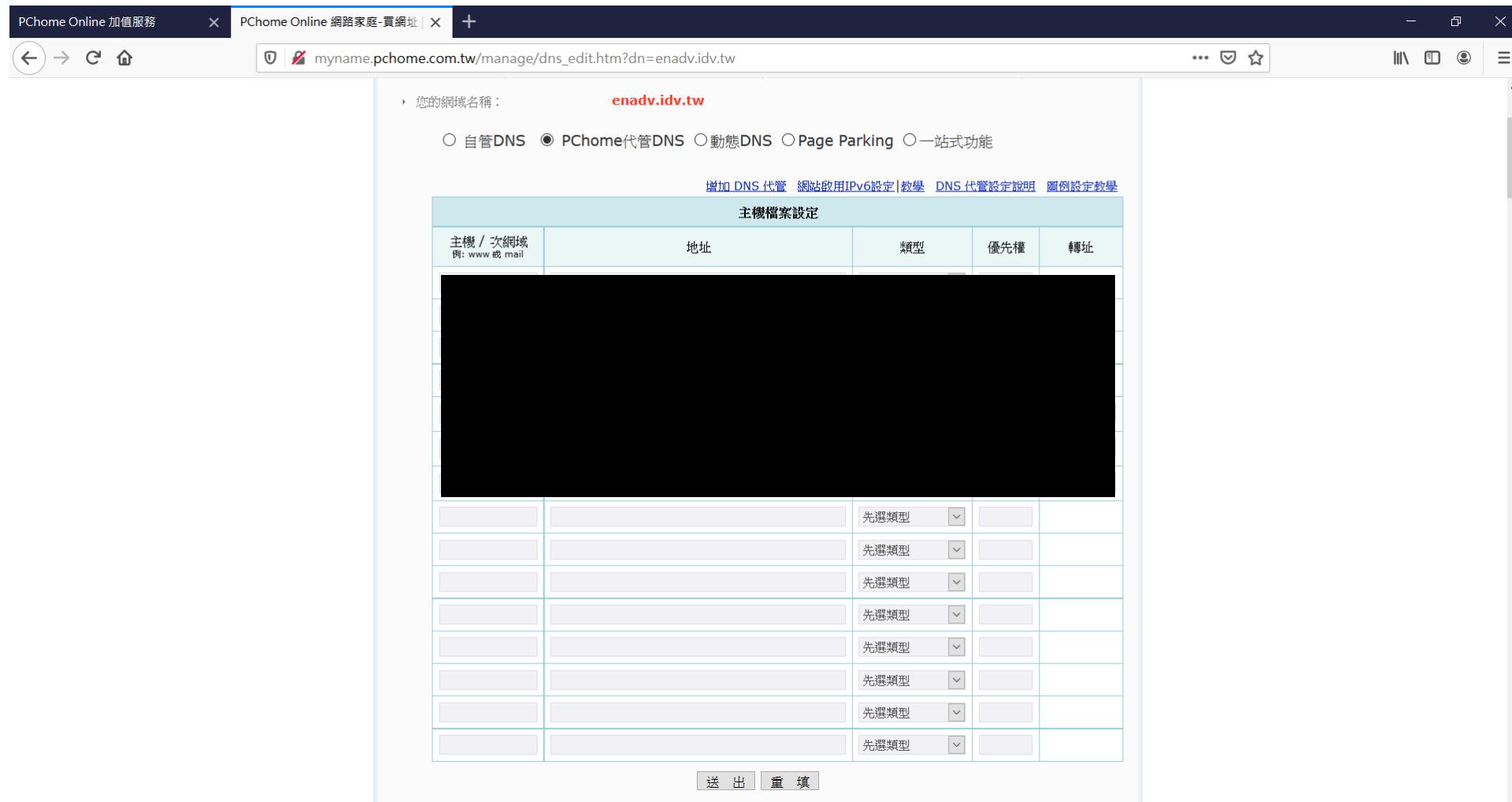
您的網域名稱：**enadv.idv.tw**

自管DNS  PChome代管DNS  動態DNS  Page Parking  一站式功能

[增加 DNS 代管](#) [網站啟用IPv6設定](#) | [教學](#) [DNS 代管設定說明](#) [圖例設定教學](#)

主機檔案設定				
主機 / 次網域 例: www 或 mail	地址	類型	優先權	轉址
[Redacted]				
		先選類型	▼	

送出 重填



## 設定網域 -2

PChome Online 加值服務 × PChome Online 網路家庭-買網址 | +

myname.pchome.com.tw/manage/dns\_edit.htm?dn=enadv.idv.tw

您的網域名稱：**enadv.idv.tw**

自管DNS  PChome代管DNS  動態DNS  Page Parking  一站式功能

[增加 DNS 代管](#) [網站啟用IPv6設定](#) [教學](#) [DNS 代管設定說明](#) [圖例設定教學](#)

主機檔案設定				
主機 / 次網域 例: www 或 mail	地址	類型	優先權	轉址
		先選類型		
		先選類型		
		A		
		AAAA		
		CNAME		
		MX		
		轉址(frame)		
		redirect		
		TXT(SPF)		
		SRV		
		CAA		

CAA: Certificate Authority Au

# CAA: Certificate Authority Authorization

# 設定網域 -3

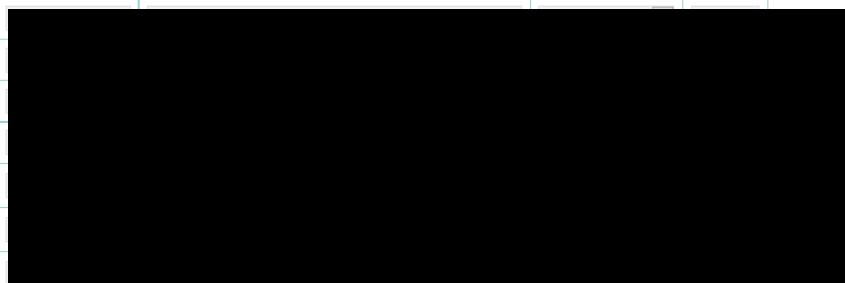
PChome Online 網路家庭-買網址 | x +

myname.pchome.com.tw/manage/dns\_edit.htm?dn=enadv.idv.tw

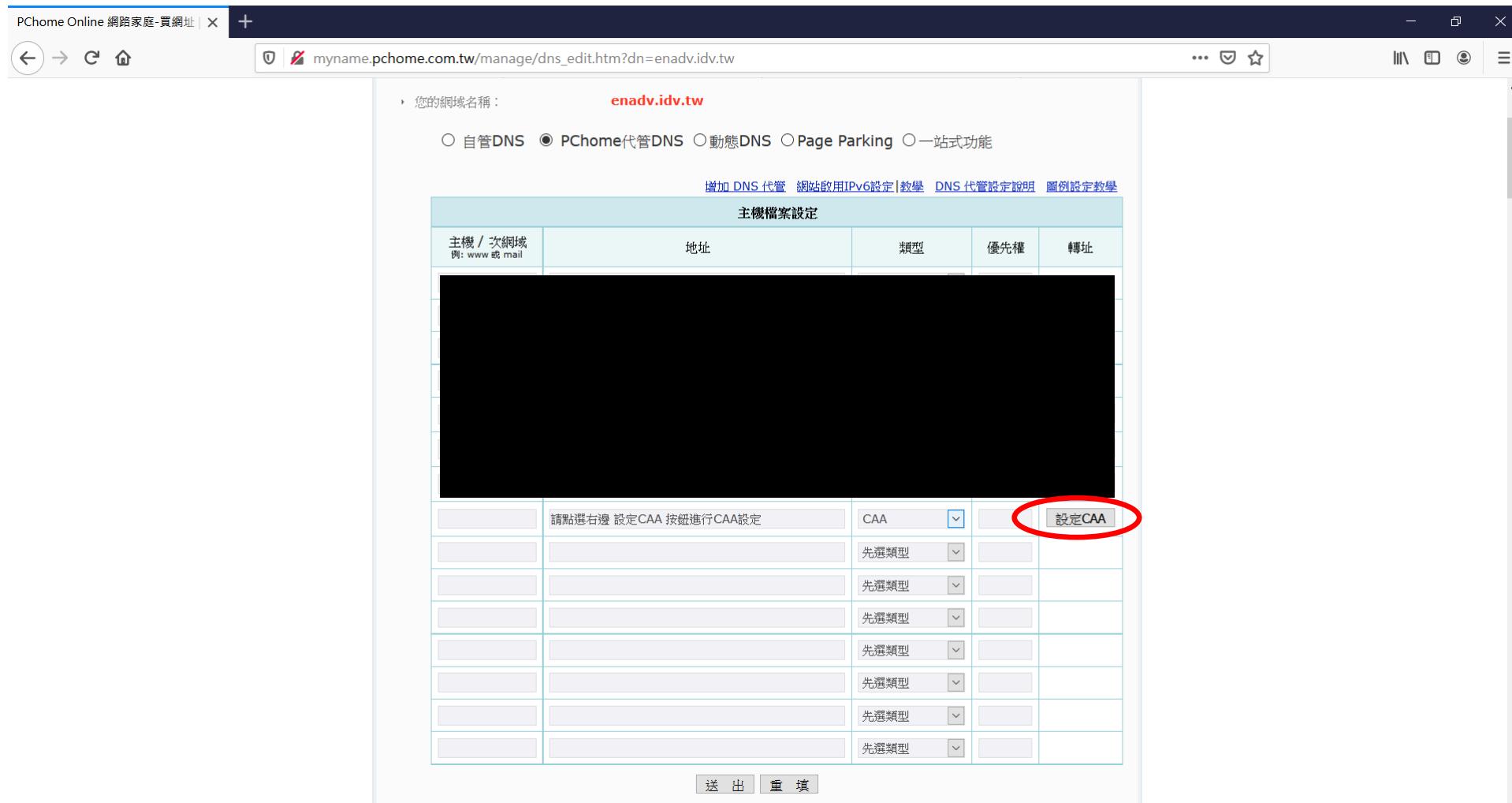
您的網域名稱：**enadv.idv.tw**

自管DNS  PChome代管DNS  動態DNS  Page Parking  一站式功能

[增加 DNS 代管](#) [網站啟用IPv6設定](#) [教學](#) [DNS 代管設定說明](#) [圖例設定教學](#)

