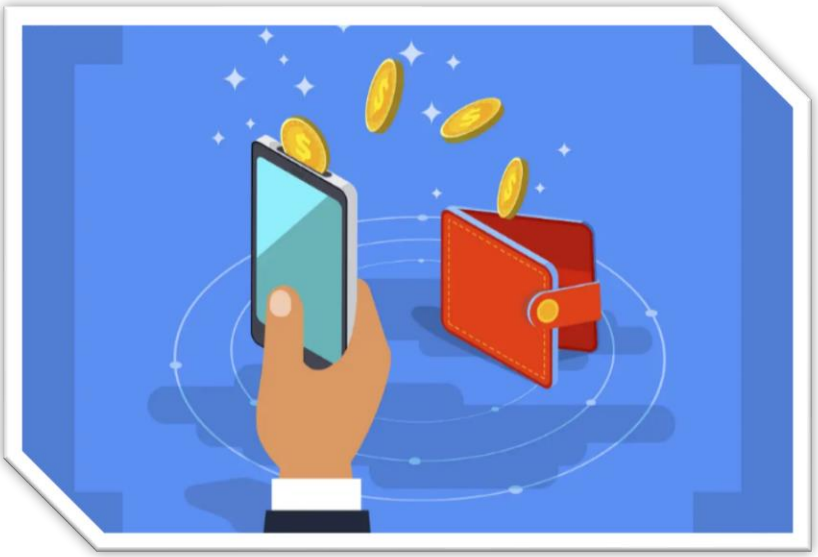
Cryptocurrency Wallet – Buy, sell, and swap Crypto



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Genesis Convergence offers blockchain consulting services to harness the potential of blockchain and gain valuable insights on DeFi (decentralized finance), NFTs, Web3, and Metaverse.

We provide cryptocurrency, cryptocurrency wallet, cryptocurrency exchange, tokenization of assets, NFTs marketplace development services.

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OBJECTIVE

Modern tech startups are striving to break down the boundaries between the virtual and real world with blockchain technology that is changing our world. Distributed technologies in mobile applications allow today to integrate cryptocurrency payments along with other internet payment options. You can build a bitcoin wallet to suit the business needs or integrate it for use as a payment method.

In this document, we are going to discuss cryptocurrency wallets, their types, benefits, main features, and challenges.

BLOCKCHAIN THE REAL HYPE

In simple terms, blockchain is a peer-to-peer distributed ledger that stores information and keeps track of transactions.

- Each member of the blockchain community has its own copy of the information.
- The information is recorded subsequently into units called blocks and protected by strong cryptography, creating a chain of data.
- Changes to blocks are not permitted by the blockchain system architecture, so every action and event could be traced to its origins.
- A blockchain could store data on agreements between the parties, their credentials, transactions, and any other information presented in a digital form.

- Since this information is distributed and highly secured, any attempt at fraudulent activity can be seen by the members of the blockchain community.
- This creates trust and transparency for any type of ecosystem that the blockchain is integrated into.

Blockchain Functioning

Blockchain is a platform that ensures the integrity of the information stored and maintains interactions between the members of the ecosystem. Here's a high-level overview of the way it works:

- Each member maintains their own blockchain node with the full history of all the events and data appended to the network, including credentials, identities, certificates, etc.
- Every update to the network entails the creation of a new block at the end of the chain. A blockchain protocol dictates how these blocks are recorded, validated, and distributed.
- A consensus mechanism is employed to verify each created block where members of the blockchain network decide if it's valid to be added to the chain.
- Once a block is created and confirmed, it cannot be revoked. All entries on the blockchain are permanent and securely stored. This allows for members of the community to trace the full history of transactions and any other modifications in the7i blockchain.

- Smart contracts are a special type of agreement between the members of the network that have the conditions programmed into them, making sure that they are met before each party receives what was agreed upon. Smart contracts eliminate the need for third parties and middlemen to be involved in agreement resolution.
- Transactions in cryptocurrency play a very important part in the blockchain ecosystem, providing the incentive for all members of the community to make valuable contributions and participate in the development of the system as a whole.

These key pillars of blockchain technology lay the foundation for its uses throughout different industries, including in education. It has the potential to create a global environment where learning materials, publications, student credits, and transcripts are easily accessible. It can also introduce new and innovative ways for accountability, incentivization, and communication between teachers, students, and other participants.

