

How to create and use a LightAccount with permissionless.js

[LightAccount](#) is the smart account implementation made by Alchemy and inspired by SimpleAccount. It has a few additional [features](#), such as transferrable ownership and upgradability. This guide will show you how to create and use a LightAccount with permissionless.js.

Steps

Create the clients

First we must create the public, bundler, and (optionally) paymaster clients that will be used to interact with the LightAccount.

```
...

// Get your API key here: https://dashboard.pimlico.io/apikeys constAPI_KEY='YOUR API KEY';

exportconstpublicClient=createPublicClient({ transport:http("https://rpc.ankr.com/eth_sepolia"), });

exportconstpaymasterClient=createPimlicoPaymasterClient({ entryPoint:ENTRYPOINT_ADDRESS_V06, transport:http(
https://api.pimlico.io/v2/sepolia/rpc?apikey={API_KEY}, ), });

exportconstpimlicoBundlerClient=createPimlicoBundlerClient({ transport:http( https://api.pimlico.io/v2/sepolia/rpc?apikey={API_KEY}, ),
entryPoint:ENTRYPOINT_ADDRESS_V06, });

...
```

Create the LightAccount

For a full list of options for creating a LightAccount, take a look at the reference documentation page for [signerToLightSmartAccount](#). You can also pass an address to use an already created LightAccount.

```
...

constlightAccount=awaitsignerToLightSmartAccount(publicClient, { signer:privateKeyToAccount('0x...'),
entryPoint:ENTRYPOINT_ADDRESS_V06, lightAccountVersion:'1.1.0' })

...
```

Create the smart account client

The smart account client is a permissionless.js client that is meant to serve as an almost drop-in replacement for viem's [walletClient](#).

```
...

constsmartAccountClient=createSmartAccountClient({ account: lightAccount, entryPoint:ENTRYPOINT_ADDRESS_V06,
chain: sepolia, bundlerTransport:http( https://api.pimlico.io/v2/sepolia/rpc?apikey={API_KEY}, ), middleware: { sponsorUserOperation:
paymasterClient.sponsorUserOperation, // optional gasPrice:async()=>
(awaitpimlicoBundlerClient.getUserOperationGasPrice()).fast, // use pimlico bundler to get gas prices } });

...
```

Send a transaction

Transactions using permissionless.js simply wrap around user operations. This means you can switch to permissionless.js from your existing viem EOA codebase with minimal-to-no changes.

```
...

consttxHash=awaitsmartAccountClient.sendTransaction({ to:"0xd8dA6BF26964aF9D7eEd9e03E53415D37aA96045", //
Vitalik data:"0x", value:0n, });

console.log(Transaction: https://sepolia.etherscan.io/address{txHash})

...
```