



MyID MFA and PSM

Version 5.0.8

YubiKey Reprogramming Guide

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Conventions used in this document

- Lists:
 - Numbered lists are used to show the steps involved in completing a task when the order is important.
 - Bulleted lists are used when the order is unimportant or to show alternatives.
- **Bold** is used for menu items and for labels.
For example:
 - Record a valid email address in '**From**' email address.
 - Select **Save** from the **File** menu.
- *Italic* is used for emphasis:
For example:
 - Copy the file *before* starting the installation.
 - Do *not* remove the files before you have backed them up.
- ***Bold and italic*** hyperlinks are used to identify the titles of other documents.
For example: "See the ***Release Notes*** for further information."
Unless otherwise explicitly stated, all referenced documentation is available on the product installation media.
- A `fixed width` font is used where the identification of spaces is important, including filenames, example SQL queries and any entries made directly into configuration files or the database.
- **Notes** are used to provide further information, including any prerequisites or configuration additional to the standard specifications.
For example:
Note: This issue only occurs if updating from a previous version.
- **Warnings** are used to indicate where failure to follow a particular instruction may result in either loss of data or the need to manually configure elements of the system.
For example:
Warning: You must take a backup of your database before making any changes to it.

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1 Introduction

This document describes the process for configuring your YubiKey device so that you can use it to authenticate YubiKey-generated One Time PINs (OTPs) locally, without requiring access to the internet-based YubiKey servers for validation.

Note: MyID MFA and MyID PSM were previously known as Authlogics products. Authlogics is now an Intercede Group company and the products have been rebranded accordingly. The term 'Authlogics' may still appear in certain areas of the product.

1.1 Considerations

You must have MyID Multi-Factor Authentication (MFA) version 4 or above installed, configured, and fully operational. You must also provision all users issued with YubiKey devices with MyID One Time Codes (formerly known as PINpass) before customizing and provisioning YubiKeys for local MyID server validation.

1.2 Change history

Version	Description
IMP2048-01	Reformatted and released with MyID MFA and PSM version 5.0.7.
IMP2048-5.0.8	Released with MyID MFA and PSM version 5.0.8.

2 YubiKey personalization

Intercede introduced the ability to process YubiKey generated one-time codes locally in MyID Multi-Factor Authentication version 4. Before you can use your YubiKeys locally without requiring them to be validated using the YubiKey published servers over the internet, you must customize and configure the devices for MyID use.

The process described in this chapter generates a Comma Separated Value (CSV) file that you can import into MyID MFA.

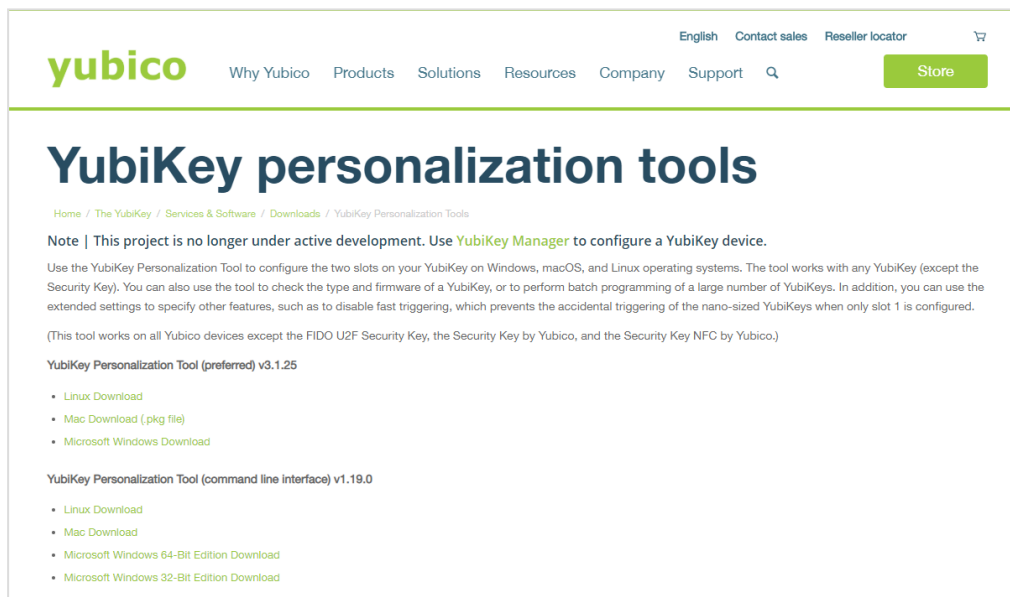
Note: If you do not customize the YubiKey according to the instructions in this chapter, YubiKey OTPs are still sent to YubiKey-hosted servers on the Internet, and no local server processing occurs. As such, outbound Internet access to the YubiKey servers is still required from the MyID Authentication servers.

