White Paper

PYUSD on Arbitrum

PayPal

PayPal USD (PYUSD) is now available on the Ethereum layer two (L2) blockchain **Arbitrum**. This is the first launch of PYUSD on an L2 network, making PYUSD available for a new ecosystem that is battle-tested, widely adopted, and developer-friendly.

PYUSD on Arbitrum offers fast, cheap transactions for international transfers, crypto payments, business transfers, and other uses thanks to Arbitrum's speed and low fees plus PYUSD's stable backing and wide availability.

Let's look in detail at PYUSD and Arbitrum and how, by working together, they create a major step forward for the future of payments.

What is PYUSD?

PYUSD is a **stablecoin** issued by Paxos Trust Company, LLC (Paxos), a limited purpose trust company regulated by the New York State Department of Financial Services (NYDFS). PYUSD is 100% backed by high-quality liquid assets.

PYUSD is a stable store of value, fully-backed, built on blockchain, that is redeemable 1:1 for USD. It was created from the ground up to provide the technology needed for the future of digital payments.

As a stablecoin, PYUSD is a fast, cost-effective, and inclusive method for payments.

Callout:

Stablecoins Defined. Most cryptocurrencies fluctuate in price, often considerably, and are unsuitable for payments. For example, the value of Bitcoin in USD can swing by double-digit percentages in a single day. Because of this volatility, users typically don't settle invoices with a cryptocurrency such as Bitcoin. **Stablecoins** are cryptocurrencies designed to solve this problem by maintaining a stable value, often by pegging the value to a fiat currency (such as USD) 1:1. Stablecoins offer the best of both worlds: They keep a low rate of day-to-day volatility yet still provide the benefits of blockchain—fast, cost-effective, global payments that are provable and fraud-proof.

PYUSD can be bought, sold, sent, received, and spent. For example, eligible users can:

Buy PYUSD on PayPal and Venmo
Buy PYUSD on an eligible exchange using any compatible crypto wallet
Pay for online transactions using PYUSD
Send and receive PYUSD, to and from eligible persons across the globe, both inside and outside of the PayPal ecosystem
Redeem PYUSD for USD via PayPal, Venmo, Paxos, and exchanges that support PYUSD
Convert PYUSD to other cryptocurrencies

Why do we need stablecoins like PYUSD?

Current payment rails and messaging protocols, such as ACH, SEPA, and Swift, form the backbone of global payments. The reality is, they work. They allow us to transact at scale and with sufficient trust that payments will happen the way we expect.

However, these technologies can force trade-offs between speed and cost-effectiveness, at a time when users often expect—and require—both. For example:

Payments accrue fees as they move between parties and require arrangements such as infrastructure overhead and liquidity requirements.
Batch-processing schedules and limited operating hours mean that payments can take days to settle.
Net settlement arrangements make small-dollar value transactions economically untenable to process.

Innovations such as crypto payments offer an opportunity to streamline this process and make payments more efficient, cost-effective, and accessible. And USD-based stablecoins, such as PYUSD, offer an inclusive entrypoint into crypto payments based on the familiar, traditional, and global fiat USD.

PYUSD: A Modern Payments Solution

PYUSD is a modern payments solution that upgrades stablecoin transactions to stablecoin payments.

PYUSD is fully backed and audited
PYUSD has high levels of distribution
PYUSD supports a wide variety of payment needs
PYUSD has easy on- and off-ramps
PYUSD has anti-fraud measures

Let’s look at each of the above points in detail.

PYUSD • Is fully-backed and audited

PYUSD is issued by Paxos, a limited-purpose trust company (LPTC) regulated by the New York State Department of Financial Services (NYDFS). NYDFS has established a comprehensive framework for regulating virtual currency businesses, including stablecoin issuance and the required reserves.

PYUSD is **100% reserved with fully transparent attestations of cash and cash equivalents held in:**

Cash Deposits in accounts with insured depository institutions, with each such account segregated from any proprietary assets of Paxos and PayPal and from any reserve assets that Paxos maintains on behalf of holders of other tokens issued by Paxos,
US treasury bonds with remaining maturities of less than 90 days held in custody accounts protected from bankruptcy at highly rated financial institutions, and
Overcollateralized overnight reverse repurchase agreements with highly rated financial institution counterparties where cash is repo'ed out against US treasuries.

