



CW9008 FIDO application

User manual v0.7



Contents

What is FIDO.....	3
FIDO's three major authentication protocols	4
How does FIDO work.....	6
CW9008 FIDO key application schematics.....	7
CW9008 FIDO key product description	8
CW9008 FIDO certification	10
Support customize needs.....	11
An operational example of the CW9008 FIDO Key	11



What is FIDO

FIDO 是指由同名的非營利組織 FIDO 聯盟所訂定的一套網路識別標準，意在確保登入流程中伺服器及終端裝置協定的安全性。而這套識別標準透過公開金鑰加密 (Public Key Cryptography) 的架構進行多重因素驗證 (MFA) 以及生物辨識登入來強力且嚴密地保護雲端帳號的個資。

面對這些狀況，資安界的專家們不斷改良登入及驗證方式，大約每隔 10 年就會產生新的變革來解決密碼安全的問題，目前的最新趨勢是捨棄傳統密碼型態，轉向以無密碼驗證、零信任安全模型等架構的解決方案來面對資安議題，FIDO 就是在無密碼及零信任這兩個架構概念下誕生的一種解決方案標準。

傳統密碼的登入方式是藉由使用者輸入的帳號與密碼與驗證的資料進行比對，經過身份識別 (Identification) 與身份驗證 (Verification) 確認使用者身分之後，再允許登入，代表著只需要知道帳號跟密碼，即使不是本人登入也能夠通過驗證，除了 IP 位置也無法追蹤由哪一端進行登入。

FIDO 的優勢在於，由使用者的硬體裝置來進行身分驗證，再經由公私鑰架構線上識別身分。FIDO 將需要被驗證的資料保存在使用者硬體端，資料不會經由網路資料傳輸，也因此不會被洩漏，具有安全保障。



圖片來源：[FIDO 官方網站](#)

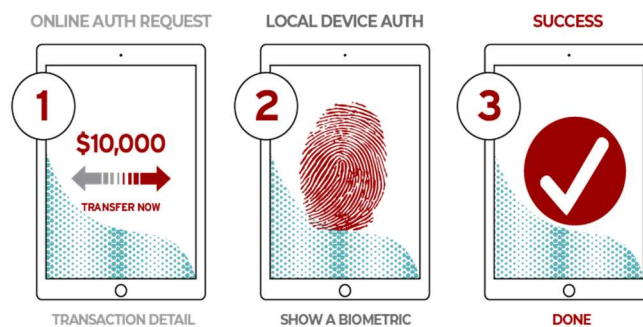


FIDO's three major authentication protocols

FIDO UAF

Universal Authentication Framework -- UAF 是指透過結合生物辨識等認證途徑，提供使用者順暢的無密碼登入體驗。透過安裝在裝置上的 FIDO UAF 堆疊 (stack)，使用者可以選擇在終端裝置上透過指紋辨識、聲音辨識、輸入個人識別碼 PIN 等方式進行線上登入，擺脫傳統輸入冗長密碼的流程。

PASSWORDLESS EXPERIENCE (UAF standards)

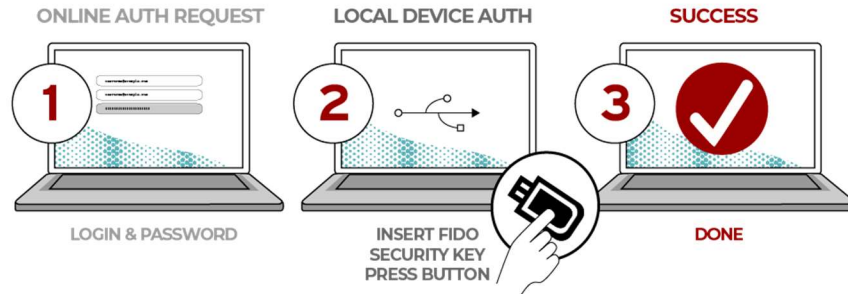


圖片來源：[FIDO 官方網站](#)

