

## TWO FACTOR AUTHENTICATION

This is also known as 2FA or multi factor authentication

### WHAT IS TWO FACTOR AUTHENTICATION?

Here's a good definition.

“Two-factor authentication (2FA), sometimes referred to as *two-step verification* or *dual-factor authentication*, is a security process in which users provide two different authentication factors to verify themselves.”<sup>1</sup>

Two-factor authentication provides an additional layer of security and makes it harder for attackers to gain access to a person's devices and online accounts, because knowing the victim's password alone is not enough to pass the authentication check. Two-factor authentication has long been used to control access to sensitive systems and data, and online services are increasingly introducing 2FA to prevent their users' data from being accessed by hackers who have stolen a password database or used phishing campaigns to obtain users' passwords.

The ways in which someone can be authenticated usually fall into three categories known as the factors of authentication, which include:

#### KNOWLEDGE FACTORS

A knowledge factor is something the user knows, such as a password, PIN or shared secret.

#### POSSESSION FACTORS

Possession factors are something the user has, such as an ID card, security token or a smartphone.

#### INHERENCE FACTORS (AKA BIOMETRICS)

Biometrics are something the user is, something inherently about him or her. “These may be personal attributes mapped from physical characteristics, such as fingerprints, face and voice. It also includes behavioral biometrics, such as keystroke dynamics, gait or speech patterns.”<sup>2</sup>

### DISCOVER WHICH SERVICES USE TWO FACTOR AUTHENTICATION

Visit the [2FA Directory](#) to get an idea of which services you use offer two factor authentication.

### A PLACE TO STORE YOUR SECOND FACTORS

[1Password](#), [Dashlane](#), and [Roboform](#) support storing 2FA codes in their password managers. If you're using another program, you'll need an app like [Google Authenticator](#), [Microsoft Authenticator](#), or [Twilio's Authy](#).

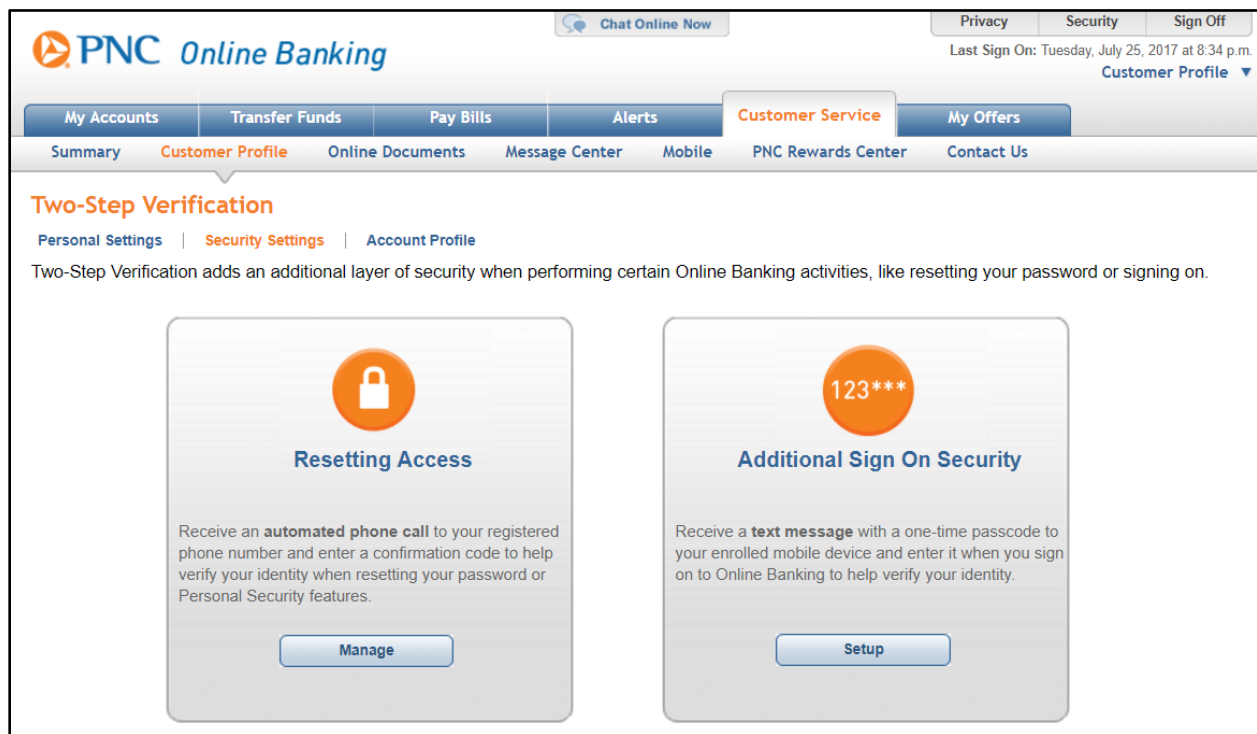
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<sup>1</sup> Linda Rosencrance, “Two-Factor Authentication,” TechTarget, accessed March 31, 2023, <http://searchsecurity.techtarget.com/definition/two-factor-authentication>.