PYUSD transactions are subject to regular audits and daily attestations including the publication of monthly third-party attestation reports.

PYUSD • Has high levels of distribution

Distribution of PYUSD is achieved in a variety of ways, including:

On **PayPal and Venmo**, PYUSD is available for purchase and transfer by eligible persons. On Xoom, PYUSD can be used to fund cross-border P2P payments.
Outside of the PayPal ecosystem, PYUSD can be transferred using supported exchanges via a compatible wallet.

PYUSD can also be used for a variety of use cases that encourage distribution. For example, PYUSD can be used as a fast, low-cost funding instrument for venture investments such as the investment made by PayPal Ventures in Mesh, or for invoicing vendors, and for other services.

PYUSD • Supports a wide variety of payment needs

Existing stablecoin infrastructure can facilitate the transaction of stablecoin assets between wallets. But with PYUSD payments made through PayPal, eligible users can leverage the full range and power of PayPal, including PayPal's platform to handle invoicing, returns, refunds, interfaces, reporting, and account servicing.

PYUSD • Has easy on- and off-ramps

As some of the most widely used financial services applications in the US, the PayPal and Venmo apps provide easy and straightforward ways to move fiat to PYUSD and back. This simplified user experience allows eligible consumers to easily on- and off-ramp, without having to worry about asset custody, multichain switches, and key management. Additionally, token holders can redeem PYUSD directly with the issuer Paxos.

PYUSD • Offers anti-fraud measures

When used on PayPal, PYUSD incorporates PayPal's anti-fraud mechanisms to help protect users and facilitate mainstream payments at scale.

PayPal has collaborated with leading blockchain forensics firms Chainalysis, TRM Labs, and Elliptic Forensics, as well as created custom investigation teams to help identify and prevent fraudulent and illicit activity involving PYUSD. PayPal also partners with Inca Digital to identify scam PYUSD tokens and have them pulled down from the sites where they are listed. PayPal is also a member of the TRUST consortium, a group of leading cryptocurrency firms that jointly share information on customer crypto transfers, including PYUSD, to satisfy requirements of the Financial Crimes Enforcement Network (FinCEN) of the US Treasury Department.