CRYPTOCURRENCY – THE FUTURE OF CURRENCY

Cryptocurrency is far more than just a banknote or coins. A currency is a unit of storage and account and a means of exchange. In simple terms, it is a universally accepted way of buying or selling any goods or services.

- In older times, when the barter system was in place anything from rice and grains to wool and even feathers would be considered a currency. Then came in banks to regularize this means of payment. That's when they made coins and printed banknotes.
- Now in the digital time and age, the coins and banknotes seem to become outdated. So came in a new form of currency, the cryptocurrency.

Resourceful Explained Cryptocurrency

It is just like a normal currency but in a digital platform and accepted universally unlike physical currencies that work only in a specific country. A single centralized platform does not bind cryptocurrencies.

Cryptocurrency in a more detail

- Cryptocurrencies don't have banknotes, but they do have coins. There is also one more term, Token in cryptocurrencies. People often get confused between a token and a coin.
- **So, what exactly is the difference between a Token and a Coin in Cryptocurrency?**
- **The three main differences are:**

1. Coins are part of a single blockchain while tokens operate on the existing blockchains.

2. Tokens are limited to a specific industry or community; coins can be used anywhere.
3. Coins can buy tokens, but tokens can't buy coins.

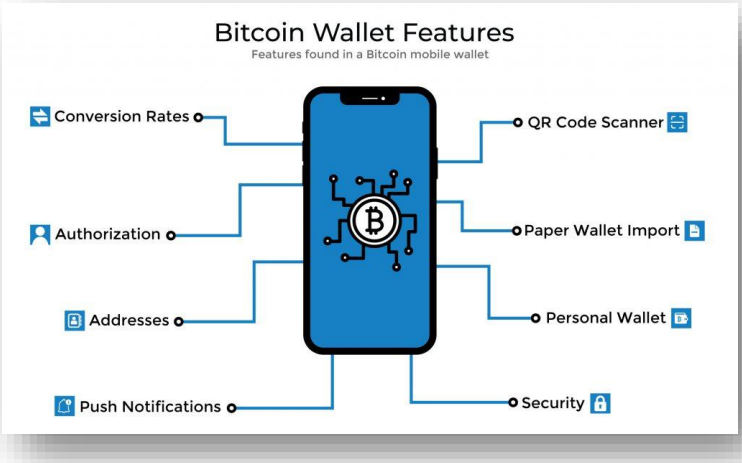
- Let's simplify using a real-life scenario. If you go to Starbucks regularly, then you may earn loyalty points for your frequent purchases. With these points, you can redeem a drink. These loyalty points are token that an establishment (in this case Starbucks) offers.
- Now you can buy such loyalty points by giving money which in turn gives you free coffee. This money is the coin (in this case a real-life coin or bank note).
- You can buy loyalty points using coins, but you cannot get real money using loyalty points. So, a crypto coin can be used to buy a business's token, but you can't buy a crypto coin using a token.

CRYPTOCURRENCY WALLET – A PROGRESSIVE APPROACH

- It is a piece of software or a program that can be easily downloaded on a compatible device.
- It will keep track of your available balance, the different expenses, and lets users hold more than 100 digital currencies at once.
- A Cryptocurrency wallet can be downloaded and installed on a smartphone. It can be used for making daily purchases, as a long-term investment, or just utilize its cold storage facilities.

SOME INTERESTING FEATURES OF CRYPTOCURRENCY WALLET

- Quick conversion from fiat to cryptocurrency and vice-versa.
- Automatic session logout post the execution of a transaction to prevent any unauthorized access.
- Unrestricted access to transaction history for the users to ascertain their expenditure pattern.
- An exclusive QR code scanner facility to make payments quickly and securely.
- Real-time push notifications to view the activity 24×7.
- Auto denial of duplicate payments to prevent chargeback frauds.
- Protection from inflation and economic downturn.
- Not influenced by any government regulations.
- Affordable rates for processing transactions as there is no interference of third parties.
- Real-time pricing information will be provided about different kinds of cryptocurrencies.



- The list of frequently used wallet addresses will be displayed in a separate list to process transactions faster.
- Security measures like password and PIN protection will be available.
- A real-time tracking facility for payments.
- Multiple modes of executing a transaction via NFC, QR codes, or a Bitcoin URL.