主機檔案設定				
主機 / 次網域 例: www 或 mail	地址	類型	優先權	轉址
				
	請點選右邊 設定CAA 按鈕進行CAA設定	CAA	<input type="button" value="設定CAA"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	
		先選類型	<input type="button"/>	

送出 重填



# 設定網域 -4

The screenshot shows a web browser window for PChome Online's DNS management. The URL is `myname.pchome.com.tw/manage/dns_edit.htm?dn=enadv.idv.tw`. A modal dialog box titled "CAA 紀錄設定" (CAA Record Configuration) is open. The dialog contains fields for "標記 Flags" (Flag), "標籤 Tag" (Label), and "值 Value" (Value). Below the fields is a descriptive text about CAA records. At the bottom of the dialog is a "設定" (Set) button. The main page background shows a table with several rows, each containing a "請點選右邊 設定CAA 按鈕進行CAA設定" (Select the right side to set the CAA button to set the CAA) link and a dropdown menu labeled "CAA".

CAA(Certification Authority Authorization)在 DNS 裡的紀錄，主要用於設定該網站的 SSL 憑證為哪個憑證授權機構(CA)發出。

標記 Flags : 0-255 之間

標籤 Tag : 諺書屬性標籤

- issue (表示授權「值」的內容替您的網域或子網域發行憑證)
- issuemwid (表示授權「值」的內容替您的網域或子網域發行萬用字元憑證)
- iodef (要求任何 CA 在收到無效憑證請求時透過連結或發信聯絡您 <http://>, <https://>, <mailto:>)

值 Value : 諺書頒發機構、策略違規報告郵件地址等

		先選類型		

# 設定網域 -5

The screenshot shows a web browser window for PChome Online's DNS management. The URL is `myname.pchome.com.tw/manage/dns_edit.htm?dn=enadv.idv.tw`. A modal dialog box titled "CAA 紀錄設定" (CAA Record Configuration) is open. Inside the dialog, three fields are highlighted with red circles: "標記 Flags : 0", "標籤 Tag : issue", and "值 Value : letsencrypt.org". Below these fields is a "設定" (Set) button, also circled in red. The background shows a table for managing other DNS records.

CAA(Certification Authority Authorization)在 DNS 裡的紀錄，主要用於設定該網站的 SSL 憑證為哪個憑證授權機構(CA)發出。

標記 Flags : 0-255 之間

標籤 Tag : 諺書屬性標籤

- issue (表示授權「值」的內容替您的網域或子網域發行憑證)
- issuemid (表示授權「值」的內容替您的網域或子網域發行萬用字元憑證)
- iodef (要求任何 CA 在收到無效憑證請求時透過連結或發信聯絡您 http:// , https:// , mailto: )

值 Value : 諺書頒發機構、策略違規報告郵件地址等

		先選類型		

# 設定網域 -6

The screenshot shows a web browser window for PChome Online's domain management. The URL is `myname.pchome.com.tw/manage/dns_edit.htm?dn=enadv.idv.tw`. A red circle highlights the first row of a table where the value 'issue' is set to 'letsencrypt.org'. The table has columns for 'Value' (containing 'issue letsencrypt.org'), 'Type' (dropdown), and 'Priority' (dropdown). Below the table are two buttons: '送出' (Submit) and '重填' (Reset).

issue letsencrypt.org	CAA	
	先選類型	

**DNS自管設定說明：**

不論您申請的是哪一類域名，請輸入至少兩組 DNS 設定，基於備援的狀況，最好至少有兩台。您可自行架設 DNS，或是設定由虛擬主機廠商所提供的 DNS。

IP 位址的格式—例如 210.59.2.33  
IPv6 位址的格式—例如 2001:0db8:85a3::1319:8a2e:0370:7344  
IPv6 的 IP 視您自己需求填寫，非必填。

國際域名需注意以下四項：

## 設定網域 -7

The screenshot shows a web-based DNS management tool. At the top, the URL is myname.pchome.com.tw/manage/dns\_edit.htm?dn=enadv.idv.tw. Below the header, there's a large black rectangular redaction box covering most of the main content area. Underneath this, there's a table with several rows. The first row has a red circle around the 'trytry' entry in the first column. The table columns are labeled: 'trytry', '0 issue 'letsencrypt.org'', 'CAA', and three dropdown menus. Below the table are two buttons: '送出' (Submit) and '重填' (Reset). At the bottom left, there's a section titled 'DNS自管設定說明:' with explanatory text about DNS record requirements.

# 設定網域 -8

The screenshot shows a web browser window for PChome Online's domain management. The URL is [myname.pchome.com.tw/manage/dns\\_edit.htm?dn=enadv.idv.tw](http://myname.pchome.com.tw/manage/dns_edit.htm?dn=enadv.idv.tw). The page title is "王機檔案設定". The main area displays a table for managing DNS records, with one row highlighted in red. Below the table, a dropdown menu is open, showing various DNS record types: CAA, AAAA, CNAME, MX, 轉址(frame), redirect, TXT(SPF), SRV, and CAA. The "A" option is selected and highlighted with a blue background. To the right of the dropdown, the text "A: Address Record" is displayed in red. At the bottom of the form, there are "送出" (Submit) and "重填" (Reset) buttons.

A: Address Record

# 設定網域 -9

PChome Online 網路家庭-買網址 | x +

myname.pchome.com.tw/manage/dns\_edit.htm?dn=enadv.idv.tw

主機 / 次網域  
例: www 或 mail

地址

類型

優先權

轉址

trytry 0 issue 'letsencrypt.org' CAA 設定CAA

請輸入主機IP A

先選類型

先選類型

先選類型

先選類型

先選類型

送出 重填

DNS自管設定說明：  
不論您申請的是哪一類域名，請輸入至少兩組 DNS 設定，基於備援的狀況，最好至少有兩台。您可自行架設 DNS，或是設定由虛擬主機廠商所提供的 DNS。

TD 網址的格式二例如 210.50.2.33



# 設定網域 -10

PChome Online 網路家庭-買網址 | X Compute Engine - trytry - Go X +

myname.pchome.com.tw/manage/dns\_edit.htm?dn=enadv.idv.tw

主機 / 次網域  
例: www 或 mail

地址

類型

優先權

轉址

trytry 0 issue 'letsencrypt.org' CAA 設定CAA

trytry 35.201.144.19 A 先選類型

先選類型

先選類型

先選類型

先選類型

先選類型

送出 重填

DNS自管設定說明：  
不論您申請的是哪一類域名，請輸入至少兩組 DNS 設定，基於備援的狀況，最好至少有兩台。您可自行架設 DNS，或是設定由虛擬主機廠商所提供的 DNS。



# 設定網域 -11



A screenshot of a web browser showing the PChome Online 'Buy Domains' management interface. The URL in the address bar is [myname.pchome.com.tw/manage/dns\\_edit.php](http://myname.pchome.com.tw/manage/dns_edit.php). The page displays a success message for a DNS configuration update:

(enadv.idv.tw) DNS 設定完成，請等待 24~48 小時 DNS 生效時間

**OK!** DNS 解析標準需要 24~48 小時完成，請您耐心等候各家 ISP 陸續完成更新，但您大約可以在 4 小時後先嘗試測試連線！

The message is circled in red.

At the bottom of the page, there are two buttons: [到管理我的網址頁](#) and [回首頁](#).

Page footer (in Chinese):

- [設PChome為首頁](#)
- [刊登廣告](#)
- [隱私權聲明](#)
- [消費者保護](#)
- [兒童網路安全](#)
- [關於PChome](#)
- [徵才](#)

