RESOURCE CENTER

# The State of Password Security 2025 Report

How federal agencies are addressing password security

Get the full interactive view at https://bitwarden.com/resources/the-state-of-password-security/



#### Assessing the State of Password Security within U.S. Federal Agencies

There has been an intense focus on cybersecurity across the United States federal government in recent years. Many agencies are leading the way in educating government organizations and large and small businesses as well as consumers.

However, not every agency is singing the same tune when it comes to password security. One of the foremost groups, the National Institute of Standards and Technology (NIST), "develops cybersecurity standards, guidelines, best practices, and other resources to meet the needs of U.S. industry, federal agencies and the broader public."

The NIST cybersecurity page goes on to say that "some NIST cybersecurity assignments are defined by federal statutes, executive orders and policies. For example, the Office of Management and Budget (OMB) mandates that all federal agencies implement NIST's cybersecurity standards and guidance for non-national security systems."

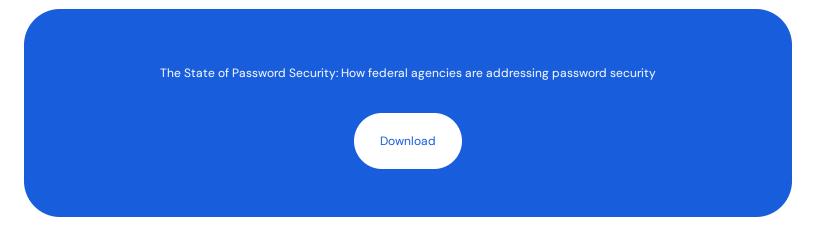
Unfortunately, NIST's recommendations have not yet been universally accepted and implemented by all federal agencies. While NIST sets the standards that agencies purport to follow, it also has its own weakness: a disorganized website.

2025 marks the fourth year Bitwarden has conducted this analysis. This year, the NSA has improved from a "Good" ranking to "Very Good" due to the added recommendation of password managers. CISA's score has risen from "Very Good" to "Excellent" by making their information easier to access and digest. The NIST website has remained disorganized, although its content is very sound. Over the years, many agencies have trended in a better direction in terms of their password security recommendations and overall cybersecurity posture, including CISA, the FBI, the FTC, and the SBA.

Technology moves fast. For businesses and individuals, so much of our lives are now online in myriad accounts ranging from fun entertainment sites to serious financial businesses like our bank accounts.

This assessment aims to engage and educate everyone who uses passwords on the best practices coming from the federal government and where there is room for improvement. Many within the federal government have a solid educational approach to password security, and others might need a bit of assistance to modernize.

Fortunately, consensus is building on best practices for password security. This report consolidates and assesses the details.



View the State of Password Security Presentation

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#### **Guideline to Password Security Rating System**

The rating system ranks agencies based on adherence to the following criteria:



### Excellent

- Recommends use of a password manager
- Calls out importance of strong passwords
- Cites need for 2FA/MFA to further support password security
- Overall security advice is up-to-date and adheres to NIST guidelines
- · Lays out password security recommendations in a clear, digestible, and easy-to-find manner

# **D bit**warden Very Good

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#### National Institute of Standards and Technology (NIST)

#### NIST Risk Management Framework | IA-5(18)

#### Agency Advice:

- Authenticator Management | Password Managers
  - Employ [Assignment: Organization-defined password managers] to generate and manage passwords; and
    - Protect the passwords using [assignment: organization-defined controls].
    - For systems where static passwords are employed, it is often a challenge to ensure that the passwords are suitably complex and that the same passwords are not employed on multiple systems. A password manager is a solution to this problem as it automatically generates and stores strong and different passwords for various accounts. A potential risk of using password managers is that adversaries can target the collection of passwords generated by the password manager. Therefore, the collection of passwords requires protection including encrypting the passwords and storing the collection offline in a token.
- Reference

#### **Digital Identity Guidelines**

- A Password (sometimes referred to as a passphrase or, if numeric, a PIN) is a secret value intended to be chosen and either memorized or recorded by the subscriber. Passwords must be of sufficient complexity and secrecy that it would be impractical for an attacker to guess or otherwise discover the correct secret value. A password is "something you know".
- The requirements in this section apply to centrally verified passwords that are used as independent authentication factors and sent over an authenticated protected channel to the verifier of a CSP. Passwords used locally as an activation factor for a multi-factor authenticator are referred to as activation secrets and discussed in Sec. 3.2.10.
- Passwords SHALL either be chosen by the subscriber or assigned randomly by the CSP.

