Trustology

Tutorial:

How to swap and yield farm in DeFi using TrustVault: Part 1





Whether you are a DeFi fund looking to build a position on Ethereum mainnet leveraging stablecoins for yield or you're institutional investor seeking arbitrage opportunities on DeFi DEXs or, maybe, you're just wanting to earn passive income on your cryptoassets or buy NFTs, the secret sauce to all is having the right DeFi wallet. Non-custodial wallets won't work to satisfy regulatory compliance or investor demands for holding and fiduciary risk. You need a custodian wallet provider and here's why:

- To ensure your fund interacts with DeFi protocols in the manner that mirrors your investment mandate – custom transaction safety controls
- To ensure no member of the team can run off with funds multisig controls

In Part 1 of our tutorial series on yield farming, you will understand how to swap and lend digital assets using our secure and compliant crypto custodial wallet—TrustVault. Part 2 of our series will focus on borrowing against deposited assets as collateral to reinvest on other solutions to maximise your earnings.

Here's what we'll show:

- Step 1 Swapping ETH for MATIC
- Step 2 Lending your MATIC tokens with Aave on Polygon



Step 1: Swapping ETH for Matic

TrustVault is the only custodial wallet today with its own bespoke forked MetaMask integration and DeFi Firewall rules. Metamask is a browser wallet that manages users Ethereum wallets by storing their private keys on their web browser's data store and the seed phrase encrypted with their password. Using TrustVault's forked MetaMask extension provides users with extra security as

you're now using custodied keys with an insured provider, Trustology, who ensures full account recovery and no onus on users to worry about seed phrases.

Here's how an ETH to MATIC swap would work using our extension.

\rightarrow Some things to note

- Only users signed up to TrustVault can use our chrome extension, although it's downloadable for all.
- You need your own MetaMask account setup to start with.
- Once logged into MetaMask from the downloaded TrustVault MetaMask extension, you import your wallets over to the new extension by prompt.
- To CONNECT to TrustVault, click the circle icon at top nav and select the option from the dropdown menu (see image). Enter your login details for TrustVault at the prompt to establish the wallet connection.
- All your Ethereum wallets will be displayed and marked as "TRUSTVAULT" against your "MetaMask" wallets depending on where you are holding your assets.



Let's get started:

Once connected to TrustVault x MetaMask, you'll be able to buy, send or swap as normal via MetaMask but from the security of your TrustVault wallet(s). Choose to work from an expanded window view or the plugin.

NOTE: For this tutorial we are leading with MetaMask to swap. In our follow-on tutorial, we will show how TrustVault can work with other protocols, e.g. Uniswap





Get Started in DeFi

Contact sales@trustology.io Next, click the **SWAP** option from the MetaMask navigation menu and enter the two tokens you are looking to execute the swap transaction against. In this case we are swapping **ETH** for **MATIC**.

Set the amount for the transaction in ETH. Keep in mind fees which on Ethereum can be high.

Before you execute the transaction you must ensure the validity of the token you are looking to swap for. MetaMask provides a view on the number of sources who verified the token listed with them as well as a direct link to Etherscan to perform further checks.

	Swap		Cun
Swap from			
🔮 ЕТН 🚽	0.015	= \$64.62	
1.0422 ETH available to	o swap		
		~	
Verified on 9 sources. address on Etherscan.	Always confirm ti ©	he token	
Adva Slippage O Tolerance	nced Options	custom	
R	eview Swap		
	ms of Service		

Swap to	Ţ,
	Ŧ
/erified on 9 sources. Always confirm the address on Etherscan.	token

On Etherscan here are the security
checks you can perform to ensure
legitimacy:

- 1. Check that the token is really the Matic Token
- 2. Check the number of **TRANSACTIONS EXECUTED** and **PENDING** and
- 3. Check the **COMMENTS** tab

