Yubico Authenticator User's Guide

YubiKeys with desktop computers and NFC-enabled Android smartphones

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Introduction

Yubico changes the game for strong authentication, providing superior security with unmatched ease-of-use. Our core invention, the YubiKey, is a small USB and NFC device supporting multiple authentication and cryptographic protocols. With a simple touch, it protects access to computers, networks, and online services for the world's largest organizations.

Our innovative keys offer strong authentication via Yubico one-time passwords (OTP), FIDO Universal 2nd Factor (U2F), and smart card (PIV, OpenPGP, OATH) — all with a simple tap or touch of a button. YubiKeys protect access for everyone from individual home users to the world's largest organizations.

Yubico Authenticator

The Yubico Authenticator application enables you to generate time-based OTP codes or counter-based OTP codes directly from your computer or on your Android device.

There are two ways to use Yubico Authenticator:

- Yubico Authenticator for Desktop
- Yubico Authenticator for Android

This document describes the following topics:

Getting Additional Help

For more information, and to get help with your YubiKeys, see:

- Support home page
- Documentation and FAQs
- Start a Support ticket

Before You Begin

Before using Yubico Authenticator to add credentials to your YubiKey, or to view existing credentials on your YubiKey, it is important to understand the differences in settings between the different YubiKeys. You should also plan how to back up your YubiKeys (because you cannot rename or make any changes to a credential after you add it). Finally, decide if you want to protect your YubiKey with a password.

In this Chapter

Understanding the Differences in Settings Between YubiKeys

You can use all YubiKeys with the Yubico Authenticator application, with the exception of the FIDO U2F Security Key.

All the YubiKeys have two configuration slots, but there are differences in the number of credentials the different YubiKeys store.

YubiKey 4 and YubiKey 4 Nano

You can store up to 32 OATH credentials (TOTP or HOTP) on the YubiKey 4 and access them using the Yubico Authenticator for Desktop application.

YubiKey NEO and YubiKey NEO-n

You can store up to 28 OATH credentials (TOTP or HOTP) on the YubiKey NEO and YubiKey NEO-n, and you can access those credentials using both the Yubico Authenticator for Desktop application and the Yubico for Authenticator for Android application.

YubiKey Edge/Edge-n, YubiKey Standard, and YubiKey Nano

On a YubiKey Edge/Edge-n or YubiKey Standard/Nano, you can store a maximum of two OATH or TOTP credentials (one in each configuration slot), as long as no other credentials are stored in those slots. You can access them using the Yubico Authenticator for Desktop application.

Planning for Backup YubiKeys

It is not possible to create an exact copy of a YubiKey, but in some cases it is possible to duplicate the credentials stored on the YubiKey. When you add a credential, be sure you copy the secret key for that credential and store it in a safe place.

YubiKeys are, by design, write-only devices. This means that the secrets stored in the YubiKey can only be written into, and not read out, of the device. If a credential is to be copied, it must be known beforehand, either written down (or copied) while programming the YubiKey. The best ways to plan for backup YubiKeys are:

- Add credentials at the same time to multiple YubiKeys if you have them
  or
- Save a copy of the QR code (capture the screen) or make a copy of the secret key.

TIP: When you are adding a credential, there is usually a clickable link below the QR code. Click this link to view the secret key.

IMPORTANT: If you add credentials to one YubiKey, and then later decide to buy another YubiKey for a backup, you must log into every account and go through the setup process again with the Yubico Authenticator app. To get a new credential for each account, delete the original credentials from the original YubiKey, and then add the new credentials to both YubiKeys.

To copy the secret key when adding a credential

- Do one of the following:
  - When you add a credential with Yubico Authenticator, copy the secret key from **Secret key (base32)**, and save it to a text file so you can use it on another YubiKey.
    NOTE: **Secret key (base32)** is automatically populated when you scan the QR code from the website.
  - Click the link below the QR code, which enables you to view and copy the secret code associated with the QR code.

Understanding Credential Naming

Yubico Authenticator credentials cannot be changed or renamed once they are added, only viewed or deleted. If you want to change anything about the credential, including the name of the credential, you must delete the existing credential, go through the setup process again, and create a new credential with the settings and the name that you want.