- If the CSP disallows a chosen password because it is on a blocklist of commonly used, expected, or compromised values (see Sec. 3.1.1.2), the subscriber SHALL be required to choose a different password. Other complexity requirements for passwords SHALL NOT be imposed. A rationale for this is presented in Appendix A, Strength of Passwords.
- The following requirements apply to passwords:
- Verifiers and CSPs **SHALL** require passwords to be a minimum of eight characters in length and **SHOULD** require passwords to be a minimum of 15 characters in length.
- Verifiers and CSPs SHOULD permit a maximum password length of at least 64 characters.
- Verifiers and CSPs SHOULD accept all printing ASCII [RFC20] characters and the space character in passwords. Verifiers and CSPs SHOULD accept Unicode [ISO/ISC 10646] characters in passwords. Each Unicode code point SHALL be counted as a single character when evaluating password length.
- Verifiers and CSPs SHALL NOT impose other composition rules (e.g., requiring mixtures of different character types) for passwords.
- Verifiers and CSPs **SHALL NOT** require users to change passwords periodically. However, verifiers **SHALL** force a change if there is evidence of compromise of the authenticator.
- Verifiers and CSPs SHALL NOT permit the subscriber to store a hint that is accessible to an unauthenticated claimant.
- Verifiers and CSPs **SHALL NOT** prompt subscribers to use knowledge-based authentication (KBA) (e.g., "What was the name of your first pet?") or security questions when choosing passwords.
- Verifiers SHALL verify the entire submitted password (i.e., not truncate it).
- When processing a request to establish or change a password, verifiers SHALL compare the prospective secret against a blocklist that contains known commonly used, expected, or compromised passwords. The entire password SHALL be subject to comparison, not substrings or words that might be contained therein. For example, the list MAY include but is not limited to:
  - Passwords obtained from previous breach corpuses
  - Dictionary words
  - · Context-specific words, such as the name of the service, the username, and derivatives thereof
  - If the chosen password is found on the blocklist, the CSP or verifier **SHALL** require the subscriber to select a different secret and **SHALL** provide the reason for rejection. Since the blocklist is used to defend against brute-force attacks and unsuccessful attempts are rate-limited, as described below, the blocklist **SHOULD** be of sufficient size to prevent subscribers from choosing passwords that attackers are likely to guess before reaching the attempt limit.
- Verifiers **SHALL** offer guidance to the subscriber to assist the user in choosing a strong password. This is particularly important following the rejection of a password on the blocklist as it discourages trivial modification of listed weak passwords [Blocklists].
- Verifiers **SHALL** implement a rate-limiting mechanism that effectively limits the number of failed authentication attempts that can be made on the subscriber account, as described in Sec. 3.2.2.
- Verifiers **SHALL** allow the use of password managers. Verifiers **SHOULD** permit claimants to use the "paste" functionality when entering a password to facilitate their use. Password managers have been shown to increase the likelihood that users will choose stronger passwords, particularly if the password managers include password generators [Managers].

- Verifiers SHALL store passwords in a form that is resistant to offline attacks. Passwords SHALL be salted and hashed using a suitable password hashing scheme. Password hashing schemes take a password, a salt, and a cost factor as inputs and generate a password hash. Their purpose is to make each password guess more expensive for an attacker who has obtained a hashed password file, thereby making the cost of a guessing attack high or prohibitive. The chosen cost factor SHOULD be as high as practical without negatively impacting verifier performance. It SHOULD be increased over time to account for increases in computing performance. An approved password hashing scheme published in the latest revision of [SP800-132] or updated NIST guidelines on password hashing schemes SHOULD be used. The chosen output length of the password verifier, excluding the salt and versioning information, SHOULD be the same as the length of the underlying password hashing scheme output.
- The salt **SHALL** be at least 32 bits in length and chosen to minimize salt value collisions among stored hashes. Both the salt value and the resulting hash **SHALL** be stored for each password. A reference to the password hashing scheme used, including the work factor, **SHOULD** be stored for each password to allow migration to new algorithms and work factors. For example, for the Password-Based Key Derivation Function 2 (PBKDF2) [SP800-132], the cost factor is an iteration count: the more times that the PBKDF2 function is iterated, the longer it takes to compute the password hash.
- In addition, verifiers **SHOULD** perform an additional iteration of a keyed hashing or encryption operation using a secret key known only to the verifier. If used, this key value **SHALL** be generated by an approved random bit generator, as described in Sec. 3.2.12. The secret key value **SHALL** be stored separately from the hashed passwords. It **SHOULD** be stored and used within a hardware-protected area, such as a hardware security module or trusted execution environment (TEE). With this additional iteration, brute-force attacks on the hashed passwords are impractical as long as the secret key value remains secret.
- Cybersecurity Awareness Month 2023 Blog Series
  - Agency Advice
    - Passwords are still the most widely used authentication mechanism for gaining access to resources of interest. Passwords are the frontline defense to protect data confidentiality and integrity against cybercriminals and data breaches. Good, strong passwords help people to stay secure and private online.
- Reference







