ATKey.card User Guide

REVISION: 1.2
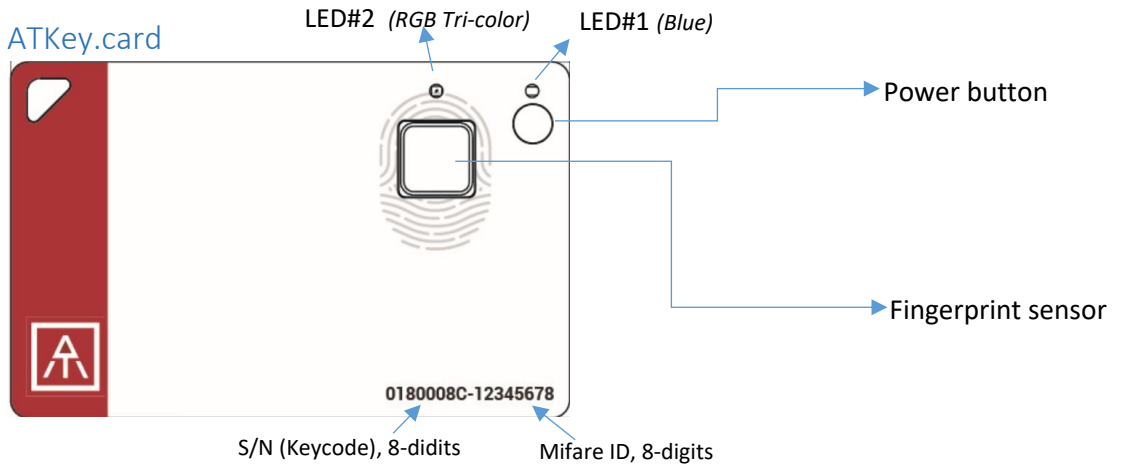
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Table of Contents

- Preface
  - ATKey.card

LED#2 *(RGB Tri-color)*   LED#1 *(Blue)*

Power button

Fingerprint sensor

0180008C-12345678

S/N (Keycode), 8-didits   Mifare ID, 8-digits

USB Connector (back side)

90mAh Li-on rechargeable battery

NFC Antenna area

0180008C-12345678

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- o Before Start (Enroll Fingerprint, Battery and LED)
  - 1st MUST item- **Enroll your fingerprint into ATKey.card**, then it can work for below functionalities.
    - Enroll through Windows app
    - Enroll through Mac app
    - Enroll through Mobile app (we wil   Fingerprint sensor
  - **Battery**
    - There is a 90mAh Li-on re-chargeable battery (through USB port)
    - Please do battery charge at your 1st time usage
      - o Insert card into USB port (PC or USB adapter) to start battery charging
      - o It will turn LED#1 ON (Blue) – power on the card
        - If you can't see the LED#1 is ON, please wait for a while because the Li-On battery protected by PCM, if the battery is low and never charge for a long time, it needs resume time to start the battery charging – so, please wait for minutes, LED will tune on to start battery charging
      - o During the charging, LED#2 shows RED flashing; if the LED#2 RED is off, it means full charged.
        - If the card inserts to PC USB port – it's USB mode, BLE is off
        - If the card inserts to USB power adapter – it's battery charging mode, BLE is still ON
    - If you find the LED#2 shows slow RED flashing, it means the card is in battery-low state, please do battery charge immediately.
  - **LEDs**

STATE	LED#1 (Blue)	LED#2 (tri-color, RGB)
Power ON/OFF	• **Blue flashing, then ON**	
Waiting for fingerprint (touch)	• **Blue flashing**	• **"Any Touch fingerprint" to confirm the pairing from host (White ON)** • **Fingerprint matching success (Green ON a second) or Fail (RED ON a second)** • **NFC ON (Green ON for 15 sec)**
Bluetooth/BLE		• **LED#2: Bluetooth broadcasting (blue flashing)** • **LED#2: BLE Connected (Blue ON)**
Battery		• **Low battery (slow RED flashing)** • **Battery charging (RED flashing)**

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- **Functionalities**

	Windows	Mac OS X	iOS	Android
USB HID	• Windows Hello • Fido U2F (Chrome browser) • Fido2 (Windows RS5, edge/Chrome/Firefox)	• Fido U2F (Chrome browser) • Fido2 (Chrome/Firefox)		
BLE	Windows Hello (Windows 10)	Mac Logon (Password replacement)	Fido U2F (Chrome browser, "Smart Lock" app)	
NFC				Fido U2F (Chrome browser, NFC)

- Main Functionalities:
  - ATKey.card for Windows – Windows Hello
  - ATKey.card for Mac – Mac login
  - ATKey.card for FIDO U2F
  - ATKey.card for FIDO2
  - ATKey.card for NFC reader (Mifare Type A Door locker)
 - Extra Highlights and Troubleshooting

  Connect to https://www.authentrend.com/atkey-card/ for more information.

  Visit https://fidoalliance.org/ for more FIDO information.

 or mail to contact@authentrend.com to contact.

1. Enroll fingerprint into ATKey.card

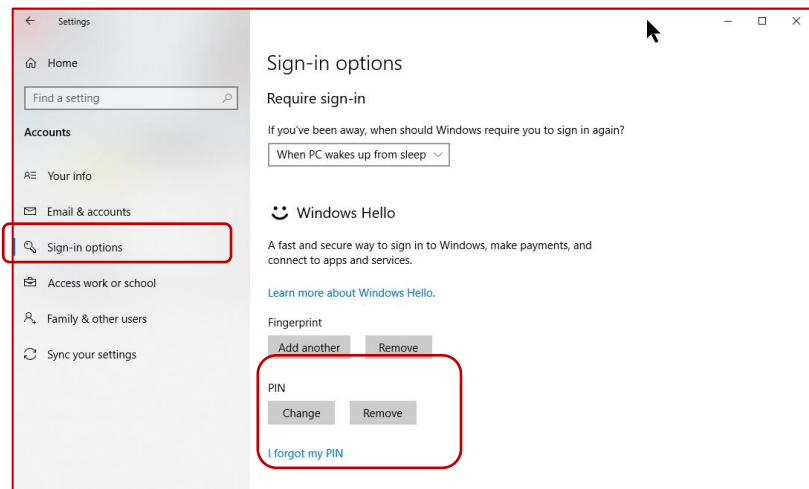## i) Enroll from Windows 10 (USB or BLE)