<sup>2</sup> Ibid.

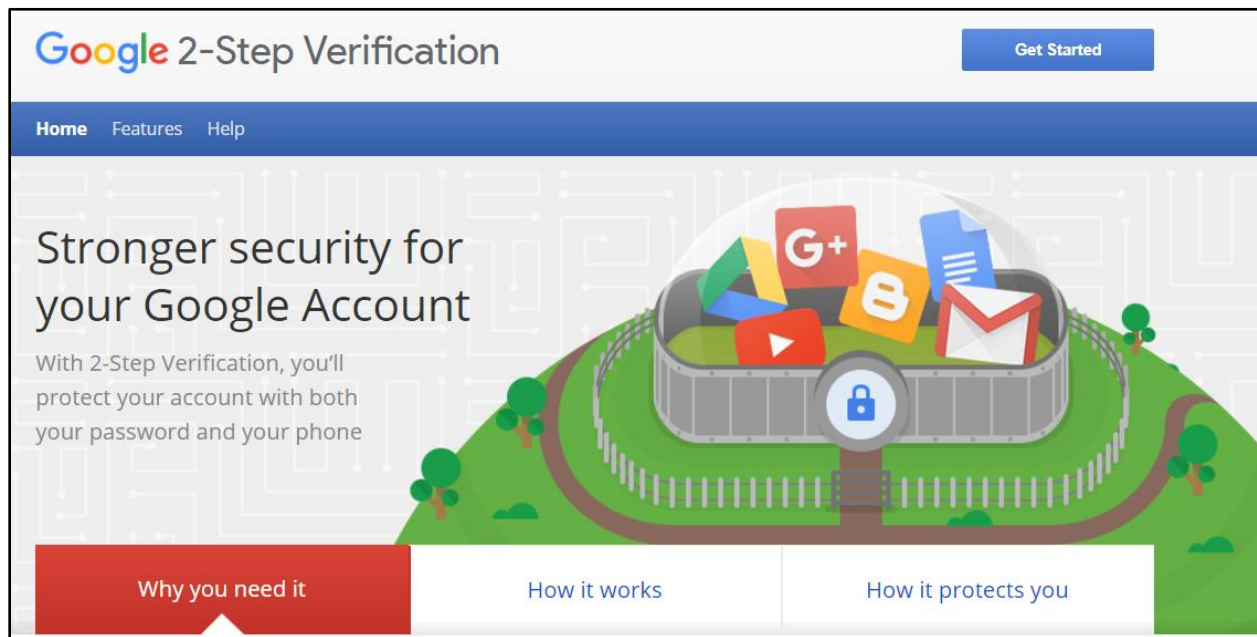
## HOW DO YOU GET 2FA?

