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How to Manage a Multichain Project Using Alchemy SDK

Learn how to manage multiple API keys and network endpoints in the same project using Alchemy SDK

Introduction

key and endpoint are used for each chain can be time-consuming and error-prone. Alchemy SDK provides a solution to this problem with its AlchemyMultiChainClient, a wrapper around the Alchemy SDK that allows for easy management of multiple chains in a single application. In this tutorial, we'll walk through a demo project that demonstrates how to use the AlchemyMultiChainClient to query NFTs for an owner on multiple chains.

Project Setup

To follow along with this tutorial, you'll need to have Node. js and npm installed on your machine. You'll also need to clone the demo project from Alchemy's GitHub repository by running the following command in your terminal:

Shell git clone https://github.com/alchemyplatform/alchemy-multichain-demo.git After cloning the repo, navigate to the project directory and run the following command to install its dependencies:

Shell cd alchemy-multichain-demonpm install Now that we have the demo project set up, we can move on to querying multiple chains.

Querying Multiple Chains

The src/index.ts file contains a simple demo that uses the AlchemyMultichainClient class to make requests across multiple chains. Let's walk through the code to understand how it works.

TypeScript import {AlchemyMultichainClient }from './alchemy-multichain-client'; import {Network }from 'alchemy-sdk' ;async function main () {// Default config to use for all networks. const defaultConfig = {apiKey :'demo' ,// TODO: Replace with your Mainnet Alchemy API key. network :Network .ETH_MAINNET };// Include optional setting overrides for specific networks. const overrides = {// TODO: Replace with your API keys.

:'demo', maxRetries:10 },// Replace with your Matic Alchemy API key

:'demo' }// Replace with your Arbitrum Alchemy API key. };const alchemy = new AlchemyMultichainClient (defaultConfig ,overrides);// get NFTs in multiple networks const owner = '0xd8da6bf26964af9d7eed9e03e53415d37aa96045' ;const mainnetNfts = await alchemy .forNetwork (Network .ETH_MAINNET) .nft .getNftsForOwner (owner , {pageSize :5 });console .log ('mainnetNfts' ,mainnetNfts); hain (); First, we import the necessary modules:

TypeScript import {AlchemyMultichainClient } from './alchemy-multichain-client' ;import {Network } from 'alchemy-sdk' ; The AlchemyMultichainClient class is imported from the alchemy-multichain-client file in the same directory, and the Network is imported from the Alchemy SDK.

Next, we define the configuration settings for our multichain application. This is done by creating a defaultConfig object which contains the default settings that will be used across all networks. In this example, the defaultConfig object includes an Alchemy API key and specifies the ETH_MAINNET as the default network.

TypeScript const defaultConfig = {apiKey :'demo' ,network :Network .ETH_MAINNET }; We can also include optional setting overrides for specific networks, if needed. This is done by creating an overrides object which maps network IDs to their respective configuration overrides. For example, in the overrides object in the example code below, we are overriding the API key for the MATIC MAINNET and ARB MAINNET networks.

TypeScript const overrides = {

:'demo' ,maxRetries :10 },// Replace 'demo' with your Alchemy Matic API key

:'demo' }// Replace 'demo' with your Alchemy Arbitrum key }; With the configuration settings defined, we can now create an instance of the AlchemyMultichainClient by passing in the defaultConfig and overrides objects.

TypeScript const alchemy = new AlchemyMultichainClient (defaultConfig ,overrides); Once the AlchemyMultichainClient instance is created, we can start making requests to different networks using the forNetwork method. This method returns a new instance of the AlchemyMultichainClient with the specified network settings, so you can chain requests together.

In the example code below, we are using the forNetwork method to make requests to the ETH_MAINNET and MATIC_MAINNET networks to get the NFTs for an owner with a specified wallet address. We are also specifying the pageSize option to limit the number of NFTs returned to 5.

TypeScript const owner = '0xd8da6bf26964af9d7eed9e03e53415d37aa96045' ;const mainnetNfts = await alchemy .forNetwork (Network .ETH_MAINNET) .nft .getNftsForOwner (owner , {pageSize :5});const maticNfts = await alchemy .forNetwork (Network .MATIC MAINNET) .nft .getNftsForOwner (owner , {pageSize :5}); Finally, we log the results of our requests to the console.

TypeScript console .log ('mainnetNfts' ,mainnetNfts);console .log ('maticNfts' ,maticNfts);

Testing the Script

To test the script, make sure you have typescript installed by running this command, in the root of terminal:

Shell npm install-g typescript Next, you need to compile your TypeScript file by running the following command:

Shell tsc src/index.ts This will generate a JavaScript file called index.js in the same directory as your index.ts file. You can then run the index.js file using Node.js:

Shell node src/index.is Finally, it will log the mainnetNfts and maticNfts for the given owner in your terminal

Shell mainnetNits (ownedNits: (contract: [Object], lokenid: "1, lokenType: ERC72", itile", description.", itimeLastUpdated: 2023-02-17T16:10:26.6112", metadataError: undefined, rawMetadata: (), tokenUri; [Object], balance: 81, contract: [Object], balance: 83, co

Conclusion

totalCount:2497 }

In this tutorial, we have seen how to use the Alchemy SDK with multiple chains in a single application using the AlchemyMultichainClient class. We have also seen how to manage the different API keys and endpoints for different chains. With the knowledge gained from this tutorial, you can now start building your own multichain applications using the Alchemy SDK.

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