- This will also do "Companion" with Windows via CDF (Companion Device Framework) for Windows Hello
- Download app from Microsoft Store
    - Search by keyword (ATKey) or download from
      https://www.microsoft.com/store/productId/9P7GR8W9SJD3
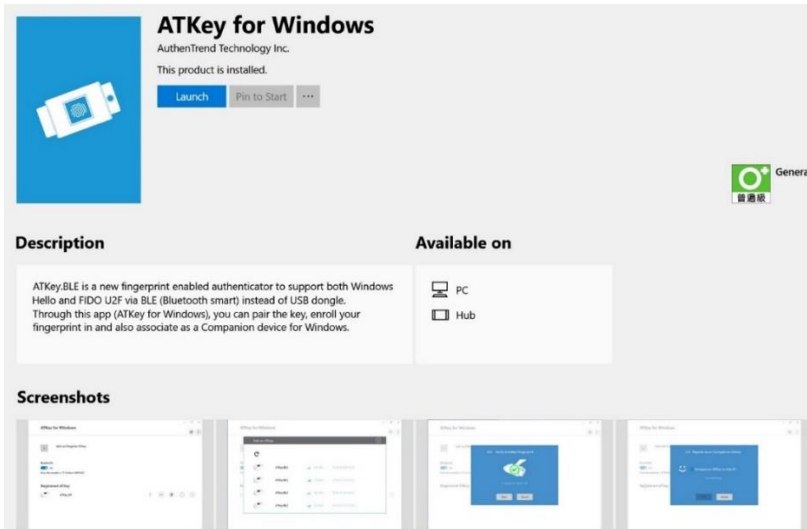
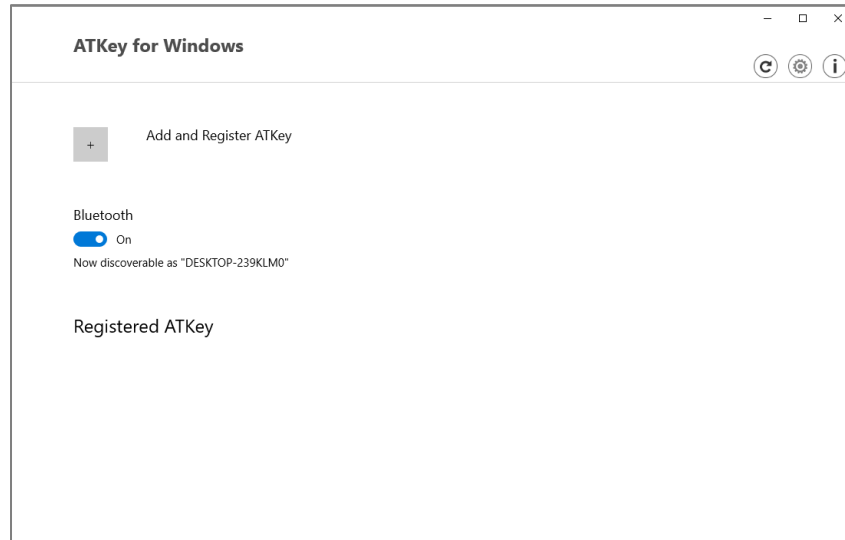- After installed, find "ATKey for Windows" icon
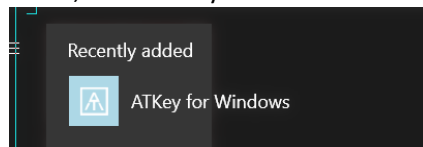
    - Before setup ATKey.card, please Enable PIN code for Windows Hello
        - Windows Settings => Accounts => Sign-in Option => Setup PIN
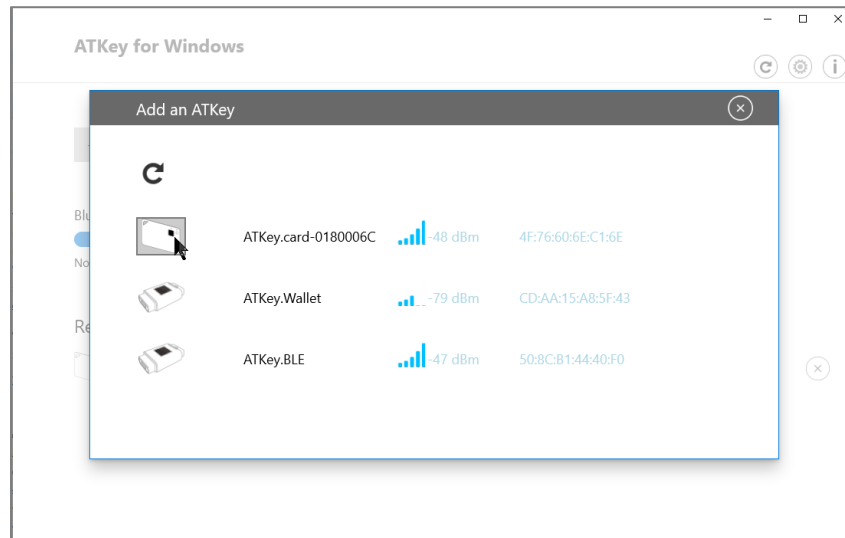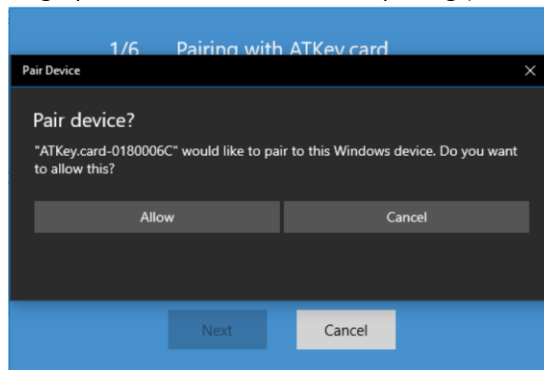

- Launch "ATKey for Windows" app

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- Click "Add and Register ATKey"

ATKey for Windows

+   Add and Register ATKey

Bluetooth
On
Now discoverable as "DESKTOP-239KLM0"

Registered ATKey
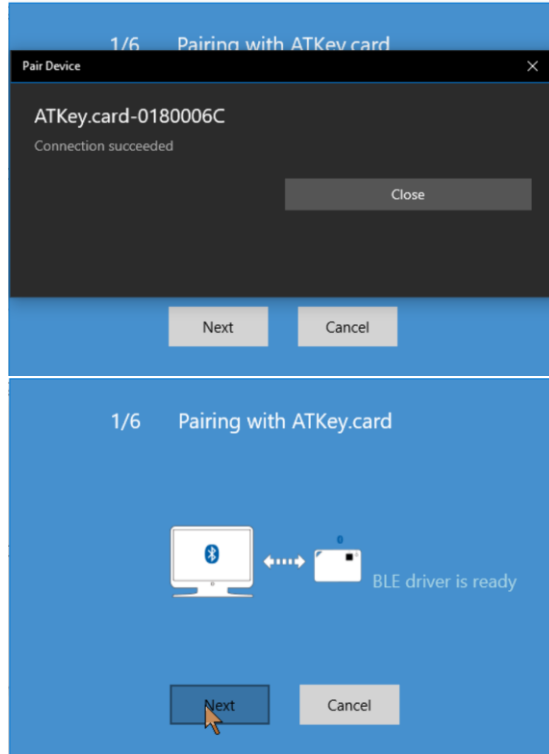
- (Bluetooth mode) Pick and click the specific ATKey.card to connect: check the 8-digits S/N (Keycode) on card

ATKey for Windows

Add an ATKey ⊗

ATKey.card-0180006C   -48 dBm   4F:76:60:6E:C1:6E

ATKey.Wallet   -79 dBm   CD:AA:15:A8:5F:43

ATKey.BLE   -47 dBm   50:8C:B1:44:40:F0

- (Bluetooth mode: 1/6) pair Windows and ATKey.card – "Allow" from app and also touch Fingerprint on card to confirm the pairing (LED#2 of card is WHITE flashing)

1/6   Pairing with ATKey card

Pair Device   ×

Pair device?
"ATKey.card-0180006C" would like to pair to this Windows device. Do you want to allow this?
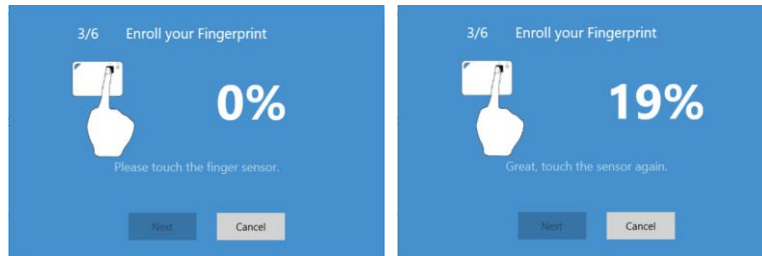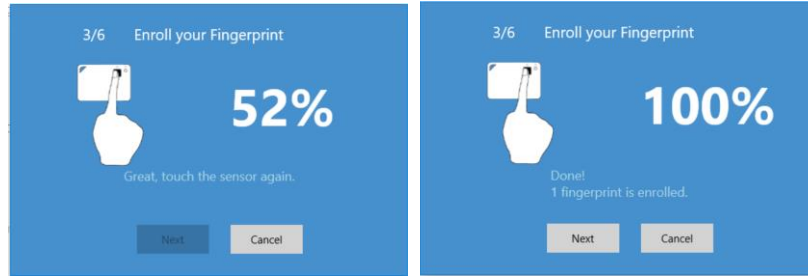
Allow   Cancel

Next   Cancel

- (Bluetooth mode: 2/6) enter a name of the card – you can have your own name, or just keep the original unique name with S/N (Keycode)
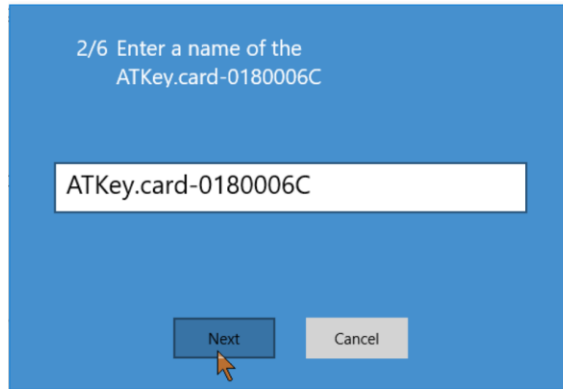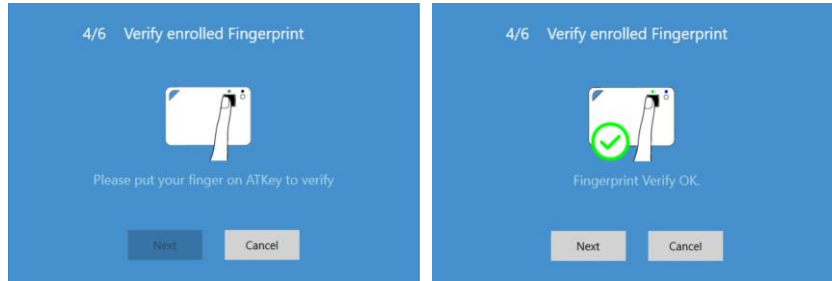