For critical services you access online, check to see if they offer any type of 2FA. Keep in mind that 2FA is ANNOYING, but better security is almost always more annoying. If you want to protect yourself well, be prepared to be slightly annoyed. Anyway, here are some 2FA ideas. Your bank probably offers it:



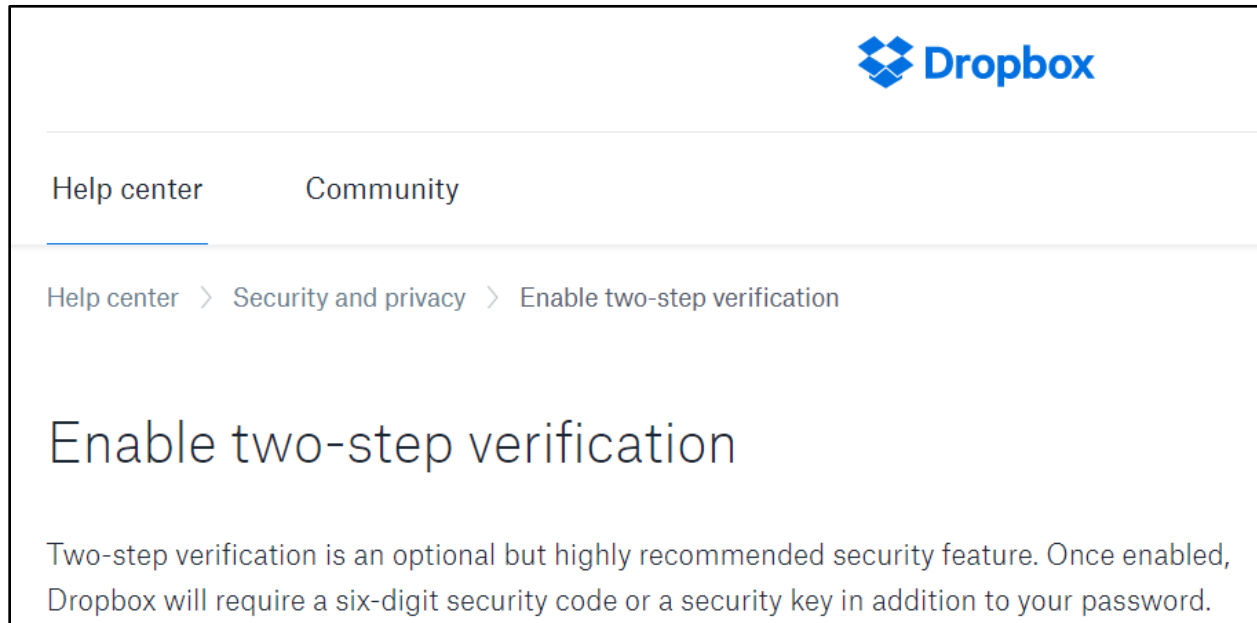
The screenshot shows the PNC Online Banking interface. At the top, there's a navigation bar with links for "My Accounts", "Transfer Funds", "Pay Bills", "Alerts", "Customer Service", and "My Offers". Below this is a secondary navigation bar with "Summary", "Customer Profile", "Online Documents", "Message Center", "Mobile", "PNC Rewards Center", and "Contact Us". The main content area is titled "Two-Step Verification" and includes links for "Personal Settings", "Security Settings", and "Account Profile". A paragraph explains that Two-Step Verification adds an additional layer of security. Two main options are presented in boxes: "Resetting Access" (with a padlock icon) and "Additional Sign On Security" (with a "123\*\*\*" icon). Each option includes a brief description and a button to "Manage" or "Setup".

Your email account probably offers it:



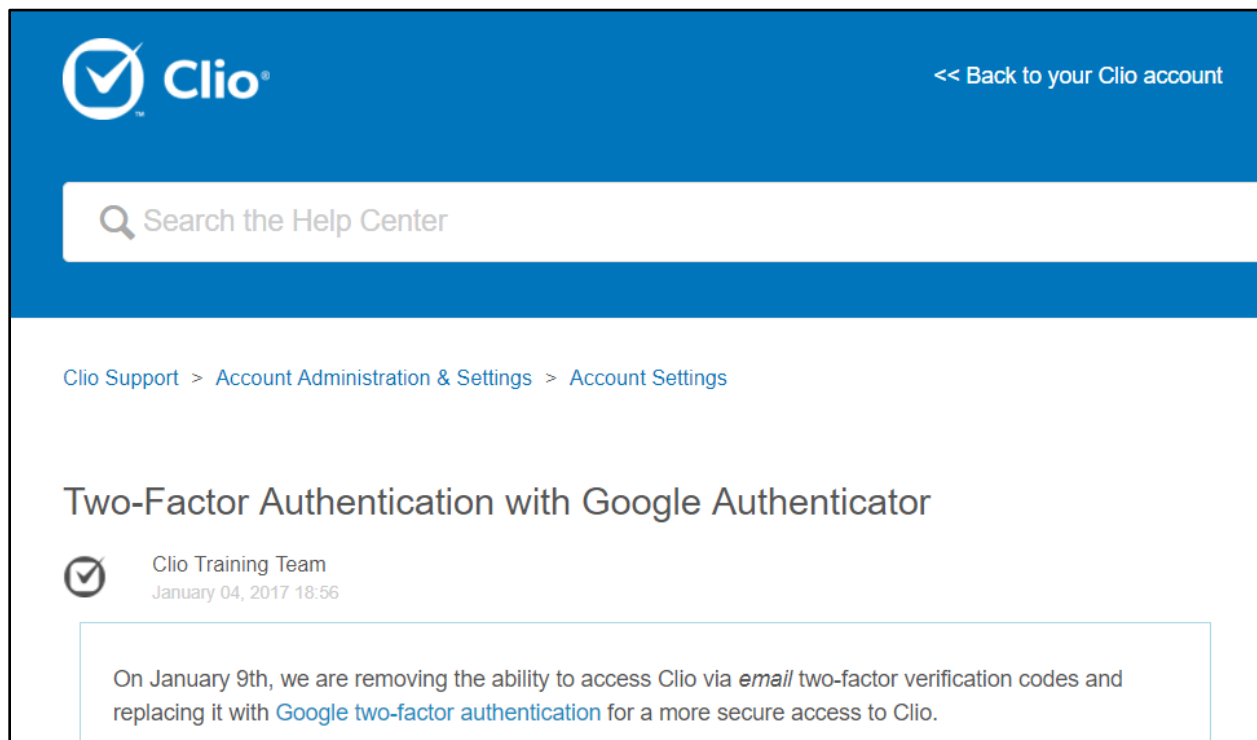
The screenshot shows the Google 2-Step Verification landing page. At the top, it says "Google 2-Step Verification" with a "Get Started" button. Below this is a navigation bar with "Home", "Features", and "Help". The main content area features the heading "Stronger security for your Google Account" and a sub-heading "With 2-Step Verification, you'll protect your account with both your password and your phone". To the right of the text is an illustration of a fenced-in area containing icons for Google services (G+, Blogger, YouTube, Gmail) and a padlock icon. At the bottom, there are three navigation buttons: "Why you need it", "How it works", and "How it protects you".

Your file sharing service probably offers it:



The screenshot shows the Dropbox Help Center interface. At the top right is the Dropbox logo. Below it are two navigation links: 'Help center' (which is underlined) and 'Community'. A breadcrumb trail reads 'Help center > Security and privacy > Enable two-step verification'. The main heading is 'Enable two-step verification'. Below the heading is a paragraph: 'Two-step verification is an optional but highly recommended security feature. Once enabled, Dropbox will require a six-digit security code or a security key in addition to your password.'

Your case management system probably offers it:



The screenshot shows the Clio Help Center interface. At the top left is the Clio logo, and at the top right is a link '<< Back to your Clio account'. Below the header is a search bar with the placeholder text 'Search the Help Center'. A breadcrumb trail reads 'Clio Support > Account Administration & Settings > Account Settings'. The main heading is 'Two-Factor Authentication with Google Authenticator'. Below the heading is a post from the 'Clio Training Team' dated 'January 04, 2017 18:56'. The post content is enclosed in a box and reads: 'On January 9th, we are removing the ability to access Clío via *email* two-factor verification codes and replacing it with [Google two-factor authentication](#) for a more secure access to Clío.'