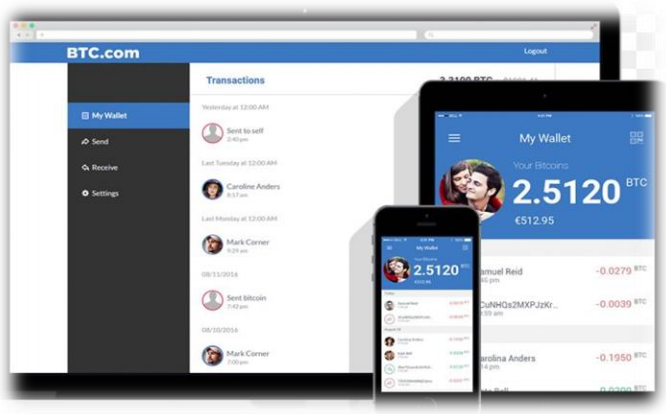
CRYPTO WALLET TYPES

Mainly we divided Crypto Wallet into Two types:

- Hot Wallet
- Cold Wallet

Hot Wallet:

- One of the most popular kinds of cryptocurrency wallets is called a hot wallet. hot wallets are connected to the internet.
- A hot wallet is a tool that allows cryptocurrency users to store, send, and receive tokens.
- Hot wallets are linked with public and private keys that help facilitate transactions and act as a security measure.
- Because hot wallets are connected to the internet, they tend to be somewhat more vulnerable to hacks and theft.
- There is different type of Hot Wallet such as:
  1. Desktop Wallets
  2. Online Wallets
  3. Mobile Wallets



Desktop Wallet:

- Desktop wallets are the most common and most popular crypto wallet types available.
- They enable the user to store their crypto on the desktop.
- Users are required to install the wallet like they would with any software.

- These wallets work on all operating systems like mac OS, Windows and Linux.

Online Wallet:

- These wallets require a unique key to operate.
- These wallets are beneficial to users who cannot access their PC and want to view their accounts.
- The only downside to this type is that they are prone to hacking.

Mobile Wallet:

- Desktop wallets are the most common and most popular crypto wallet types available.
- They enable the user to store their crypto on the desktop.
- Users are required to install the wallet like they would with any software.
- These wallets work on all operating systems like mac OS, Windows and Linux.

Cold Wallet:

- A crypto wallet that cannot be compromised because it is not connected to the Internet.
- Also called a "hardware wallet" and "offline wallet"
- The cold wallet stores the user's address and private key and works in conjunction with compatible software in the computer.
- There is different type of Hot Wallet such as:
  1. Hardware Wallets

2. Paper Wallet

Hardware Wallet:

- These wallets enable the user to store a copy of their private key.
- These wallets are like a physical safe.
- They are the ideal choice for users who do not actively buy and sell their crypto.

Paper Wallet:

- Paper wallets have a printout of the user's private and public authentication keys.
- This type is the least secure wallet type available.
- If the user loses the paper, they also lose access to their crypto wallet.

A GLIMPSE OF CRYPTO WALLET APPLICATIONS

Authorization

In this function, users can register or fill out a form with their keys to access their bitcoin wallet. One way to make sure your app is tamper-proof right from this first adaptation step is to add Google two-factor authentication. By adding 2-Step Verification to an application, companies can add an extra layer of security that conventional non-cryptographic applications typically avoid.

Conversion rate

Since the cryptocurrency wallet application will allow users to make money transactions between different modes – between the same digital currency, between different digital currencies, and between digital and fiat currencies, they

will need to be updated with the currency value in real-time.

List of addresses

This feature will aim to make the entire transaction much faster and more convenient by providing users with a mode to manage the addresses with which they frequently conduct digital currency transactions.

Notifications

Using the push notification function, the administrator will be able to notify the users of the cryptocurrency application about the price of their digital currency, the success, and failure of the transaction, adding an address, etc. Thanks to this function, users will be able to stay connected. receive information about all actions in your account in real-time.