- (Bluetooth mode: 3/6) Enroll your fingerprint into card – touch and lift by the specific finger base on same angel, but slightly moving fingerprint to enroll wide fingerprint area, it needs around 16 times enrollments.
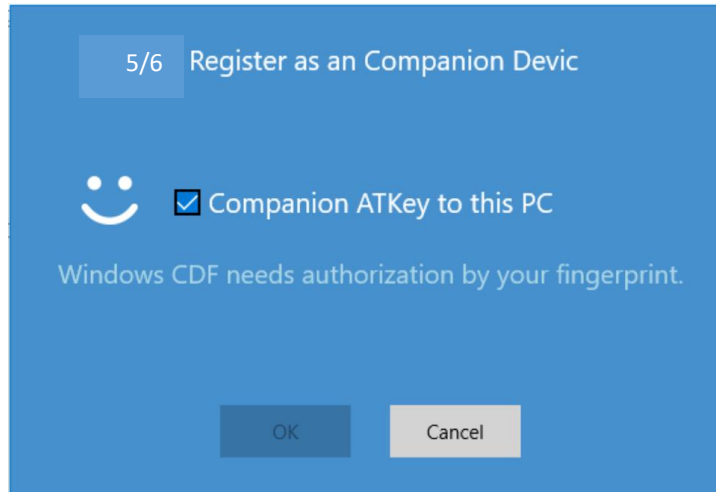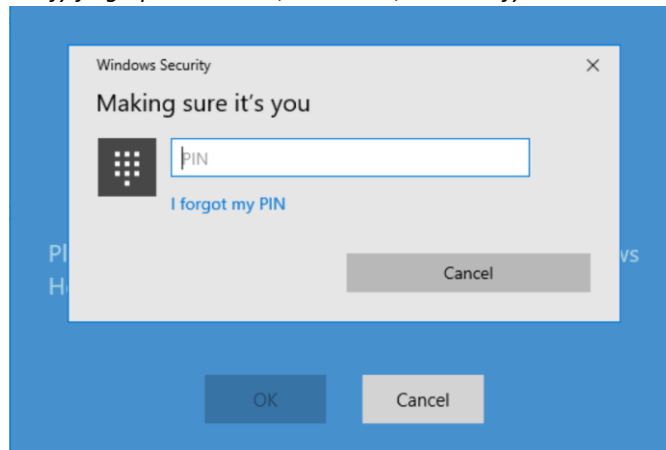
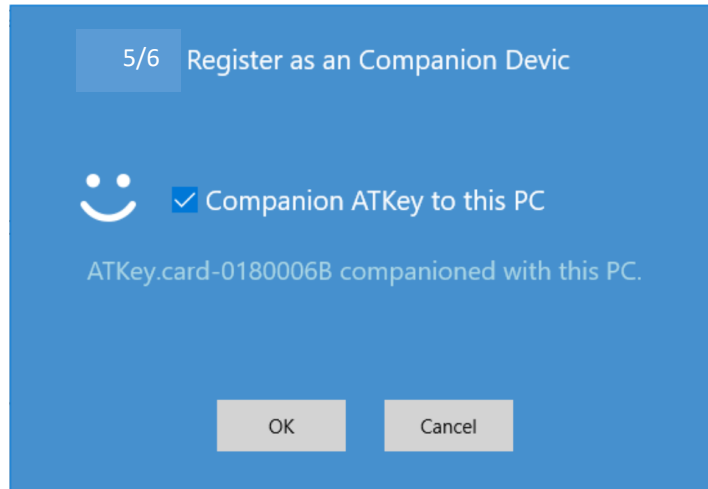- (Bluetooth mode: 4/6) Verify enrolled fingerprint

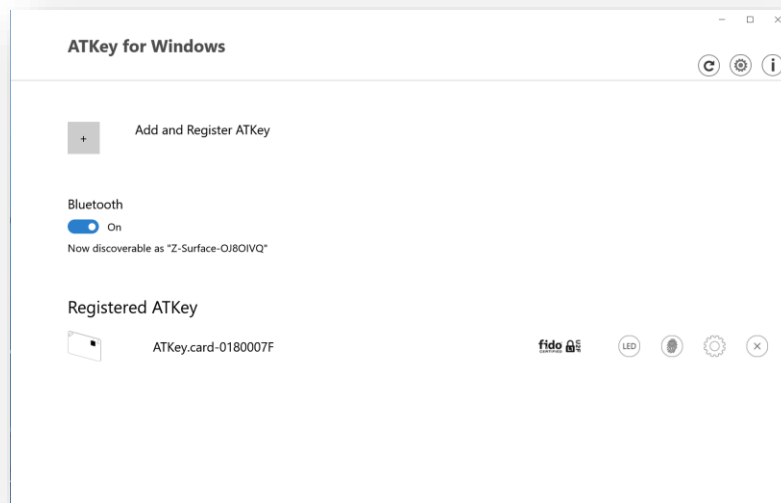- (Bluetooth mode: 5/6) Register Card as Windows 10 Companion device for Windows Hello

- *Verify fingerprint on card, "Success", then verify PIN code on Windows*

- (Bluetooth mode: 6/6) enable "Dynamic Lock" – **please ignore this one now (un-check)** since it seems Windows 10 may only enable this feature with Smart Phone.

- Now, your ATKey.card is ready there

- 🖐 *You can add/delete fingerprints (max. is 10)*
- ⚙ *You can check ATKey.card configurations (firmware version, Battery, Bluetooth information, rename the card)*
- ⊗ *You can remove the card from Windows*

- Now, your ATKey.card is ready with fingerprint and also companioned with this Windows
  - USB is also ready now, since it's HID device, no extra driver needs, just insert into USB port, Windows will detect and recognize ATKey.card as a HID device.

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ii) Enroll from Mac (BLE)
   o This will also do "Companion" with Mac via Bluetooth as password replacement
   o Download app from: https://authentrend.com/download/ATKeyForMac.zip
     • Please make sure your app is v1.1.6 or later versions, or you can upgrade version from "Check for updates" from app
   o Install app "ATKey for Mac"
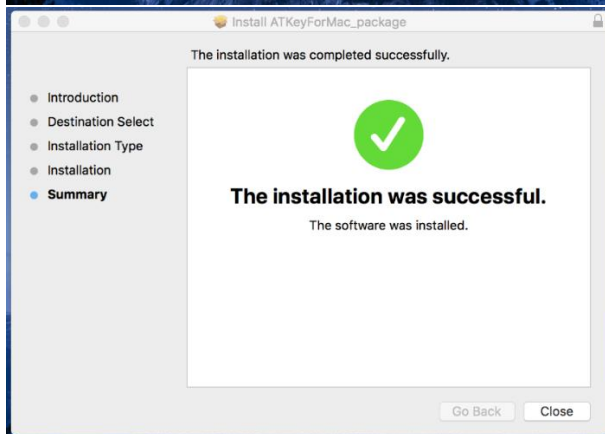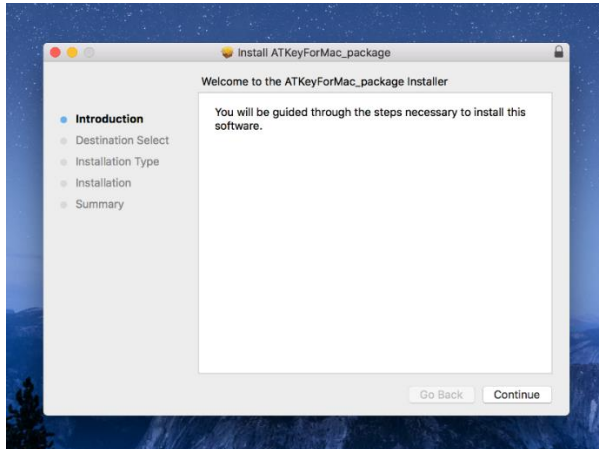
   o Please unlock "ATKeyforMac.app" from Security & Privacy