FIDO U2F

Universal Second Factor -- U2F (在 FIDO2 頒佈後被歸納為 CTAP1) 則是支援雙因素驗證。使用者除了輸入自己本身的帳號密碼外，必須另外再提供第二個驗證因素來證明自己的身份，而這些外加的第二因素包含了近距離無線通訊 NFC (Near Field Communication)、藍牙低功耗 BLE (Bluetooth Low Energy) 感應，或是輕觸外觀像 USB 的安全金鑰硬體裝置，讓登入過程多一層把關及保護。

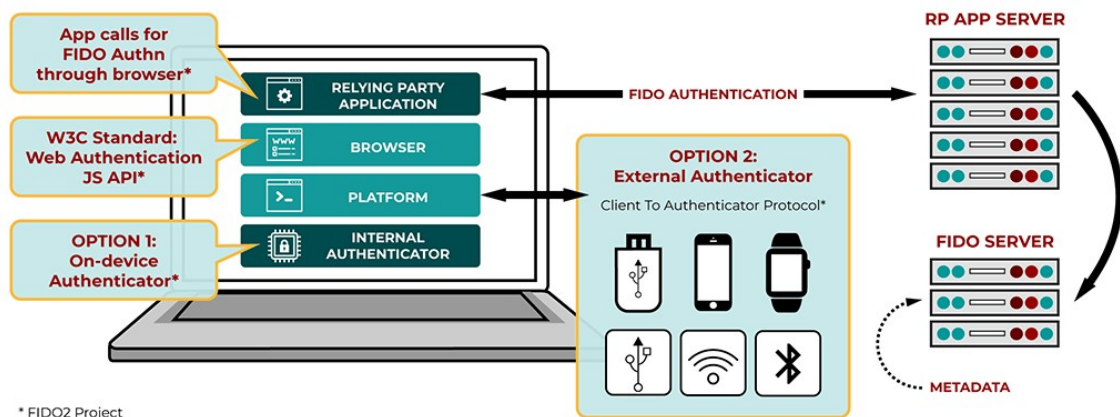
SECOND FACTOR EXPERIENCE (U2F standards)



圖片來源：[FIDO 官方網站](#)

FIDO2

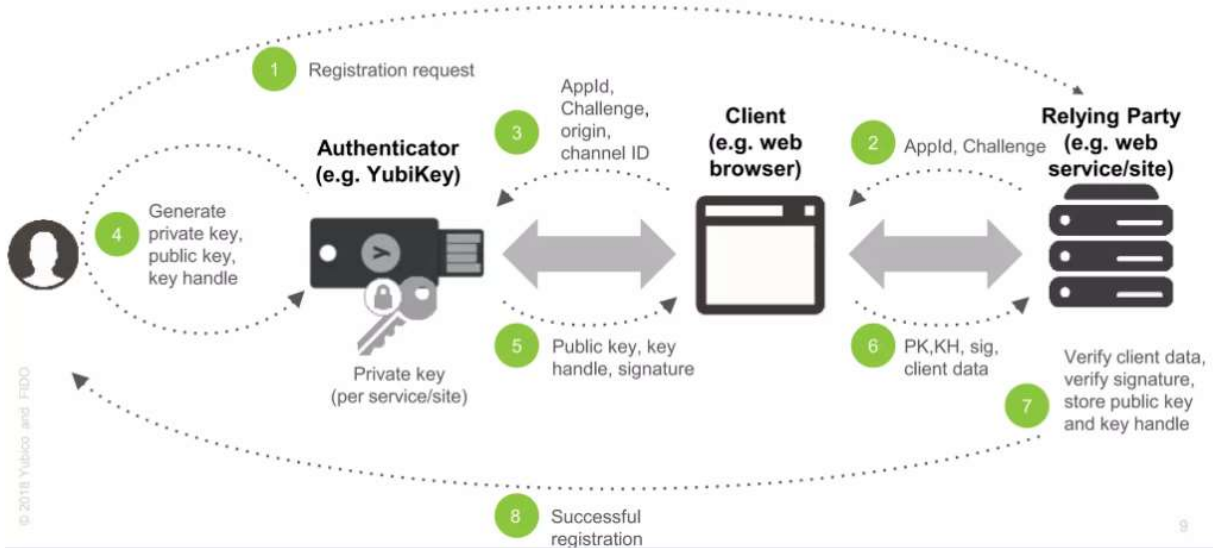
FIDO2 是三大認證協議當中最新的一條協議，是由全球資訊網協會（W3C）的網路驗證規格（Web Authentication · WebAuthn）以及 FIDO 的客戶端至驗證器協定（Client-to-Authenticator Protocols · CTAP）所共同組成的。其內容除了綜合無密碼登入以及雙因素驗證，它最大的特色在於結合了 WebAuthn 後對於各大瀏覽器的支援。FIDO Alliance 表示 WebAuthn 在 2019 年三月被指定為正式的網頁標準，目前除了支援 Windows 10 以及 Android 平台之外，也支援 Google Chrome、Mozilla Firefox、Microsoft Edge 以及 Apple Safari 等網頁瀏覽器。這樣的協議能讓使用者再更多的平台及裝置上透過 FIDO 標準進行身份驗證，拉開無密碼時代的序幕。