Etherscan		AI FIRES V OFFICE DY A	All Filters V Search by Address / TXN Hash / block / Teken / Ens		
29:: 54,434.65 (+0.69%) 1 (\$) 05 Oresi		Home Block	Home Blockchain - Tokens - Resources - More - 🖨 Sign In		
 Token Matic Toke 	n 1			Day - Escharge -	Ears - Garning
olygon (Matic)					
atured: Review and revok	e d'App access to your to	tens with our Token Approvals tool!			
Overview [ERC-20]			Profile Summary [Edt]		🔞 🖌 More 🤟
1960E \$2.54 @ 0.000673 Eth (+1.90%)		FULLY DILUTED MARKET CAP () \$25,359,106,759.00	Contract:	0x7d1sfs7b718fb893d530s3sb50clo608asclobb	, ,
lax Total Supply:	10,000.000,000	MATIC ()	Decimals:	18	
Holders:	304,765 (* -0.53	(3%)	Official Site:	https://polygon.technology/ 12	
Transfers:	2.784,982		Social Profiles:	> E ¥ O O E E E E @ Q	
Rebrand announcemen	t. Matic Network was rebr	anded and is now known as Polygon.			
Transfers 2 Helders	Info DEX Trades	Contract Analytics Common	. 3		•
			_		

Once these details are checked and you've indicated your transaction amount and confirmed your **SLIPPAGE TOLERANCE**, i.e. maximum price movement you can live with to execute the transaction, hit **REVIEW SWAP** and confirm the full transaction details. Check the quote details, especially the fees before clicking the final **SWAP** button to execute. MetaMask always leads with the best quote shown first.

Once you've clicked **SWAP**, the next prompt from MetaMask will be to confirm the transaction with your wallet which in this case is TrustVault.



TrustVault utilises an iOS mobile phone as the signing device for all transactions. Users will need to open their TrustVault app on their mobile phone using their biometric id and navigate to the **app INBOX** where a push notification of the transaction to view, confirm and sign awaits. Full transaction details such as costs are displayed for users to review and approve. As TrustVault was built with institutions in mind, we provide multisig wallets on-DeFi. Therefore, any multisig signatories set up on the organisational account will be required to sign the transaction as well before it can be fully processed. TrustVault will only sign transactions once all policies on your wallet have been met.







Once you've hit confirm and send from within the "Confirm MetaMask Transaction" screen in the app, refresh the inbox by pulling down on the device screen. MetaMask will then be prompted to process and complete the transaction which you can view in your TrustVault MetaMask account under activities. You can also view the transaction on Etherscan.





There are no limits to multisig quorum nor additional fees with TrustVault. We operate multisig off-chain which makes it gasless. You only pay the on-chain transaction fees



Get Started in DeFi

Contact sales@trustology.io Once the transaction has been processed you'll be able to view your MATIC tokens in your account as shown in the image below. In this scenario, we swapped 0.015 ETH for 26 Matic tokens.

	1.0141 ETH	-	Activity
	\$4,502.40 USD	LD/4 ETH 64.82240 V80	>
		26.631 MATIC 557.64 USD	>
8	26.631 MATIC \$67.64 USD	Add Token Need heigh Contoct MetaMask Support	

Assets held in TrustVault are always segregated for easy reporting and better security. Additionally, if you've taken out a leveraged position, we have forthcoming push notification capabilities to help you stay on top of margin calls or other events in DeFi.

For all inbound and outbound Ethereum transactions, we provide our clients with transaction risk rating and counterparty cluster information e.g. gambling, mixers, terrorist financing etc. through our webhook payloads. This ensures an easier way of monitoring for direct transactional exposure risk, eliminating the need for institutions to manually perform pre-flight checks themselves, which saves on time, cost and effort.

You also have the option to add crypto wallet addresses to an Address Book. This allows you to pre-select from frequently used crypto wallet addresses when withdrawing.

As an added layer of security, we've provided institutions with allow and deny list functionality that we can exercise across users, wallets, addresses and protocols. When enabled, you can only withdraw to addresses that have been added to your Wallet Address Book which have been whitelisted. This becomes useful from a compliance perspective especially when working with Fund administrators looking to calculate and record NAV daily on portfolios or accountants looking to report on tax. The address book can be shared with approved users.

Before we can move on to our next scenario, we'll need to bridge the MATIC tokens over to the Polygon mainnet to then farm DeFi yield with Aave. This is because Polygon Matic is a layer 2 network solution, born out of the necessity for scale due to network congestion on Ethereum. When it comes to scaling Ethereum or blockchains in general, there are 2 major ways of doing it. You can scale the base layer itself Layer 1 (e.g. Avalanche and BSC), or scale the network by offloading some of the work to another layer – Layer 2 (e.g. Polygon Matic, Arbitrum, ZKSync and Starkware). In today's DeFi ecosystem Layer 2 networks seem to be gaining momentum but it requires a 'bridge' when dealing with assets.