PYUSD is now available on Arbitrum

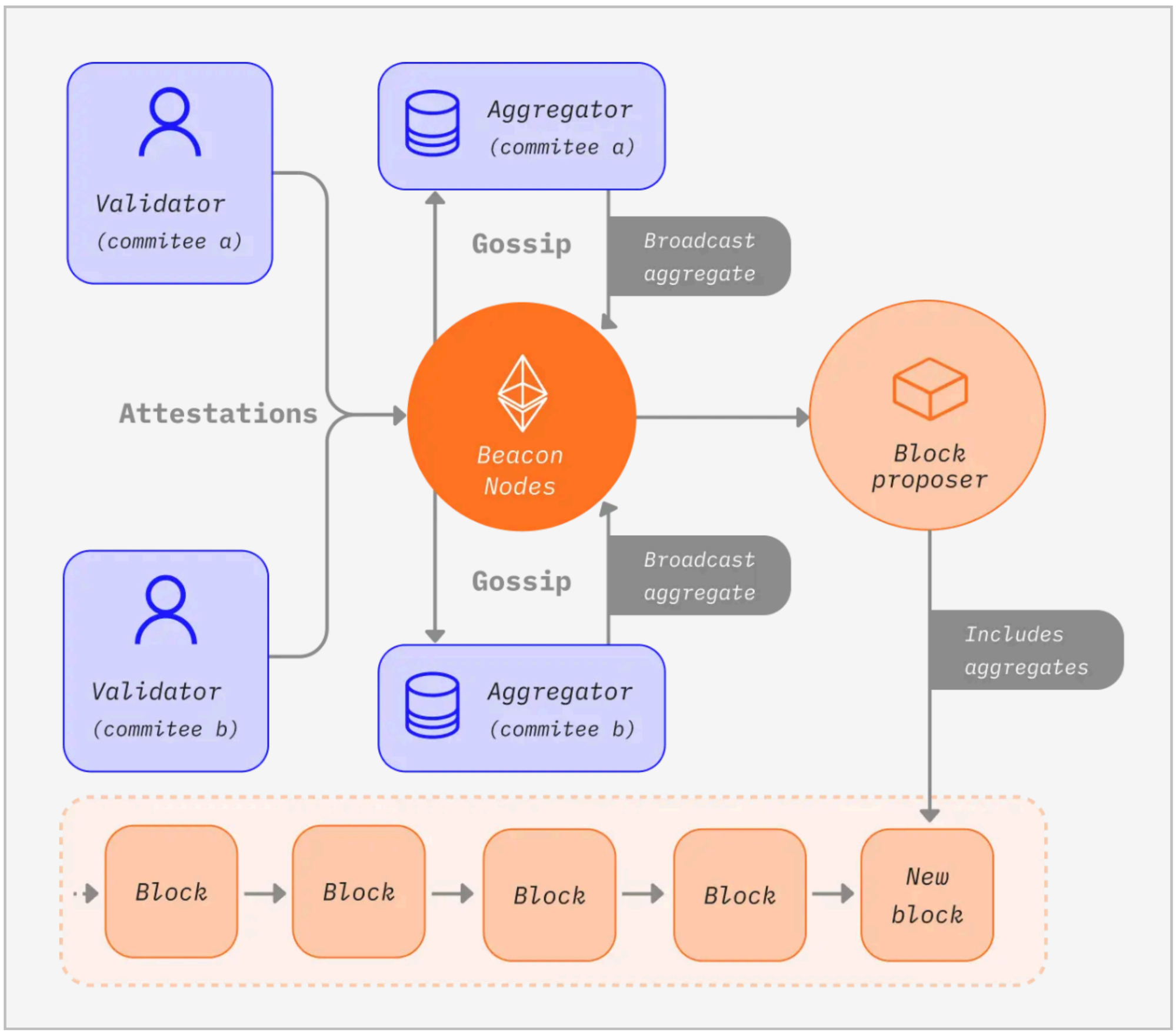
Next let's look at the technology behind PYUSD on the L2 blockchain, Arbitrum.

Arbitrum, launched by Offchain Labs in 2021, is a leading blockchain protocol. With over 300,000 active users/wallets per day, over 1,635,000,000 processed transactions, and over 60,000,000 unique addresses, it has an active, passionate, and global developer and user base.

ARBITRUM • The Ethereum Scaling Solution

Arbitrum is an L2 protocol.

Layer one (L1) blockchains, such as Ethereum, Solana, and Stellar, are foundational blockchain protocols. These L1s are where transactions are validated, ordered, and secured by the network's native consensus mechanism. The data stored in an L1 is the final "source of truth" for that protocol.



Adding a new block on the Ethereum blockchain (source)