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    o   App is working now, please enable Bluetooth of Mac also

    o   Click "Settings" to app
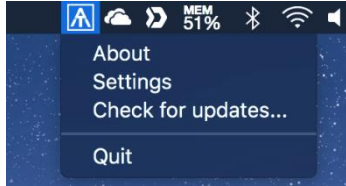
- (Bluetooth mode) Click "Add and Register ATKey"
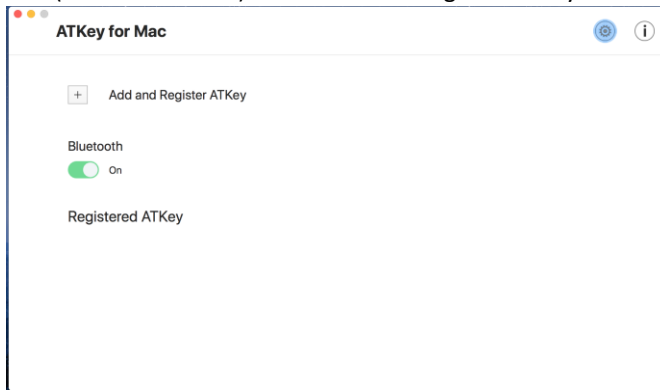
- (Bluetooth mode, 1/5) Click the specific ATKey.card by unique S/N (Keycode) on card to pair
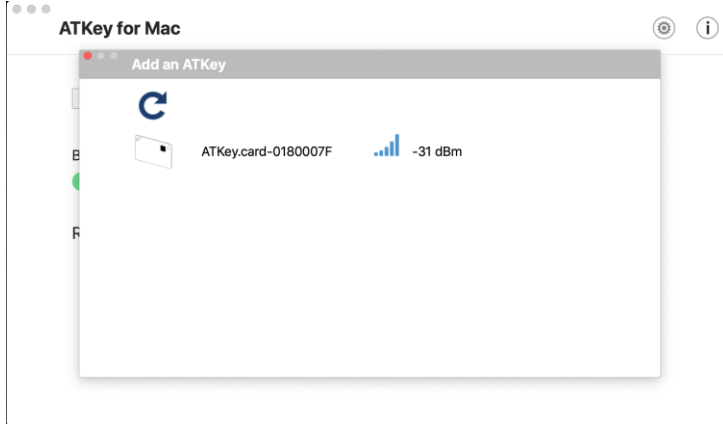
- (Bluetooth mode, 2/5) Click the specific ATKey.card by unique S/N (Keycode) on card to pair and also have name for the card - default name is base on S/N (Keycode).

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2/5 Enter a name of the ATKey

ATKey.card-0180007F

Cancel   Next
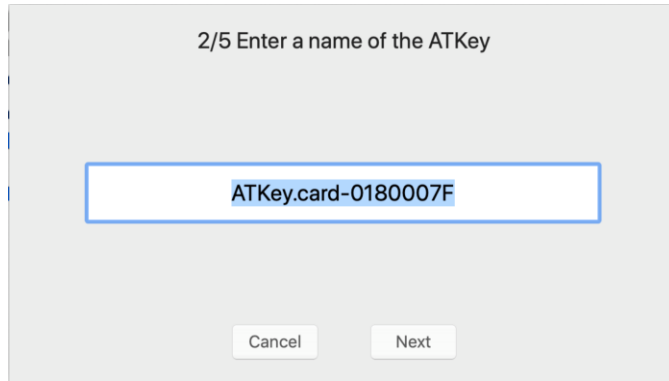
- (Bluetooth mode, 3/5) Enroll your fingerprint into card – touch and lift by the specific finger base on same angel, but slightly moving fingerprint to enroll wide fingerprint area, it needs around 16 times enrollments till 100%

- (Bluetooth mode: 4/5) Verify enrolled fingerprint
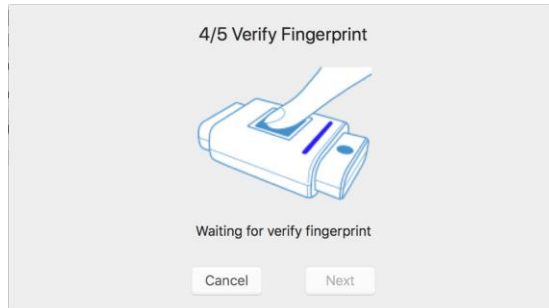
- (Bluetooth mode: 5/5) Register as a Companion Device (to unlock/lock Mac)
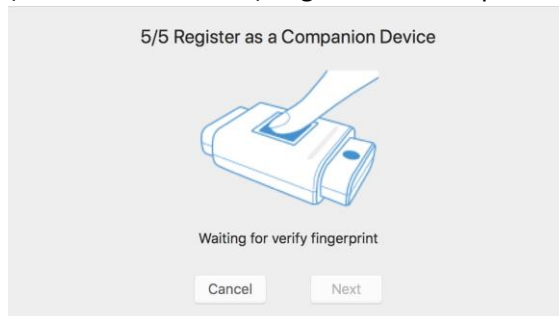
- Next to confirm your Mac login password – Same as app install, we need your password to authorize it; in addition, we will leverage this password at every login (when fingerprint verify passed!); so if you change your login password, please remember to change it inside app
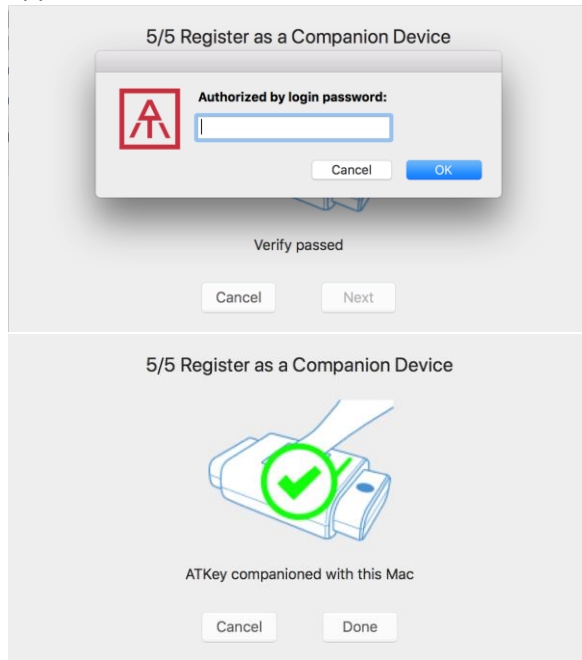
- Then, we will guide you to the setting as reminding – enable "Require password: immediately" from "Security & Privacy Settings"
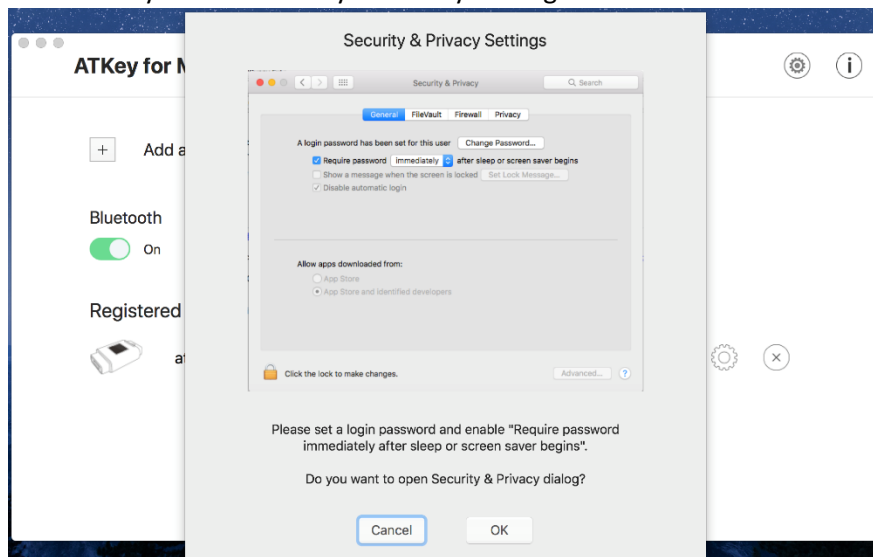
- Paired and Companioned ATKey to your Mac, and the ATKey listed in app
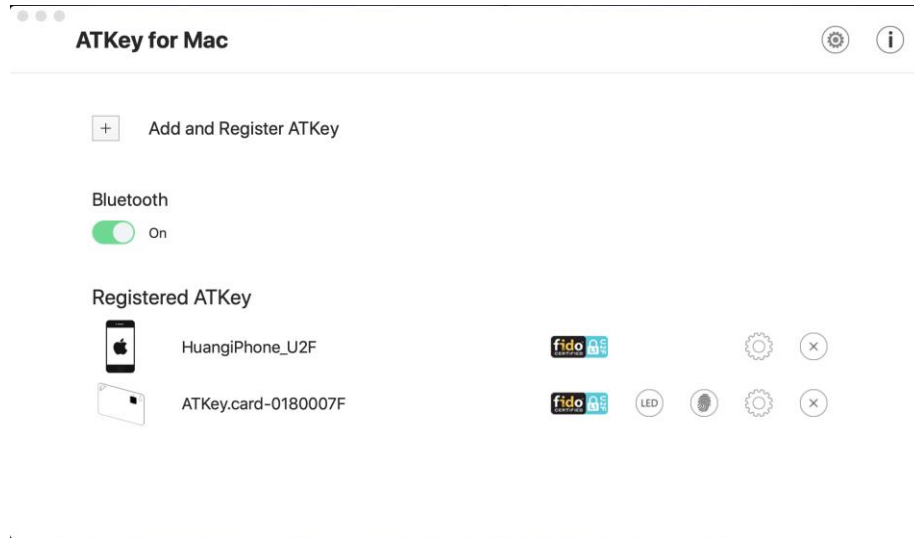
- Buttons of the "ATKey for Mac":
  - "LED": click it, BLUE LED of the ATKey will enable, and flashing for 5 sec. - this is helpful to identify the registered ATKeys if you have a lot of ATKeys there.
  - Fingerprint(s): add (up to 10), delete (delete all), Calibration (re-calibrate fingerprint sensor if you found FRR getting worse or slow response)
  - "Configure":
    - Key information
    - BLE information
    - Rename
    - **Re-Companion with Mac: if you change Mac login password, please re-companion and type in new password here.**
  - "Remove": Remove this ATKey from this Mac

