Windows Login Tool & YubiKey Config

Configuring the YubiKey and the Windows Login Authenticator

February 22, 2013

Introduction

Yubico is the leading provider of simple, open online identity protection. The company's flagship product, the YubiKey®, uniquely combines driverless USB hardware with open source software. More than a million users in 100 countries rely on YubiKey strong two-factor authentication for securing access to computers, mobile devices, networks and online services. Customers range from individual Internet users to e-governments and Fortune 500 companies. Founded in 2007, Yubico is privately held with offices in California, Sweden and UK.

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1 Overview

The Yubico Windows Login tool (available at the Yubico Website, here: <u>http://www.yubico.com/applications/computer-login/windows/windows-login/</u>) allows users to lock accounts on their Windows 7 and up PCs and prevent access without the correct YubiKey. This guide will detail how to configure a YubiKey to work with the Windows Login tool, as well as some best practices for backing up the YubiKey information, protecting a configured YubiKey and setting up the Windows Authentication tool.

2 Configuring the YubiKey

 First, download and install the latest Cross Platform Personalization Tool for Windows from the Yubico Website at: <u>http://www.yubico.com/products/services-software/personalization-tools/use/</u> under the section "Cross platform personalization tools". There are a number of different installers for various operating systems – pick the installer for your operating system.

Cross-Platform Personalization Tool
Valid with any YubiKey
 Windows, Mac OS X and Linux
Graphical user interface
 » User Guide » Release Notes » Windows: Binary installer » Mac OS X: Binary installer » Ubuntu package » Feodora package » Source code on GitHub

2) Once the Cross-Platform Personalization tool has been installed, insert a YubiKey in a USB port on the computer and launch the YubiKey Personalization Tool.





3) In the Cross-Platform Personalization Menu, open the "Settings" menu by clicking on the link "Update Settings" on the main page or the "Settings" option from the menu at the top.

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🕜 Yub	oiKey Per	sonalization Tool									-
Yubi	ico OTP	OATH-HOTP	Static Password	Challenge	Response	Settings	Tools	About	Exit		
									YubiKey is	; inserted	I
		The	Swiss Army Kı	nife for t	he YubiK	ey					
	Persona	lize your YubiKey	in:						Programmir	ıg status:	
	-	<u>rubico OTP Mode</u>							Slot 1 and 2 o	configured	
	-	DATH-HOTP Mode							2.2.3		
	-	Static Password Mo	ode						Serial Num	ber	
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	-	<u>public betango</u>							- Features S	··· L	-
	If you ha	ve any questions or	suggestions, please send	l an email to 🔉	upport@yubic	o.com			Yubico OTP	apported	
									2 Configurati	ons 🔹	/
				р 1	ibrary Version:	1 11 2			OATH-HOTP	9 	1
				E	Suild Timestame	: Jan 10 2013	08:13:37		Scan Code M	lode v	1
	Copyright	t © 2011-2013 Yubic	o. All Rights Reserved.						Challenge-Re Updatable Ndef	sponse))	/ ×
									yub the key to	DICO the cloud)

4) In the "Program in Challenge-Response mode" menu, select the HMAC-SHA1 mode option.

Program in Challenge-Response mode

Yubico OTP 3 Allows you to program one or more YubiKeys in "Yubico OTP" Challenge-Response mode	
HMAC-SHA1 🕑 Allows you to program one or more YubiKeys in "HMAC-SHA1" Challenge-Response mode	