#### National Institute of Standards and Technology (NIST)

#### **Overall Bitwarden assessment: Very Good**

- Recommends use of a password manager
- Calls out importance of strong passwords
- Cites need for 2FA/MFA to further support password security
- Overall security advice is up-to-date and adheres to NIST guidelines (NIST sets the standard for federal government security advice)
- Does not lay out password security recommendations in a clear, digestible, and easy-to-find manner

While the advice is thorough and sets the standards for agencies, accessing password guidelines via the website isn't intuitive. The advice is buried in very long PDFs and written in a way that isn't user-friendly.

"Verifiers SHOULD permit claimants to use "paste" functionality when entering a memorized secret. This facilitates the use of password managers, which are widely used and in many cases increase the likelihood that users will choose stronger memorized secrets."

NIST

Cybersecurity and Infrastructure Security Agency (CISA)

### Let a password manager do the work!

A password manager creates, stores and fills passwords for us automatically. **Then we each only have to remember one strong password**—for the password manager itself. Search trusted sources for "password managers" like Consumer Reports, which offers a selection of highly rated password managers. Read reviews to compare options and find a reputable program for you.

When we choose strong passwords, we make it much harder for someone to steal our:



Let a password manager do the work!

• Reference

#### Secure Our World: Require Strong Passwords Agency Advice:

- Use Strong Passwords
  - Create long, random, unique passwords with a password manager for safer accounts.
- An Easy Way to Protect Your Accounts

- Simple passwords, such as 12345, or common identifying information, like birthdays and pet names, are not safe for protecting important accounts holding personal information. Using an easy-to-guess password is like locking the door but leaving the key in the lock. Weak passwords can quickly be broken by computer hackers. But it's impossible to remember a unique strong password for every account!
- The good news is that creating and storing strong passwords with the help of a "password manager" is one of the easiest ways to protect ourselves from someone logging into our accounts and stealing sensitive information, data, money or even our identities.
- Stop online crime with strong passwords YouTube video created by CISA
- Strengthen Your Passwords with Three Simple Tips
- A strong password follows ALL THREE of these tips.



#### 1. Make them long

- At least 16 characters—longer is stronger!
- 2. Make them random
  - Two ways to do this are:
  - Use a random string of mixed-case letters, numbers and symbols. For example:
    - cXmnZK65rf\*&DaaD
    - Yuc8\$RikA34%ZoPPao98t
    - Another option is to create a memorable phrase of 4 7 unrelated words. This is called a "passphrase." For example:
      - Good: HorsePurpleHatRun
      - Great: HorsePurpleHatRunBay
      - Amazing: Horse Purple Hat Run Bay Lifting
      - Note: You can use spaces before or between words if you prefer!
- 3. Make them unique
  - Use a different strong password for each account.
  - For example:
    - Bank: k8dfh8c@PfvOgB2
    - Email account: legal tiny facility freehand probable enamel
    - Social media account: e246gs%mFs#3tv6
- PRO TIP: USE A PASSWORD MANAGER
  - It's hard to remember all these strong passwords and we don't want to save them in a file on a computer. Instead, use a password manager. See below!
- Use a Password Manager
  - For most people, generating and remembering long, random and unique passwords for every account is not possible. Rather than write them down, use a password manager! A password manager is an easy-to-use program that generates, stores and even fills in all your passwords. Password managers tell us when we have weak or re-used passwords and can generate strong passwords for us. They can also automatically fill logins into sites and apps as we move from one to another.
  - When we use a password manager, we only need to remember one strong password—the one for the password manager itself. (Tip: Create a memorable long "passphrase" as described above.)
  - There are many password managers to choose from. Some are free, like the built-in password managers in your web browser, and some cost money. Search a trusted source for "password managers" like Consumer Reports, which offers a selection of highly rated password managers. Read reviews to compare options and find a reputable program for you.