iii) Enroll from iOS (Later schedule)
iv) Enroll from Android (Later schedule)

2. ATKey.card for Windows Hello

- Windows Hello (Windows 10, USB or BLE)
  - o ATKey can work for multiple Windows if they were companioned; but one Windows can just allow one ATKey.
    - Please check here for the detail to companion ATKey and Windows
  - o Windows Logon (Windows Hello)
    - Message on Windows logon screen
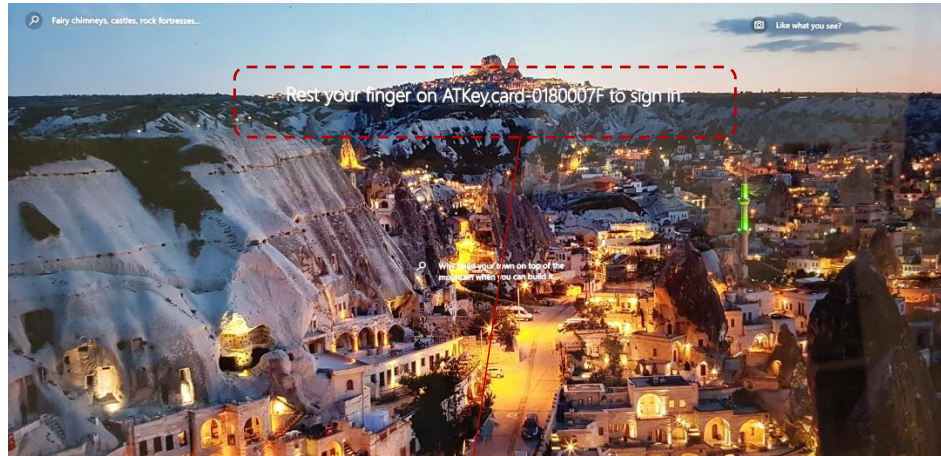
*When this message comes (LED#1 of ATKey is **blue flashing**), you can logon via ATKey fingerprint matching;*
If the message is not showing, you may need to hit "Space bar" sometimes to push Windows checks Companion Device to show.

- Via USB – when LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login

- *ATKey is doing battery charging at the same time:*
  - ➢ *LED#2 is RED flashing;*
  - ➢ *LED#2 is off at full charging;*
- *ATKey Bluetooth is off when it is in USB data mode.*

- Via BLE – Press Power button of ATKey, it will ON with BLE broadcasting (LED#2 is blue flashing) to all paired devices to connect, ideally it will connect the near one

since it's base on RSSI; when the ATKey connected to the target Windows (LED#2 is blue ON), then LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login
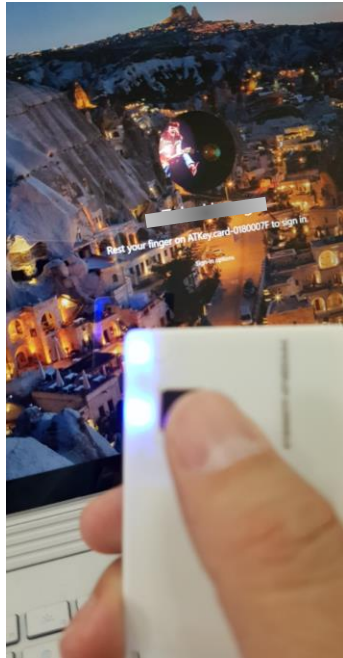
- *ATKey will be off automatically if there is no "operations" or "interactions" for 60 seconds.*

3. ATKey.card for Mac Login

- Companion ATKey.card and Mac
  - [Check here for the detail to enroll fingerprint and also companion ATKey with Mac](#)
  - *Only for warm boot (sleep, hibernate), we can't support login at cold boot (restart, shutdown)*
- Via BLE – Press Power button of ATKey, it will ON with BLE broadcasting (LED#2 is blue flashing) to all paired devices to connect, ideally it will connect the near one since it's base on RSSI; when the ATKey connected to the target Mac (LED#2 is blue ON), then LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login
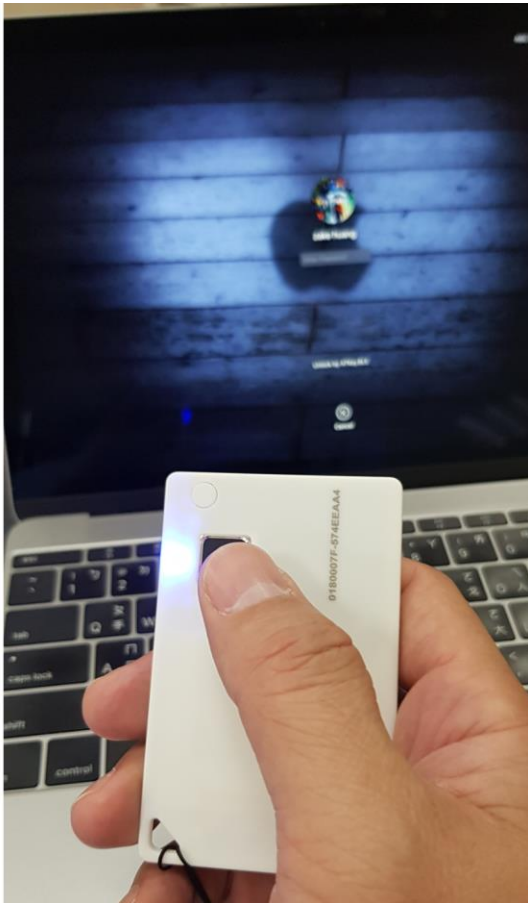

- *If your Mac starts from "cold boot" and "Restart", it did not allow ATKey as authenticator to login*
- *"ATKeyforMac app" must be alive*
- *ATKey will be off automatically if there is no "operations" or "interactions" for 60 seconds.*
- *We did not support USB mode to login Mac yet.*

17

4. ATKey.card for FIDO U2F

- Browser base but Chrome only - One Card for Windows, Mac, iOS and Android
- Here are FIDO U2F ready services: [fido U2F]

Or you can search and find available FIDO U2F certified server here:

https://fidoalliance.org/certification/fido-certified-products/?appSession=8YT7Z25V0DOH6M41OQG26WI22N0F6D5MF9W19F58545OZWKJPBOH5XMB874A6596S8432G491GGF12B5Y7PIAM6PKR09S5G9Z3Q9T0FLK91C5445079DO1NWZFP8714Q