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YubiKey Personalization Tool						
Yubico OTP OATH-HOTP St	atic Password	Challenge-Response	Settings	Tools	About	Exit
Program in Cha	allenge-Res	sponse mode - HN	IAC-SHA	1		YubiKey is inserted
Configuration Slot						
Select the configuration slot to be programmed O Configuration Slot 1 O Configuration Slot 2 Image: Configuration Slot 2						
Program Multiple YubiKeys		Configuration Protectio	n (6 bytes He	ex)	0	•
Automatically program YubiKeys wh	en inserted	YubiKey(s) unprotected -	Keep it that wa	y	•	Description status
Parameter Generation Scheme Current Access Code						Slot 1 and 2 configured
Randomize Secret	· ·	New Access Code				Firmware Version:
HMAC-SHA1 Parameters						2.2.3 Serial Number
Require user input (button press)				2	Dec: 1072762	
HMAC-SHA1 Mode	Variable input	Fixed 64 byte input				Hex: 105e7a 📋
Secret Key (20 bytes Hex)	00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00	00 00 00	Generate	0	Modhex: bcguil
Actions					Features Supported	
Press Write Configuration button to proc	Actions Prace Write Configuration button to program your WhiKey's selected configuration slot					Yubico OTP 🖌
Write Configuration Stop Reset Back					2 Configurations CATH-HOTP	
						Static Password 🖌
Results						Scan Code Mode 🖌
# Status Timestamp					^	Challenge-Response V Updatable X
						Ndef 🗙
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						vubico
						the key to the cloud

5) Locate the Configuration Slot section and select the "Configuration Slot 2" option

Configuration Slot		
Select the configuration slot to be prog	rammed	
Configuration Slot 1	Configuration Slot 2	

6) Locate the HMAC-SHA1 Section. In that section, ensure the checkbox "Require User input (button press)" is not selected.



7) In the HMAC-SHA1 section, for the HMAC-SHA1 Mode, select the "Variable input" option.

Require user input (button press)	
HMAC-SHA1 Mode	Variable input

8) Click the "Generate" button in to the right of the field labelled "Secret Key (20 bytes Hex). Please Note: This secret key is essential for making backup to configured YubiKeys. Record this value in a safe location for generating backup or secondary YubiKeys for the Windows Login Tool.

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YubiKey Personalization Tool					
Yubico OTP OATH-HOTP Static Password	Challenge-Response	Settings	Tools	About	Exit
Program in Challenge-Re	sponse mode - HI	MAC-SHA	1		YubiKey is inserted
Configuration Slot					
Select the configuration slot to be programmed					
Configuration Slot 1 O Configuration	Slot 2			•	
Program Multiple YubiKeys	Configuration Protection	on (6 bytes H	ex)		
Automatically program YubiKeys when inserted	YubiKey(s) unprotected -	Keep it that wa	ау	•	
Parameter Generation Scheme	Current Access Code	Current Access Code			Programming status: Slot 1 and 2 configured
Randomize Secret 🔹	New Access Code				Firmware Version:
HMAC-SHA1 Parameters					2.2.3
HMAC-SHA1 Parameters					Serial Number
Image: Weight and the second secon					Dec: 1072762
HMAC-SHA1 Mode Variable input Fixed 64 byte input					Hex: 105e7a
Secret Key (20 bytes Hex) fa b9 8f 38 45 b9 e7 08 08 c2 36 05 36 1e 1f b2 d7 96 9C Generate 3					Modnex: bcguil
Actions					Features Supported
Press Write Configuration button to program your YubiKey	Yubico OTP				
Write Configuration Stop Re	set Back				OATH-HOTP
					Static Password 🛛 🗸
Results					Scan Code Mode 🛛 🖋
# Status Timestamp				A	Challenge-Response 🖌
					Updatable 🗮
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9) In the Actions Section, click the "Write Configuration" button. This will configure the YubiKey for the Windows Login Tool.

Please see Appendix A for steps to create multiple YubiKeys for the same Windows Login account as well as how to enable Configuration Protection.

3 Installing the Windows Login Tool

Please note: Administrator privileges and an internet connection are necessary to be able to install the application. A reboot to the computer is required after the installation

1. Click here to download the YubiKey Logon installation file.

The installation is the same for both Windows 7 32 bit and 64 bit editions.

2. Open the installation file and click "Install"

The Installer for the Windows Login will automatically download and install the necessary supporting components.

	In order to install YubiKey Logon you must first install these components:
yubico	Microsoft .NET Framework 4.0 - Client (Installed)
	 ♥ YubKey Clent COM API ♥ YubKey Logon
	P Instal Close

3. Press "Yes" in the User Account Control window





4. Follow the setup wizard to install the Windows Login Tool and components.



5. Launch the YubiKey Logon Administration, which can be accessed from the start menu

The application will be located under the folder Yubico \rightarrow YubiKey Logon \rightarrow YubiKey Logon Administration.