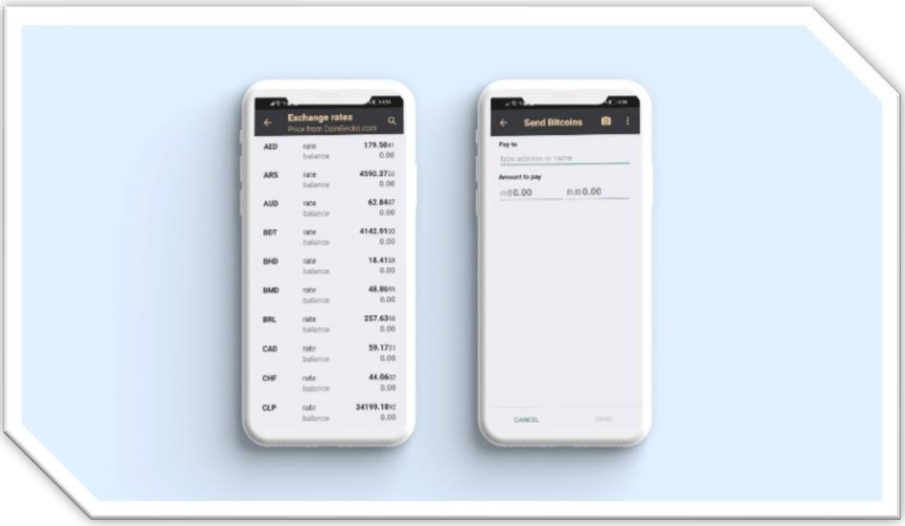
Paper Wallet Import

Some mobile wallet apps also can scan a paper bitcoin wallet using a QR code and then add keys to the app wallet to

complete the transaction. The scanned information can then be used to send and receive money.

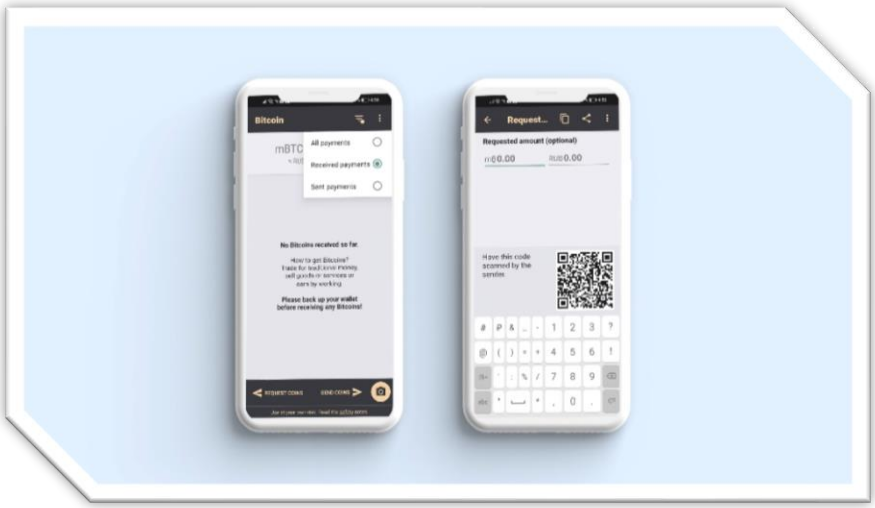
Transaction

The whole point of Blockchain is to change the future of transactions. The most important part of a cryptocurrency wallet application is the transaction function. Thanks to this, users will be able to send and receive digital currencies in the cryptocurrency application. This section of the application is 100% tamper-proof and fast.



Security

A common but equally important part of a cryptocurrency wallet app is the security feature it comes with. Based on Blockchain, a technology known to revolutionize mobile app security, you must provide your users with the ability to change their PIN, password, or any other personal information they wish to change in the app.



QR code scanner

The QR code scanner automatically scans wallet addresses and speeds up crypto-asset transactions.

NFC support

NFC support works on an asset transfer mechanism based on the proximity of the device. This is usually done when the sender clicks on the NFC tag, obtains the recipient’s wallet address and processes the transaction.

12-word mnemonic phrase

It is one of the main features that make it easy to restore the wallet when the wallet is deleted or moved to another device. The mnemonic passphrase is usually attached to the private keys so that they can be matched with security features.