- (USB) FIDO U2F from Windows (Windows 7/8/8.1/10) and Mac OS – Chrome browser
  - o Take Google as example:
    - Login your Google account
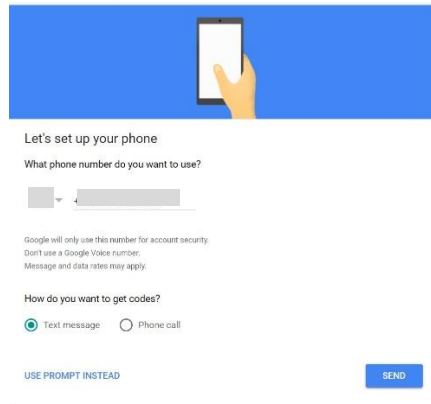   - Enable 2FA from "Sign-in & Security"
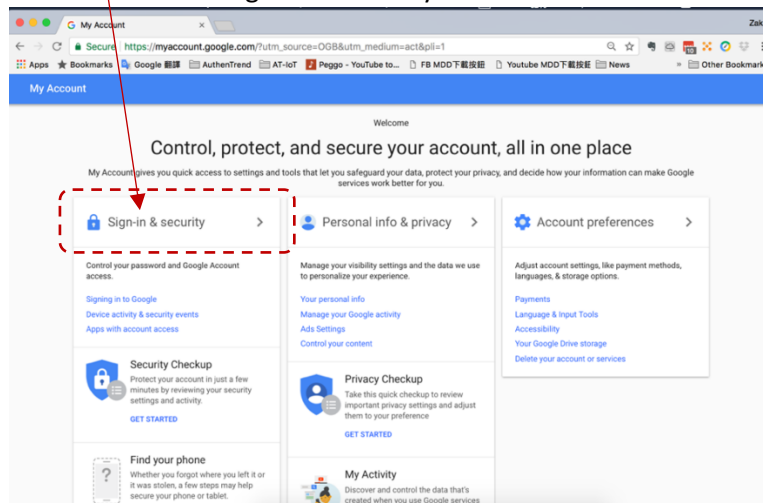
- Turn 2-step Verification ON
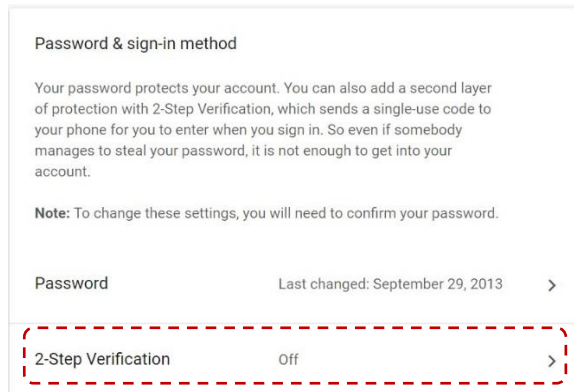
- Following Google steps

- *login again by ID/Password*
- *Add your mobile phone in and select "Text message"*
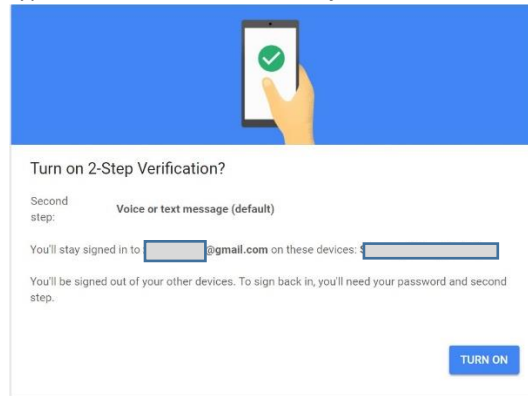
- *Type-in received SMS code to confirm to turn on "2-step verification"*

- *Page down to find "Security Key" and "ADD SECURITY KEY"*

19

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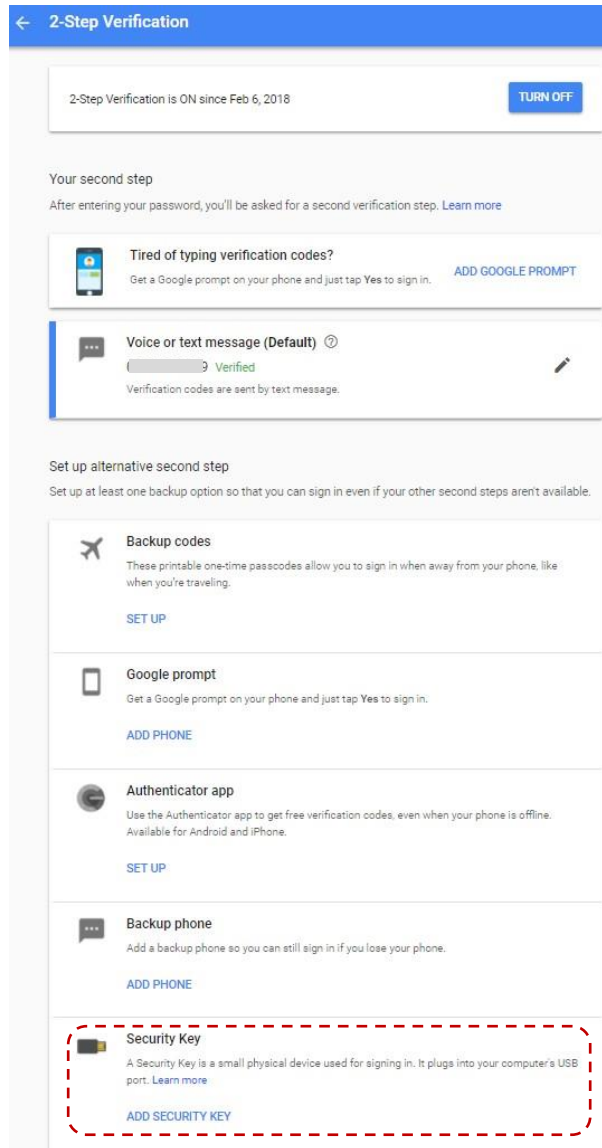
o *Prepare the ATKey – insert ATKey.card to USB port, click "NEXT" to register the key*
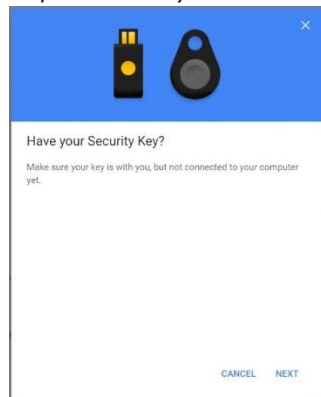
o *Register ATKey here*
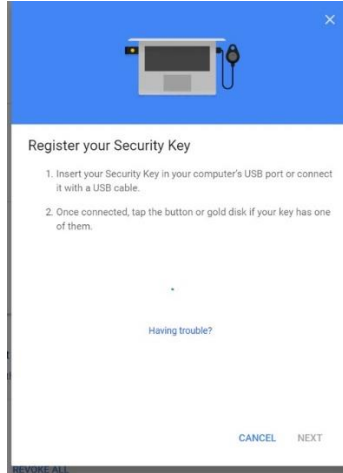
- LED#1 of ATKey.card is flashing, touch by your registered finger, when Green LED is ON, it means fingerprint verified and register this ATKey to Google U2F server; if Red LED is on, it means fingerprint failed, wait and verify again