Music	
Computer	
Control Panel	4
Devices and Printers	
Default Programs	
Help and Support	
Shut down	
	Music Computer Control Panel Devices and Printers Default Programs Help and Support



6. Press "Yes" in the User Account Control window



7. Press "Yes" to enable YubiKey logon for your computer



8. Confirm the login dialog – a reboot will be required after associating a YubiKey with a Windows Account.





9. Select the Windows Account to configure from the drop down menu in the YubiKey Logon Administration window

🥑 YubiKey Logon Administr 💼 💷 💌	
YubiKey Logon enabled yubico	
Disable enabled in safemode	
Select user to configure	
Press to test configuration	

10. If not already done so, insert the YubiKey in the computer via a USB port.

11. Press the button labeled "Configure"

YubiKey Logon er	nabled yubico
Disable	📄 enabled in safemode
Select user to con	figure
test	•
Configure	enabled
Press to test confi	guration
Test	



12. Press "Yes" to enable the YubiKey Logon for the chosen user



13. Optionally, clicking the button labeled "Test" will perform a login test with the YubiKey

	🌒 YubiKey Logon Administr 🗖 🔳 🖾
	YubiKey Logon enabled yubico
-	Disable enabled in safemode
	Correct response!
	ОК

14. Once the YubiKey is configured, reboot your computer

15. Log on to the Windows Account using the username and password with the YubiKey inserted in a free USB port.



4 Appendix A: YubiKey Configuration & Backup

4.1 Configuring Backup/Multiple YubiKeys

For Multiple YubiKeys to work with the same Windows Authentication Login, they need to be configured with the same Secret Key. It is recommended that the secret key value is recorded when configuring a YubiKey for use with the Windows Authentication Tool.

To use an existing Secret Key to create a backup, configure the YubiKey as normal, except when creating the secret key, do not click the "Generate" button. Instead, type the secret key you wish to use directly into the Secret Key field. This will create a new YubiKey which will work as a backup to an existing YubiKey/Windows Login.

To configure multiple YubiKeys with the same secret key (so they will all work with the same Windows Login), first configure the first YubiKey as normal. However, before pushing the "Write Configuration" button, follow these steps:

- 1) Locate the "Program Multiple YubiKeys" Section.
- 2) Check the box labelled "Program Multiple YubiKeys"
- 3) Check the box labelled "Automatically Program YubiKeys when inserted"
- 4) Locate the Menu "Parameter Generation Scheme" and set it to "Same Secret for all Keys"
- 5) Click the Write Configuration Button to program the first YubiKey.
- 6) Once the YubiKey is configured, remove it and insert the next YubiKey. It should be programmed automatically.
- 7) Repeat step 6 until all the YubiKeys are programmed, then click the "Stop" Button.

This method creates multiple YubiKeys with the same secret and can be used interchangeably with the each other for the Windows Login tool.

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4.2 Applying Configuration Protection to YubiKeys

To lock a YubiKey configuration slot so that it cannot be reconfigured without proper authorization, users can add Configuration Protection which prevents the YubiKey configuration slot from being configured without the proper access code.

To apply Configuration Protection to a configuration slot first configure the first YubiKey as normal. However, before pushing the "Write Configuration" button, follow these steps:

- 1) Locate the "Configuration Protection" Section.
- 2) Locate the Menu "YubiKey(s) unprotected Keep it that way" and set it to "YubiKey(s) unprotected Enable Protection"
- 3) The "New Access Code" field below the menu should become active.
- 4) In the "New Access Code" field, enter in a 12 digit, numeric access code. Record this code in a safe location as the YubiKey configuration slot will not be able to update its configuration without it.
- 5) Continue to configure the YubiKey as normal.

To change the configuration of a YubiKey configuration slot protected with an Access Code, follow these steps:

- 1) Locate the "Configuration Protection" Section.
- Locate the Menu "YubiKey(s) unprotected Keep it that way" and set it to "YubiKey(s) protected Keep it that way"
- 3) The "Current Access Code" field below the menu should become active.
- 4) In the "Current Access Code" field, enter in the 12 digit, numeric access code set for that YubiKey configuration slot.
- 5) Continue to configure the YubiKey as normal.