Enshroud Testing Guide
Sepolia Blockchain

16 May, 2025

Prerequisites

The revised Enshroud dApp is ready for testing on Sepolia testnet! The current version is 0.2.4, dated 16 May 2025. This version is essentially a release candidate for deployment on Ethereum Mainnet.

To check it out you'll need these prerequisite items:

1. Your choice of browser: Chrome/Chromium, Firefox, or Brave (which is built on Chromium). Opera and Edge are also possible, but not yet tested by us.

2. A Web3 plugin for your browser. Metamask, Coinbase, or anything equivalent that follows the *window.ethereum.providers* Web3 standard, including EIP-712 signature support.

Rabby is known *not* to work. We looked into adding RainbowKit to enable it and various other smartphone wallets, but it's not possible for us to support it. This is due to an absolute requirement to register our project with WalletConnect to obtain a project ID. Doing so means our team and project could not be anonymous; would become subject to US federal and California state govt jurisdiction (including prohibiting us from servicing a long list of prohibited and monitored countries); plus our dApp could be disabled at will by WalletConnect or other third parties. See this frightening ToS. Unfortunately, Web3 projects all over the world are getting lassoed into this toxic US-controlled corral by its convenience.

3. At least one wallet address on Sepolia with some SepoliaETH in it for gas. We can send you a small amount of SepoliaETH if you post your wallet account address in our support forum (see last page). Or you can obtain some yourself by using one of the free faucets. A partial list of these is available here:

Faucets Link (https://faucetlink.to/sepolia)

Since the operators of faucets want to prevent professional miners from abusing their faucet, there are various restrictions imposed. For example the most you can obtain simply by providing an address and completing a Captcha is minimal, around 0.001 SepoliaETH. Alternatively you can open a free account with the service that operates the faucet (such as Infura or Alchemy), or qualify by having a certain small amount of ETH (or another token) at the same address on the Ethereum mainnet. Basically, anything that will prove your address is a real account and not one generated by a bot. A quantity of 0.05 – 0.1 SepoliaETH should be ample for most testing with Enshroud that you might wish to do, since gwei (gas costs) are typically low on the Sepolia testnet.

4. For best results, you should do your testing using IPFS. To do this, you'll need to obtain the Kubo IPFS Go client, which you can get for your platform here:

https://dist.ipfs.tech/#kubo

At this writing the current version is v0.35.0 (21 May). Extract the appropriate archive and move the executable (*ipfs*) into your $PATH. (There should be an install script that will do this for you.) **One time, you'll need to run the command *ipfs init* to set up your local repository.** After that, invoke with *ipfs daemon*, which starts up both your local node and the HTTP Gateway for serving content to browsers. There is copious documentation available on the Kubo download site if you need guidance.

Accessing the dApp

1. Switch your wallet to the Sepolia network. (Not every wallet supports this; some don't support testnets, only Eth mainnet.) By default, Metamask supports several Ethereum testnets; all you have to do is switch on the display of testnets in your Settings and pick Sepolia from the list. However this connects you through Infura, which is a censoring RPC provider that also logs all your activity against your IP address and account address(es). You will need to register a (free) account with Infura in order to get an API_KEY to use with their RPC URL, https://sepolia.infura.io/v3/<YOUR_API_KEY>. If this bothers you, for a little more privacy you can use an open source JSON-RPC gateway maintained by a third party node provider as a service to the community (much like the faucets). You can find a list of public RPC nodes here:

Chainlist Sepolia RPC

Ideally, pick one that has both a green Score (meaning it's usually up-to-date with the tip of the Sepolia blockchain) and a green Privacy entry (meaning logging is not done or else is purged frequently).