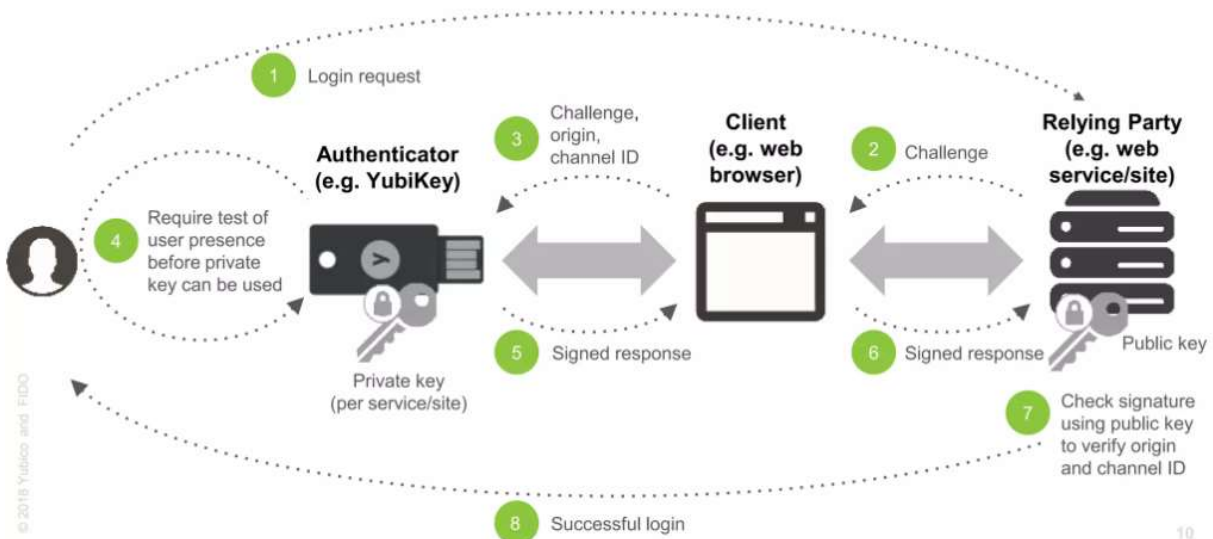
How does FIDO work

How FIDO Registration Works



圖片來源：Yubico

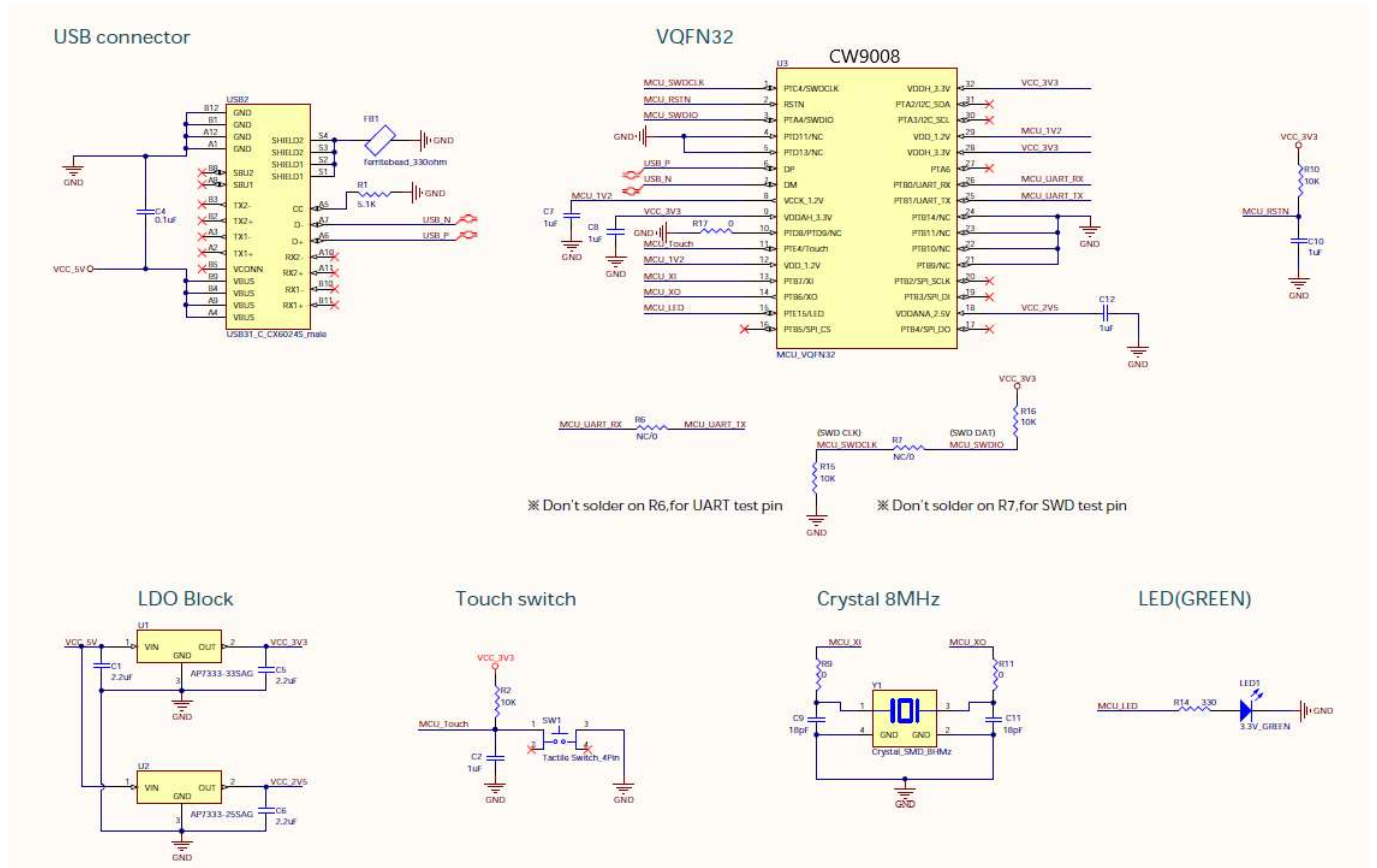
How FIDO Authentication Works



圖片來源：Yubico

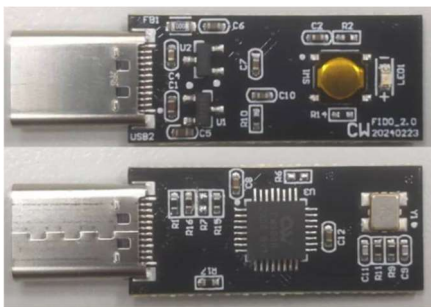


CW9008 FIDO key application schematics





CW9008 FIDO key product description



產品類別:

FIDO

產品描述:

Clife key 是群旺科技研發與生產的產品，是一個通過 FIDO 協會認證的硬體安全金鑰，具有強大的多因素身份驗證功能可用於多因素身份驗證 (MFA) 和安全登錄。可確保帳號的安全性，並提供強大的身份驗證保護。

產品特色：

- 產品支援多種 FIDO 驗證協議: WebAuthn, FIDO2 CTAP1, FIDO2 CTAP2, Universal 2nd Factor (U2F)。
- 產品支援多種 OS: Windows, MacOS, Linux, iOS, Android, ChromeOS.

靈活的身份驗證: 選擇強大的單因素 (無密碼身份驗證)、雙重因素 (2FA) 或多因素身份驗證



(MFA), 且耐用可靠; 高品質設計, 防篡改、防水、防擠壓。從設計, 晶片製造, 封裝到成品皆台灣製造。

Product Category:

FIDO

Product Description:

Clife key is a product developed and produced by ChipWon Technology. It is a hardware security key certified by the FIDO Association. It has a powerful multi-factor authentication function and can be used for multi-factor authentication (MFA) and secure login. Ensures account security and provides strong authentication protection.

Feature of product:

The product supports multiple FIDO authentication protocols: WebAuthn, FIDO2 CTAP1, FIDO2 CTAP2, Universal 2nd Factor (U2F).

The product supports multiple OS: Windows, MacOS, Linux, iOS, Android, ChromeOS.

Flexible Authentication: Choose from strong single-factor (passwordless authentication), two-factor (2FA) or multi-factor authentication (MFA) that is durable and reliable; high-quality design that is tamper-proof, water-resistant, and crush-proof. From design, chip manufacturing, packaging to finished products, they are all made in Taiwan.



CW9008 FIDO certification

Certification

In recognition of Chipwon Technology's achievement of FIDO® U2F Authenticator Certification:

Company: Chipwon Technology
Product: Clife Key
Specification: U2F
Specification Version: 1.2
Implementation Class: Authenticator
Authenticator Level: Level 1 (L1)
Functional Policy Version: 1.3.9
Authenticator Policy Version: 1.4
Security Requirements Version: 1.5
Interoperability Date: March 28, 2023
Conformance Self-Validation Date: March 7, 2023
Vendor Questionnaire Approval Date: May 5, 2023





Certificate No.
 U2F100020230612001
Issued
 June 12, 2023

Certification

In recognition of Chipwon Technology's achievement of FIDO® Authenticator certification:

Company: Chipwon Technology
Product: Clife Key
Specification: FIDO2
Specification Version: CTAP2.0
Implementation Class: Authenticator
Authenticator Level: Level 1 (L1)
Functional Policy Version: 1.3.9
Authenticator Policy Version: 1.4
Security Requirements Version: 1.5
Interoperability Date: March 28, 2023
Conformance Self-Validation Date: March 7, 2023
Vendor Questionnaire Approval Date: May 5, 2023





Certificate No.
 FIDO20020230612001
Issued
 June 12, 2023



Support customize needs

FIDO key interface is via USB interface. We can customize FIDO features to fit customers' FIDO sever functions. Chip serial interface besides USB also has SPI/I2C/UART interface can meet customers requirement.