2.1 Configuring YubiKey devices

You can carry out the customization using the YubiKey Personalization Tool.

You are recommended to use the Graphical User Interface version, not the command-line tool. You can download this tool from the YubiKey website:

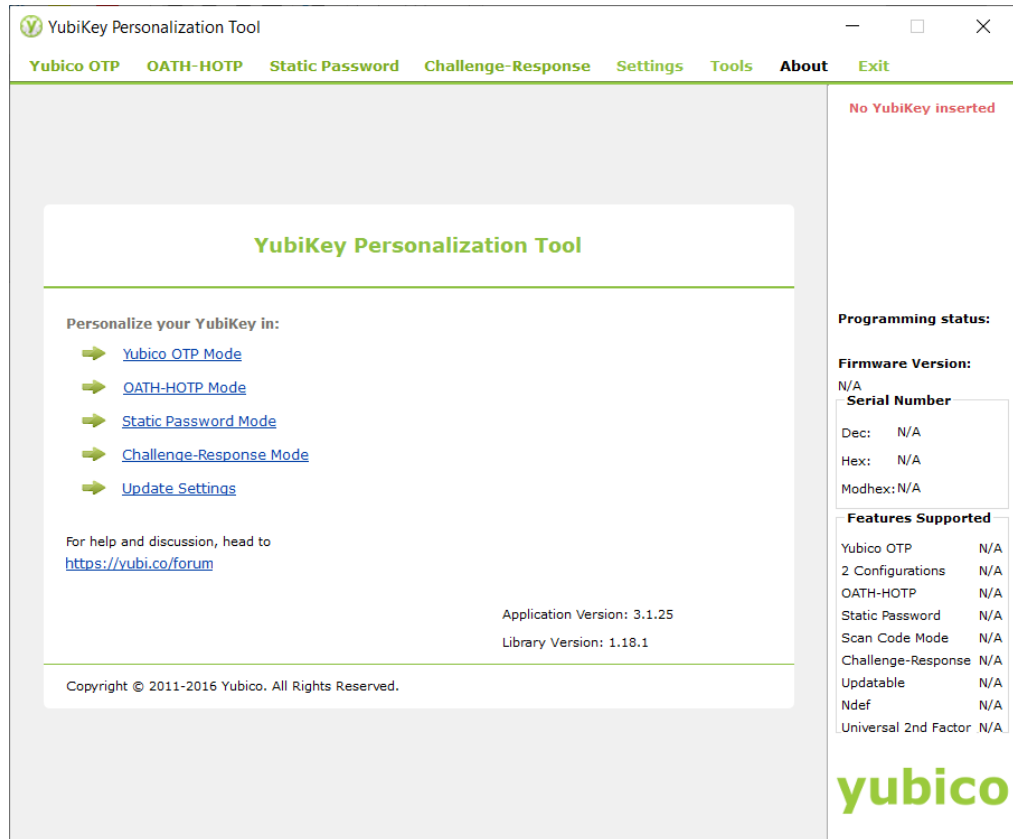
www.yubico.com/products/services-software/download/yubikey-personalization-tools/