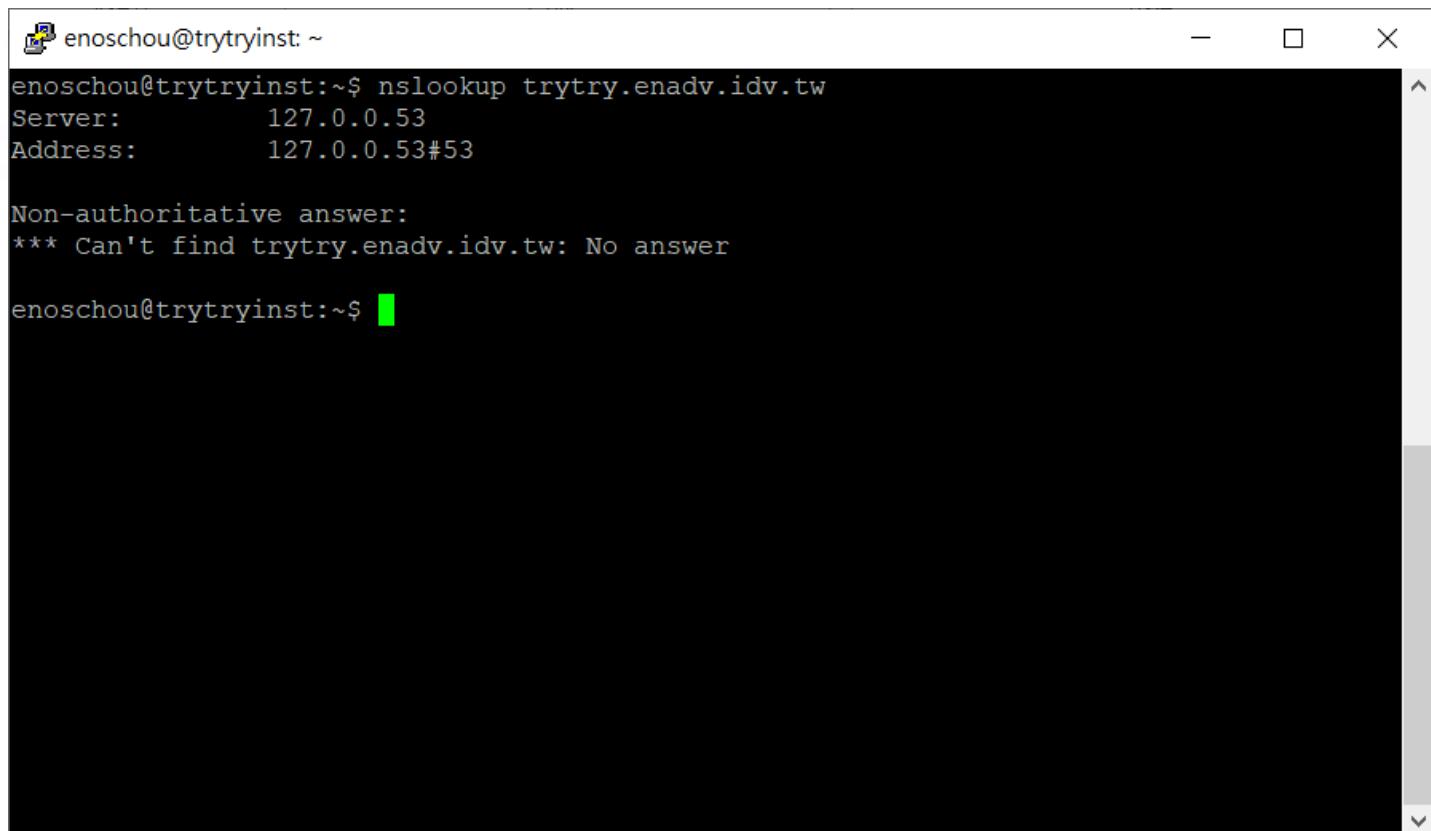
網路家庭版權所有、轉載必究 Copyright© PChome Online  
PChome Online and PChome are trademarks of PChome Online Inc.

# 設定網域 -12

測試是否生效

nslookup domain\_name

尚未生效



```
enoschou@trytryinst:~$ nslookup trytry.enadv.idv.tw
Server:      127.0.0.53
Address:     127.0.0.53#53

Non-authoritative answer:
*** Can't find trytry.enadv.idv.tw: No answer

enoschou@trytryinst:~$
```

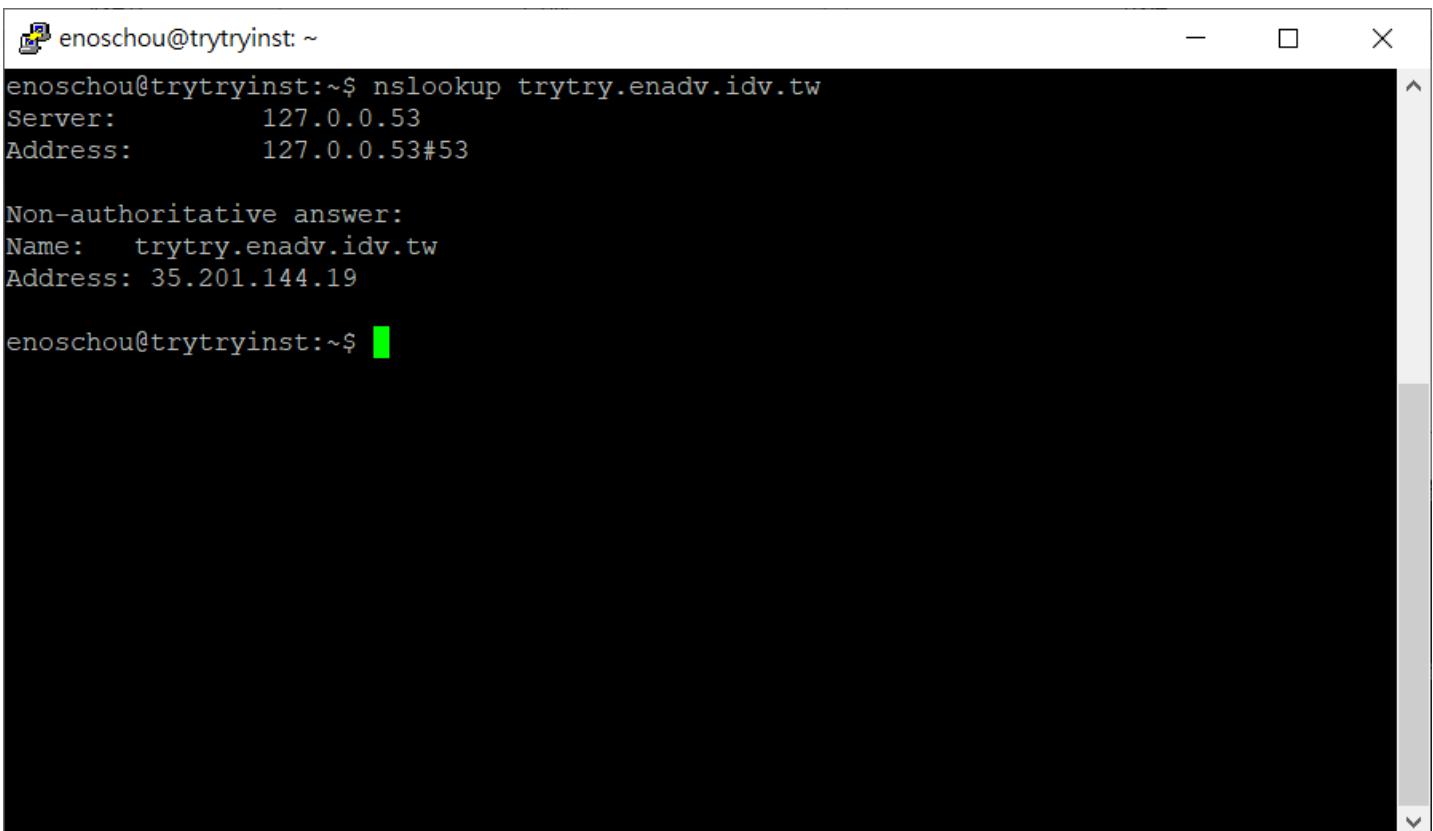
A screenshot of a terminal window titled 'enoschou@trytryinst ~'. The window contains the command 'nslookup trytry.enadv.idv.tw' and its output. The output shows the server is 127.0.0.53 and the address is also 127.0.0.53#53. It then displays a 'Non-authoritative answer:' followed by '\*\*\* Can't find trytry.enadv.idv.tw: No answer'. The terminal window has a standard Windows-style title bar with minimize, maximize, and close buttons.