Protecting your YubiKey with a Password

For greater security, you can protect your YubiKey with a password.

Yubico Authenticator enables you to protect your Yubikey NEO, YubiKey 4, or YubiKey 4 Nano with a password. You are prompted to type this password each time you insert a password-protected YubiKey into a USB port of your computer, or the password protected YubiKey and your Android device connect over NFC.

To set a password for your YubiKey

1. Insert your YubiKey into a USB port of your computer.
2. Launch Yubico Authenticator.
3. Select **File > Set/Change password**.
4. Type a password to protect your YubiKey, type the password again to verify the password, and then click **OK**.
5. If you want to save the password to your Android device or computer, select **Remember my password**.

To use a password-protected YubiKey

- Once you password protect your YubiKey, a **Password required** dialog box appears each time you insert the YubiKey while Yubico Authenticator is open or if you are holding the YubiKey NEO against the Android device with Yubico Authenticator open.
- Type the password when prompted.

To remove the password for your YubiKey

1. Insert your YubiKey into a USB port of your computer.
2. Launch Yubico Authenticator.
3. Select **File > Set/Change password**.
4. Leave **New password (blank for none)** and **Verify new password** blank, and click **OK**. The next time you insert your YubiKey into a USB port of your computer, you will not be prompted for a password because you are leaving the fields blank.
   TIP: The fields start out blank because you verified the password when you launched the app or inserted your YubiKey.

Installing Yubico Authenticator for Android and Desktop

IMPORTANT: The FIDO U2F Security Key cannot be used with the Yubico Authenticator application. The Security Key is a U2F-only device that cannot be programmed.

You can install Yubico Authenticator for Desktop on Microsoft Windows, Linux, and Mac OS X operating systems. Yubico Authenticator for Android can only be installed on Android smartphones and tablets.

NOTE: On Android devices, credentials can only be added or viewed over the NFC interface. You cannot use a USB On-The-Go (OTG) cable instead.

In this Chapter

To install Yubico Authenticator for Android

1. Using your NFC-enabled Android smartphone or tablet, on the Yubico website, under **Yubico Authenticator for Android** tap **Android Download**.
2. In **Google Play**, tap **Install**, and follow the instructions to complete the installation wizard.

To install Yubico Authenticator for Desktop

1. Download the latest version of the Yubico Authenticator for Desktop from the Yubico website for the operating system you are using.
2. To install the application, do one of the following:
    - For Windows:
        - To launch the installation wizard, double-click the downloaded file (for example, `yubioath-desktop-`*`version_number`*`-win.exe`).
        - Complete the installation wizard.
    - For Mac OS X:
        - To launch the installation wizard, click the downloaded file (for example, `yubioath-desktop-`*`version_number`*`-mac.pkg`).
        - Complete the installation wizard.

- For Linux:
  - Unpack the downloaded file (for example, `yubioath-desktop-`*`version_number`*`.tar.gz`).

    Complete the installation process for your Linux distro.

Using Yubico Authenticator for Desktop App

If you have been using Yubico Authenticator on your Android device, all your credentials are also available on your desktop using the Yubico Authenticator for Desktop application.

In this Chapter

Adding Credentials

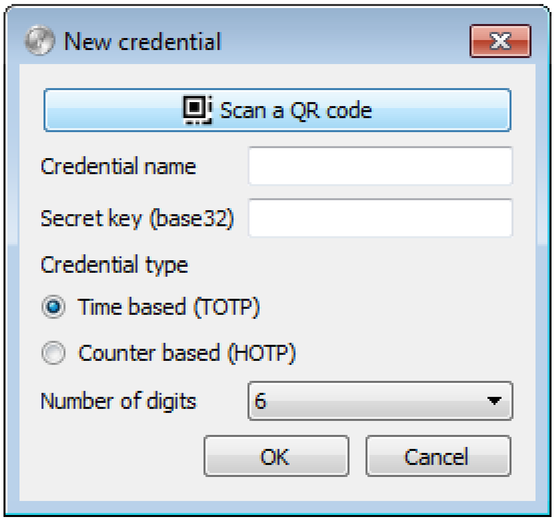
For all YubiKeys except for YubiKey Edge, YubiKey Edge-n, YubiKey Standard, and YubiKey Nano, the general process is to accept the default settings.