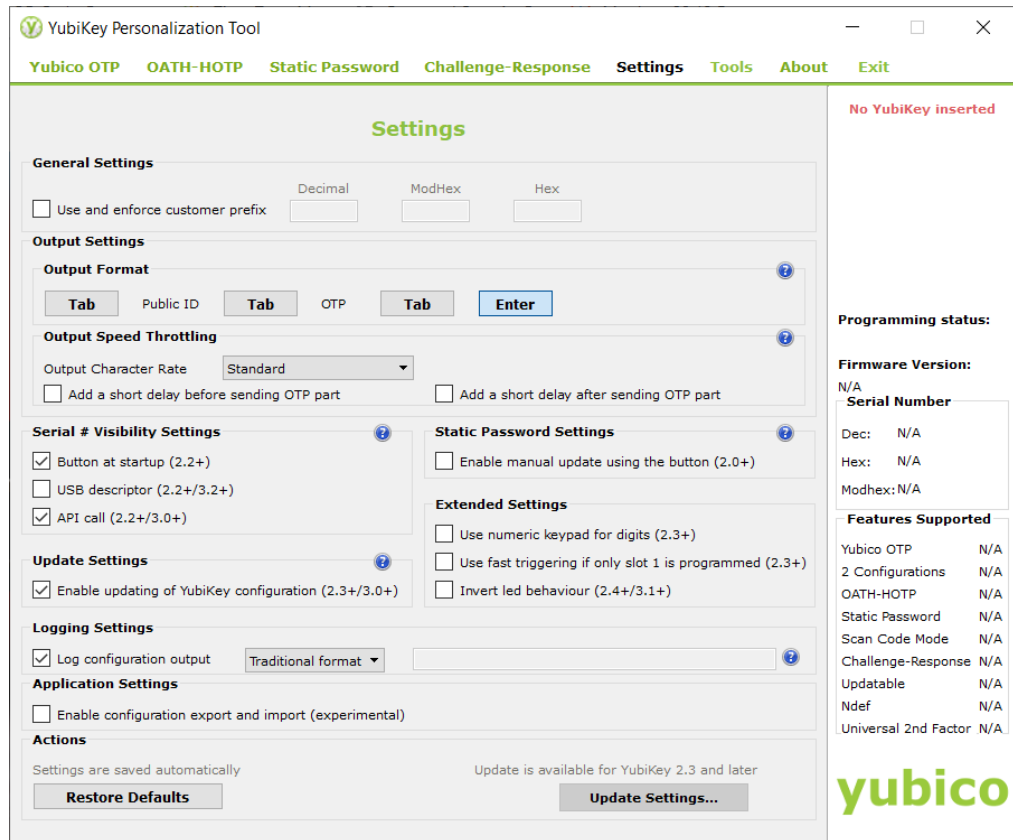
The screenshot shows the YubiKey website's download page for personalization tools. The page has a green header with the YubiKey logo and navigation links: Why Yubico, Products, Solutions, Resources, Company, Support, and a Store button. The main heading is "YubiKey personalization tools". Below the heading is a breadcrumb trail: Home / The YubiKey / Services & Software / Downloads / YubiKey Personalization Tools. A note states: "Note | This project is no longer under active development. Use YubiKey Manager to configure a YubiKey device." The text explains that the tool is used to configure two slots on a YubiKey on Windows, macOS, and Linux. It also mentions that the tool can check the type and firmware of a YubiKey and perform batch programming. A disclaimer notes that the tool works on all Yubico devices except the FIDO U2F Security Key, the Security Key by Yubico, and the Security Key NFC by Yubico. Two tool versions are listed: "YubiKey Personalization Tool (preferred) v3.1.25" and "YubiKey Personalization Tool (command line interface) v1.19.0". Each version has a list of download links for Linux, Mac, and Microsoft Windows (64-bit and 32-bit editions).

To customize the YubiKey using the YubiKey Personalization Tool:

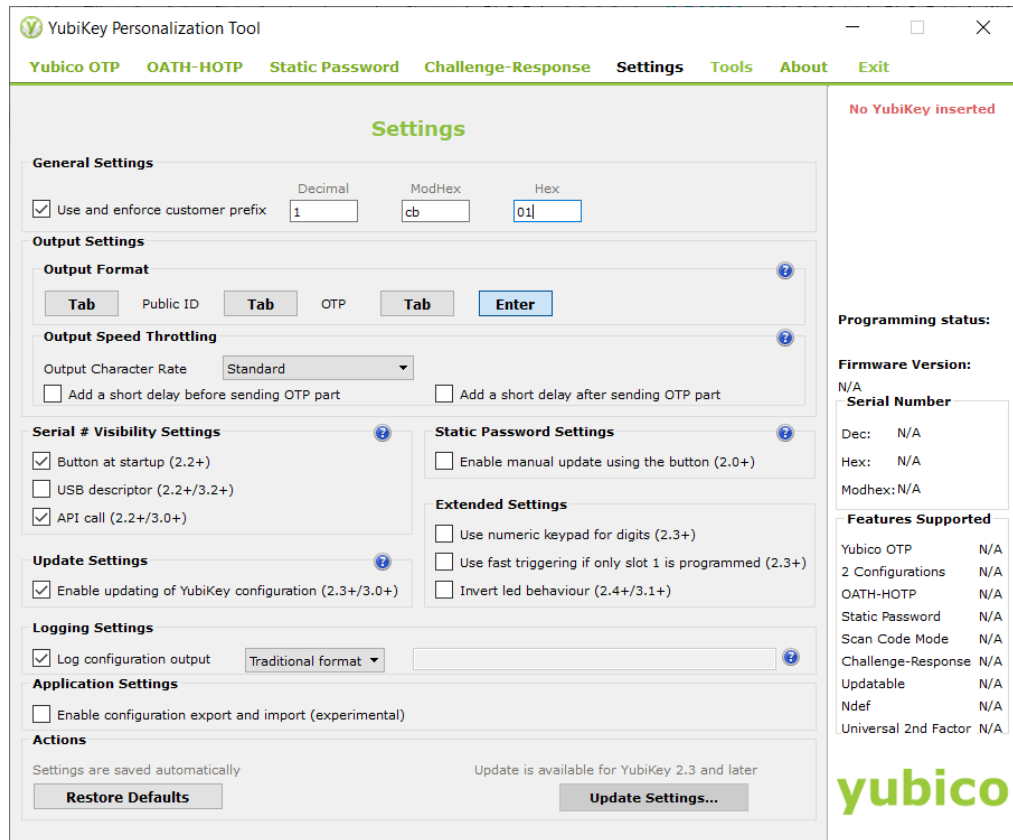
1. Ensure that no YubiKey devices are inserted into your workstation.
2. Launch the YubiKey Personalization Tool.
3. Select **Yubico OTP Mode**.