o *Register ATKey done, type-in the name of the key (you can use the name of your ATKey, or any Nick name you can remember which key is)*
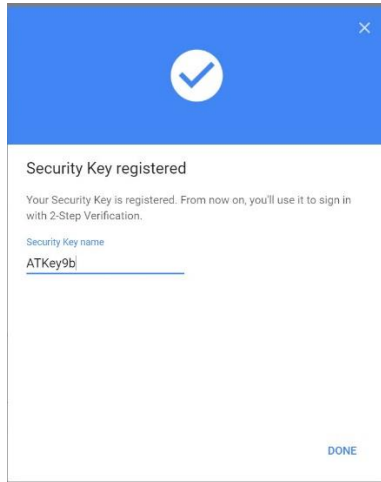
o *Then you can see the registered ATKey shows there:*
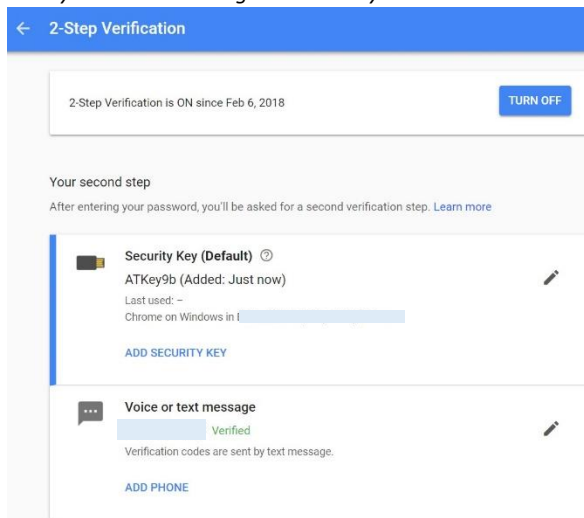
o *You can re-login the google account, ID/Password first, then it will request 2ⁿᵈ factor – LED#1 is blue flashing, touch to verify your fingerprint to login*
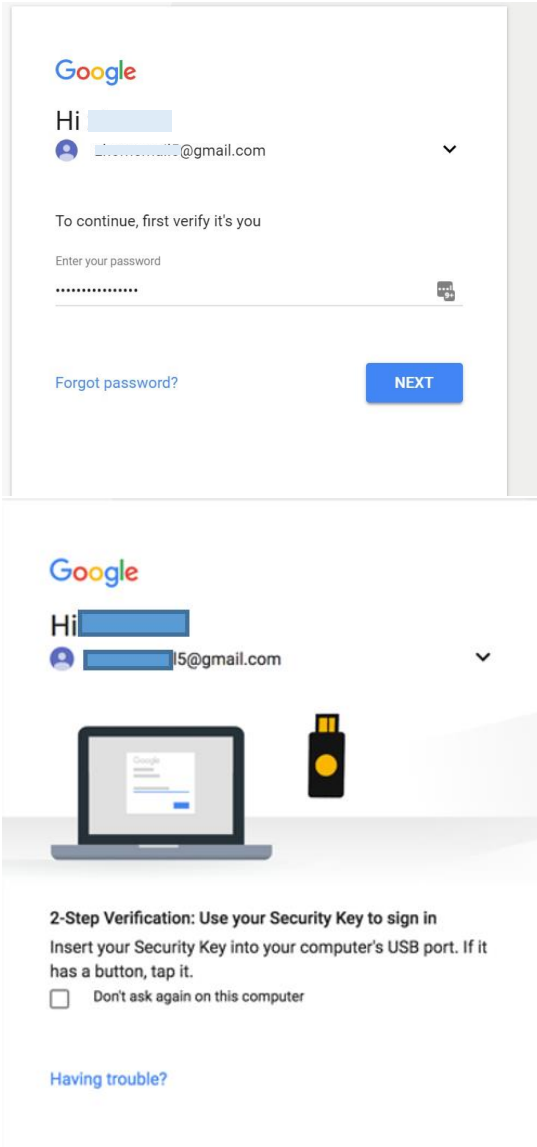
o *For other U2F enabled service:*
- Dropbox: https://www.dropbox.com/help/security/enable-two-step-verification
- Facebook: https://www.facebook.com/notes/facebook-security/security-key-for-safer-logins-with-a-touch/10154125089265766/
- Github: https://help.github.com/articles/configuring-two-factor-authentication-via-fido-u2f/
- Salesforce: https://help.salesforce.com/articleView?id=security_u2f_enable.htm&type=5

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- (Bluetooth) FIDO U2F via iPhone/iPad (iOS) – app "Smart Lock" and Chrome browser
  - o Smart Lock (download from app store)

    Smart Lock

    - ▪ Add your Google account in
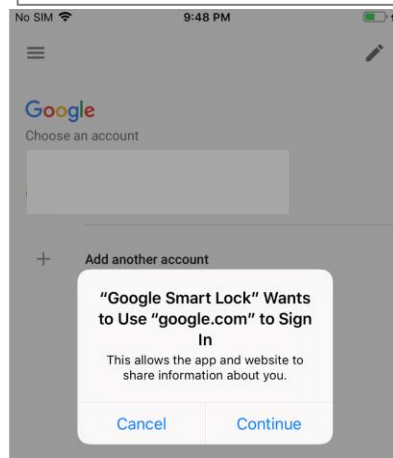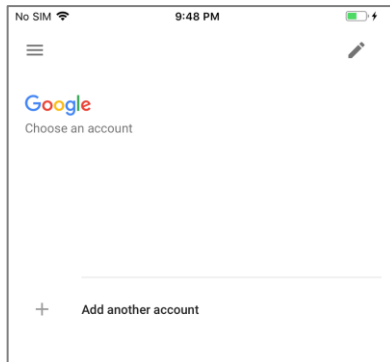
    - ▪ Pair your Security Key (ATKey)
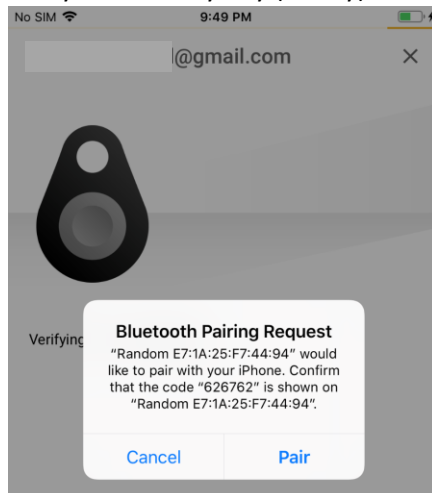
      - Pair ATKey.card and iPhone
        - o ATKey.card: LED#2 is WHITE ON, touch fingerprint to confirm the pairing
        - o iPhone: click "Pair" to continue

      - when it's done, showing the google account in "Smart Lock" as below screenshots
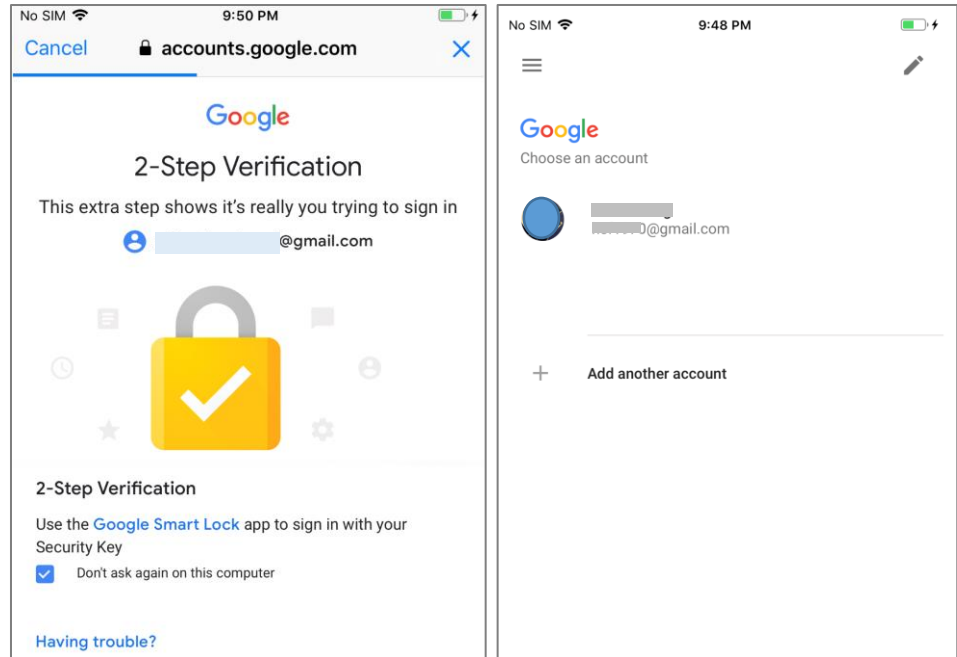
- o Chrome Browser – login your google account by U2F
  - Login by ID/Password first, then need to power on ATKey.card …, to verify fingerprint to login

> Power on ATKey.card now, they will connect (LED#2 is blue ON) to request fingerprint verification (LED#1 is flashing)