> Combining Rollups and sharding gives a 10,000X increase in scalability (for Ethereum).

Vitalik Buterin





Get Started in DeFi

Ethereum has several bridge options like **Zapper Bridge** where you can connect your TrustVault x MetaMask extension to move assets across. For demonstration purposes, we've opted to bridge over 10 of our 26 MATIC tokens. Here are the steps involved to use Zapper:

- Connect your wallet from Zapper homepage
- Select your "**from**" and "**to**" destinations for the networks
- Input the token you are moving "from" and "to".
 In this case we are moving MATIC from Ethereum mainnet over to Polygon network with the token also confirmed as MATIC
- **APPROVE** the transaction on Zapper Bridge having confirmed the amount and slippage for the transaction.
- Confirm and approve the spend limit from
 MetaMask prompt

To see the status of your MATIC tokens

in TrustVault x MetaMask, you'll need to change the network view from Ethereum

to Polygon from the drop down menu

as shown in the next image. Once the transaction has gone through you'll see your tokens on Polygon. That's it, you're

all done. Now let's try yield farming with

TrustVault on Aave.

- **Review and sign** the transaction in the TrustVault mobile app in your inbox
- Go back to Zapper to CONFIRM the transaction now activated for you to click
- Wait 5-8 minutes to see assets moved over to Polygon



NOTE: Other bridges could prove cheaper and faster. Hence, it's important to research what is available and compare costs.

_			
1	(a)	Polygon 🗸	
1	O Not connected	orks	;
-	The default network t transactions is Main I	for Ether Net.	
	Ethereum Mo	ainnet	
		Network	
	Kovan Test N	letwork	
	Rinkebý Test	Network	
	Goerli Test N	etwork Activity	
-	• BSC		
	🗌 🗸 🍋 Polygon		>
	Localhost 85	45	
	O Custom RPC		
	Need help? Contact Me	taMask Sup	port





Step 2: MATIC NETWORK Lending MATIC with Aave on Polygon

Valuing a DeFi project today comes down to yield, total locked value, growth rates and the strength of the community. Yield farming or liquidity mining, allows users to be recompensed in return for "locking" their tokens in a DeFi platform. This can entail staking cryptocurrencies, providing liquidity to a pool in a decentralised exchange, staking the liquidity pool (LP) tokens awarded, or providing liquidity to lending protocols (lending out your assets). The important factor being that it leverages different protocols interacting with one another in a permissionless way and promises jaw-dropping returns, e.g. 200-300% APYs.

S

Connect

Investors can opt to yield farm on Ethereum mainnet protocols, layer 2 networks like Polygon, or across both depending on fee appetite and strategy involved. Right now, setting up leveraged positions on Ethereum protocols to farm yield will cost a significant amount in gas fees. It's also important to note the risks involved, namely liquidation and smart contract risk.

In our chosen investment scenario, we'll keep it simple and show how you can provide liquidity to Aave's Matic pool using TrustVault. Head over to Aave and click **ENTER APP**. Once you've entered, select the AAVE Market for Polygon icon in the top right navigation bar.

Next click on the Matic row as shown in the image on the right to deposit tokens.

When you click through, it should show the market information, e.g. total borrowed, total supply, and key stats such as utilisation ratio. You should be able to see the total LTV or maximum borrowing power for that collateral asset. AAVE AAVE AAVE AMM **AAVE** AAVE \$ 4,827,703,853.72 Native Borrow APY Borrow APV w Assets w Market size w Total borrowed v Deposit APY 1 0.30 % 2.45 % ₩ 2.44 % A 183.38M 28.54M Matic 2.92 % 4.08 % 946.12M 📄 DAI 1.18B 3.17 % ■ 1.63 % A 4.00 % ■ 2.77 % AJ (i) USD Coin 1.42B 1.25B _ 7.57 % 9.33 % 174.76M 158.72M 🕞 USDT Coin _



Before you can deposit your bridged **MATIC** assets you'll need to **CONNECT** to your wallet from the prompt on the screen as shown above. In the pop up window, select the option for **BROWSER WALLET** and then select MetaMask. Once connected, ensure your network is switched over to Polygon in TrustVault from the dropdown menu at the top. In Aave, you'll see your wallet balance displayed and options to transact— **DEPOSIT** or **WITHDRAW** (see image on the right).