# 設定網域 -13

測試是否生效

nslookup domain\_name

已生效

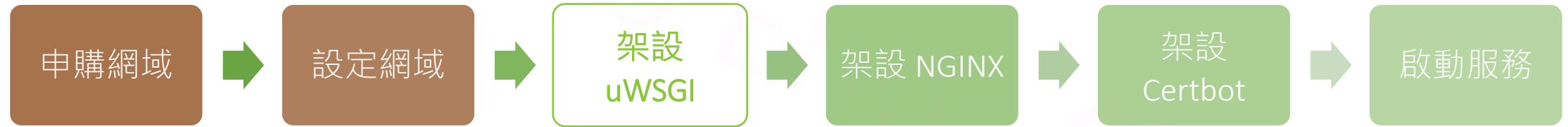


```
enoschou@trytryinst:~$ nslookup trytry.enadv.idv.tw
Server:      127.0.0.53
Address:    127.0.0.53#53

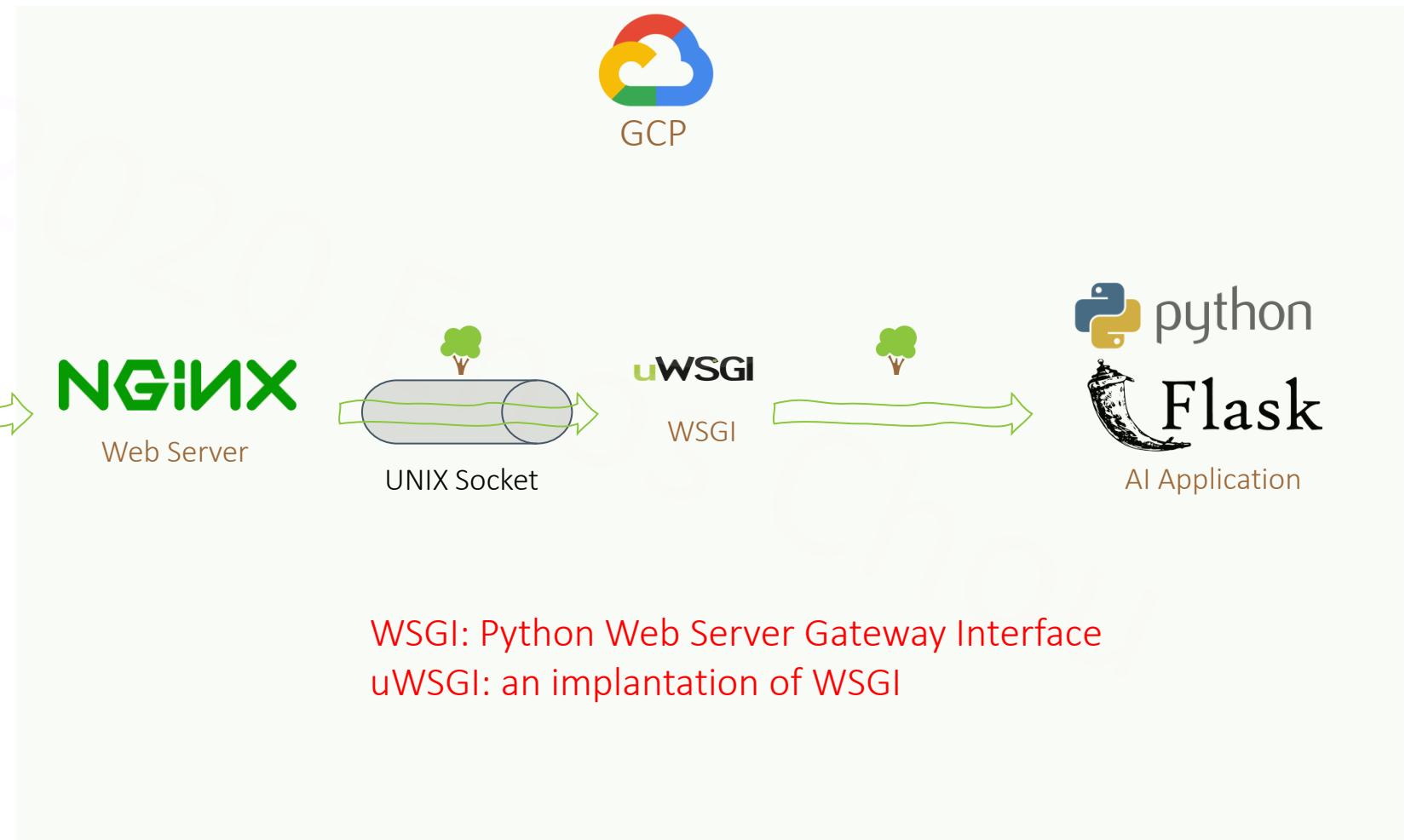
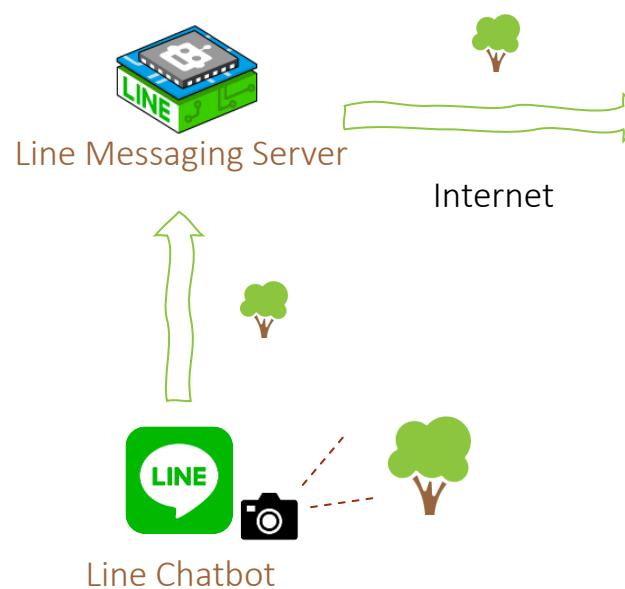
Non-authoritative answer:
Name:  trytry.enadv.idv.tw
Address: 35.201.144.19

enoschou@trytryinst:~$
```

A screenshot of a terminal window titled "enoschou@trytryinst: ~". The window contains the command "nslookup trytry.enadv.idv.tw" and its output. The output shows the server is 127.0.0.53, the address is 127.0.0.53#53, and a non-authoritative answer for the name trytry.enadv.idv.tw with an address of 35.201.144.19.



# WSGI



# 架設 uWSGI -1

安裝 uWSGI 套件

```
pip3 install uwsgi
```

# 架設 uWSGI -2

進入你的 project 目錄

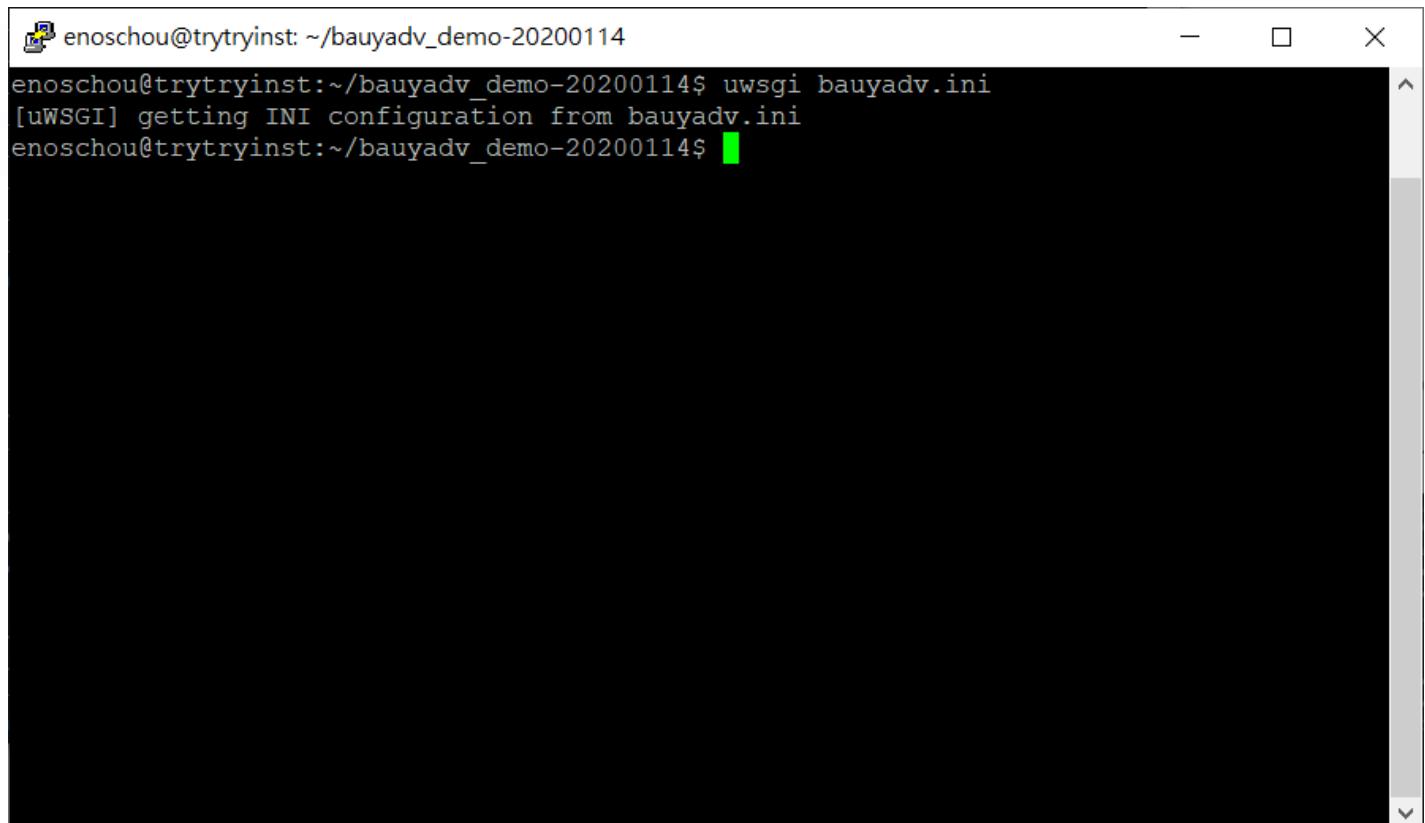
```
cd your_project_name
```

編輯 your\_config\_name.ini，內容為：

```
[uwsgi]
module = your_python_name:app
master = false
processes = 1
chdir = /home/somebody/your_project_name
socket = your_socket_name.sock
logto = your_log_name.log
daemonize = your_log_name.log
chmod-socket = 666
vacuum = true
```