An operational example of the CW9008 FIDO Key

Resetting a FIDO2 security key

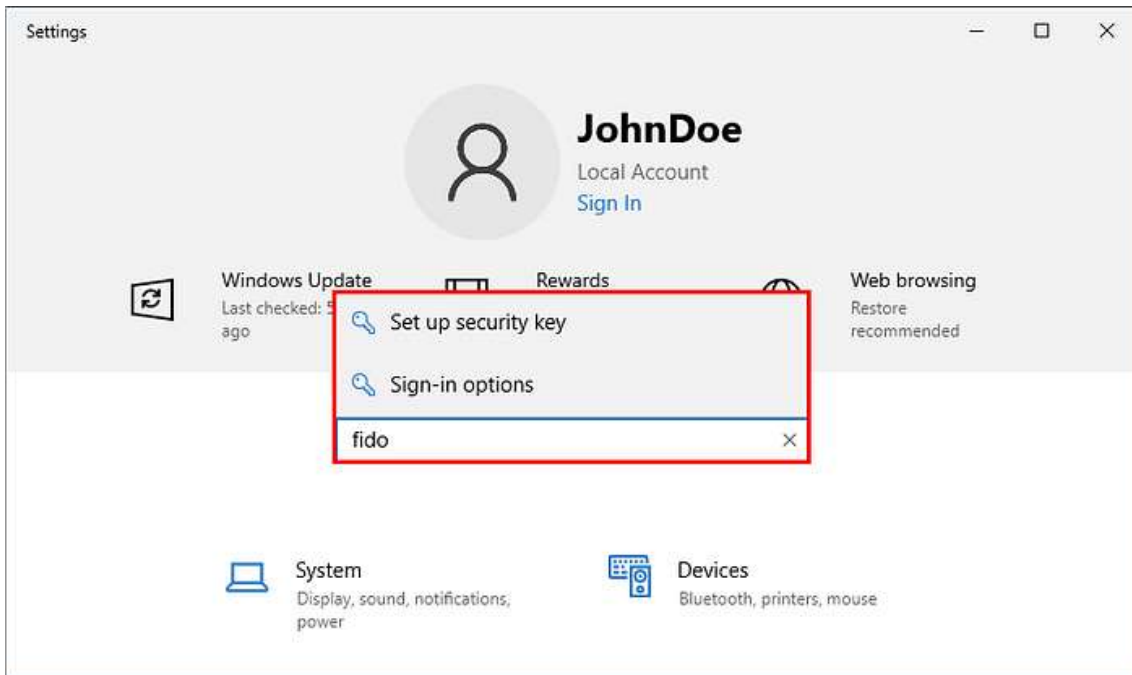
You should consider resetting a security key if you have lost and cannot recover a required credential (for example PIN, PUK or Card Management Key) OR if the security key is to be assigned to a new user. Make sure you understand what is being reset in context of your actions: the entirety of the device (all applets) or just a specific feature (e.g. the FIDO2 applet).

NOTE: In most cases, resetting using Windows 10 will be the best approach as it is simple, fast and does not require the use of any 3rd party software.

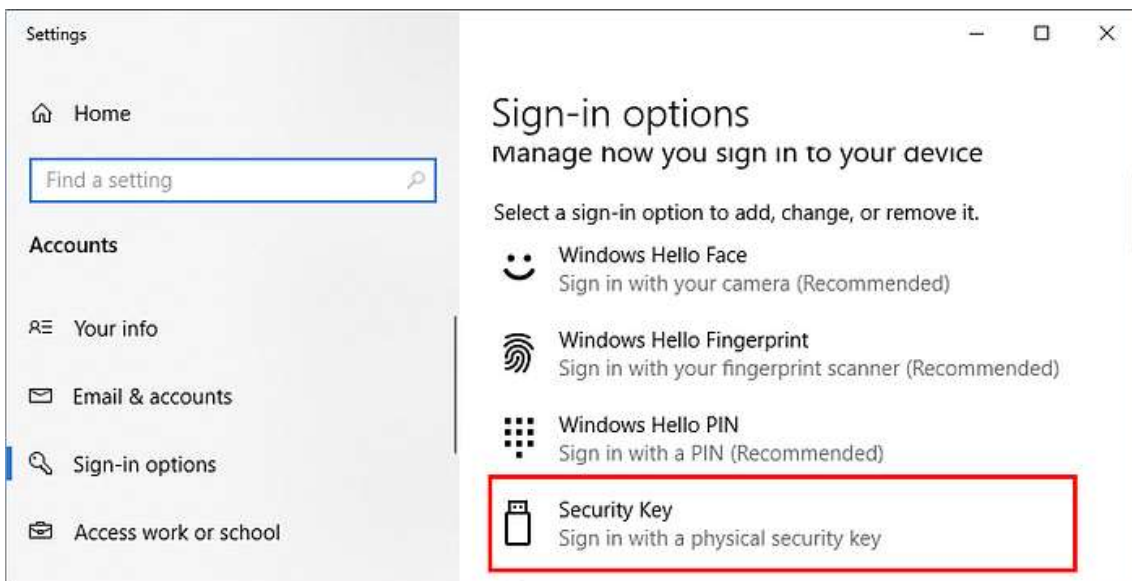
Resetting you security key in Windows 10