RECOMMENDED TECHNOLOGIES FOR CRYPTOCURRENCY WALLET DEVELOPMENT

- Now that we've talked about the features that need to be integrated when building a cryptocurrency wallet, it's time to talk about the technical side of building a cryptocurrency wallet app.
- If you are building a web cryptocurrency wallet app, you should use Angular JS 10.0 and above to build the frontend along with HTML5 and CSS3. Use Node JS to create the back end, and you can use AWS to set up the server.
- We highly recommend our clients develop cross-platform solutions. This shouldn't come as a surprise – using this approach allows companies to save time, money, and effort. Thus, you will need React Native to create a frontend and API service using Node JS for the backend.
- Moreover, for signing and verifying data with Ethereum keys we should create a collection of functions. Typescript fits the best for it.
- However, if building an app from scratch isn't what you want to do, you can easily use the public libraries available on the web to build your app.
- These libraries will implement the standard functionality of your application and synchronize it with the blockchain. Some of the great examples of public library are Chain-Java.

DEVELOPING CRYPTOCURRENCY WALLET APPS FROM SCRATCH

The other variant is to create your project from scratch. cryptocurrency code is open source and free. So, it's not a problem to find all the standards and create an independent application that fits personal preferences and business needs. This kind of development is more difficult and expensive, as it requires more time, effort, and knowledge. However, a custom application is always more valuable as it is perfect for all needs.

1. Discovery Phase

This stage includes the analysis, project plan, workflow, and wireframes approval. It helps to define business goals, analyze and prepare a plan for further development and find optimal technologies.

2. Build a Prototype

In this phase, an actual prototype is designed based on the information gathered customer. It is a small working model of the required system.

3. Design

During the design phase, the actual conceptualization of the solution is created, that is, detailed software architecture is created that meets the specific requirements of the project.

4. Development

The development phase is about writing code and converting design documentation into real software during the software development process.

5. Quality Assurance

The QA team conducts a series of tests, including functionality testing, system integration and interoperability, and user acceptance testing to ensure that the code is clean and that the solution's business goals are met.

CHALLENGES OF CRYPTO WALLET DEVELOPMENT

The crypto wallet development is a complicated task. So, you should be ready for the pitfalls you may face. Here is the list of the main of them.

Regulation

The legal status of cryptocurrencies and blockchain technology varies significantly from country to country.

Initial costs

Blockchain promises long-term cost savings, but its implementation requires a high initial price.

Integration with legacy systems

To migrate to a blockchain-based system, a company must either completely redesign its existing system or integrate it with a blockchain solution; both processes can take a lot of time, money, and experience

Power consumption

Blockchain networks require a significant amount of computing power to function; this can be a limiting factor for many companies

Security and privacy

Since the network is publicly available, this poses some challenges for governments and corporations looking to protect their sensitive data.

Public opinion

Society is not ready for mass blockchains as most people are unaware of the technology and its potential benefits.

TOP CRYPTO WALLETS

	Best for Beginners	Best for Bitcoin	Best for Mobile	Best for Offline Crypto Wallet	Best for Desktop
	Coinbase	Electrum Crypto Wallet	Mycelium Crypto Wallet	Ledger Nano X Crypto Wallet	Exodus Crypto Wallet
Company Highlight	Interact with websites using the Dapp (decentralized app) web browser	Rebroadcast transactions with a higher fee with Replace By Fee feature	Partnered with Cashila, Glidera, and Coinapult, to provide financial services	Trade and stake crypto on your hardware Ledger wallet through the Ledger Live app	Built-in no-commission trading provided by the exchange platform Shapeshift
Type of Wallet	Hot storage	Hot storage	Hot storage	Cold storage	Hot storage
Price/Fee Information	User-set miner fees from low to high priority; wallet and exchange fees	0.2 mBTC (default rate)	User-set miner fees from low to high priority (0.01mBTC - 1mBTC); wallet and exchange fees	$119 for device; miner, wallet and exchange fees	Only miner fees; customizable for Bitcoin and Ethereum transactions
Compatible with Hardware Wallets?	No	Yes	Yes	N/A	Yes
# of Supported Coins and Tokens	500+	1	22+	500+	145+

Best for Beginners: Coinbase

PROS

- User-friendly interface that is easy to navigate
- Supports more than 500 cryptocurrency assets
- Multi-signature and 2-factor authentication support
- Backed by a reputable exchange that is able to recoup lost or stolen assets