- When we use a password manager, we are much more likely to use a long, random and unique password on every site. And that makes it much harder for someone to steal our valuable information!
- PRO TIP Check to see whether your email accounts, banks, healthcare providers and other important accounts enforce strong password requirements. If they let you use a short password or a dictionary word, ask them why. It's your information they're putting at risk!
- And don't forget to enable MFA, especially for your email, social media accounts and financial accounts.
- CISA password tip sheet
- Reference



### Excellent



### **U bit**warden

#### Cybersecurity and Infrastructure Security Agency (CISA)

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#### The National Security Agency (NSA)

#### **Stop Ransomware Guide**

#### Agency Advice:

- Implement password policies that require unique passwords of at least 15 characters
  - Password managers can help you develop and manage secure passwords. Secure and limit access to any password managers in use and enable all security features available on the product in use, such as MFA.
- Reference

#### **Cisco Password Types: Best Practices**

- The rise in the number of compromises of network infrastructures in recent years is a reminder that authentication to network devices is an important consideration. Network devices could be compromised due to:
  - Poor password choice (vulnerable to brute force password spraying)
  - Router configuration files (which contain hashed passwords) sent via unencrypted email, or
  - Reused passwords (where passwords recovered from a compromised device can then be used to compromise other devices).
- Using passwords by themselves increases the risk of device exploitation. While NSA strongly recommends multi-factor
  authentication for administrators managing critical devices, sometimes passwords alone must be used. Choosing good password
  storage algorithms can make exploitation much more difficult.
- To provide as much protection as possible, use strong passwords to prevent them from being cracked and converted to plaintext. Comply with a password policy that:
  - · Consists of a combination of lowercase and uppercase letters, symbols, and numbers;
  - Is at least 15 alphanumeric characters; and

- Patterns that are not:
  - A keyboard walk
  - The same as a user name
  - The default password
  - The same as a password used anywhere else
  - Related to the network, organization, location, or other function identifiers
  - Straight from a dictionary, common acronyms, or easy to guess
- Reference

#### **Keeping Safe on Social Media**

#### **Agency Advice:**

- Secure and strengthen your passwords
  - Use unique and strong passwords for each online account. Reusing passwords across multiple accounts can expose data from all of the accounts if the password is discovered. Make sure that your password is of adequate length and complexity, using a combination of letters, numbers, and special characters. Where possible, implement multi-factor authentication using an authentication token or app so that someone can't access your account even if your password is compromised. Never share passwords and avoid using information that could be guessed based on your social media profiles or public information.
- Reference

#### **Selecting Secure Multi-factor Authentication Solutions**

- Criteria to consider when selecting a multi-factor authentication solution: The National Institute of Standards and Technology's Computer Security Resource Center recently updated its "Digital Identity Guidelines4" (SP 800-63-3). It provides standard definitions and assigns assurance levels for various authentication solutions. The criteria below reflect NIST's requirements to ensure that a solution is validated to resist a number of common exploits. A complete authenticators solution must be properly implemented using standard, validated mechanisms. It must also include authenticators, validators, and supporting lifecycle processes. Some commercial solutions focus on authenticators and require an organization to manage validators and lifecycle processes. Other commercial solutions validate multiple types of authenticators, manage multi-step authentication mechanisms, and manage trust in authenticator from various identity providers in support of multiple services. These often require the customer to acquire one or more authenticator solutions and configure servers to accept the assertions of an authentication server that performs identity federation. SP 800-63-3 also includes criteria for identity federation.
- Reference







#### The National Security Agency (NSA)

#### **Overall Bitwarden assessment: Very Good**

- Recommends use of a password manager
- · Calls out importance of strong passwords
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"Disable the feature that allows web browsers to remember your passwords. Secure your passwords in a password manager."

NSA

#### **Department of Homeland Security**

CISA falls under the DHS

#### **Cybersecurity page**

- President Biden has made cybersecurity, a critical element of the Department of Homeland Security's (DHS) mission, a top priority for the Biden-Harris Administration at all levels of government.
- To advance the President's commitment, and to reflect that enhancing the nation's cybersecurity resilience is a top priority for DHS, Secretary Mayorkas issued a call for action dedicated to cybersecurity in his first month in office. This call for action focused on tackling the immediate threat of ransomware and on building a more robust and diverse workforce.
- In March 2021, Secretary Mayorkas outlined his broader vision and a roadmap for the Department's cybersecurity efforts in a virtual address hosted by RSA Conference, in partnership with Hampton University and the Girl Scouts of the USA.
- After his presentation, the Secretary was joined by Judith Batty, Interim CEO of the Girls Scouts, for a fireside chat to discuss the unprecedented cybersecurity challenges currently facing the United States. Dr. Chutima Boonthum–Denecke from Hampton University's Computer Science Department introduced the Secretary and facilitated a Q&A to close the program.
  - Overview of DHS Cybersecurity Sprints
  - Overview of Additional Ongoing Cybersecurity Priorities
  - Additional Information