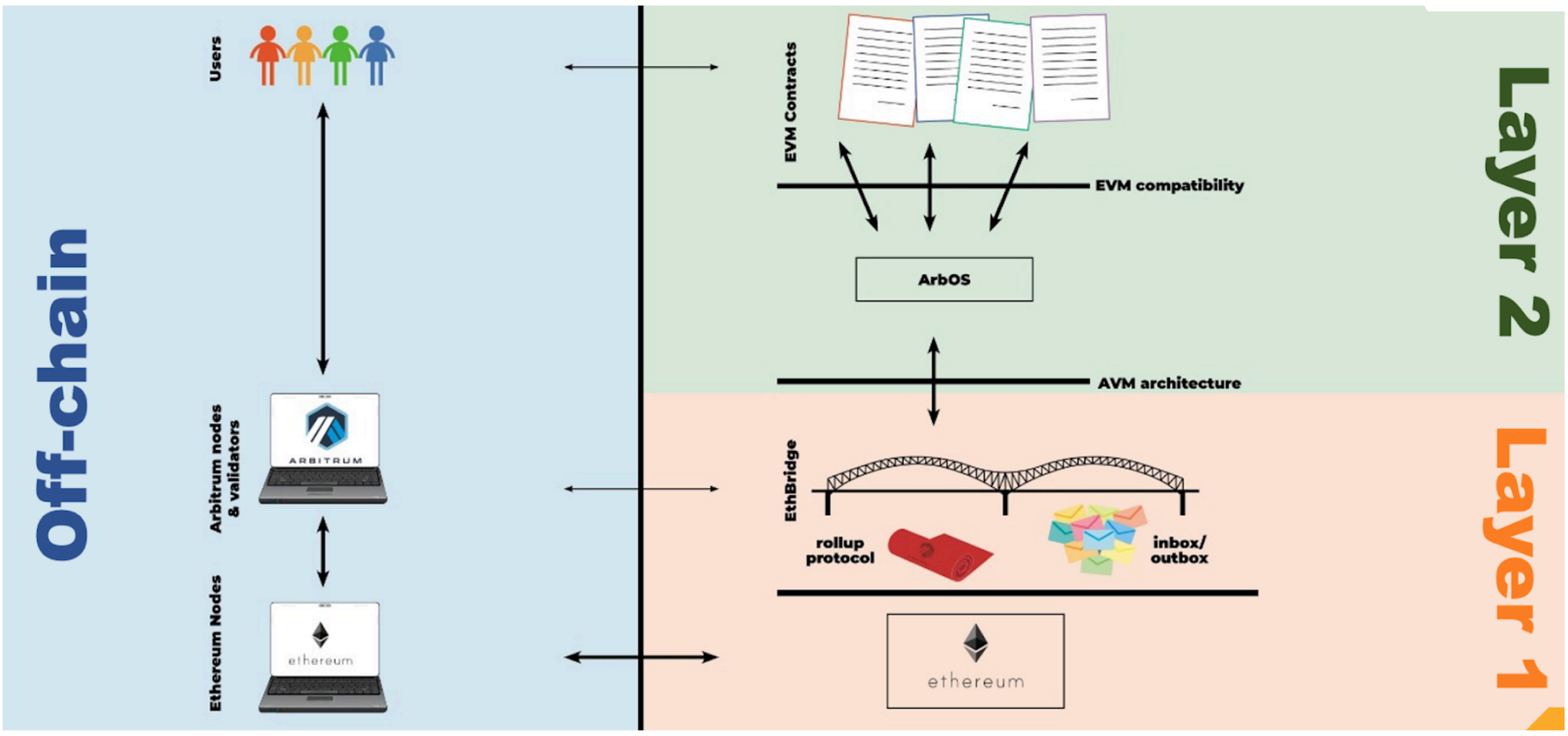
However, L1 blockchains are often expensive and slow. While their security, robustness, and decentralization are emphasized, speed, costs, and user experience are often secondary. For example, Ethereum typically processes only ~15 transactions per second (TPS) and can charge transaction fees in the hundreds of dollars during times of high congestion.

This is where **L2 protocols** come in.

What are layer 2 protocols?

An **L2** is a network or protocol that sits on top of an L1. L2s do most everything an L1 can do (support smart contracts, host user accounts, etc.), but are built to be fast, cheap, and scalable. L2s emphasize user experience while relying on the finality and decentralization of L1s.

On an L2 protocol, transactions are typically processed first on the L2, then batched periodically and sent to the L1 for inclusion in the core protocol using the L1's validation and security.



Arbitrum L2 Architecture (source)

In short, L2s are built to be faster, cheaper, and more scalable than L1s, yet partner with the L1 to offer the security of the base L1 chain.

PYUSD • Is on Arbitrum

Arbitrum, part of the Arbitrum ecosystem, is an L2 for Ethereum. Arbitrum is a *rollup*: it processes transactions off-chain, batches thousands of transactions together, rolls them up into a compressed summary, and then sends that summary to Ethereum for storage.