# 架設 uWSGI – 3

執行 uwsgi your\_config\_name.ini，  
觀察是否報錯

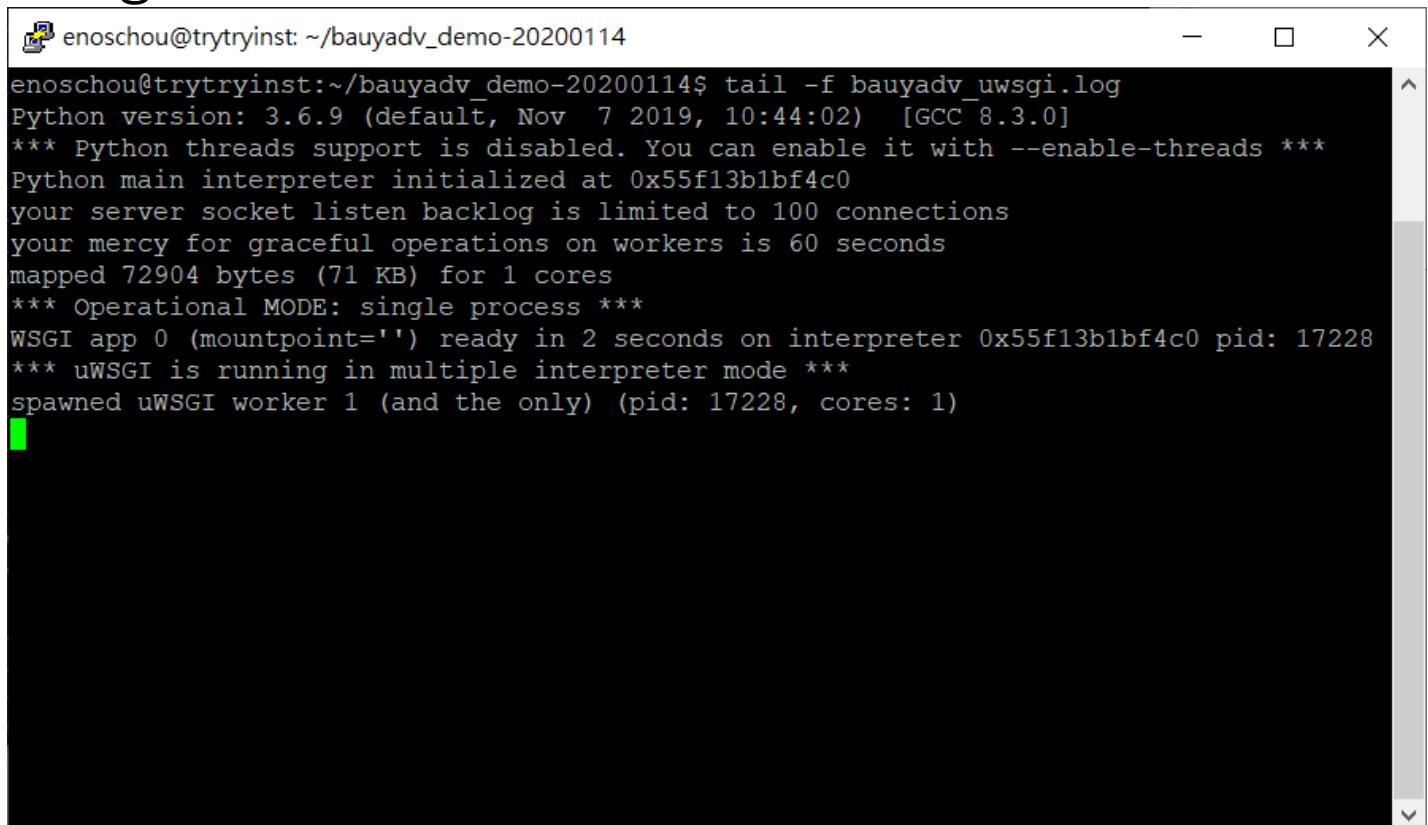
A screenshot of a terminal window titled "enoschou@trytryinst: ~/bauyadv\_demo-20200114". The window contains the following text:

```
enoschou@trytryinst:~/bauyadv_demo-20200114$ uwsgi bauyadv.ini
[uWSGI] getting INI configuration from bauyadv.ini
enoschou@trytryinst:~/bauyadv_demo-20200114$
```

The terminal has a dark background and light-colored text. A vertical scroll bar is visible on the right side of the window.

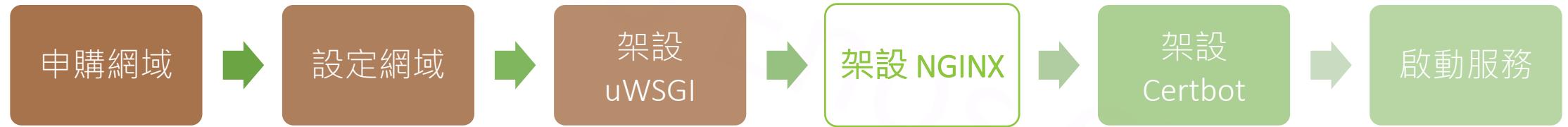
# 架設 uWSGI -4

執行 `tail -f your_log_name.log`，  
觀察是否異常



A screenshot of a terminal window titled "enoschou@trytryinst: ~/bauyadv\_demo-20200114". The window contains the following log output:

```
enoschou@trytryinst:~/bauyadv_demo-20200114$ tail -f bauyadv_uwsgi.log
Python version: 3.6.9 (default, Nov  7 2019, 10:44:02) [GCC 8.3.0]
*** Python threads support is disabled. You can enable it with --enable-threads ***
Python main interpreter initialized at 0x55f13b1bf4c0
your server socket listen backlog is limited to 100 connections
your mercy for graceful operations on workers is 60 seconds
mapped 72904 bytes (71 KB) for 1 cores
*** Operational MODE: single process ***
WSGI app 0 (mountpoint='') ready in 2 seconds on interpreter 0x55f13b1bf4c0 pid: 17228
*** uWSGI is running in multiple interpreter mode ***
spawned uWSGI worker 1 (and the only) (pid: 17228, cores: 1)
```



# 架設 NGINX -1

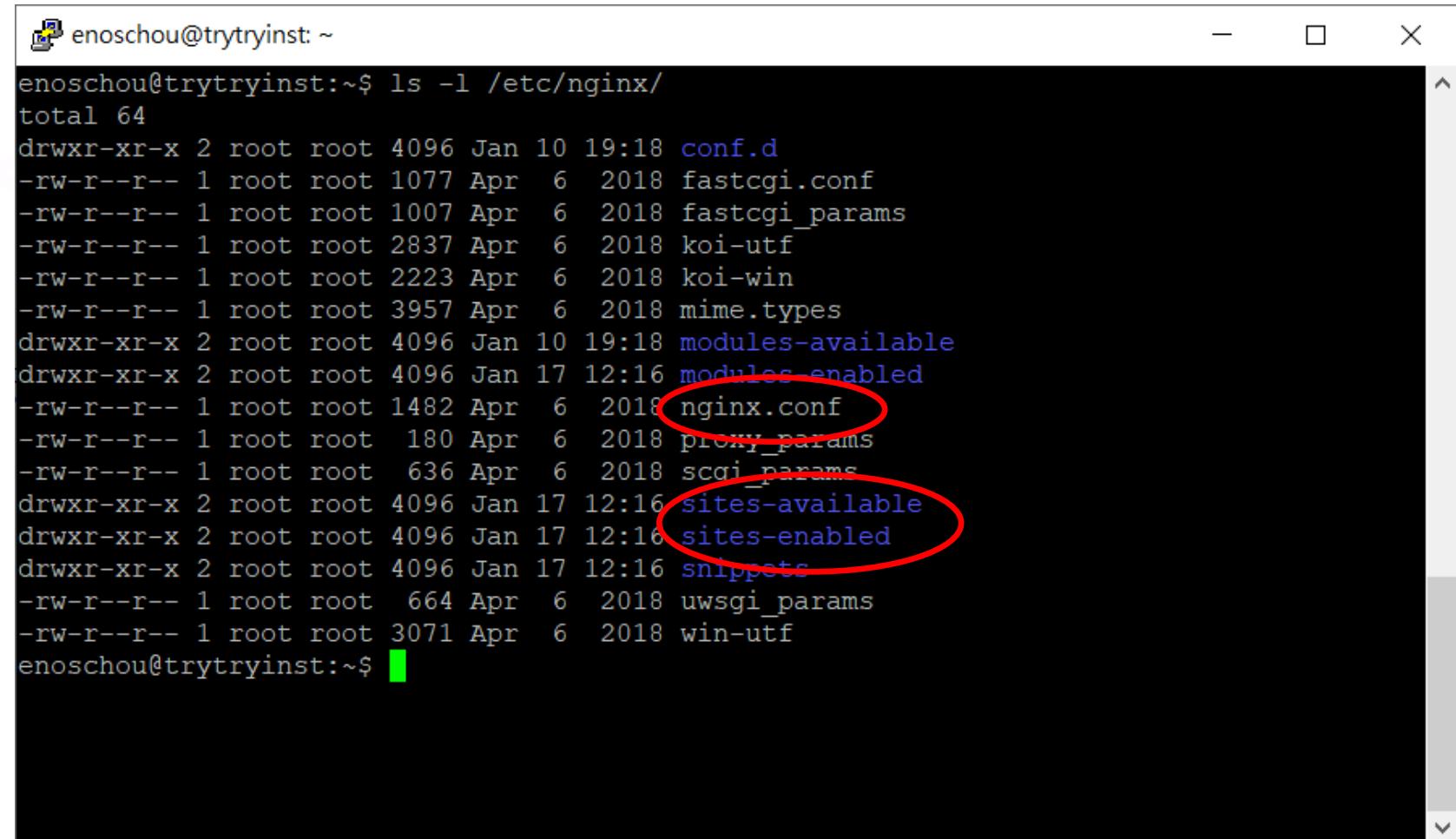
安裝 NGINX 套件

```
sudo apt-get install nginx
```