### **Room for Improvement**





#### **Department of Homeland Security**

#### **Overall Bitwarden assessment: Room for Improvement**

- Does not recommend use of a password manager
- Does not call out importance of strong passwords
  - Offers inaccurate and misguided password security advice OR does not mention passwords or password security
  - Does not clearly call out password-related advice
- Does not consistently cite the need for 2FA/MFA to further support password security
- · Overall security advice is not up-to-date and does not adhere to NIST guidelines
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#### Federal Bureau of Investigation (FBI)

#### The Cyber Threat

- Internet-enabled crimes and cyber intrusions are becoming increasingly sophisticated and preventing them requires each user of a connected device to be aware and on guard.
- Keep systems and software up to date and install a strong, reputable anti-virus program.
- Be careful when connecting to a public Wi-Fi network and do not conduct any sensitive transactions, including purchases, when on a public network.
- Create a strong and unique passphrase for each online account and change those passphrases regularly.
- Set up multi-factor authentication on all accounts that allow it.
- Examine the email address in all correspondence and scrutinize website URLs before responding to a message or visiting a site
- Don't click on anything in unsolicited emails or text messages.
- Be cautious about the information you share in online profiles and social media accounts. Sharing things like pet names, schools, and family members can give scammers the hints they need to guess your passwords or the answers to your account security questions.
- Don't send payments to unknown people or organizations that are seeking monetary support and urge immediate action.
- Reference

#### Scams and safety on the internet

#### Agency Advice:

#### • Keep your firewall turned on

A firewall helps protect your computer from hackers who might try to gain access to crash it, delete information, or even steal passwords or other sensitive information. Software firewalls are widely recommended for single computers. The software is prepackaged on some operating systems or can be purchased for individual computers. For multiple networked computers, hardware routers typically provide firewall protection.

#### Install or update your antivirus software

Antivirus software is designed to prevent malicious software programs from embedding on your computer. If it detects malicious code, like a virus or a worm, it works to disarm or remove it. Viruses can infect computers without users' knowledge. Most types of antivirus software can be set up to update automatically.

#### Install or update your antispyware technology

Spyware is just what it sounds like—software that is surreptitiously installed on your computer to let others peer into your activities on the computer. Some spyware collects information about you without your consent or produces unwanted pop-up ads on your web browser. Some operating systems offer free spyware protection, and inexpensive software is readily available for download on the Internet or at your local computer store. Be wary of ads on the Internet offering downloadable antispyware—in some cases these products may be fake and may actually contain spyware or other malicious code. It's like buying groceries—shop where you trust.

#### Keep your operating system up to date

Computer operating systems are periodically updated to stay in tune with technology requirements and to fix security holes. Be sure to install the updates to ensure your computer has the latest protection.

#### • Be careful what you download

Carelessly downloading email attachments can circumvent even the most vigilant anti-virus software. Never open an e-mail attachment from someone you don't know, and be wary of forwarded attachments from people you do know. They may have unwittingly advanced malicious code.

#### • Turn off your computer

With the growth of high-speed Internet connections, many opt to leave their computers on and ready for action. The downside is that being "always on" renders computers more susceptible. Beyond firewall protection, which is designed to fend off unwanted attacks, turning the computer off effectively severs an attacker's connection—be it spyware or a botnet that employs your computer's resources to reach out to other unwitting users.

Reference







#### Federal Bureau of Investigation (FBI)

#### **Overall Bitwarden assessment: Good**

- Does not recommend use of a password manager
- Calls out importance of strong passwords
- Cites the need for 2FA/MFA to further support password security
- Overall security advice is not up-to-date and does not adhere to NIST guidelines
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"Be careful with what information you share online or on social media. By openly sharing things like pet names, schools you attended, links to family members, and your birthday, you can give a scammer all the information they need to guess your password or answer your security questions."

FBI

#### Federal Trade Commission (FTC)

### Protect Your Personal Information with Strong Passwords and Two-Factor Authentication

- Your online accounts may contain a lot of your personal information. Protect them with a strong password that's hard to guess and turn on two-factor authentication.
- When it comes to passwords, you have a few options:
  - Create your own password
  - Choose an automatically generated password
  - Use a password manager
- Create your own password. If you create your own password, make it long. Aim for at least 15 characters. Use a combination of
  uppercase and lowercase letters, numbers, and symbols.
- Since a long password can be hard to remember, you may find it easier to use a passphrase. A passphrase is a series of words separated by spaces. If you use a passphrase
  - Make sure it consists of random words