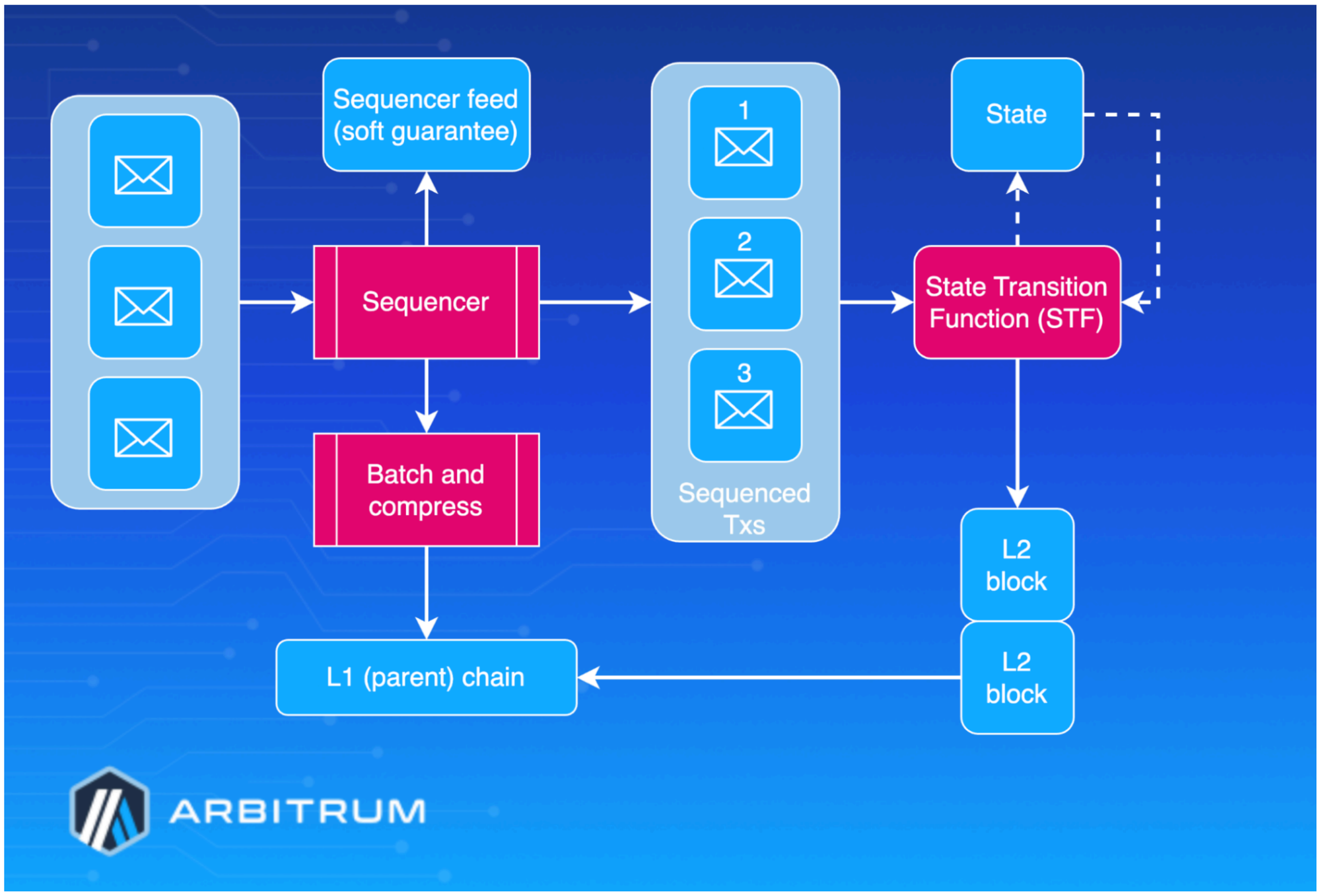
Callout: Note that Arbitrum, the rollup chain, is often just referred to as Arbitrum. Technically, Arbitrum is an ecosystem with many tools and products, one of which is the L2 rollup Arbitrum. But the terms are often used interchangeably.