Suppose that you select: https://0xrpc.io/sep. You can then configure the network manually, by going to MetaMask/Settings/Security&Privacy/Add Network and editing the entry for Sepolia so it looks like this:

Name: Sepolia
RPC URL: https://0xrpc.io/sep ← (this URL is the field you're entering/replacing)
Chain ID: 11155111
Currency symbol: SepoliaETH
Explorer URL: https://sepolia.etherscan.io

Note that some JSON-RPC providers don't provide access to blockchain events through filters, which makes it impossible to use them with dApps. The one used as an example above (https://0xrpc.io/sep) is known to work reasonably well. Some others work too but may give you problems with rate limits, or disallow event searches more than 10k or 50k blocks in the past, etc. YMMV. Worst case you can simply get an Infura account and use the Infura default URL pre-configured with MetaMask, but the URLs near the top of the Chainlist page appear to work at some level.

2. Quick start *without* IPFS client

Browse to: http://app.enshroud.info
[note https is *not* supported, except for a landing page explaining why we don't support it :-)]

Important: if you have your browser configured for "secure only" mode, visiting plain *http* URLs is prohibited. In this case you'll need to change your browser setting. (Enshroud uses better encryption over HTTP that doesn't rely on the HTTPS standard, for reasons beyond the scope of this document.)

You'll see the home page begin to load. If you don't yet have a Web3 plugin (such as MetaMask) installed, you'll see a popup telling you to install one, and loading will stop. If you do have a plugin, you'll be prompted to unlock your wallet (if you haven't already done so), and then the rest of the page will load. If your wallet is set on a network different from Sepolia, you'll see an error to the effect that Enshroud isn't deployed on that network. Switch to Sepolia and it will retry.

You'll be asked by MetaMask to connect the current account to the Enshroud dApp. Click on the link to approve this, and add any other account addresses you also wish to use. *You'll know the app is fully loaded when the black menu bar stripe appears along the top of the page.*

Note: we may or may not retain a webpage option for live. However, we cannot support *https* because one can't access our L2 MVO layer from within the dApp using a http://IP URL whenever the context is "secure." (The reason for this, and how we encrypt data using ECIES instead of TLS, is explained in the "What Is Enshroud" page within the dApp.) Plus if the user's browser options are configured to disallow insecure connections globally (now recommended but not mandatory), the insecure website URL won't work anyway (as noted above).

We would prefer not to have any hosted domain or website for a live deployment, other than for info/support purposes. But this may not be wholly practical due to user onboarding friction.

3. Access via IPFS client (preferred)

Start your Kubo IPFS client (i.e. run the executable with *ipfs daemon*). This also starts up a web access client gateway on port 8080 (by default, unless you change the port).

Then browse to:

http://localhost:8080/ipns/k2k4r8ontb0dinlp1ifvflzjzt11ngbj2huz9agk4h9v7ztuo2rblsy0

(Your browser may rewrite this URL as:
http://k2k4r8ontb0dinlp1ifvflzjzt11ngbj2huz9agk4h9v7ztuo2rblsy0.ipns.localhost:8080/
which means the same thing, and is fine to bookmark.)

This will trigger your IPFS client to obtain all the content off the IPFS network and feed it back to your browser. This might take a bit longer than opening a traditional website using a domain name. Because it's localhost (127.0.0.1), security is irrelevant. Also, since IPFS uses content-based addressing, the retrieval mechanism itself requires that each file's contents match the hash by which it was addressed. Therefore, IPFS access inherently guarantees data integrity – a nice feature!

Note that having the **"IPFS Companion" plugin** installed in your browser **will not work**. This is because the plugin relies on web servers which act as IPFS gateways (meaning they obtain the content from IPFS and then offer it over their own website URL). This procedure is centralized; not private because of webserver logs; doesn't guarantee file integrity; and, because *https* URLs are mandatory doesn't work for us anyway (see above). *You will need a separate local IPFS client such as Kubo.*

Since our site is published with IPNS (IPFS name service), whenever the dApp is updated the constituent files will change but the top-level access URL will not. Therefore you can use one

bookmark across multiple updates. (That is, simply bookmark the IPNS URL shown above.)