For YubiKey Edge, YubiKey Edge-n, YubiKey Standard, and YubiKey Nano, be sure to select the slot you want to use, and then accept the remaining default settings.

NOTE: This is the same procedure and options for Mac OS X, Windows, and Linux operating systems.

To add an account using Yubico Authenticator for Desktop

1. Insert a YubiKey into a USB port of your computer.
2. Launch Yubico Authenticator (previously installed).
3. Launch the application for which you want to add a credential.
4. In the application for which you are adding a credential, enable two-step verification.
   TIP: Be sure to select Authenticator App as the method for receiving your codes.
5. When the QR code appears in the application, in Yubico Authenticator, select **File > Add**.
   - For all YubiKeys except for YubiKey Edge, YubiKey Edge-n, YubiKey Standard, and YubiKey Nano:
     a. The fields for Secret key (base32), Credential name, Time based (TOTP), Counter of based (HOTP), and Number of digits are automatically populated.
     b. Accept the defaults, and click **OK**.



● Time based (TOTP)

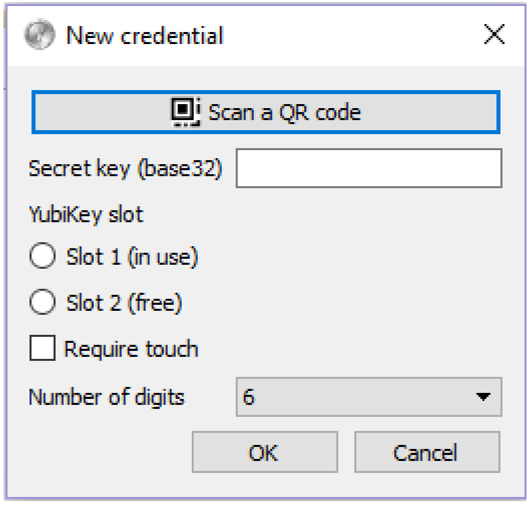
○ Counter based (HOTP)

Number of digits: 6

- For YubiKey Edge, YubiKey Edge-n, YubiKey Standard, and YubiKey Nano:

  a. Select the slot you want to use (**Slot 1** or **Slot 2**), accept the defaults for the other fields, and click **OK**.

  b. Select **File > Settings** and be sure the **Read from slot** option matches the slot you want to use. **NOTE**: The default slot is Slot 2, which is usually available if you have not programmed your YubiKey.



○ Slot 1 (in use)

○ Slot 2 (free)

□ Require touch

Number of digits: 6

6. Click Scan a QR code.

7. Change the **Credential name** if you want now. Once you have saved the credential, you cannot edit the name later.

8. Save a copy of the **Secret key (base32)** to a text file if you want to add a backup YubiKey with the same credential.

9. Click **OK**.

Example of Adding a Credential from an Amazon Account

This section steps through the process of adding a credential, using an Amazon account as the example, and includes detailed instructions for enabling two-step verification and generating the QR code.

NOTE: The steps in this section are correct as of the date of publishing this document, but the steps are subject to change at any time.

To add a credential for an Amazon account

1. On your web browser, see the security settings page in Amazon.
2. To enable two-step verification, select **Your Account > Change Account Settings**.
3. Enter your email address (or mobile number) and password.
4. For **Advanced Security Settings**, click **Edit**.
5. Next to **Two-Step Verification**, click **Get Started**.
6. Click **Turn On Two-Step Verification**.
7. Select **Authenticator App**. Amazon generates a QR code.
8. From Yubico Authenticator for Desktop, select **File > Add**.
9. Click **Scan a QR code**.
   - The fields for Secret key (base32), Credential name, Time based (TOTP), Counter of based (HOTP), and Number of digits are automatically populated.
10. Change the **Credential name** if you want now. Once you have saved the credential, you cannot edit the name later.
11. Click **OK**.
12. Get the code for Amazon from your Yubico Authenticator app (click or tap the clipboard next to the Amazon account, which saves the code in your buffer).
13. In Amazon, paste or type the authenticator code, and click **Verify code and continue**.
14. Select a backup method for receiving codes (for example, your mobile phone).
15. Click **Turn on Two-Step Verification**.

