Enabling global identity
Protecting digital trust

Witness Pool

GLEIF Testnet Documentation

Public
Version 1.0
2025-07-11

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Version	1.0
Date of version	2025-07-11
Created by	Kent Bull
Approved by	Ivan Mortimer-Schutts
Confidentiality level	External Use

About this Document

This document describes the usage of the GLEIF Testnet witness pool for technical users and is aimed at software developers and architects using the vLEI technologies to build line of business applications.

Change History

Date	Version	Description of Change	Author
2025-07-11	1.0	Final Version	Kent Bull

1 Witness Pool Overview

1.1 Getting Started

Using witnesses may be done with the `kli witness start` command from the KERIpy library which is available as a Docker image in the weboftrust/keri image as used in the below examples. Both the training and end-to-end referenced examples below illustrate usage of witness servers and may be used as a getting started guide. Start with the Training example and progress onto the end to end workflow if additional context is needed.

1.1.1 Training Example

The vLEI Trainings repository has a Witnesses training (Github GLEIF-IT/vlei-trainings/jupyter/notebooks/101_40_Witnesses.ipynb) showing the basics with getting up and running with witnesses.

1.1.2 End to End Workflow Example

An advanced setup may be found in the end-to-end testing qvi-software repository in the keria_docker folder (Github GLEIF-IT/qvi-software/qvi-workflow/keria_docker) illustrating how witnesses may be set up for production usage. A barebones, headless, task based Signify wallet implementation using witnesses with both the KLI for command line wallets and KERIA for Signify edge wallets may be found in the qvi-software/qvi-workflow/sig_ts_wallets subdirectory showing the Typescript code for building the various parts an end-to-end issuance, credential holding, and credential presentation workflow.

1.2 Functional Purpose

Witnesses are required signing infrastructure needed in a full deployment of vLEI infrastructure as they provide the critical component called key event receipts on key events from vLEI identifiers. These receipts are needed whenever an identifier adds cryptographic keypairs to their identifier database including initial creation of an autonomic identifier (AID), also known as inception, and including rotation of keys for an AID.

The GLEIF Testnet Witness Pool provides a set of five witnesses to serve as testing infrastructure for building proof of concept solutions.

1.3 Witness URL List

The five GLEIF Testnet witness URLs are noted below.

Witness 1 - wit1	https://wit1.testnet.gleif.org:5641
Witness 2 - wit2	https://wit2.testnet.gleif.org:5642
Witness 3 - wit3	https://wit3.testnet.gleif.org:5643
Witness 4 - wit4	https://wit4.testnet.gleif.org:5644
Witness 5 - wit5	https://wit5.testnet.gleif.org:5645

1.4 Who Runs This

Witnesses should be run, or be rented, by any organization that uses vLEI identifiers. Usually a wallet software vendor will include a witness offering along with a wallet

offering that are configured to work together. A given team may want to run all of the infrastructure themselves, which is acceptable.

For the duration of the hackathon GLEIF will provide a testnet with infrastructure on the "testnet.gleif.org" domain as shown below including five witnesses. These witnesses are preconfigured to be known by the KERIA Server in the GLEIF testnet.

Component	URL and Port
Witness 1 - wit1	https://wit1.testnet.gleif.org:5641
Witness 2 - wit2	https://wit2.testnet.gleif.org:5642
Witness 3 - wit3	https://wit3.testnet.gleif.org:5643
Witness 4 - wit4	https://wit4.testnet.gleif.org:5644
Witness 5 - wit5	https://wit5.testnet.gleif.org:5645
KERIA Server	https://keria.testnet.gleif.org Ports 3901, 3902, and 3903 are open
vLEI Server	https://schema.testnet.gleif.org:7723
vLEI Reporting API	https://presentation-handler.testnet.gleif.org:9723
Webhook Call Handler	https://hook.testnet.gleif.org:9923

2 OpenAPI Documentation

The OpenAPI 3.0 documentation for each witness may be retrieved from the **/spec.yaml** endpoint. A full URL to the OpenAPI 3.0 documentation looks like the following: https://wit1.testnet.gleif.org:5641/spec.yaml