# 架設 NGINX -2

觀察檔案結構

ls -l /etc/nginx



```
enoschou@trytryinst:~$ ls -l /etc/nginx/
total 64
drwxr-xr-x 2 root root 4096 Jan 10 19:18 conf.d
-rw-r--r-- 1 root root 1077 Apr  6 2018 fastcgi.conf
-rw-r--r-- 1 root root 1007 Apr  6 2018 fastcgi_params
-rw-r--r-- 1 root root 2837 Apr  6 2018 koi-utf
-rw-r--r-- 1 root root 2223 Apr  6 2018 koi-win
-rw-r--r-- 1 root root 3957 Apr  6 2018 mime.types
drwxr-xr-x 2 root root 4096 Jan 10 19:18 modules-available
drwxr-xr-x 2 root root 4096 Jan 17 12:16 modules-enabled
-rw-r--r-- 1 root root 1482 Apr  6 2018 nginx.conf
-rw-r--r-- 1 root root 180 Apr  6 2018 proxy_params
-rw-r--r-- 1 root root 636 Apr  6 2018 scgi_params
drwxr-xr-x 2 root root 4096 Jan 17 12:16 sites-available
drwxr-xr-x 2 root root 4096 Jan 17 12:16 sites-enabled
drwxr-xr-x 2 root root 4096 Jan 17 12:16 snippets
-rw-r--r-- 1 root root 664 Apr  6 2018 uwsgi_params
-rw-r--r-- 1 root root 3071 Apr  6 2018 win-utf
enoschou@trytryinst:~$
```

# 架設 NGINX – 3

## nginx.conf

nginx 啟動時預設讀取的參數檔，內容會去掃描 sites-enabled 中所有 site 參數檔

## sites-available 目錄

儲存各個 site 啟動參數檔，但未必會被啟動。要被啟動的 site 參數會以 symbolic link 方式放在 sites-enabled 目錄

## sites-enabled 目錄

要被啟動的 site 參數檔

# 架設 NGINX – 4

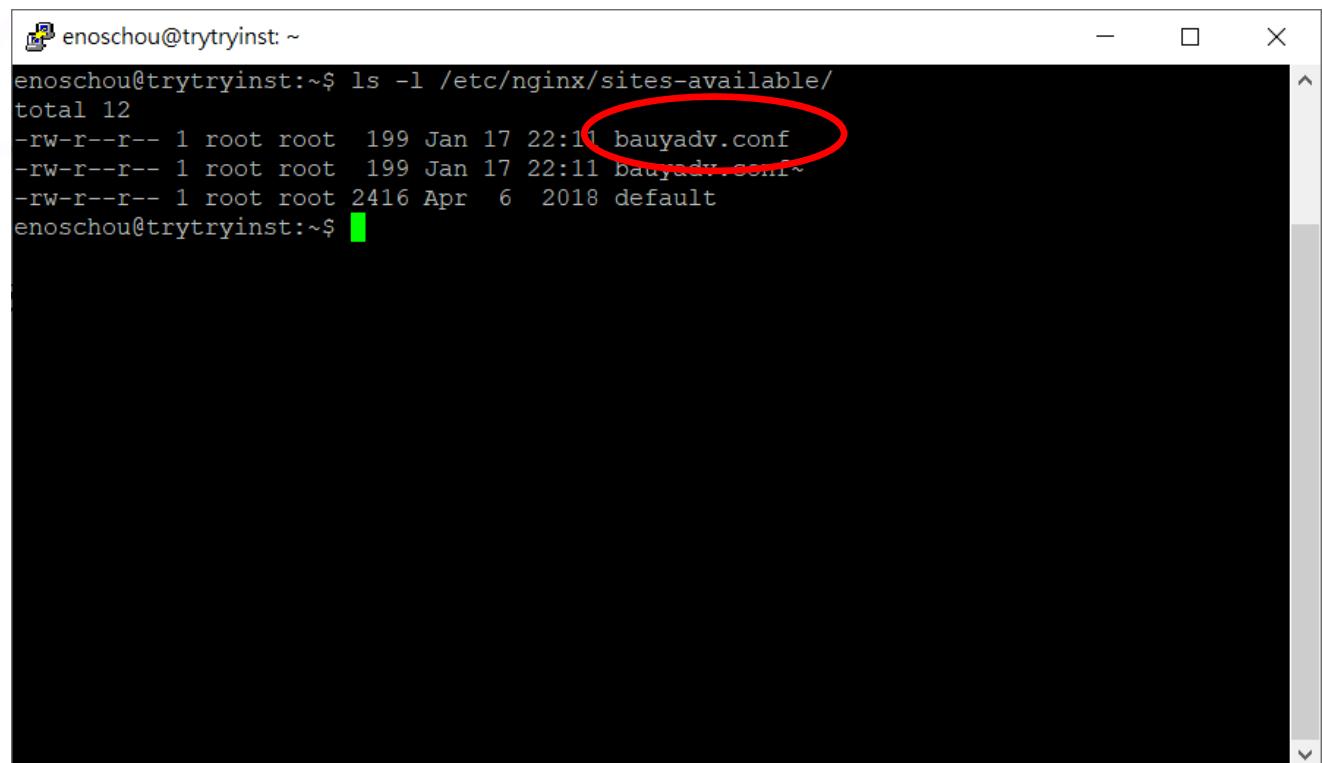
於 /etc/nginx/sites-available 新增 your\_project\_name.conf，內容為：

```
server {  
    server_name your_domain_name; #the name you set with CAA  
  
    location / {  
        include uwsgi_params;  
        uwsgi_pass unix:/home/somebody/your_project_name/your_socket_name.sock;  
    }  
}
```

# 架設 NGINX – 5

觀察是否正確建立參數檔

```
ls -l /etc/nginx/sites-available/
```



```
enoschou@trytryinst:~$ ls -l /etc/nginx/sites-available/
total 12
-rw-r--r-- 1 root root 199 Jan 17 22:11 bauyadv.conf
-rw-r--r-- 1 root root 199 Jan 17 22:11 bauyadv.conf~
-rw-r--r-- 1 root root 2416 Apr  6  2018 default
enoschou@trytryinst:~$
```

# 架設 NGINX – 6

啟動剛加入的 site 參數：以 symbolic link 方式建立參數連結於 sites-enabled

```
sudo ln -s /etc/nginx/sites-available/your_config_name.conf /etc/nginx/sites-enabled/your_config_name.conf
```

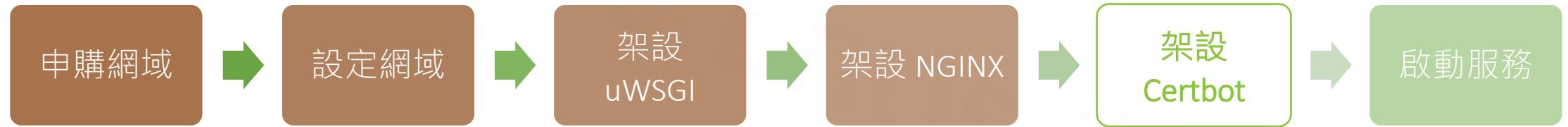
觀察是否正確加入

```
ls -l /etc/nginx/sites-enabled/
```

# 架設 NGINX -7

重新載入 NGINX

```
sudo nginx -s reload
```



# 架設 Certbot

## 免費憑證機器人 Certbot 安裝方

- <https://certbot.eff.org/>
- 採用 Let's Encrypt 免費憑證
- 自動更新憑證

## Let's Encrypt 免費憑證

- <https://letsencrypt.org/zh-tw/>
- 多家機構合資成立，包含 Mozilla、Linux、Cisco 等
- 效期 3 個月
- Line Messaging API 平台暗地支援 (未列入白名單)

# 架設 Certbot -1

切換 ubuntu 套件資料庫

```
sudo add-apt-repository universe
```

```
sudo add-apt-repository ppa:certbot/certbot
```

```
sudo apt-get update
```

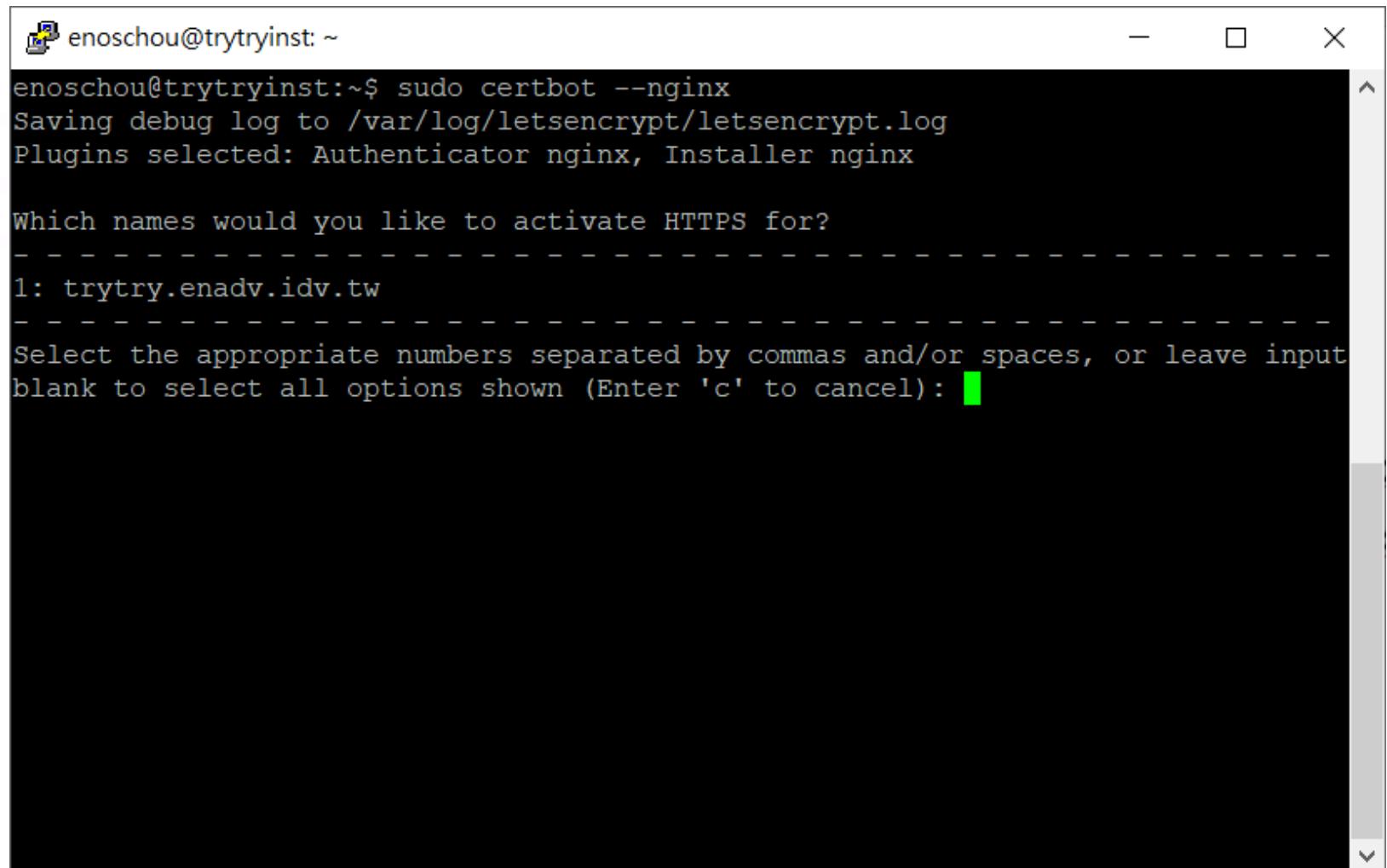
安裝 NGINX 版 Certbot

```
sudo apt-get install certbot python-certbot-nginx
```