- · Avoid using common phrases, song lyrics, or movie quotes that are easy for a hacking program to guess
- Choose an automatically generated password. Studies show that people aren't good at creating and remembering strong passwords. You can have your browser or device create a password for you. Here's more info on how that works:
  - Google Chrome
  - Mac
  - Microsoft Edge
  - Firefox
  - iPhone iOS
  - Android
- Use a password manager. A third-party password manager also can create a strong password. To find a reputable password manager, read expert reviews. Make sure the password for your password manager is strong. And protect it like you do your other passwords.
- Strong passwords can be hard to remember. But your browser and device can save your password. So can your password manager. And they can auto-populate your password the next time you log in to a website or app.
- Use two-factor authentication. Using a strong password is an important step in protecting your account from hackers. But even strong passwords are vulnerable to cyberattacks. Using two-factor authentication adds an extra layer of security to your account. A hacker who steals your password can't log in to your account without the second authentication factor.
- The most common type of two-factor authentication is a verification passcode you get by text message or email. This one-time passcode is typically six digits or longer and expires automatically.
- The more secure types of two-factor authentication are an authenticator app or a security key. Choose one of these methods for more protection if you have the option.
- Reference

#### **Password checklist**

- Make sure your password is long and strong. That means at least 12 characters. Making a password longer is generally the easiest way to make it stronger. Consider using a passphrase of random words so that your password is more memorable, but avoid using common words or phrases. If the service you are using does not allow long passwords, you can make your password stronger by mixing uppercase and lowercase letters, numbers, and symbols.
- Don't reuse passwords you've used on other accounts. Use different passwords for different accounts. That way, if a hacker gets your password for one account, they can't use it to get into your other accounts.
- Use multi-factor authentication when it's an option. Some accounts offer extra security by requiring something in addition to a password to log in to your account. This is called multi-factor authentication. The "something extra" you need to log in to your account fall into two categories:
  - Something you have like a passcode you get via an authentication app or a security key.
  - Something you are like a scan of your fingerprint, your retina, or your face.

- Consider a password manager. Most people have trouble keeping track of all of their passwords. The longer and more complicated a password is, the stronger it is, but a longer password can also be more difficult to remember. Consider storing your passwords and security questions in a reputable password manager. To find a reputable password manager, search independent review sites, and talk to friends and family for ones that they use. Make sure to use a strong password to secure the information in your password manager.
- Pick security questions only you know the answer to. If a site asks you to answer security questions, avoid providing answers that are available in public records or easily found online, like your zip code, birthplace, or your mother's maiden name. And don't use questions with a limited number of responses that attackers can easily guess like the color of your first car. You can even use nonsense answers to make guessing more difficult but if you do, make sure you can remember what you use.
- **Change passwords quickly if there's a breach.** If a company tells you there was a data breach where a hacker could have gotten your password, change the password you use with that company right away, and on any account that uses a similar password.
- Reference







#### Federal Trade Commission (FTC)

#### **Overall Bitwarden assessment: Excellent**

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"Use a password manager. A third-party password manager also can create a strong password. To find a reputable password manager, read expert reviews. Make sure the password for your password manager is strong. And protect it like you do your other passwords."

FTC

#### **Department of Commerce**

#### National Cybersecurity Month: Protecting Yourself Online

- Previously, the conventional wisdom was to create passwords using special characters, capitalization, numbers, letters, and a variety of arbitrary rules including forcing you to change your password multiple times per year. Research shows each of us did the same thing in response-re-used passwords or created variations of the same password because we'd been asked to memorize dozens of unique passwords for every site, log-in, or application.
- Our natural instincts created a weakness in our online security and cyber criminals took advantage. Research on the use of
  passwords has demonstrated the inherent weakness in expecting users to memorize arbitrarily complex passwords, and the
  importance of using multi-factor authentication (MFA) to safeguard our private information. Importantly, our thinking has evolved
  around this topic, and we've identified the following practices to better protect ourselves:
  - When you must use a password, use a longer password (15 or more characters) or even passphrases, as these provide greater protection than a shorter, arbitrarily complex password. Passphrases have the added benefit of being easy to remember.
  - Employing MFA (such as a one-time code emailed to you or an authenticator app on your phone) adds a second, critical layer to protect against a compromised password. MFA should be set up anytime it is available. It just takes a couple moments and will give you peace of mind.
  - Password managers, protected by one very strong, long password with MFA enabled, allow us to create unique passwords for each site without needing to memorize them all.