As noted, this is probably the best approach, assuming of course you are working from a Windows 10 host. Approach applies to all FIDO authenticators regardless of make, model or form-factor.

1. Press Windows + I to bring up the Settings app
2. In the search field, type "fido" and select either result (both appears to link to the same sign-in options view)
3. Select Security Key from the list and then click Manage
4. Touch the security key when prompted and then select Reset
5. Select Proceed and follow any additional prompt.



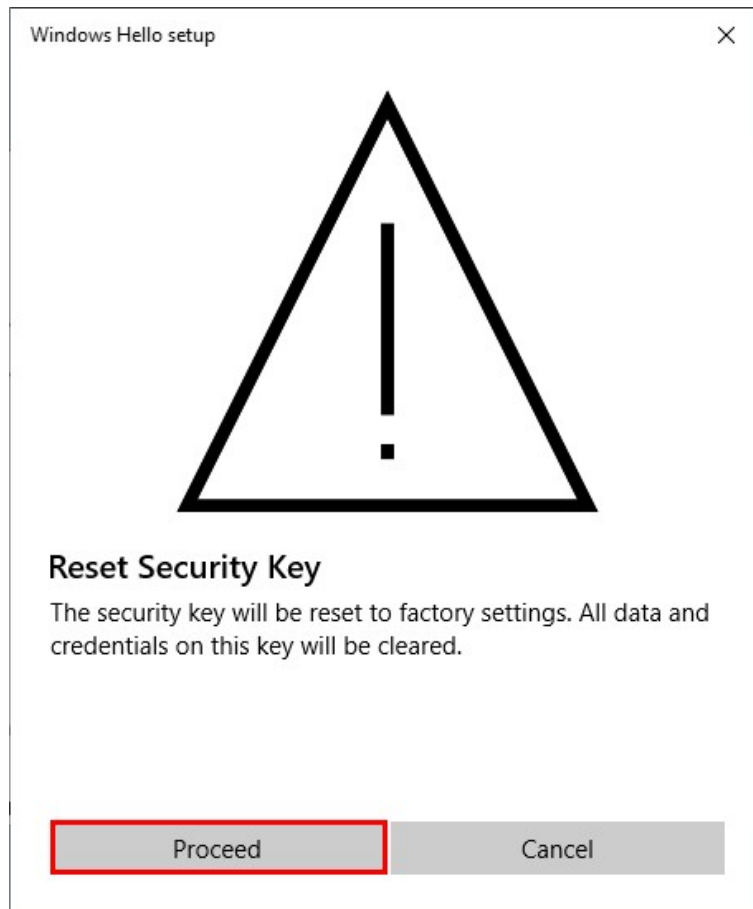
Search for “fido” and then select one of the results (will lead to the same screen)



Select “Security key” from the list of authenticators



Select "Reset" to proceed towards factory reset



Point of no return