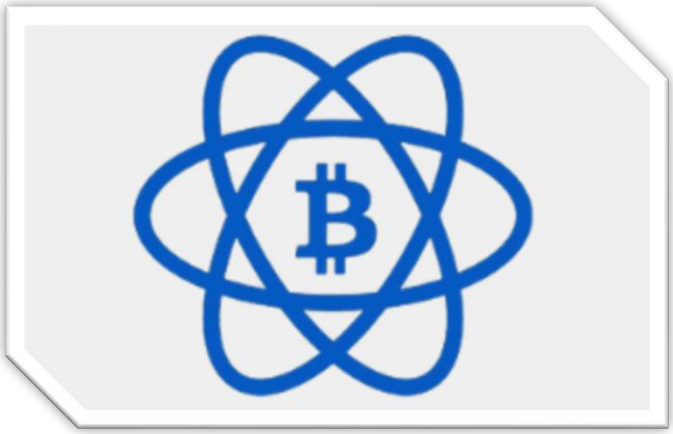
CONS

- Similar security issues and weak points as other hot storage alternatives
- Only available on mobile and tablet devices (except for Chrome extension)

Why we chose it

- We chose Coinbase Wallet as the best crypto wallet for beginners because it's an intuitive and highly secure wallet that is backed by a well-known exchange.
- Coinbase Wallet is an excellent wallet for beginners who have little to no experience with crypto. The app can connect to most major bank accounts and has an interface that is welcoming and easy to navigate, consisting of a simple three-tab layout and clearly identifiable functions.
- Coinbase Wallet can store non-fungible tokens (NFTs) and digital collectibles, and it supports over 500 crypto assets — the largest number among hot wallets on this list.
- Other highlights include:
    - Uses the Secure Enclave chip available in Android, iOS, iPad, and Mac devices to provide biometric authentication (e.g. FaceID, TouchID)
    - Access to decentralized exchanges in-app, which can convert tokens without any intermediaries
    - Optional cloud backups to protect your digital keys

Best for Bitcoin: Electrum



PROS

- Fast and easy to set up
- Greater security than other hot wallets
- Customizable transaction fees
- Wallets don't suffer downtime thanks to server configurations

CONS

- Only supports Bitcoin trading
- Setup and interface not ideal for beginners
- No customer support via chat, email or phone

Why we chose it:

- We chose **Electrum** as the best Bitcoin wallet because of its extensive security features and high degree of customizability.

- Founded in 2011, Electrum is one of the oldest and most well-known crypto wallets today. It's also one of the few remaining crypto wallets that only deals in Bitcoin, a currency that Electrum is uniquely outfitted to support.

- The wallet hosts a variety of potent security features that others lack, and users can also adjust their fees depending on how long they're willing to wait for a transaction to be completed: Pay more in fees, and your transaction will be executed faster.

- One of the wallet's greatest assets is that it uses a lightweight client. Light clients can be set up in a matter of minutes and take up less space than traditional wallet clients on your computer.

- Other highlights include:

    - Open-source wallet, meaning its code is available for scrutiny, which helps build trust and safety
    - It also features custom transaction fees, which means users can adjust their fees depending on how long they're willing to wait for a transaction to be completed, and several different types of user accounts
    - Integration with hardware wallets (KeepKey, Ledger, Trezor) for cold storage
    - Two-factor authentication and multi-signature support

Best for Mobile: Mycelium

PROS

- Compatible with popular cold storage solutions (Ledger, Trezor, KeepKey)
- HD spending accounts and Single Address saving accounts available
- In-app crypto exchange and educational material
- Offers offline transactions

CONS

- Inherently not as secure as hardware wallets
- It may be confusing for first-time users
- Only supports Bitcoin, Ether, and ERC-20 tokens

Why we chose it:

- We chose Mycelium as the best crypto wallet for mobile devices because of its strong focus on security and advanced transaction history information.

- Mycelium is another well-established crypto wallet with a big focus on Bitcoin. Introduced to the market back in 2008, it has long been a mobile-only software wallet and continues to be one of the best options for Android and iOS users.

- Mycelium's security and transaction options are two of the wallet's major highlights. The app is entirely reproducible, which means its code can be duplicated and compared to the original to find any potential security issues, and has several levels of pin protection.

- The wallet app features custom transaction fees with four recommended levels — low priority, normal, economic and priority — and several different types of user accounts.