There are several ways that an L2 can roll up transactions to an L1, including optimistic rollups, ZK-rollups, and more.

Arbitrum is an *optimistic* rollup. This means the chain assumes that transactions are valid —"optimistically"—unless someone proves otherwise during a challenge window. It relies on fraud-proofs after-the-fact to catch bad data. This greatly increases the speed of transactions, allowing L2 transactions to settle near-instantly, while the challenge period remains open for anyone to challenge the batch on Ethereum.

Table: Arbitrum Architecture Overview

Stage	What happens	Where
Sequencing	Users send transactions to **the Sequencer**, a single node run by Offchain Labs. |It orders the transactions, runs the Arbitrum State-Transition Function locally, and returns a confirmation—all in under a second.	**L2**
Batch compression and L1 post	Every ~1–3 minutes the Sequencer bundles hundreds to thousands of transactions and posts the batch to Ethereum. Only the transaction **calldata** (the hashes of the confirmed blocks) are sent as part of the rollup, not the much larger blocks themselves.	**L2->Ethereum**
State assertion by validators	Any validator can become a **proposer** and submit an assertion (state root) attesting "this batch is valid."	**Ethereum rollup contracts**
Fraud-proof window	A **7-day challenge period** opens. If anyone spots an invalid root, they can challenge the batch. If proven invalid, the cheater loses its stake and the batch is discarded. (Note that this means it takes 7 days for transactions to be considered finalized on Ethereum.)	**Ethereum**
Finality & withdrawals	When the window closes unchallenged, the batch becomes official. L2 balances become spendable on Ethereum and standard withdrawals clear.	**Ethereum + L2 bridge contracts**



Arbitrum One Architecture (source)

By using this architecture, Arbitrum One is able to offer fast transactions, at low cost, and still back the chain with the decentralization and finality of Ethereum.

The Arbitrum ecosystem includes several products:

Component	Description
Arbitrum Rollup	A **protocol** for scaling Ethereum smart contracts.
Arbitrum AnyTrust	A **protocol** for scaling Ethereum smart contracts even further, with a mild trust assumption.
Arbitrum Nitro	The node **software** that codifies the Rollup and AnyTrust protocols.
Arbitrum nodes	**Machines** that run Nitro in order to service and/or interact with an Arbitrum chain.
Arbitrum One	A public Rollup **chain**.
Arbitrum Nova	A public AnyTrust **chain**.
Arbitrum bridge	Lets you move ETH and ERC-20 tokens between Ethereum, Arbitrum, and select Arbitrum (Orbit) chains.
Arbitrum (Orbit) chains	Lets you run your own Rollup and AnyTrust chains.
Arbitrum Stylus	Lets you write EVM-compatible smart contracts in Rust and any other language that compiles to Wasm.

Arbitrum Ecosystem Overview (source)

Advantages of PYUSD on Arbitrum

Using PYUSD in the Arbitrum ecosystem offers many advantages for merchants, consumers, and developers, including:

Near-instant settlement: Most PYUSD transactions on Arbitrum settle within seconds. Aributrum averages 20-30 TPS, with a theoretical limit of 40,000 TPS.
Finality: On-chain payments made with PYUSD on Arbitrum offer near-instant finality. Merchants don't have to worry about canceled customer payments due to insufficient funds or other reasons.
24/7 availability: PYUSD on Arbitrum is designed to be available 24/7.
Interoperability: PYUSD is also available for payments outside of PayPal, offering interoperability with other compatible processors, networks, and wallets.
Low transaction costs: Transactions involving PYUSD on Arbitrum typically cost pennies, regardless of the transaction dollar amount. PYUSD transfers between PayPal or Venmo users are processed for free.
A prebuilt user base: PYUSD inherits the eligible US user base of PayPal and Venmo.

Building with PYUSD on Arbitrum

Next, let's look at the details needed to start building with PYUSD on Arbitrum.

Callout: While Arbitrum is the first official L2 to support PYUSD, PYUSD is also available on the Solana and Ethereum L1 blockchains.

