

The background features three large, stylized, light blue letters: 'B' on the left, 'V' in the center, and 'S' on the right. The letters have a double-line outline and a slight shadow effect, giving them a three-dimensional appearance. They are set against a plain white background.

Password Managers
LastPass

Password Managers

- **Why?**
- **Different approaches**
- **Best Practices**



Why?

- **The Old Days – few to remember, memorize, sticky notes, etc.**
- **Now –**
 - **hundreds of different accounts, personal, organizational, work – not just login but security questions, associated CCs, phone numbers, recovery email**
 - **Beneficiaries likely need some access**
 - **Backups desirable**

Why A Password Manager?

- **Tracking things manually – sticky notes, password account notebook**
 - Gets cluttered in a hurry; writing may be unclear; loss can expose and loose access to all accounts; backup?
- **Tracking info in an ordinary computer document**
 - Risky; no adequate protection if computer compromised by malware that allows access to file or if someone else can gain physical access to your computer or backups, or if file is ported to other devices by insecure means
- **Password Managers use a securely encrypted database – one master password to remember**

Different Approaches

- **Single Database in proprietary cloud with local synced copy (LastPass) – advantage: always synced across all devices; disadvantage: one user with multiple independent database accounts not well supported**
- **Database on local system (KeePass) – advantage: very flexible, multiple databases well supported; disadvantage: must devise own conventions for porting to other devices (using cloud storage, external storage) and for all backups**
- **All support account description, username & password. Must devise own conventions for tracking related security questions and info as "notes"**

LastPass

- **Supported on any platform with a browser plus special LastPass apps for mobile devices**
- **Auto fill of passwords when using web browser supported via Browser add-on for Chrome, Firefox, Safari, Opera, IE, Edge**
- **Available in Free, Premium (\$36/year), and Family (\$48/year, w 6 Premium licenses) – business prices for "teams" & "enterprise" much more expensive(\$48 & \$72 per user per year)**
- **Even "Free" now allows unlimited number of devices**
- **"Premium" adds one-to-many item sharing, Emergency access, password auto-fill support for Windows apps, 1 GB encrypted cloud file storage, plus some other stuff**
- **"Family" adds unlimited shared folders**

LastPass

- **Creating a LastPass account**

- **Need an email address & a Master Password (12 chars or more, upper & lower case, 1 number)**
- **Ways to get a long but memorable password**
 - **Use all characters from a phrase made up from several words**
 - **Use first letters from a longer phrase that is very familiar to you – if you are a fan of Sir Walter Scott's "Lay of the Last Minstrel", perhaps something like 6Bttmwssdwnthhs for "Canto VI, Breathes there the man with soul so dead, who never to himself hath said, ..."**
- **Will ask to install browser extension when account created successfully**
- **Will offer upgrades, which may be ignored**
- **May need to give LastPass some permissions, depending on browser**
- **Will ask to verify your email address in order to share items**

LastPass

- **Your data is protected by strong encryption with master password – only stored in decrypted form on local devices, not on LastPass server**
- **"Items" can be added-to/updated-on LastPass by web browser with login to lastpass.com, or from LastPass App on mobile device**

LastPass Links

- **Last Pass Introductory video (2.13 min)**
<https://www.youtube.com/watch?v=pXf6vzx9PUg>
- **Create an Account:**
<https://lastpass.com/create-account.php>

LastPass Web Browser Extensions

Open the browser you will use first then click the appropriate link below.

Chrome: [Download & Install](#)

Firefox: [Download & Install](#)

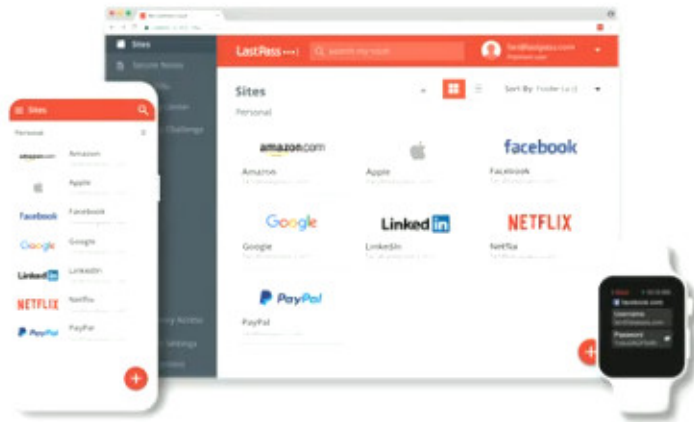
Edge: [Download & Install](#)

Safari: [Download & Install](#)

Mac App Store: [Download & Install](#)

One password. Zero headaches.

| LastPass takes care of the rest.



Free features

- ✔️ Secure password vault ⓘ
- ✔️ Access on all devices ⓘ
- ✔️ One-to-one sharing ⓘ
- ✔️ Save and fill passwords ⓘ
- ✔️ Password generator ⓘ

Create an account

or [Log In](#)



Strength



Sign Up - It's Free

By completing this form, I agree to the [Terms](#) and [Privacy Policy](#). I want to receive promotional emails, unless I [opt out](#).