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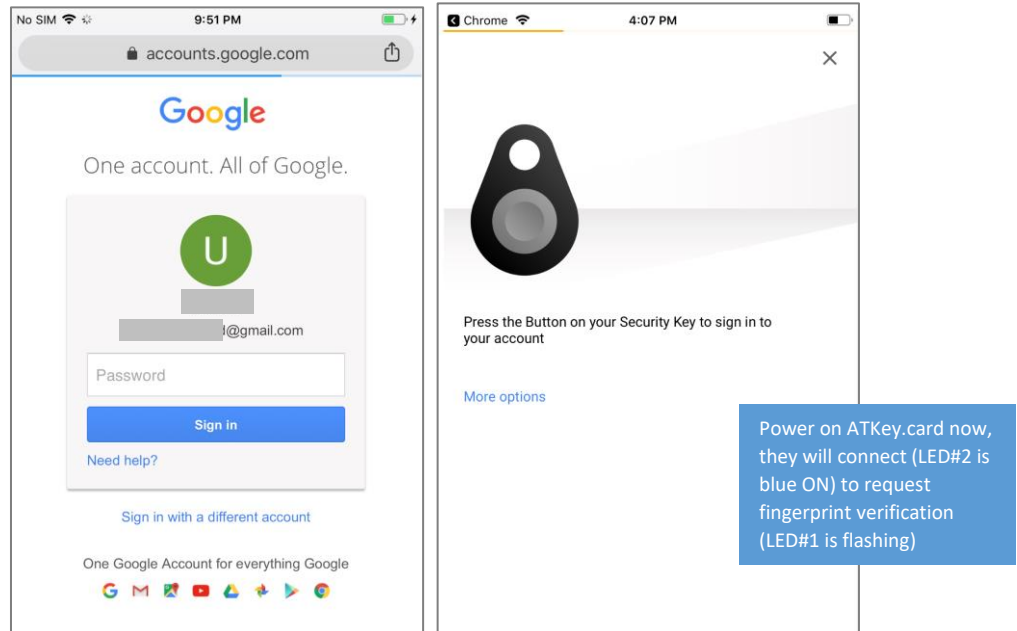
- (NFC) FIDO U2F via Android phone/tablet – Chrome browser
  - o Sign in Google account via Chrome browser
    - ID/Password first
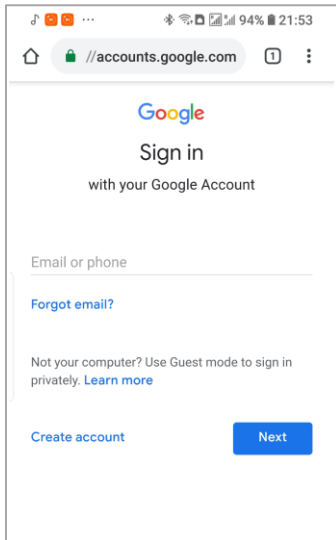
    - Request Security Key and turn on NFC
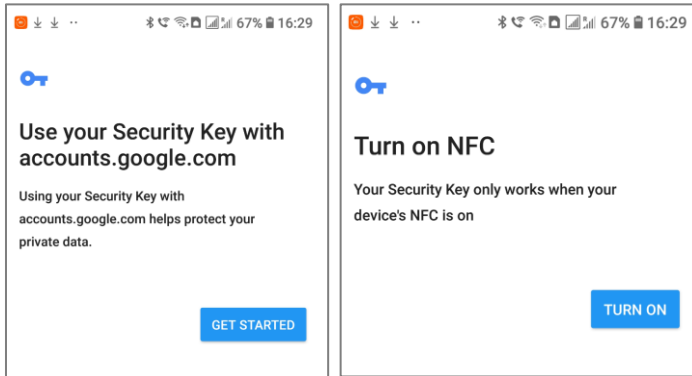
    - Authenticate via ATKey through NFC

- Power on ATKey.card
- LED#1 is flashing, just touch fingerprint to verify to enable NFC (for 15 sec.)
- ATKey.card contacts Android Phone (back side) to send U2F token via NFC (JavaApplet) to Phone to server for authentication

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5. ATKey.card for FIDO2

- Please check https://fidoalliance.org/fido2/ for more ideas about FIDO2
- ATKey.card is FIDO2 certified

Link of the certified products:

(https://fidoalliance.org/certification/fido-certified-products/?appSession=276TI9VOA93161HHGNKF95CK9973MQT6H7HW96L3C707U348CS8TDF7GLM6YZ3TT333P4XNQ4G35ZOXO66JV16382X3H96SC91X20J5U4929JH452SNN6BW98QKD2L1B)

- Browser base (WebAUTHN – Edge, Chrome) for Windows and Mac via USB only
  - Windows 10 RS5, Edge browser must be v44.17738.1000.0 or later version
  - Chrome Canary browser v70.0.3528.0 or later version; and please follow below screenshot to enable flags.
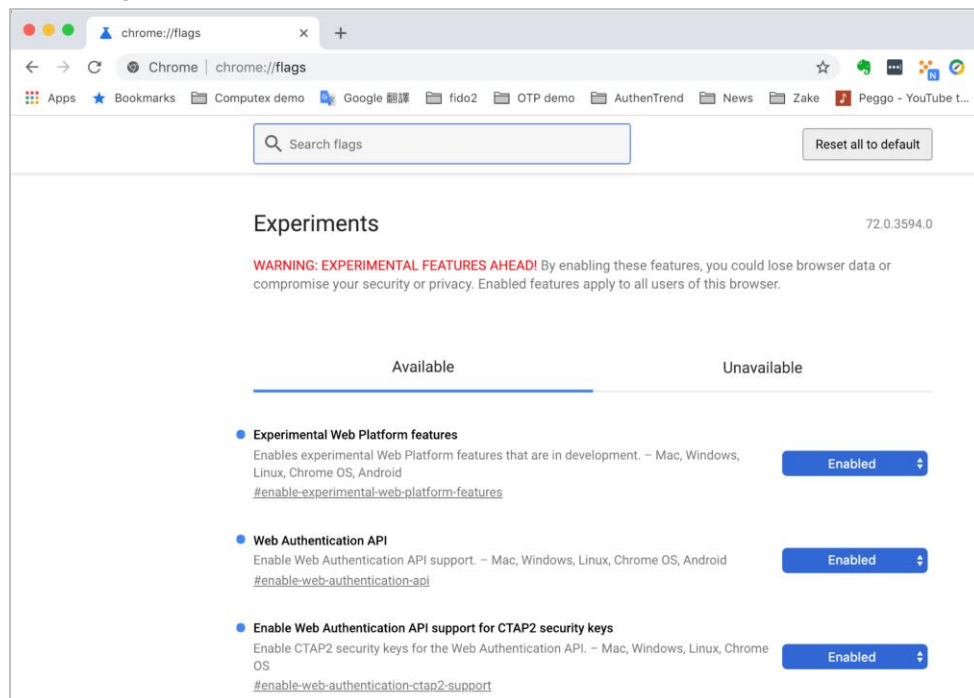
- o FIDO2 server
  - Please check below certified FIDO2 server to try with ATKey.card (USB only)
  https://fidoalliance.org/certification/fido-certified-products/?appSession=735HXT4BHP6S5B453PCZH40LZB8J07Y1PJH7C6Z5PNHR57GTRVEV492OWX3E8R YS335G6IU935S92W99707J73Q1KS1385CC6Y2AY15T5197JR1K5C212T703WTBY31Z

6. ATKey.card for NFC Reader

- ATKey.card is a NFC tag type for ISO14443 & Mifare Type A NFC reader
  - Mifare ID is resident and unique ID inside SE/NFC chip
  - For NFC door locker
    - If there is a "Mifare ID table" in the backend of NFC card reader (Door NFC reader), just need to copy Mifare ID of those specific cards
    - Or register ATKey.card to Mifare Type A NFC door locker
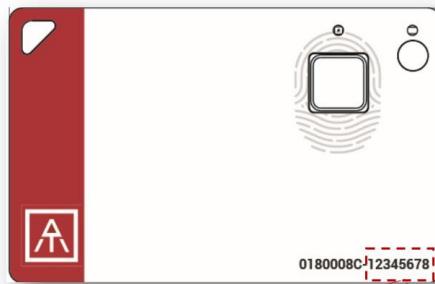
- Extra Highlights and Trouble Shooting
  - Pending mechanism for security
    - Security level is high: Fingerprint FAR < 1/50000, FRR < 2%
    - For even higher security, we support "lock" mechanism to avoid trying by fake fingerprint continuously
      - Allow 5 times fingerprint verifications, if it fails 5 times continuously:
      - 1st time: lock card for 1 hour
      - 2nd time or later: lock card for 12 hours

  - Battery
    - From factory finish good, it is 3.8V (~50%)
    - Battery low is 3.67V (~35%), please do battery charge
    - If the battery is lower than 3.4V, ATKey.card can not boot
      - You need doing battery charge for a while (ATKey.card is no response at beginning), then ATKey.card can boot again
    - If the battery is lower than 3.0V, battery protects by Hardware (PCM)
      - You need doing battery charge for a while (no response from ATKey.card for a while).

  - Bluetooth
    - We are BLE mode (Bluetooth smart), it's low power consumption (comparing with Bluetooth mode)
    - ATKey.card is USB data mode (insert PC or ..), we will stop BLE mode; but if ATKey.card is USB battery charging (using USB power adapter), BLE is still ON.

  - Demo Video
    - https://youtu.be/zfGS9shUiMs (Setup ATKey.card)
    - https://youtu.be/3budV7ji250 (ATKey.card for NFC door, PC)
    - https://youtu.be/MAomJowMuzc (ATKey.card for Mac)
    - https://youtu.be/fiAaX7PsNvk (ATKey.card for FIDO U2F: PC)
    - https://youtu.be/IzewBCCXyvA (ATKey.card for FIDO U2F: Android)
    - https://youtu.be/6SwYWws07IA (ATKey.card for NFC door)

AUTHENTREND

- FCC and NCC statement

FCC Label Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To assure continued FCC compliance:
Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Exposure to Radio Frequency Radiation:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

NCC警語:

本產品符合低功率電波輻射性電機管理辦法 第十二條、第十四條等條文規定
1. 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
2. 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。