4. Select **Settings**.

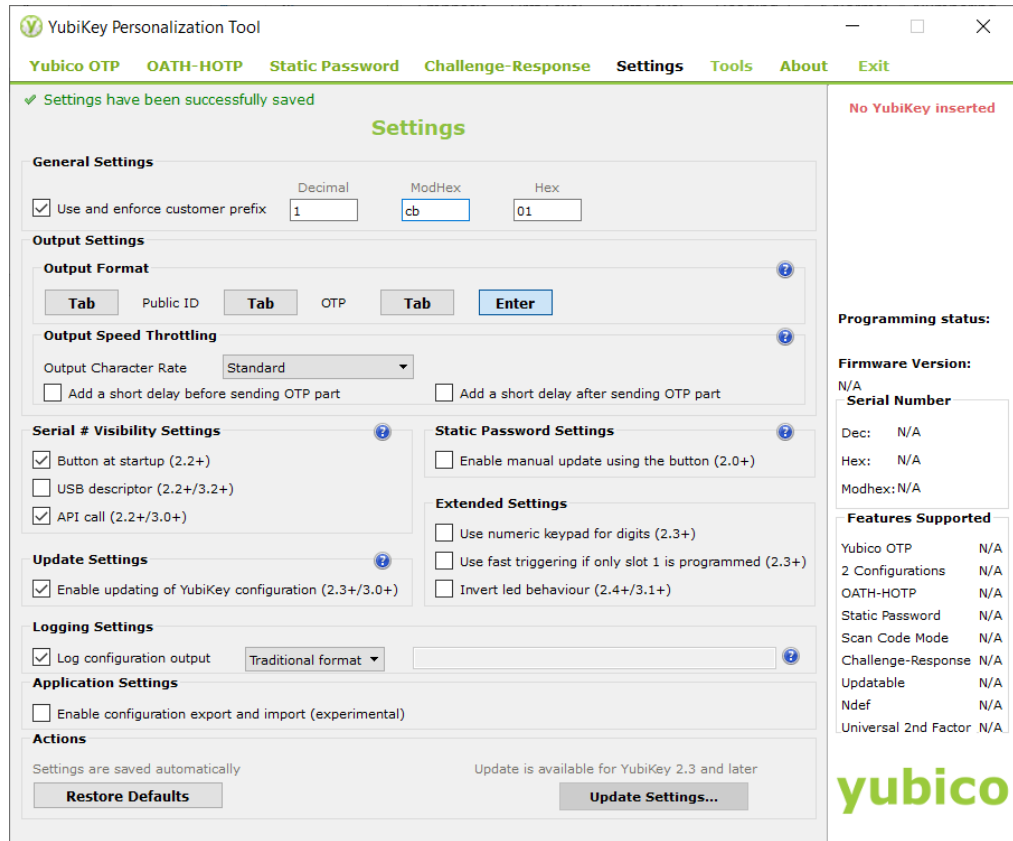


- In the **General Settings** section, enable the **Use and enforce customer prefix** option and specify a value between 01 and FF in the HEX field.