Advantages of Building with PYUSD and Arbitrum

In addition to the L2 speed, predictable low costs, and an Ethereum-level security model, developers building with PYUSD on Arbitrum gain several advantages:

Full EVM equivalence: Arbitrum offers full EVM equivalence, meaning smart contracts written for Ethereum also run on Arbitrum with no changes (and vice versa). So teams with existing projects that have already written and deployed Solidity contracts on Ethereum can deploy those contracts to Arbitrum, and take advantage of everything the L2 offers, with no code changes.

Battle-tested fraud proofs: Arbitrum is battle-tested, with bounties and third-party provers live since 2021.

Popular: Arbitrum routinely processes 1,000,000–2,000,000 transactions per day and has peaked above 5,000,000 transactions in a single 24-hour period. The ecosystem has also passed 2,500 monthly active developers.

Exploring Arbitrum

For more information on building on Arbitrum, check out these resources:

A gentle introduction to Arbitrum

The Arbitrum developer hub

Arbitrum developer portal

PYUSD on Arbitrum architecture

PYUSD on Arbitrum is a fully-compliant ERC-20 token, similar to PYUSD on Ethereum. This means it is interoperable with all other protocols or apps that support ERC-20s, including leading DeFi apps and Ethereum itself. For details, check out the PYUSD contract on testnet and on mainnet.

Bridging (the ability to move PYUSD from one network to another) is supported via LayerZero OFT integration. With LayerZero you can programmatically move PYUSD among Arbitrum One, Solana, and Ethereum. For more information, read our guide to using PYUSD on LayerZero.

To test your PYUSD and your apps on Arbitrum, use the testnet Arbitrum Sepolia. Testnets in Web3 are sandbox environments where developers can build and test their apps without risking real funds. (See an overview of Arbitrum networks here.)

As a test network, Arbitrum Sepolia uses corresponding test versions of tokens such as PYUSD and ETH. These test tokens allow developers to deploy and interact with smart contracts, test transactions and gas estimation, verify wallet integrations, and more. Unlike mainnet tokens, these testnet tokens have no real-world value.

Test PYUSD is available for free using the Google Cloud Web3 faucet or the Paxos faucet.

Callout: A Web3 faucet is an online tool that gives out small amounts of test tokens on demand and for free. See our article on the Google Faucet for more information.

PYUSD on Arbitrum use cases

Let's look at some of the use cases that are enabled by PYUSD on Arbitrum (akin to PYUSD on Ethereum and Solana)

Cross-border peer-to-peer transfers

Sending cross-border payments is a thriving market, with over $669 billion USD in fiat payments sent in 2023 alone to low- and middle-income countries. But fees for these transfers can be high, and are especially impactful for individuals in disadvantaged countries.

With PYUSD and Arbitrum, individuals can send funds to eligible recipients with a compatible wallet and get near-instant settlement and minimal to no cost.

And even individuals without compatible wallets can benefit. Using PYUSD on Arbitrum, cross-border P2P transfer service providers can reduce their own liquidity management and processing costs, and pass along the savings to their customers.

Providers can also leverage local bank connections and cash networks, allowing recipients to easily convert PYUSD to cash or bank deposits. This gives the individuals the benefits of near-instant, low cost transfers, while still preserving the ability to off-ramp into local currencies and bank accounts.

Business-to-business transfers

A majority of B2B payments today are still made on legacy payment rails such as wire transfers. While these rails work, they are often slow (sometimes taking more than a day), expensive (they can cost $25-45 for the sender with possible additional fees for the recipient), and inefficient. These pain points are even more pronounced when working with cross-border B2B payments, where multiple entities or currencies can be involved.

By using the open and programmable PYUSD on Arbitrum, businesses can create new solutions that solve these issues, building services that support near-instant, cost-effective transfers across borders. Businesses can also write their own smart contracts to govern these transactions, making payments even faster.

And by using PYUSD, payment providers can create services where customers never hold, or even know about, blockchain and PYUSD. These services can convert fiat to PYUSD behind the scenes, execute the transfer, and then convert the PYUSD back to the local currency before delivering to the customer, passing along the time and cost advantages.