Notes on the dApp itself

- Near the top, there's a light blue link to an "Explainer" page (What Is Enshroud). This contains some generic instructions plus links to several PDF documents. This will help you to understand what Enshroud does and what to test. The thinking was that we'd put some ".info" material right inside the dApp, to reduce the need for a separate *enshroud.info* site. Also, it's better to host such material on IPFS than a website, if we can. (For one thing, an IPFS-based site cannot be hacked without access to the private key used to publish it.)

- In order to mint some eNFTs, you'll need to deposit some value. If you have enough, you can just use SepoliaETH (which will be wrapped to erc20 WETH once deposited). Or you can post your account address(es) in our support chat room and we'll mint you some $ENSHROUD (our erc20 project token), which you can then deposit. Any other test erc20 on Sepolia will also work, if you happen to have some or can find a faucet for the token. You can also buy $ENSHROUD from our Crowdsale page (in the dApp under the Staking menu) using SepoliaETH, at a rate of 1 ETH = 100,000 $ENSHROUD.

- You'll likely want >1 funded account so you can test spending eNFTs from one test account address to another.

- In designing the UI, we've strictly followed the Mac O/S style of "task-based" pages, on which everything needed to perform a task is on the same page in vertical order, even if that makes the page long enough to scroll. On the critical Mint / Spend / Burn pages, there will always be two steps: 1) pre-configure what you're doing through our Layer 2 nodes; and 2) review the results and submit them to the blockchain.

- You'll quickly notice that practically every button, label, table header, table cell, input, etc., has hover text associated with it. Many pages have step-by-step instructions at the top. All of this is meant to make the dApp essentially self-documenting. (At least to any experienced Web3 user!) Very few fields display *wei*, because that renders the magnitude of amounts too hard to see visually. Thus amounts are generally displayed as *ethers* (aka 1e-18 units, i.e. with 18 zeroes chopped off the end). However you will see *wei* when reviewing signed text sent to MVOs, simply because we have to display and sign the exact same text.

- There's a Staking menu with several items in it. There are UI pages for managing user DAO Pool stakings for earnings, and also MVO owner stakings, as well as the Crowdsale (Buy $ENSHROUD) tokens page. You are welcome to test these as well, in addition to manipulating eNFTs and making payments.

- There's also an Admin menu with several items in it. This allows you to see the list of configured Layer 2 MVO test nodes and their public endpoints, plus the history of $ENSHROUD minting, token Timelocks, and eNFT greylisting by Auditors. While ordinary users won't have admin permissions to do much with these pages, all of this is included within the dApp for transparency reasons.

Getting Help and Reporting Issues

While we do not yet have 24x7 support available, we will be checking our support forum daily. This is available at this URL:

https://support.enshroud.info:7443/inverse/#

The first time you visit:

1. Create an XMPP login on the server (registration link on bottom of login page). You can enter any values you wish. (I.e. your name and email address don't need to be real, and nothing will ever get sent to the email address.)
2. Login with your chosen username and password.
3. If your browser asks you to allow notifications from this site, say yes so you can see new messages and presence indications.
4. You'll see a mostly blank screen, with labels near the top left for GROUPCHATS and CONTACTS. Click the rightmost icon after GROUPCHATS to bring up a search for public chat rooms. The one you want is "Enshroud Support". Select and enter this room, and pick a nick (which can be different from your login username if you wish).
5. Optional: using the hamburger menu at the top right, you can bookmark the room so that you'll go into it automatically next time you log in.

You may find some already-posted Q&A from other people which might be useful. Feel free to ask any questions, or report bugs or other bad behavior by our dApp or Layer 2 network. If no one is in the room with you at the time, it works like a message board. Check back later for a reply.

Note: we have observed that sometimes when you're connected from the other side of a NAT (i.e. you're behind a wifi router or other gateway with a restrictive firewall), you may experience periodic reconnects. Using a VPN usually fixes this.

Thank you for helping us test, debug, and improve our service, which is the latest and greatest thing in on-chain privacy! Enjoy.

– The Enshroud Team