- ← Collapse
- 🏠 All Items
- 🔒 Passwords
- 📄 Notes
- 👤 Addresses
- 💳 Payment Cards
- 🏦 Bank Accounts
- 🛡️ Security Dashboard
- 👤 Sharing Center
- 🔄 Emergency Access
- ⚙️ Account Settings
- ⋮ More Options

LastPass

search my vault

Upgrade

cvewing44@gmail... Premium Trial User

Welcome to your vault!

Your vault is a safe place to store passwords, notes, profiles for online shopping, and even documents. And no matter where you work, your vault keeps everything in sync, so you can stay organized and save time.

Show me around

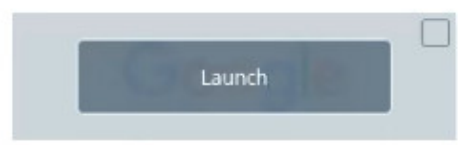
Later

Never

All Items

Sort By: Folder (a-z)

(uncategorized) (1)



CateGmail cvewing44@gmail.com



LastPass

Try LastPass Families!

Organize and secure your entire family's digital life in LastPass.

LEARN MORE



All Items

Passwords

Notes

Addresses

Payment Cards

Bank Accounts

Security Dashboard

Sharing Center

Emergency Access

Account Settings

Welcome to your vault!

Your vault is a safe place to store passwords, notes, profiles for online shopping, and even documents. And no matter where you work, your vault keeps everything in sync, so you can stay organized and save time.

Show me around

Later

Never

All Items



Sort By: Folder (a-z)

(uncategorized) (1)



CateGmail
cvewing44@gmail.com

- Edit
- Delete
- Share
- Clone
- Move to Folder >
- Copy Username
- Copy Password
- Copy URL
- Go to URL

LastPass

Try LastPass Families!



Organize and secure your entire family's digital life in LastPass.

LEARN MORE



Edit password



URL:

https://mail.google.com

Name:

CateGmail

Folder:

Username:



cvewing44@gmail.com

Site password:



Notes:



All sorts of notes here.

▶ Advanced Settings:



Cancel

Save

- [Collapse](#)
- [All Items](#)
- [Passwords](#)
- [Notes](#)
- [Addresses](#)
- [Payment Cards](#)
- [Bank Accounts](#)
- [Security Dashboard](#)
- [Sharing Center](#)
- [Emergency Access](#)
- [Account Settings](#)
- [More Options](#)

- More Options**
- [Try LastPass Families](#)
- [Go Premium](#)
- [LastPass for Teams](#)
- Advanced**
- [Import](#)
- [Export](#)
- [Update Vault](#)
- [Deleted Items](#)
- [History](#)
- [Credit Monitoring](#)
- [Bookmarklets](#)
- [One-Time Passwords](#)
- [Open All Favorites](#)
- [Manage Identities](#)
- [Generate Secure Password](#)
- [Help](#)

...ates, profiles for online shopping, and even documents
 ... organizing in sync, so you can stay organized and save time.

[Never](#)

Sort By: Folder (a-z)

+

Generate LastPass



6m5KlGoDil5h



SHOW HISTORY

Password length

12



Easy to say

Easy to read

All characters



Uppercase



Lowercase



Numbers

Symbols

COPY PASSWORD

Edit password



URL:

https://mail.google.com

Name:

CateGmail

Folder:

Username:



cvewing44@gmail.com

Site password:



7w@Cfl1JN2mk



Notes:

(Pasted generated password - not actual password for account)



All sorts of notes here.

▶ Advanced Settings:



Cancel

Save



Add Folder

LastPass... |

Folder Name:

Folder1

Add as a subfolder here:

▾

Cancel

Save

All Items



Sort By: Folder (a-z) ▼

(none) (1) ▼



CateGmail

cvewing44@gmail.com

(uncategorized) (0) ▼

Folder1 (0) ▼

All Items



Sort By: Folder (a-z) ▼

(none) (1) ▼



(uncategorized) (0) ▼

Folder1 (0) ▼

Google

CateGmail

All Items



Sort By: Folder (a-z) ▼

(uncategorized) (0) ▼

Folder1 (1) ▼



CateGmail

cwewing44@gmail.com



← Collapse

LastPass...

search my vault

Upgrade

cvewing44@gmail...
Premium Trial License

All Items

Passwords

Notes

Addresses

Payment Cards

Bank Accounts

Security Dashboard

Sharing Center

Emergency Access

Account Settings

Add Item

LastPass... |



PASSWORD



SECURE NOTE



ADDRESS



PAYMENT CARD



BANK ACCOUNT

MORE ITEMS ▾



DRIVER'S LICENSE



PASSPORT



SOCIAL SECURITY NUMBER



INSURANCE POLICY



HEALTH INSURANCE



MEMBERSHIP



WI-FI PASSWORD



EMAIL ACCOUNT



INSTANT MESSENGER



DATABASE



SERVER



SSH KEY



SOFTWARE LICENSE



NEW CUSTOM ITEM TYPE

LastPass...

Try LastPass
Families!



Organize and secure
your entire family's
digital life in LastPass

LEARN MORE

How me around

Later

Never

Share Site: CateGmail

Recipient Email Addresses:

jcewing@acm.org

Allow Recipient to View Password

Cancel

Share