

Connect to a Local Network

Use a Sui local network to test your dApps against the latest changes to Sui, and to prepare for the next Sui release to the Devnet or Testnet network. Sui CLI provides the `sui start` command to start a local network. There are several services that can be started when using `sui start`, such as an indexer, a faucet, or a local instance of the GraphQL service (including the web-based GraphQL IDE). You can use the included faucet to get test SUI to use on the local network.

If you haven't already, you need to [install Sui CLI](#) on your system.

To start the local network, run the following command after you install Sui CLI.

This command:

Each time you start the network by passing `--force-regensis`, the local network starts from a random genesis with no previous data, and the local network is not persisted. If you'd like to persist data, skip passing the `--force-regensis` flag. For more details, see the [Persist local network state](#) section. Please note that a temporary directory is created in `/tmp`, which might not work if the `/tmp` folder is mounted to `/tmpfs`. If this is the case, set `TMPDIR=/some_folder`.

To customize your local Sui network, such as starting other services or changing default ports and hosts, include additional flags or options in the `sui start` command.

Options and flags like `with-indexer`, `with-graphql`, and related require you to have `Postgresq/libpq` installed. Check out the list of possible options below to find which is the default expected DB, or how to pass a different DB.

The following is a list of possible options and flags to pass to `sui start`:

Use `sui start --help` to see these options in your console.

By default, when using `sui start` the command uses an existing genesis and network configuration if the `~/.sui/sui_config` folder exists and includes a `genesis.blob` file. If the folder doesn't exist, it creates the folder and generates a new genesis configuration. If you pass `--network.config`, the command checks for the network config file and tries to load the genesis blob as per the network config file.

Whenever you stop and start the network without passing the `--force-regensis` flag, all history is preserved and accessible.

To generate a custom genesis, use the `sui genesis` command and pass the desired custom values. For more information about possible flags and options, run `sui genesis --help`.

Use the following command to retrieve the total transaction count from your local network:

If successful, the response resembles the following:

You can use the Sui CLI with any Sui network. By default it connects to Sui Devnet. To connect to your local network, create a new environment alias named `local` that sets the RPC URL the client uses to your local network.

Next, use the following command to set the active environment to the new local environment you created.

The command returns:

Active environment switched to [local]

You can check the current active environment with the following command:

The command returns:

local

The Sui Client CLI uses the active address for command if you don't specify one. Use the following command to show the active address on your local network.

The command returns an address, for example:

0xbc33e6e4818f9f2ef77d020b35c24be738213e64d9e58839ee7b4222029610de

Use the active address to get test SUI to use on your local network. Use the `sui client addresses` command to see all of the addresses on your local network.

The address returned when you run the command is unique and does not match the one used in this example.

Transactions on your local network require SUI coins to pay for gas fees just like other networks. You can use the active address with the faucet.

Sui CLI provides the sui client faucet command to get coins from the faucet. In the most basic case, run sui client faucet and wait up to 60 seconds for the coins to reach your address. Use sui client gas to check for the new coins.

The faucet command uses the active address and the active network environment by default. If you need to pass in a different address or faucet server URL, check the help menu. If you're using a different network than a local network or the public ones (fullnode.network.sui.io), pass the URL to the faucet server.

After you get coins from the faucet, use the following command to view the coin objects for the address:

The response resembles the following, but with different IDs:

Use the TypeScript SDK to add example data to your network. This requires to start a local network with an indexer and GraphQL: sui start --force-regenesis --with-faucet --with-indexer --with-graphql . Then run the following command from the sui root folder:

For additional information about example data for testing, see <https://github.com/MystenLabs/ts-sdks/tree/main/packages/typescript#testing> .

Use a Sui network explorer to monitor your local network activity. You can build and run one locally or use the Custom RPC URL setting available on many online explorers to provide your local network's RPC URL (http://127.0.0.1:9000 by default).

If you do not use [Node.js 18](#) , you might see the following message:

Retrying requesting from faucet: Retry failed: fetch is not defined

To resolve this, switch or update to Node.js 18 and then try again.

The published version of the Sui TypeScript SDK might be an earlier version than the version of Sui you installed for your local network. To make sure you're using the latest version of the SDK, use the experimental -tagged version (for example, 0.0.0-experimental-20230317184920) in the [Current Tags](#) section of the Sui NPM registry.

Start the local network

To start the local network, run the following command after you install Sui CLI.

This command:

Each time you start the network by passing --force-regenesis , the local network starts from a random genesis with no previous data, and the local network is not persisted. If you'd like to persist data, skip passing the --force-regenesis flag. For more details, see the [Persist local network state](#) section. Please note that a temporary directory is created in /tmp , which might not work if the /tmp folder is mounted to /tmpfs . If this is the case, set TMPDIR=/some_folder .

To customize your local Sui network, such as starting other services or changing default ports and hosts, include additional flags or options in the sui start command.

Options and flags like with-indexer , with-graphql , and related require you to have Postgresq/libpq installed. Check out the list of possible options below to find which is the default expected DB, or how to pass a different DB.

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Use the following command to retrieve the total transaction count from your local network:

If successful, the response resembles the following:

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Next, use the following command to set the active environment to the new local environment you created.

The command returns:

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You can check the current active environment with the following command:

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The command returns an address, for example:

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Connect the Sui CLI to your local network

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Next, use the following command to set the active environment to the new local environment you created.

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Show the current active address

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The command returns an address, for example:

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Use the local faucet

Transactions on your local network require SUI coins to pay for gas fees just like other networks. You can use the active address with the faucet.

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The faucet command uses the active address and the active network environment by default. If you need to pass in a different address or faucet server URL, check the help menu. If you're using a different network than a local network or the public ones (`fullnode.network.sui.io`), pass the URL to the faucet server.

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Generate example data

Use the TypeScript SDK to add example data to your network. This requires to start a local network with an indexer and GraphQL: `sui start --force-regenesis --with-faucet --with-indexer --with-graphql`. Then run the following command from the sui root folder:

For additional information about example data for testing, see <https://github.com/MystenLabs/ts-sdks/tree/main/packages/typescript#testing>.

Use a Sui network explorer to monitor your local network activity. You can build and run one locally or use the Custom RPC URL setting available on many online explorers to provide your local network's RPC URL (<http://127.0.0.1:9000> by default).

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Monitor activity

Use a Sui network explorer to monitor your local network activity. You can build and run one locally or use the Custom RPC URL setting available on many online explorers to provide your local network's RPC URL (<http://127.0.0.1:9000> by default).

If you do not use [Node.js 18](#), you might see the following message:

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To resolve this, switch or update to Node.js 18 and then try again.

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Troubleshooting

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Test with the Sui TypeScript SDK

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