Viewing and Using Credentials on Your Desktop

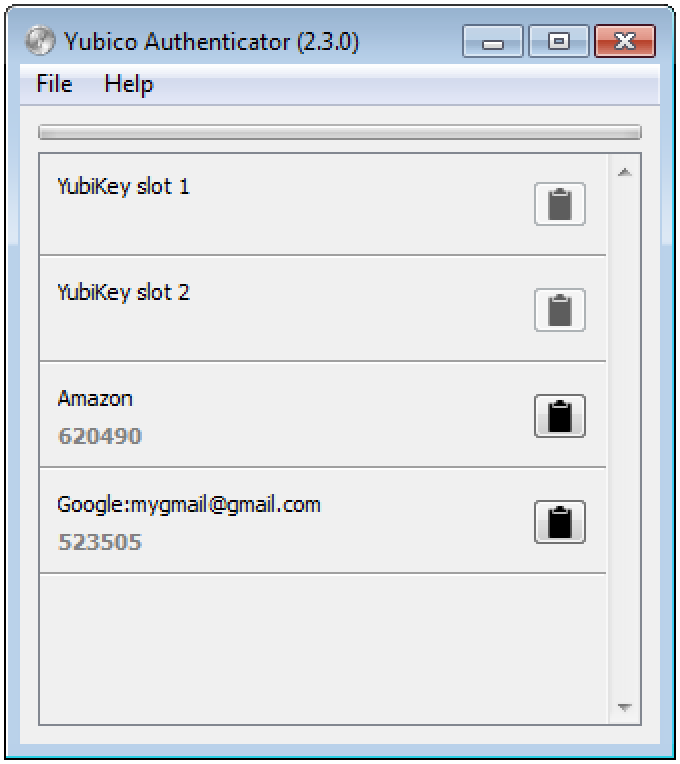
On the YubiKey 4 and YubiKey 4 Nano, you can store up to 32 OATH credentials (TOTP or HOTP) and access those credentials using the Yubico Authenticator for Desktop application.

On the YubiKey NEO and YubiKey NEO-n, you can store approximately 28 OATH credentials (TOTP or HOTP) and access those credentials using the Yubico Authenticator application for Desktop or the Yubico Authenticator application for Android.

NOTE: The number of OATH credentials you can store on the YubiKey NEO differs depending on the version and configuration of the YubiKey.

To view the credentials on your YubiKey

- Launch the Yubico Authenticator application. In this example, credentials for an Amazon account and a Gmail account are stored on this YubiKey:



YubiKey slot 1

YubiKey slot 2

Amazon
620490

Google:mygmail@gmail.com
523505

Copying the Credential (Double-Click or Single-Click)

Copy the code for a credential with a single-click of the clipboard icon or a double-click of the credential. Both methods copy the code for the selected credential -- one leaves the Yubico Authenticator application open, and the other minimizes the application.

This feature functions the same way on each operating system.

To copy the code and leave the Yubico Authenticator application open

- Click the clipboard icon corresponding to the credential.

To copy the code and minimize (or close) the application

- Double-click the credential.
  TIP: If **Show in system tray** on the **Settings** dialog box is selected, Yubico Authenticator is minimized to the System Tray when you double-click the credential. If **Show in system tray** is not selected, Yubico Authenticator closes when you double-click the credential.

Using Yubico Authenticator for Android App

TIP: You may find it easier to set up your YubiKey NEO using the Yubico Authenticator for Desktop application. Once you have set up your YubiKey NEO with the desktop version of the application, you can then use that YubiKey NEO with the Yubico Authenticator for Android App.

In this Chapter

Adding Credentials

To add an account using Yubico Authenticator for Android

1. On your computer, log in to the account for which you want to add a credential, such as Amazon, and enable two-step verification.

2. Follow the prompts to set up two-step verification, including setting up a backup method of authentication, until the QR code is displayed.