- Other highlights include:

    - An advanced transaction history that includes information such as block height, which is a specific location in the blockchain; miner fees, which are paid to miners in the blockchain network; and inputs/outputs, which indicate addresses in a transaction
    - Inter-wallet operability through the FIO network, which comprises leading crypto
    - Wallets, exchanges and payment processors

- A watch-only mode, which lets users disable outgoing transactions while keeping track of their stocks and trades

Best for Offline Crypto Wallet: Ledger Nano X

PROS

- Supports a very large number of digital assets
- Built with special hardware designed to protect your private keys
- Bluetooth allows trading on the Ledger Live mobile app
- Built-in battery with 8 hours of battery life

CONS

- Much more expensive than other cold wallets
- The use of Bluetooth technology may be a privacy concern for some
- No touchscreen

Why we chose it:

- We chose Ledger Nano X as the best offline crypto wallet because of its number of supported currencies, high security standards and mobile trading capabilities.

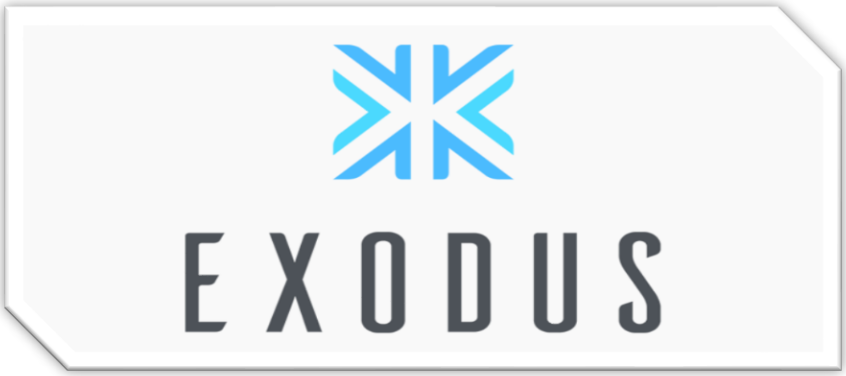
- Ledger is one of the most well-known brands of hardware wallets available today. Its initial popularity sparked with its first wallet, the Ledger Nano S, a feature-packed and highly secure cold wallet. The Ledger Nano X expands on the Nano S' success by adding a built-in battery and features such as Bluetooth connectivity and greater asset management capabilities.

- The Ledger Nano X is currently priced at $119, comes in a matte black finish and has a 128 x 64-pixel screen for cycling through apps. The wallet supports over 1,800 coins and tokens — the largest number on our list — and is able to manage up to 100 of them simultaneously through the apps on the device. Its Bluetooth Low Energy connectivity may be turned off at any point and enables the Nano X to be used with the Ledger Live app on Android or iOS devices to exchange crypto on the go.

- Other highlights include:

  - Ledger's Secure Element chip, a specialized chip also used for high-end security solutions — such as credit cards and passports — that protects from various types of attacks
  - In addition to buying and selling crypto, the Ledger Live app can be used to lend and stake crypto to generate revenue

Best for Desktop: Exodus



PROS

- Supports over 145 crypto assets
- Compatible with Trezor One and Trezor T hardware wallets
- Allows users to buy Bitcoin with Apple Pay
- 24/7 customer support

CONS

- High transaction fees on the in-wallet crypto exchange
- Lack of native 2-factor authentication may bother some users
- No multi-signature support

Why we chose it:

- We chose **Exodus** as the best crypto wallet for desktops because of the speed of its transactions, ease of use, and the varied functionality of its client.

- Exodus is one of the most visually appealing and intuitive wallets on the market yet. Originally a desktop-only wallet, Exodus now has apps for iOS and Android and is also compatible with Trezor wallets, a popular hardware wallet brand. Nonetheless, the desktop wallet application is still the wallet's core offering and is updated every two weeks.