• Reference

#### NIST falls under the Department of Commerce

- Ensuring the security of our interconnected global networks, and the devices and data connected to those networks is one of the defining challenges of our era.
- The Department of Commerce is tasked with enhancing cybersecurity awareness and protections, protecting privacy, maintaining public safety, supporting economic and national security, and empowering Americans to better manage their safety online.
  - NIST Releases Version 1.0 of Privacy Framework
  - NIST Offers 'Quick-Start' Guide for Its Security and Privacy Safeguards Catalog
  - Small Business Cybersecurity Corner
- Reference







#### **Department of Commerce**

#### **Overall Bitwarden assessment: Very Good**

- Recommends use of a password manager
- Calls out importance of strong passwords
- Cites need for 2FA/MFA to further support password security
- Overall security advice is up-to-date and adheres to NIST guidelines
- Does not lay out password security recommendations in a clear, digestible, and easy-to-find manner

#### Federal Communications Commission (FCC)

#### Cybersecurity tip sheet for small businesses

- Train employees in security principles. Establish basic security practices and policies for employees, such as requiring strong passwords and establish appropriate Internet use guidelines, that detail penalties for violating company cybersecurity policies. Establish rules of behavior describing how to handle and protect customer information and other vital data.
- Require employees to use unique passwords and change passwords every three months. Consider implementing multi-factor authentication that requires additional information beyond a password to gain entry. Check with your vendors that handle sensitive data, especially financial institutions, to see if they offer multi-factor authentication for your account.
- Reference

#### 10. Passwords and authentication

Require employees to use unique passwords and change passwords every three months. Consider implementing multi-factor authentication that requires additional information beyond a password to gain entry. Check with your vendors that handle sensitive data, especially financial institutions, to see if they offer multi-factor authentication for your account.







### **U bit**warden

#### Federal Communications Commission (FCC)

#### **Overall Bitwarden assessment: Fair**

- Does not recommend use of a password manager
- · Calls out importance of strong passwords
  - Links to content that focuses on password security
  - However, content is clearly outdated and could be more organized
- Does not consistently cite the need for 2FA/MFA to further support password security
- Overall security advice is not up-to-date and does not adhere to NIST guidelines
  - Against NIST guidelines, recommends changing passwords every three months
- Does not lay out password security recommendations in a clear, digestible, and easy to find manner

#### Small Business Administration (SBA)

#### Best practices for preventing cyberattacks

#### **Agency Advice:**

- What is the leading cause of small business data breaches? Employees and work-related communications. They are direct pathways into your systems. Train your employees on internet usage best practices. This can help in preventing cyberattacks. Other useful training topics include:
  - Spotting phishing emails
  - Using good internet browsing practices
  - Avoiding suspicious downloads
  - Enabling authentication tools (strong passwords, Multi-Factor Authentication, etc.)
  - Protecting sensitive vendor and customer information
- Reference

#### **Enable Multi-Factor Authentication**

- Multi-Factor Authentication (MFA) is an important security measure. It verifies someone's identity by requiring more than a username and password alone. MFA may require users to provide two or more of the following:
  - Something the user knows (password, phrase, PIN)

- Something the user has (physical token, phone)
- Something that physically identifies the user (fingerprint, facial recognition)
- Check with your vendors to see if they offer MFA for any of your accounts (for example, financial, accounting, payroll).
- Reference





### **U bit**warden

#### Small Business Administration (SBA)

#### **Overall Bitwarden assessment: Good**

- Does not recommend use of a password manager
- Calls out importance of strong passwords
- Cites the need for 2FA/MFA to further support password security
- Overall security advice is not up-to-date and does not adhere to NIST guidelines
- Does not lay out password security recommendations in a clear, digestible, and easy-to-find manner

#### Securities and Exchange Commission (SEC)

In July 2023, the SEC "adopted final rules that will require public companies to disclose both material cybersecurity incidents they experience and, on an annual basis, material information regarding their cybersecurity risk management, strategy, and governance." Given the SEC's role in enforcing cybersecurity compliance, it seems prudent to assess the SEC's own password security advice.

A search for "password security" on the SEC.gov website reveals 10 documents, all of which appear to be from years ago. There is a page devoted to cybersecurity, but it offers fairly general recommendations repurposed from CISA. A cybersecurity risk alert from 2020 titled "Cybersecurity: Safeguarding Client Accounts against Credential Compromise" leads to a PDF that discusses credential stuffing. While the word "password" is used throughout, "password security is not explicitly mentioned. "Strong passwords" are referenced in the below context:

#### Cybersecurity: Safeguarding Client Accounts Against Credential Compromise

- As firms prepare for credential stuffing attacks, OCIE staff encourages firms to consider their current practices (e.g., MFA and other practices described above) and any potential limitations of those practices, and to consider whether the firm's customers and staff are properly informed on how they can better secure their accounts. Informed Customers Most firms require customers and staff to create and use strong passwords. However, the use of passwords is less effective if customers and/or staff re-use passwords from other sites. To be more effective, some firms have informed and encouraged clients and staff to create strong, unique passwords and to change passwords if there are indications that their password has been compromised.
- Reference