Click the the **DEPOSIT** button and indicate how much matic you will deposit at the prompt as shown on the right. Then click **CONTINUE**.

You'll be presented with transaction details to review for your deposit amount and collateral usage. Click the deposit button if you are satisfied. You will receive a prompt from MetaMask to confirm the transaction followed by a push notification to your TrustVault app inbox. You must approve the MetaMask confirmation and sign the transaction in TrustVault. Then refresh the inbox for the transaction to fully complete.

NOTE: to cover the high network fees an additional 10 MATIC tokens were bridged over to cover a deposit of 10 MATIC tokens.



To see the transaction on Aave, navigate to **MY DASHBOARD** on the Aave top navigation menu. There you can see your available reward to claim using your TrustVault wallet and full deposit and borrow details.





Get Started in DeFi

Contact sales@trustology.io

Add amMATIC to your browser wallet 😜

Aave lets users borrow against their deposited cryptoassets as collateral requiring payment of a small interest on the loan. Should you decide to perform that as your next step, head over to the **BORROW** tab on Aave's top nav bar to explore assets you can borrow based on your collateral. TrustVault can support your needs on this side of the transaction as well and we will cover this in our next tutorial. Institutional users should know that we can build in rules and notifications around margin calls in TrustVault to help you keep on top of your leveraged positions.

What's interesting is that yield farmers can look to farm MATIC rewards on both the Deposit and Borrowing side. Both Aave and Matic pay users to borrow as a means of incentivizing platform usage earning reward. As with any leveraged position, though, you run the risk of liquidation.

Liquidation risk is just one of the risks institutions need to worry about when yield farming or margin trading. Smart contract risk is yet another, especially where upgradeable contracts are involved. BadgerDAO is a recent case in point. The protocol suffered a front-end attack that saw \$120M siphoned from the platform's user accounts. TrustVault's upcoming Ethereum Virtual Machine (EVM) Simulator and Decoder would have helped in this situation and will be a first in DeFi.

In simple terms, institutions will be able to simulate a transaction to see where the funds will actually end up before signing a transaction.

But the key here is they will be able to see in plain English what they are signing (Decoder) and where their funds will likely end up (Simulator) vs spending time and effort figuring out what the underlying binary or transaction hash data says which is industry standard today. In this way, we're enabling early detection of fraud or illegal activity and minimising the potential for financial losses. The Simulator and Decoder also works to help Protocols detect early on if anyone is trying to inject malware script at the front end like we saw happen with BadgerDAO and a number of other projects.

Taking things one step further we will also introduce a Contract Directory which will hold a list of smart contract addresses associated with a DeFi protocol. This will enable users to allow or disallow protocols quickly. What's more, the Directory will also hold each contract's Application Binary Interface (ABI) which allow our new Decoder to decode each transaction in human readable form. Another first for DeFi.

Although DeFi is showing signs of maturing, institutions still suffer from the absence of appropriate transaction safety controls when transacting or yield farming on DeFi DApps. TrustVault 'allow' and 'deny' list functionality and manual or programmatic Firewall rules to block any unauthorised or suspicious transactions, assets or protocols outside of their investment mandate works well for institutions wanting investor peace of mind and keeping regulators happy.

Conclusion

DeFi is the genie out of the bottle with the potential for many to be financially rewarded fairly and transparently. Set to become the greatest global marketplace for integrated financial services, it's open, standards-based and decentralised nature allows it to be safer, faster, easier, broader and cheaper, with deeper liquidity than anything before it. In order to realise this vision, institutional investors, service providers, token issuers and

Related readings:

- \rightarrow FCA registration announcement
- → Why Trustology stood out to Voyager DeFi fund
- → Institutional Crypto Custody for Investors

corporates will depend on an FCA registered custodial wallet provider like Trustology to help them manage inherent risks and complexity of safeguarding and administering cryptoassets.

Stay tuned for our next tutorial on **BORROWING** against your deposited assets as a collateral to reinvest or lend to other protocols.

To learn more about how TrustVault for DeFi

Talk to us