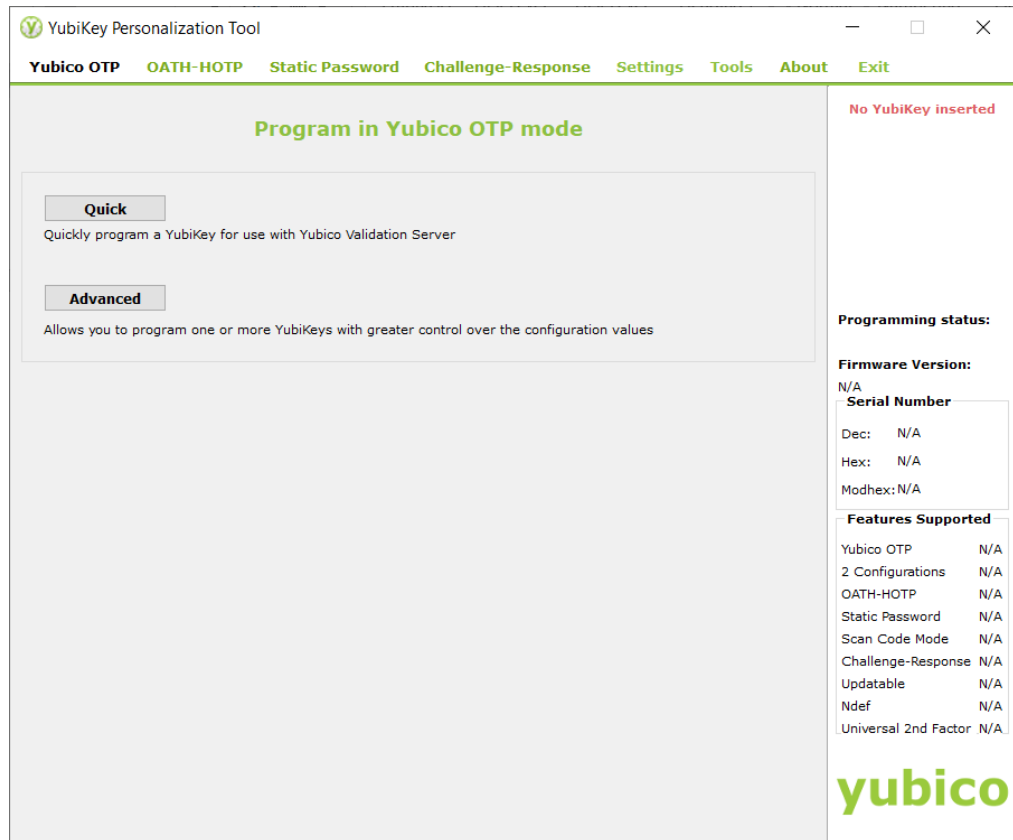


- Once you have added a **Hex** value, click on the **Decimal** or **ModHex** fields to save the settings.

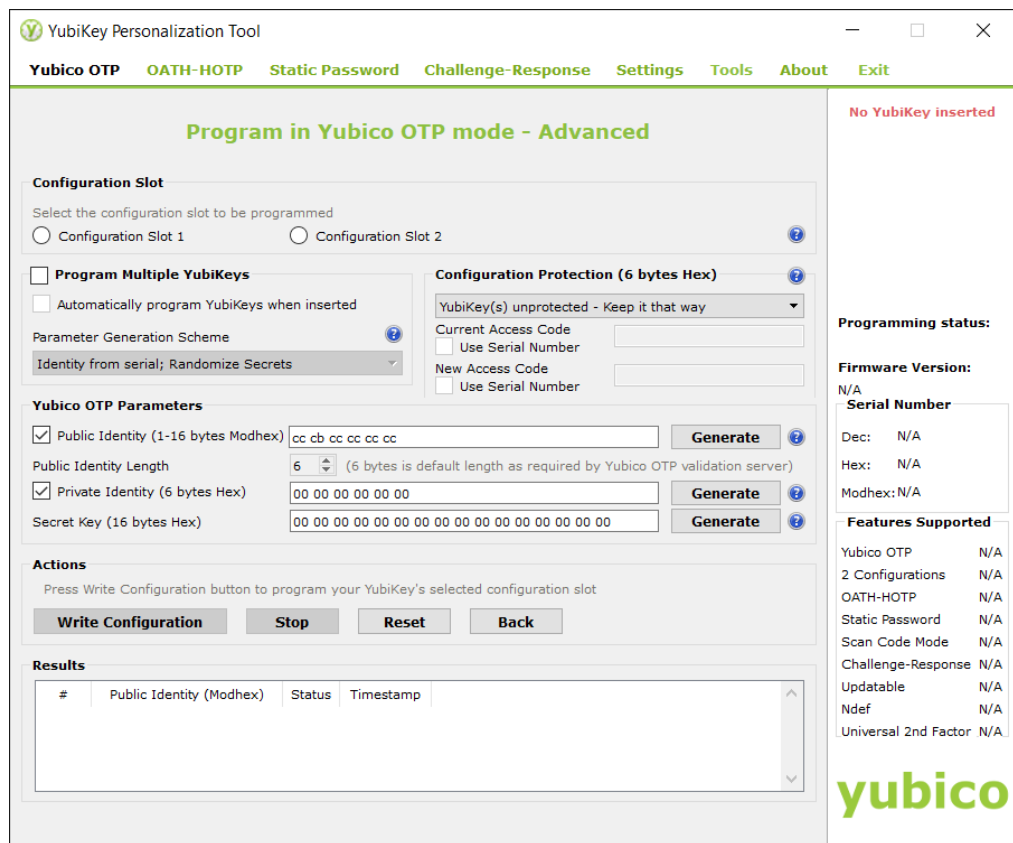
The message Settings have been successfully saved appears in the top left.