Global payouts

With a complicated combination of regional banks, local currencies, correspondent banking, and digital wallet rails, global payout can be difficult and expensive to navigate. But with PYUSD, funds can be sent to any eligible wallet in the world quickly, directly, and easily.

And PYUSD on blockchain enables new functionality in payouts that weren't possible before, such as smart contracts that execute real-time, streaming payouts for employee salaries.

Microtransactions

Affordable micropayments has long been a goal of platforms that need massive amounts of small payments: tipping, in-game purchases, paying content creators per read, and more.

But with traditional rails, these micropayments incurred transaction costs that were too high. As a result, platforms typically batch process payments, which reduces fees but increases complexity and risk.

With PYUSD on Arbitrum, these platforms can quickly and seamlessly process microtransactions, without batching, and in real time with low costs. The use cases these platforms have long wanted but couldn't build are now possible, affordable, and straightforward.

Web3 payments

Web3 is a natural use case for the blockchain-based PYUSD. Web3 merchants, such as collectible marketplaces and blockchain-based gaming platforms, have often struggled to work within the traditional payment structure of fiat bank accounts. The Web3 companies want—and need—natively digital rails and currencies.

At the same time, they need the digital currency to be stable in value and meet robust technical standards.

PYUSD is an ideal solution for these companies, meeting their Web3 needs, living on blockchain where they already operate, and giving them a payment solution that's stable in value.

Conclusion

PYUSD offers an opportunity for users and developers to be a part of a payments future that is efficient, inclusive, and ready for the new era of digital commerce. By launching on the L2 Arbitrum, PYUSD gains a new platform that is popular, developer-friendly, and fast.

We are excited to see what you will build! Get started today by exploring the PYUSD developer ecosystem, learning more about Arbitrum, and minting testnet PYUSD.

PYUSD developer ecosystem ↗

Arbitrum ↗

Minting testnet PYUSD ↗

Important Disclosures

This press release is for informational purposes only and is not intended as financial, investment, or other advice. The use and exchange of digital assets, including stablecoins such as PYUSD, may involve complex risks, including but not limited to:

Network & Custody Risks:

Transactions on blockchains – and the blockchains themselves – are subject to a range of operational, technological, and security risks. Users are responsible for safeguarding their private keys and/or working with reputable custodians/wallet providers; loss of access may lead to the permanent loss of funds.

Third-Party Reliance:

Digital assets rely on third-party blockchain software and network infrastructure. Neither PayPal nor Paxos Trust Company, LLC ("Paxos") has control over blockchain networks and is not liable for any blockchain's performance, security, or ongoing availability.

Redemption and Market Risk of Fiat-Backed Stablecoins:

U.S. dollar- backed stablecoins that are regulated by the New York State Department of Financial Services, are designed to maintain a stable value of one U.S. dollar per token. Individuals or entities with direct redemption access via PayPal, Paxos or authorized partners are guaranteed to convert PYUSD 1:1 for US dollars. All other parties may be limited to selling PYUSD at market prices.

Regulatory Uncertainty:

Regulatory frameworks for digital assets are evolving. Availability or legality of digital asset services may change without notice, and services may be restricted, suspended, or terminated in certain jurisdictions as required by law or regulation.

No FDIC/SIPC Protection:

Digital assets, including PYUSD, are not insured by the Federal Deposit Insurance Corporation (FDIC) or the Securities Investor Protection Corporation (SIPC).

Terms & Conditions:

Use of PYUSD is subject to Paxos and PayPal's Terms & Conditions, including disclaimers on liability and user responsibilities. Transactions are irreversible once recorded on the blockchain. You are advised to review and understand all applicable terms.

Service Availability & Illegal Activity:

PYUSD and related payment services may be suspended or terminated due to events or investigations involving illegal activity, system failure, or other factors beyond PayPal's control.

Forward-Looking Statements:

Statements in this press release regarding potential product features, expansion plans, and regulatory outcomes are forward-looking and subject to change. Actual results may diXer materially due to known and unknown risks, uncertainties, and other factors.

PayPal