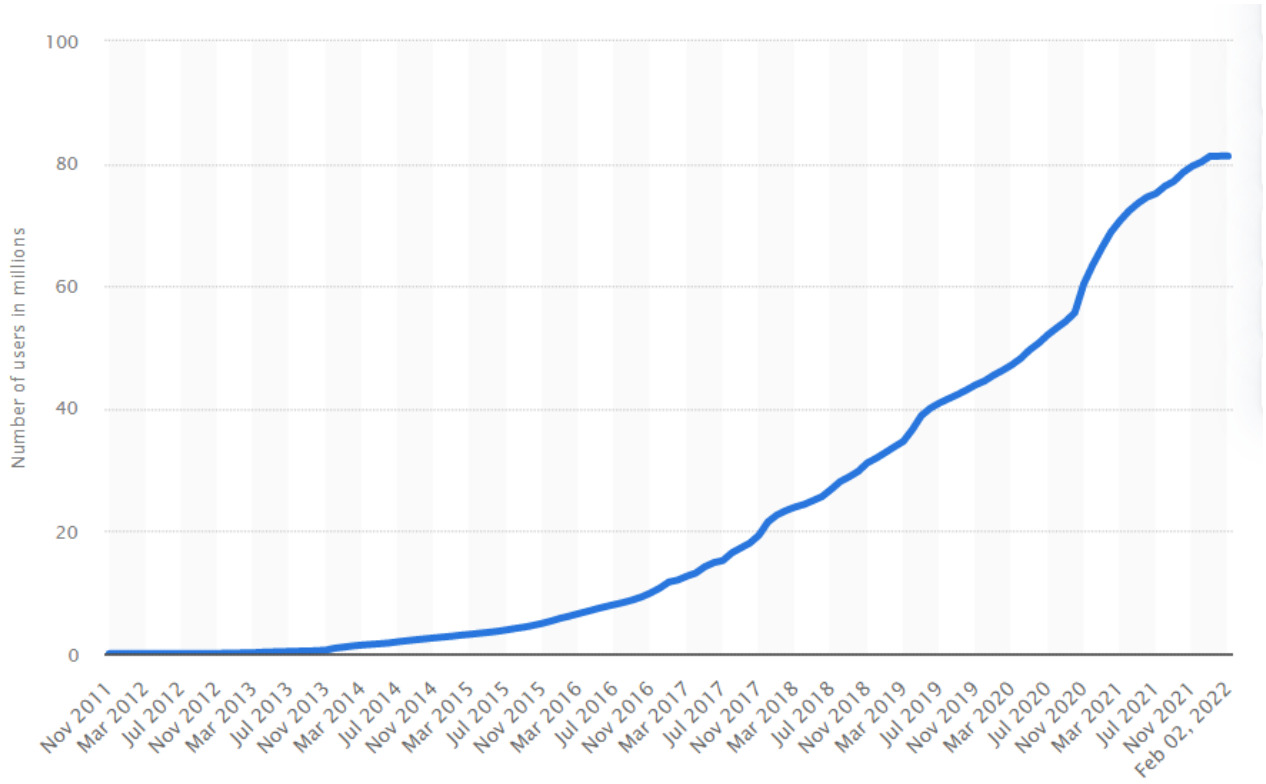
- One of Exodus' main draws is the number of currencies it supports. The wallet supports more than 145 cryptocurrency assets, a larger number than many other hot wallets.

- This includes established altcoins, such as Ether, Litecoin, Tether and Dash, as well as popular meme coins like Dogecoin and Shiba Inu.

- Other highlights include:

    - Customizable fees, though only for Bitcoin transactions as of September 2021
    - A growing number of apps released to diversify the wallet's functionality, including apps for live charts, crypto staking and crypto deposits
    - Runs on a light client, meaning it uses SPV and doesn't download complete blockchains in order to speed up transactions

BLOCKCHAIN WALLET USERS WORLDWIDE



PROS AND CONS OF CRYPTO WALLETS

Pros:

- Self-ownership of money. If you hold your own private keys, then that crypto belongs to you and only you. By comparison, money in a bank is technically property of the bank.
- The ability to send transactions to whomever you like, whenever you like. Decentralized cryptocurrencies are censorship-resistant because no one controls the network, making it hard for anyone to stop transactions.

Cons:

- User responsibility. Becoming your own bank means you have to assume 100% liability for anything that goes wrong.
- Learning curve. Using a crypto wallet requires a basic level of computer knowledge in addition to getting familiar with a new kind of financial ecosystem.

CONCLUSION

Summing up, blockchain technology is gaining popularity due to the benefits they provide. Companies are becoming more flexible by integrating a payment method that operates 24/7 365 days per year, performs cross-border transactions with lower fees, builds a customer base worldwide and provides freedom and safety. There is a growing demand for blockchain and bitcoin-based services right now.

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