於 NGINX 安裝憑證

```
sudo certbot --nginx
```

# 架設 Certbot -2

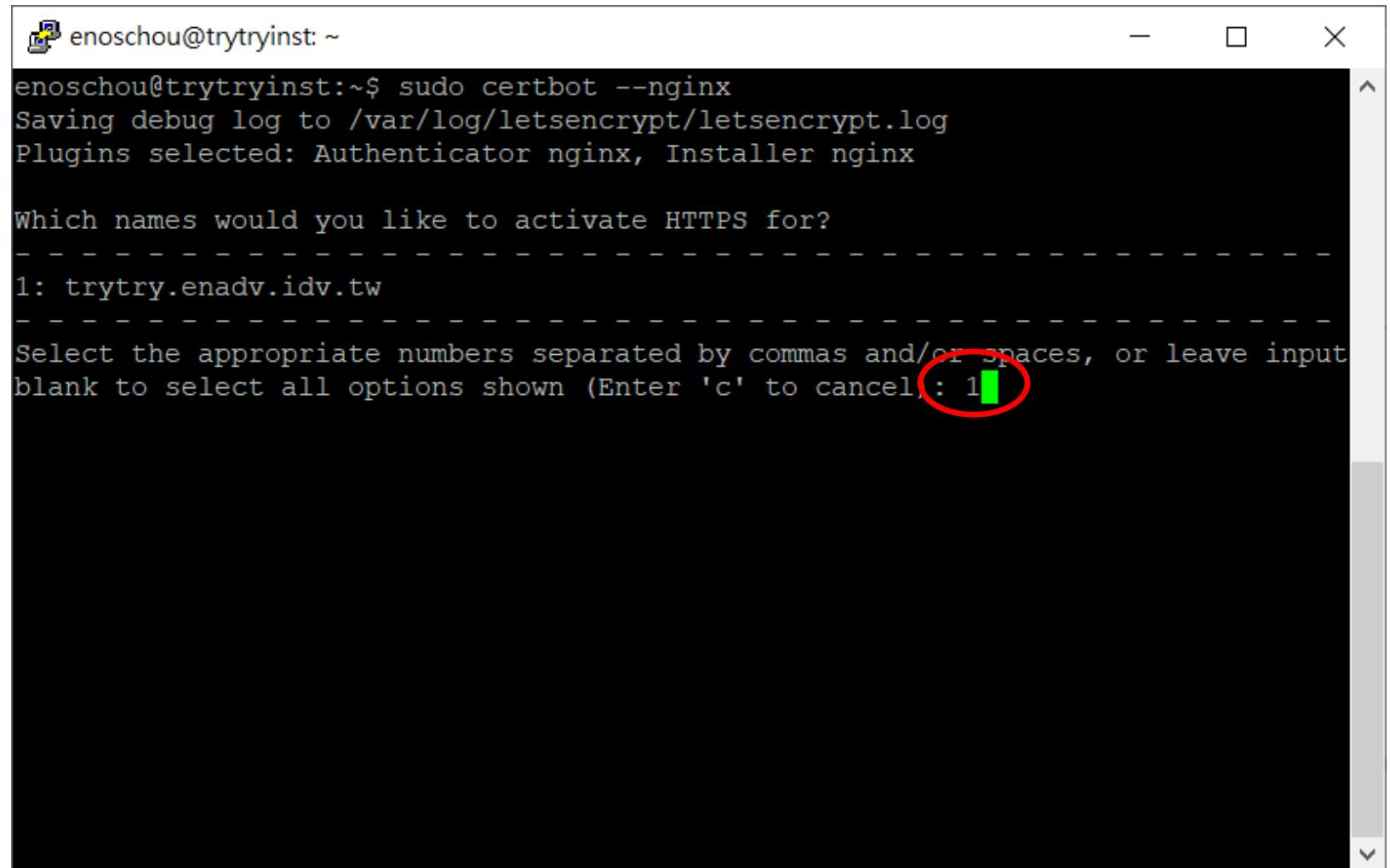


enoschou@trytryinst: ~

```
enoschou@trytryinst:~$ sudo certbot --nginx
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator nginx, Installer nginx

Which names would you like to activate HTTPS for?
-----
1: trytry.enadv.idv.tw
-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel):
```

# 架設 Certbot -3



enoschou@trytryinst: ~

```
enoschou@trytryinst:~$ sudo certbot --nginx
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator nginx, Installer nginx

Which names would you like to activate HTTPS for?
-----
1: trytry.enadv.idv.tw
-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel): 1
```

The terminal window shows the user running the command `sudo certbot --nginx`. It outputs the path to the debug log and the selected plugins: "Authenticator nginx, Installer nginx". It then asks for the names to activate HTTPS for, listing "trytry.enadv.idv.tw". A red circle highlights the number "1" entered at the prompt, indicating the selection of the first option.

# 架設 Certbot -4

```
enoschou@trytryinst: ~
enoschou@trytryinst:~$ sudo certbot --nginx
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator nginx, Installer nginx

Which names would you like to activate HTTPS for?
-----
1: trytry.enadv.idv.tw
-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel): 1
Obtaining a new certificate
Deploying Certificate to VirtualHost /etc/nginx/sites-enabled/bauyadv.conf
nginx: [error] invalid PID number "" in "/run/nginx.pid"

Please choose whether or not to redirect HTTP traffic to HTTPS, removing HTTP access.
-----
1: No redirect - Make no further changes to the webserver configuration.
2: Redirect - Make all requests redirect to secure HTTPS access. Choose this for
new sites, or if you're confident your site works on HTTPS. You can undo this
change by editing your web server's configuration.
-----
Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 2
```

# 架設 Certbot -5

```
enoschou@trytryinst: ~
enoschou@trytryinst:~$ sudo certbot --nginx
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator nginx, Installer nginx

Which names would you like to activate HTTPS for?
-----
1: trytry.enadv.idv.tw
-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel): 1
Obtaining a new certificate
Deploying Certificate to VirtualHost /etc/nginx/sites-enabled/bauyadv.conf
nginx: [error] invalid PID number "" in "/run/nginx.pid"

Please choose whether or not to redirect HTTP traffic to HTTPS, removing HTTP access.
-----
1: No redirect - Make no further changes to the webserver configuration.
2: Redirect - Make all requests redirect to secure HTTPS access. Choose this for
new sites, or if you're confident your site works on HTTPS. You can undo this
change by editing your web server's configuration.
-----
Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 2
```