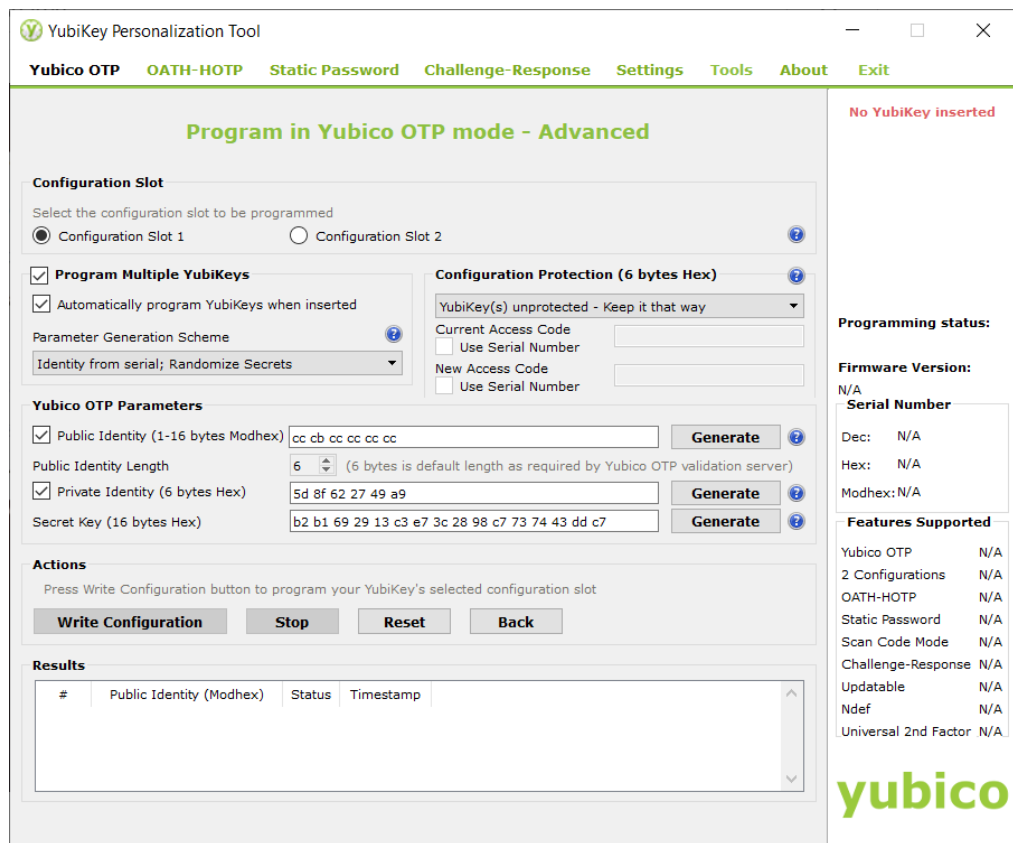
7. Select the **Yubico OTP** section.