The Commission has noted that cybersecurity risks have increased alongside the ever-increasing share of economic activity that depends on electronic systems, the growth of remote work, the ability of criminals to monetize cybersecurity incidents, the use of digital payments, and the increasing reliance on third party service providers for information technology services, including cloud computing technology. In my view, artificial intelligence and other technologies may enhance both the ability of public companies to defend against cybersecurity threats but also the capacity of threat actors to launch sophisticated attacks. The Commission also observed that the cost to companies and their investors of cybersecurity incidents is rising at an increasing rate. All of these trends highlight investors' need for improved disclosure.







#### Securities and Exchange Commission (SEC)

#### **Overall Bitwarden assessment: Fair**

- Does not recommend use of a password manager
- · Calls out importance of strong passwords
  - · Links to dated content that acknowledges strong passwords but could be much more explicit
- Does not consistently cite the need for 2FA/MFA to further support password security
  - While 2FA/MFA is referenced in the PDF linked above, it is not prolific advice and requires some searching to find
- Overall security advice is not up-to-date and does not adhere to NIST guidelines
- Does not lay out password security recommendations in a clear, digestible, and easy to find manner

#### **The White House**

This section was updated in January 2025 and will be updated to reflect new administration policies as they become available.

#### A Proclamation on Cybersecurity Awareness Month, 2023

#### **Agency Advice:**

- "I call upon the people, businesses, and institutions of the United States to recognize and act on the importance of cybersecurity and to observe Cybersecurity Awareness Month in support of our national security and resilience. I also call upon business and institutions to take action to better protect the American people against cyber threats and create new opportunities for American workers to pursue good-paying cyber jobs. Americans can also take immediate action to better protect themselves such as turning on multifactor authentication, updating software on computers and devices, using strong passwords, and remaining cautious of clicking on links that look suspicious."
- Reference

#### **Delivering a Digital-First Public Experience**

- Agencies shall ensure websites that require the public to authenticate are compatible with commonly-used password managers, and shall not prevent the "pasting" of passwords or other automated, client-side assistive mechanisms.
- Reference

#### Readout of White House Multifactor Authentication Modernization Symposium

#### Agency Advice:

- "You need more than a password to stay safe online—and that's where multi-factor authentication steps in to ensure your data is better protected against malicious cyber actors," CISA Executive Director Brandon Wales said. "CISA has consistently urged organizations to implement MFA for all users to ensure any critical data is harder to access. Today's symposium is about coming together to map out the vision we are all striving towards making a reality."
- Reference

#### Biden-Harris Administration Announces Cybersecurity Labeling Program for Smart Devices to Protect American Consumers

- Acting under its authority to regulate wireless communication devices, the FCC is expected to seek public comment on rolling out the proposed voluntary cybersecurity labeling program, which is expected to be up and running in 2024. As proposed, the program would leverage stakeholder-led efforts to certify and label products, based on specific cybersecurity criteria published by the National Institute of Standards and Technology (NIST) that, for example, requires unique and strong default passwords, data protection, software updates, and incident detection capabilities.
- Reference







Updated January 2025



#### **The White House**

#### Overall Bitwarden assessment through 2024: Good

- Does not recommend use of a password manager
  - In a 2022 Cybersecurity Awareness Month communication, the White House recommended use of a password manager. The White House had the opportunity to do the same in the 2023 Cybersecurity Awareness blog. They did not. While the blog recommends 'using strong passwords', there is no mention of password managers.
- · Calls out importance of strong passwords
- Cites need for 2FA/MFA to further support password security
- · Overall security advice is not up-to-date and does not adhere to NIST guidelines
  - In previous communications, the White House has recommended changing passwords, in contradiction to NIST advice. Passwords should only be changed if they are weak, reused, or have been compromised. A strong and unique password may never need to be changed unless you suspect it has been compromised.
- Does not lay out password security recommendations in a clear, digestible, and easy to find manner
  - No dedicated cybersecurity page

#### Summary

There are many steps you can take to stay safe online, but the simplest action with the most significant and immediate impact on your security is to use a password manager. Choose a cross-platform password manager with zero knowledge end-to-end encryption that can generate and store unlimited unique and strong passwords. You can get started with Bitwarden on a free account or opt for Premium for less than \$10/year to get advanced features.

#### **Additional Resources**

View the State of Password Security Presentation