3. On your Android device, launch Yubico Authenticator (previously installed), open the app menu, and select **Scan account QR-code**.
   NOTE: Be sure to install a QR code reader from the **Google Play Store**.

4. Center the QR code within the box displayed from your QR code scanner app until the scanner reads the QR code.

5. The scanned information is pre-populated in the new credential's fields. You can change the **Credential name** if you want now. Once you have saved the credential, you cannot edit the name later.

6. To store the new credential, tap and hold your YubiKey NEO against the NFC antenna of your Android device.
   TIP: Position your YubiKey NEO as close to the NFC antenna (of your device) as you can, and hold it there for two to three seconds.

7. When the credential is added to your YubiKey NEO, the `Credential added!` is displayed on your Android device. If the credential is not successfully added, try adding the credential using the Yubico Authenticator for Desktop app instead.

   The next time you log in to your account, you are prompted to enter your six digit authenticator code, which you can view using Yubico Authenticator.

Example of Adding a Credential from an Amazon Account

This section steps through the process of adding a credential, using an Amazon account as the example, and includes detailed instructions for enabling two-step verification and generating the QR code.

NOTE: The steps in this section are correct as of the date of publishing this document, but the steps are subject to change at any time.

To add a credential from an Amazon account

NOTE: These instructions use the desktop as an example for turning on two-step verification, but you can turn on two-step verification from your Android phone as well.

1. On your regular web browser, see the security settings page in Amazon.
2. To enable two-step verification, select **Your Account > Change Account Settings**.
3. Enter your email address (or mobile number) and password.
4. For **Advanced Security Settings**, click **Edit**.
5. Next to **Two-Step Verification**, click **Get Started**.
6. Click **Turn On Two-Step Verification**.
7. Select **Authenticator App**. Amazon generates a QR code.
8. Use your Android phone to scan the QR code on your desktop. On your Android device, launch Yubico Authenticator.
9. Tap the top right menu, and select **Scan account QR-code**.
10. Center the QR code within the box displayed with your QR code scanner app until the scanner reads the QR code.
11. The scanned information is pre-populated in the new credential's fields. You can change the **Credential name** if you want now. Once you have saved the credential, you cannot edit the name later.
12. To store the new credential, tap and hold your YubiKey NEO against the NFC antenna of your Android device. Your Android phone indicates success by displaying a message.

    The next time you log in to your account, you are prompted to enter your six digit authenticator code, which you can view using Yubico Authenticator.

Viewing and Using Credentials on Your Android Device

Once you have credentials stored on your YubiKey NEO, you can use Yubico Authenticator for Android to view those credentials and paste them into your application.

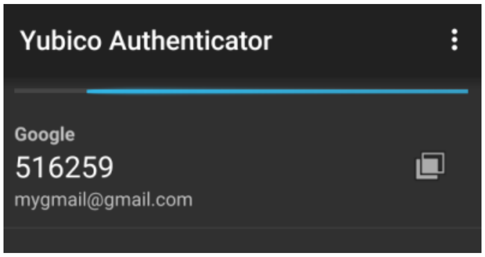
TIP: You can also use the desktop version of Yubico Authenticator with the YubiKey NEO.

To view credentials stored on your YubiKey NEO

1. On your Android device, launch Yubico Authenticator.

2. Tap and hold your YubiKey NEO against the NFC antenna of your Android device.

3. The credentials you have stored on your YubiKey NEO appear in Yubico Authenticator. Here is an example showing the credential for a Gmail account that was stored on the YubiKey NEO:



Yubico Authenticator

Google
516259
mygmail@gmail.com

4. To copy the authenticator code, on the right side of the credential, tap the square icon. This places the credential, in this example `516259`, in your buffer.

   The next time you log in to your account, you are prompted to paste or type your six digit authenticator code.