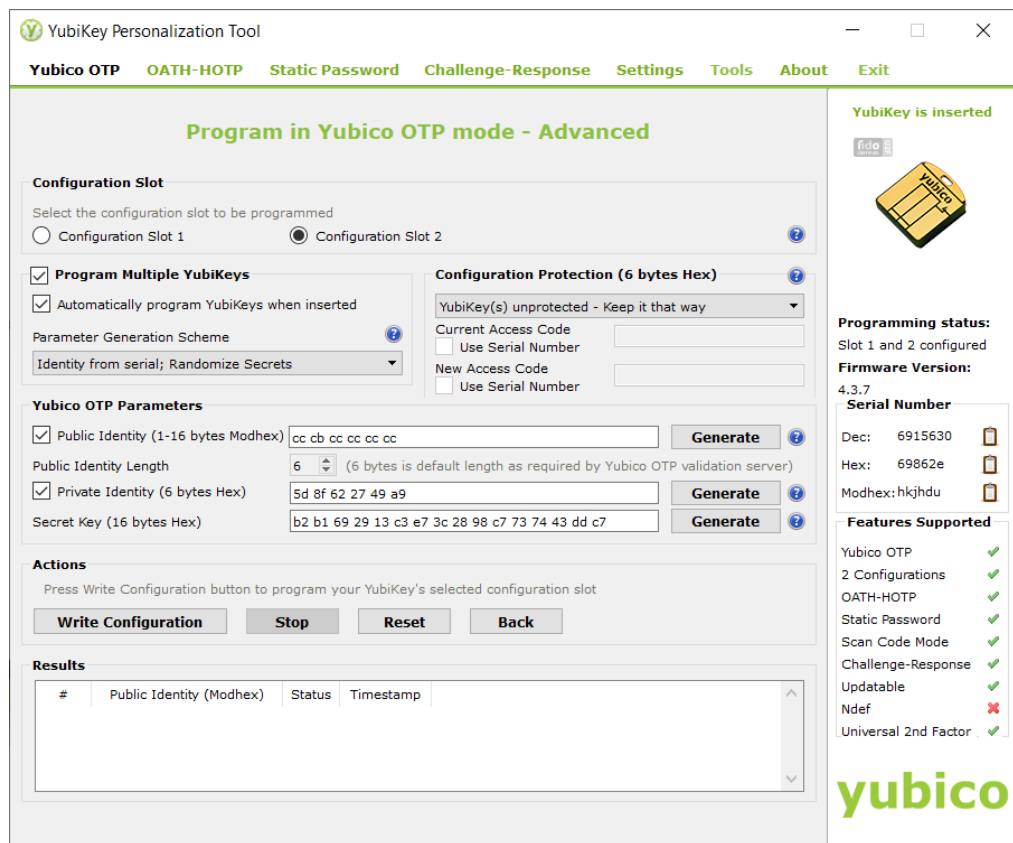
8. Select **Advanced**.



9. Select **Configuration Slot 1** to re-program the short press slot of your YubiKey device.
10. Enable the **Program Multiple YubiKeys** and **Automatically program YubiKeys when inserted** options.

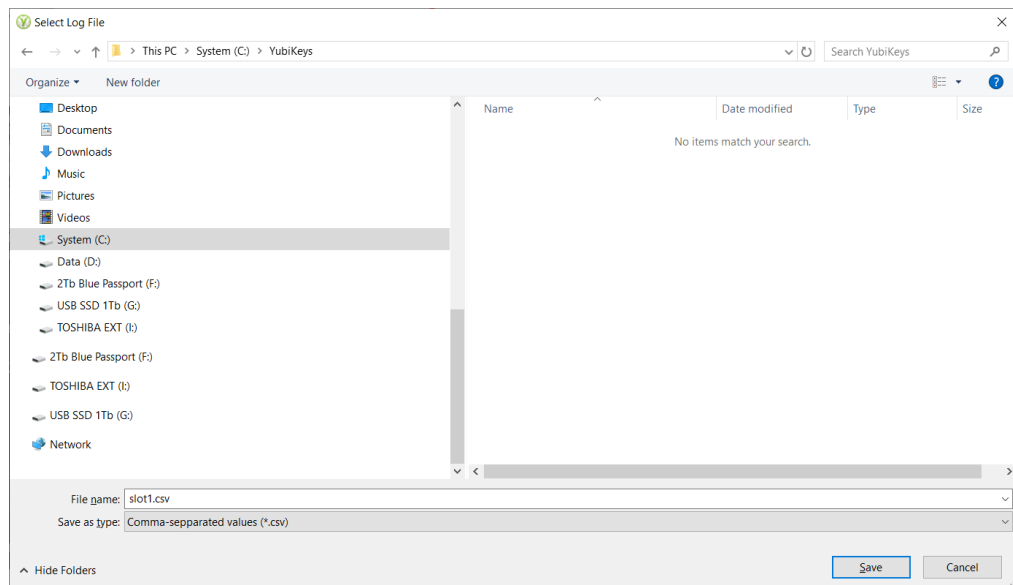


11. Insert your YubiKey device into the workstation, then, under the **Actions** section, click the **Write Configuration** option.