# 架設 Certbot -6

```
enoschou@trytryinst: ~
No matching insecure server blocks listening on port 80 found.

-----
Congratulations! You have successfully enabled https://trytry.enadv.idv.tw

You should test your configuration at:
https://www.ssllabs.com/ssltest/analyze.html?d=trytry.enadv.idv.tw
-----

IMPORTANT NOTES:
- Congratulations! Your certificate and chain have been saved at:
  /etc/letsencrypt/live/trytry.enadv.idv.tw/fullchain.pem
  Your key file has been saved at:
  /etc/letsencrypt/live/trytry.enadv.idv.tw/privkey.pem
  Your cert will expire on 2020-04-18. To obtain a new or tweaked
  version of this certificate in the future, simply run certbot again
  with the "certonly" option. To non-interactively renew *all* of
  your certificates, run "certbot renew"
- If you like Certbot, please consider supporting our work by:

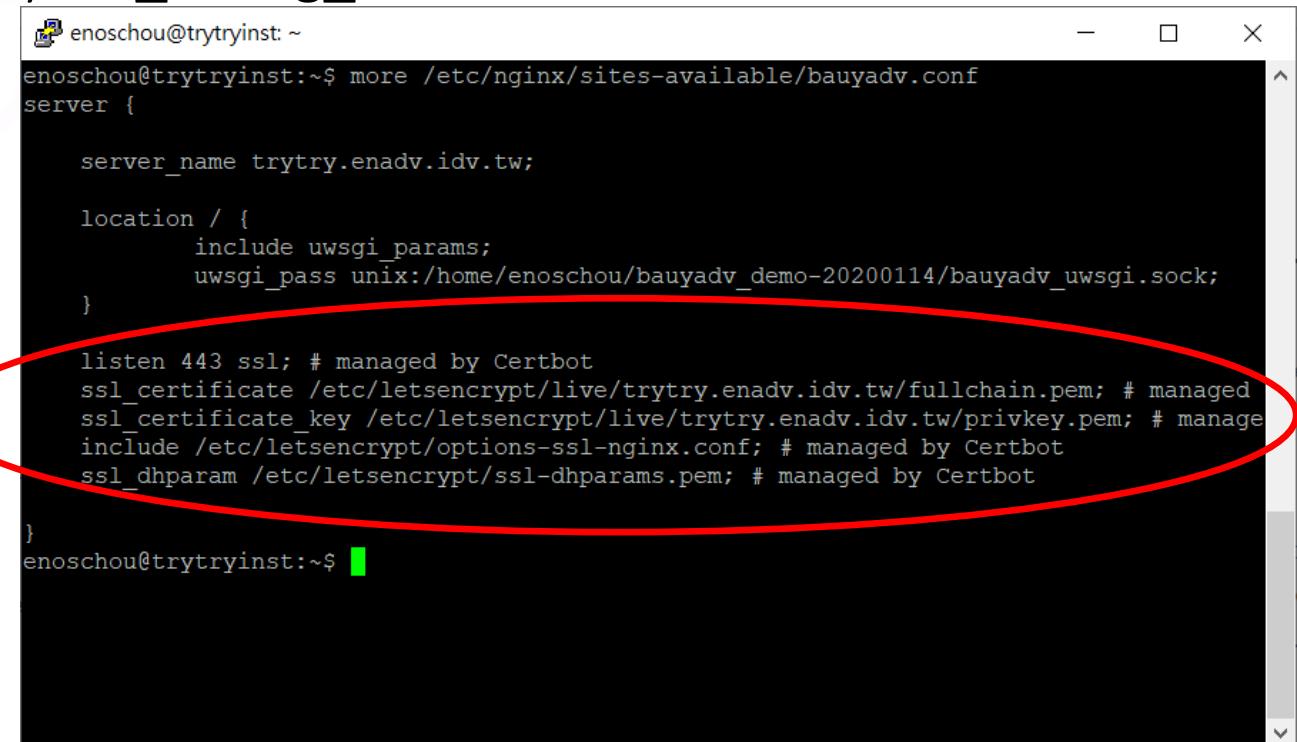
  Donating to ISRG / Let's Encrypt:  https://letsencrypt.org/donate
  Donating to EFF:                  https://eff.org/donate-le

enoschou@trytryinst:~$
```

# 架設 Certbot -7

## 觀察設定結果

more /etc/nginx/sites-available/your\_config\_name.conf



```
enoschou@trytryinst:~$ more /etc/nginx/sites-available/bauyadv.conf
server {

    server_name trytry.enadv.idv.tw;

    location / {
        include uwsgi_params;
        uwsgi_pass unix:/home/enoschou/bauyadv_demo-20200114/bauyadv_uwsgi.sock;
    }

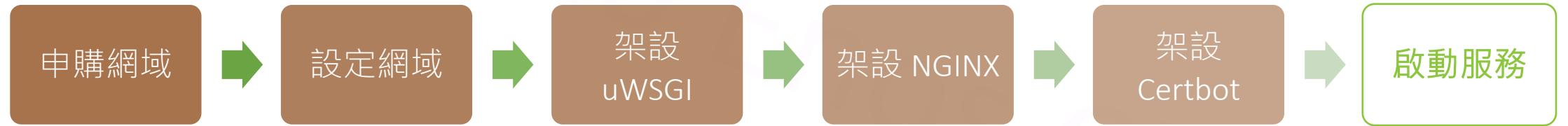
    listen 443 ssl; # managed by Certbot
    ssl_certificate /etc/letsencrypt/live/trytry.enadv.idv.tw/fullchain.pem; # managed
    ssl_certificate_key /etc/letsencrypt/live/trytry.enadv.idv.tw/privkey.pem; # managed
    include /etc/letsencrypt/options-ssl-nginx.conf; # managed by Certbot
    ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed by Certbot
}

enoschou@trytryinst:~$
```

# (架設 Certbot – 8)

## 移除憑證

1. `sudo certbot delete --cert-name your_domain_name`
2. 手動移除 `/etc/nginx/sites-available/your_config_name.conf` 中的 Certbot 設定



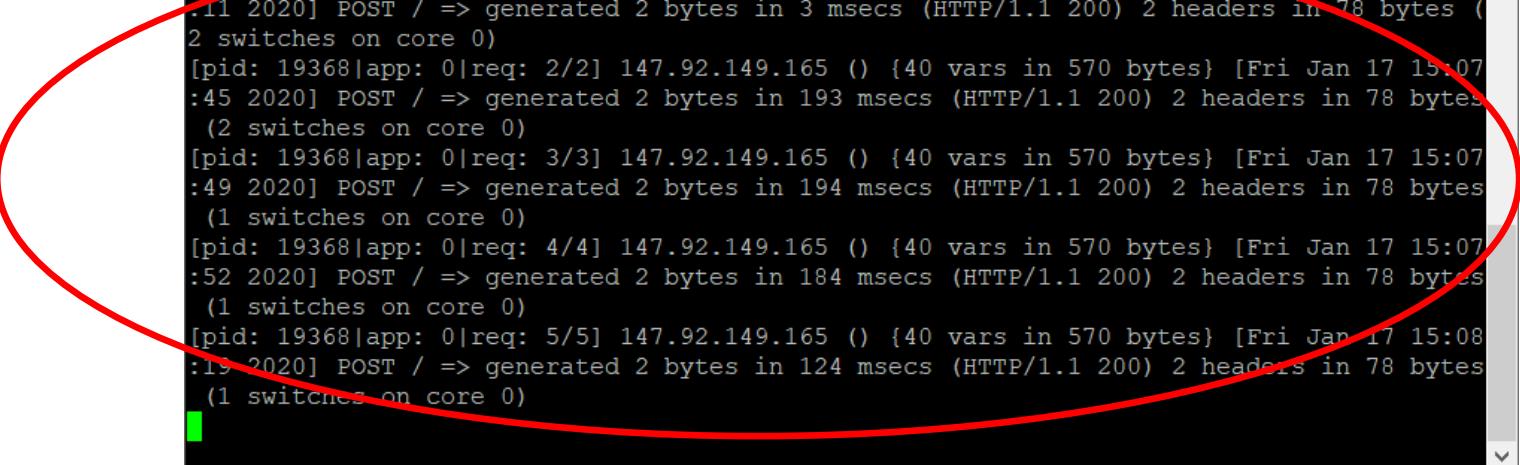
# 啟動服務 -1

- 設定 Line Messaging API 中的 Webhook URL
- 用 Line 測試

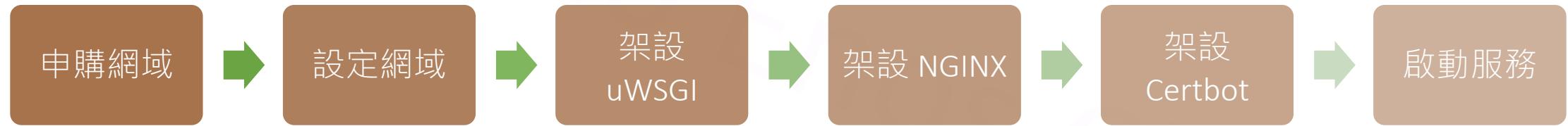
# 啟動服務 -2

觀察服務是否正常運作

```
tail -f /home/somebody/your_project_name/your_log_name.log
```



```
enoschou@trytryinst:~/bauyadv_demo-20200114$ tail -f bauyadv_uwsgi.log
mapped 72904 bytes (71 KB) for 1 cores
*** Operational MODE: single process ***
WSGI app 0 (mountpoint='') ready in 3 seconds on interpreter 0x55eb75d784c0 pid: 19368
(default app)
*** uWSGI is running in multiple interpreter mode ***
spawned uWSGI worker 1 (and the only) (pid: 19368, cores: 1)
[pid: 19368|app: 0|req: 1/1] 203.104.156.74 () {42 vars in 588 bytes} [Fri Jan 17 15:07
:11 2020] POST / => generated 2 bytes in 3 msecs (HTTP/1.1 200) 2 headers in 78 bytes (
2 switches on core 0)
[pid: 19368|app: 0|req: 2/2] 147.92.149.165 () {40 vars in 570 bytes} [Fri Jan 17 15:07
:45 2020] POST / => generated 2 bytes in 193 msecs (HTTP/1.1 200) 2 headers in 78 bytes
(2 switches on core 0)
[pid: 19368|app: 0|req: 3/3] 147.92.149.165 () {40 vars in 570 bytes} [Fri Jan 17 15:07
:49 2020] POST / => generated 2 bytes in 194 msecs (HTTP/1.1 200) 2 headers in 78 bytes
(1 switches on core 0)
[pid: 19368|app: 0|req: 4/4] 147.92.149.165 () {40 vars in 570 bytes} [Fri Jan 17 15:07
:52 2020] POST / => generated 2 bytes in 184 msecs (HTTP/1.1 200) 2 headers in 78 bytes
(1 switches on core 0)
[pid: 19368|app: 0|req: 5/5] 147.92.149.165 () {40 vars in 570 bytes} [Fri Jan 17 15:08
:19 2020] POST / => generated 2 bytes in 124 msecs (HTTP/1.1 200) 2 headers in 78 bytes
(1 switches on core 0)
```



# 完成架構



# The End