Tips for Using Your YubiKey NEO with Android Devices

If you are experiencing problems getting your Android device and your YubiKey NEO to communicate, we recommend these tips:

- Make sure that you have turned on NFC on your device.
- Position your YubiKey NEO as close to the NFC antenna (of your device) as you can and hold it there for two to three seconds. Due to the small size of the YubiKey NEO and its own antenna, the YubiKey NEO needs to be very close to the NFC antenna of the device. If you are unsure where the NFC antenna is located on your mobile device, review the specifications on the manufacturer’s website.
- On your Android device, turn off Android Beam.
- If possible, attempt to test your YubiKey NEO with another Android device and/or test your Android device with an NFC tag before you raise a ticket with Yubico Support.
- In the **Settings** dialog box, select **Kill scdaemon**, and click **OK**.

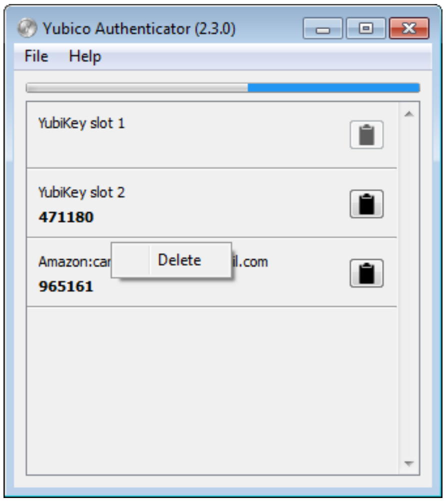
Deleting an Existing Credential

You cannot copy credentials from one YubiKey to another, or rename credentials, so if you want to change the name of a credential, you must log in to the account, and remove the existing credential by deleting the account credential from the YubiKey. While still logged in to your account, go through the setup process for the account again, and create a new credential with the name that you want.

NOTE: The process is the same whether you use Yubico Authenticator for Desktop or Yubico Authenticator for Android to delete an account.

To delete a credential

1. Right-click (or tap) the credential you want to remove, and click (or tap) **Delete**. In this example, we are removing the Amazon credential:



2. To confirm removal of the selected credential, click (or tap) **OK** in the **Confirm credential deletion** dialog box. If you are removing the credential using your Android device, you are prompted to tap the YubiKey again (to the NFC antenna on the phone) to delete the credential.

Changing Settings

This chapter describes the differences between TOTP and HOTP codes, and that TOTP is the default selection. This chapter also describes the slot options (you accept the defaults for some YubiKeys and select the correct slot for other YubiKeys).

Finally, this chapter describes each part of the Settings dialog box of the Yubico Authenticator app, including the Read from slot and the Advanced settings. The Advanced settings enable you to specify whether the application closes or minimizes when you double-click a credential, whether to stop the `scdaemon` process, and displays the name of the YubiKey.

In this Chapter

Understanding the Difference Between TOTP and HOTP Codes

There are two standards for generating One-Time passcodes (OTPs): TOTP and HOTP. Both of these standards are regulated by the Initiative for Open Authentication (OATH). TOTP is the most commonly used authenticator code (used for Amazon, Gmail, Evernote, and other applications).

Time-Based One-Time Password

Time-based one-time password (TOTP) is a temporary passcode based on a time counter. The Yubico Authenticator app automatically refreshes the TOTP codes every 30 seconds.

HMAC-Based One-Time Password

HMAC-based one-time password (HOTP) is an event-based passcode, based on an event counter. To refresh an HOTP code, click the code within the Yubico Authenticator app.

Choosing TOTP or HOTP

The application for which you are generating credentials defaults to using TOTP passwords, and we recommend you accept the default.

A TOTP password has a shorter lifespan than an HOTP password, which may be valid for an unknown amount of time (or until your next login).

A TOTP password requires less maintenance than an HOTP password but the time between the device and the server needs to be synchronized. HOTP passwords require more maintenance but no synchronization.

TOTP is the more secure one-time password solution.

Changing the Slots

For YubiKey Edge, YubiKey Edge-n, YubiKey Standard, and YubiKey Nano, be sure that the slot you program is the same slot you have selected to “read from.” The default slot will be Slot 2, which is usually available if you have not programmed your key. The slot you select here must match that setting.

Changing Advanced Settings

This section describes additional settings, which include Show in system tray, Kill `scdaemon`, and Card reader name. See To access the Settings dialog box for more information about viewing Settings for your operating system.