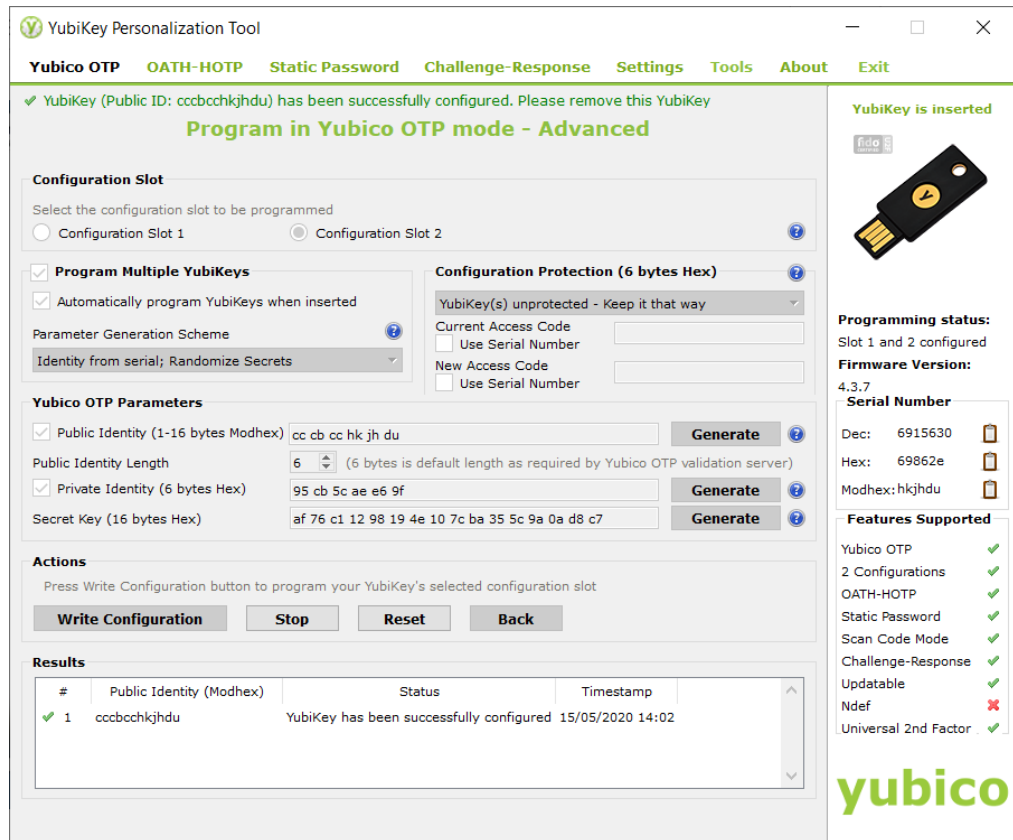


The tool creates a CSV file named `slot1.csv`.

12. Select the folder for the CSV and click **Save**.



The **Results** field reflects the changes to the YubiKey device.



13. Remove your YubiKey device and insert the next device.

Each device you insert is reprogrammed with the details written to the CSV file you created.

All new devices inserted are listed in the **Results** pane.

YubiKey Personalization Tool

Yubico OTP OATH-HOTP Static Password Challenge-Response Settings Tools About Exit

YubiKey (Public ID: cccbchkhjdu) has been successfully configured. Please remove this YubiKey

Program in Yubico OTP mode - Advanced

Configuration Slot
Select the configuration slot to be programmed
 Configuration Slot 1 Configuration Slot 2

Program Multiple YubiKeys
 Automatically program YubiKeys when inserted

Parameter Generation Scheme
 Identity from serial; Randomize Secrets

Configuration Protection (6 bytes Hex)
 YubiKey(s) unprotected - Keep it that way
 Current Access Code
 Use Serial Number
 New Access Code
 Use Serial Number

Yubico OTP Parameters
 Public Identity (1-16 bytes Modhex) cc cb cc hk jh du **Generate**
 Public Identity Length 6 (6 bytes is default length as required by Yubico OTP validation server)
 Private Identity (6 bytes Hex) 89 a1 87 e6 1f bb **Generate**
 Secret Key (16 bytes Hex) 9f 59 5e c3 ea ee a9 6d 97 e3 19 33 f7 bd 97 b3 **Generate**

Actions
 Press Write Configuration button to program your YubiKey's selected configuration slot
Write Configuration **Stop** **Reset** **Back**

Results

#	Public Identity (Modhex)	Status	Timestamp
3	cccbchkhjdu	YubiKey has been successfully configured	15/05/2020 14:08
2	cccbchkhjdu	YubiKey has been successfully configured	15/05/2020 14:04
1	cccbchkhjdu	YubiKey has been successfully configured	15/05/2020 14:02

YubiKey is inserted

Programming status:
Slot 1 and 2 configured

Firmware Version:
4.3.7

Serial Number

Dec: 6915630
 Hex: 69862e
 Modhex: hkjhdu

Features Supported

- Yubico OTP
- 2 Configurations
- OATH-HOTP
- Static Password
- Scan Code Mode
- Challenge-Response
- Updatable
- Ndef
- Universal 2nd Factor

All your devices have now been reprogrammed, and the CSV file is ready to be imported into the MyID Authentication Server. For more information on importing this file, see the *YubiKey OTP Configuration Wizard* section of the [MyID Authentication Server Installation and Configuration Guide](#).