- Show in system tray
  The **Show in system tray** setting enables you to select what happens to the Yubico Authenticator app when you minimize it (Yubico Authenticator either closes or is minimized). If **Show in system tray** on the **Settings** dialog box is selected, Yubico Authenticator is minimized to the System Tray when you double-click the credential. If **Show in system tray** is not selected, Yubico Authenticator closes when you double-click the credential.

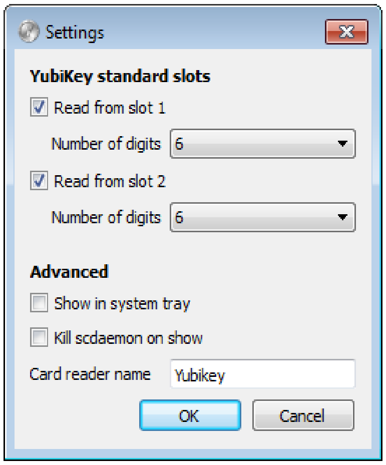
- Kill scdaemon on show
  The **Kill scdaemon on show** setting ends the `scdaemon` (smart card daemon) process if it is running. This setting can be necessary if you are using, for example, **GNU Privacy Guard** (GnuPG or GPG), which can cause Yubico Authenticator to be unable to communicate with the YubiKey.

- Card reader name
  The **Card reader name** setting shows the name associated with the YubiKey.
  IMPORTANT: Do not change the **Card reader name** unless the YubiKey has been renamed (this setting must match the way the operating system identifies the YubiKey).

To access the Settings dialog box

- On Windows and Linux, select **File > Settings**.

- On Mac OS X, select **Yubico Authenticator > Preferences**.



YubiKey standard slots

☑ Read from slot 1

Number of digits 6

☑ Read from slot 2

Number of digits 6

Advanced

☐ Show in system tray

☐ Kill scdaemon on show

Card reader name Yubikey

Troubleshooting

This chapter describes Yubico Authenticator for Desktop and Android messages, other issues, and possible solutions for each message or issue.

In this Chapter

See Tips for Using Your YubiKey NEO with Android Devices in an earlier chapter of this document.

Understanding Yubico Authenticator for Desktop Messages

```
No credentials available
```

This error message reflects expected behavior, and indicates that you have not yet added a credential. It may also indicate that you need to insert a YubiKey into a USB port of your computer.

Understanding Yubico Authenticator for Android Messages

```
Error in YubiKey communication!
```

This error message indicates that the YubiKey and the NFC antenna are not connecting properly. Possible solutions include:

- Be sure you hold the YubiKey NEO close enough to the NFC antenna on your smartphone.
- If you have a case on the smartphone, remove the case and try again.

Problems and Solutions

This section describes issues and possible solutions.

I cannot add a credential using Yubico Authenticator for Desktop on Mac OS X systems

It appears that you cannot click the Yubico Authenticator window, or view any menus for the application, even when you have a YubiKey inserted. This is a known issue. To work around this issue, press the Option+Tab keys (or Alt+Tab) twice. This changes the focus of the current window. Then you can click in the Yubico Authenticator window, and view the Yubico Authenticator menus. To add a credential, select the **File** menu, and then select **Add**.

My app reports that the code I pasted is not valid

If this occurs more than once, do the following:

- For HOTP codes, to request a new code, be sure to click the the corresponding HOTP text for the desired account.

- Yubico Authenticator automatically generates new TOTP codes every 30 seconds, which you can paste or type into your account when prompted. If the first TOTP code is invalid, try the next one. If the TOTP code is still invalid, close the Yubico Authenticator app, and then reopen it and type or enter the new TOTP code. If the error continues, contact Support.

I do not receive a QR code to scan when I turn on two-step verification

This can occur if you previously turned on two-step verification and then turned it off and did not clear your two-step verification settings.

To generate a QR code if you previously had two-step verification turned on

1. In the application you are using, turn off two-step verification.
   IMPORTANT: Be sure to clear all previous two-step verification settings when prompted to do so (you may need to select a checkbox).

2. Turn on two-step verification again. Make sure you select **Authenticator app** as your primary code source, rather than text message.

3. When the QR code appears, see the remaining steps provided in Adding Credentials in an earlier chapter.