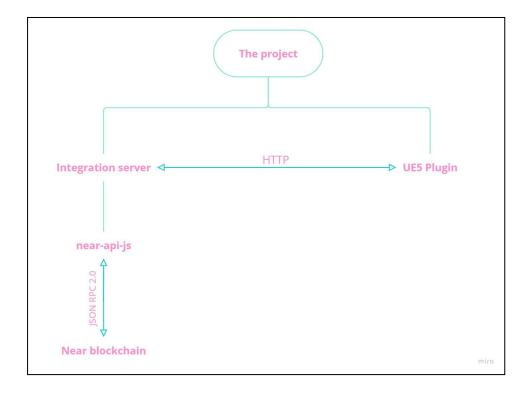# Unreal Engine 5 Plugin for

NEAR Protocol

Unreal Engine Near Plugin is a plugin that contains the basic functionality for interaction of Unreal Engine games with the Near Protocol blockchain (mainnet and testnet). To use the plugin, place it in the Plugins folder of your project and start the integration server. You can read more about the launch in the **README.MD** of the project.

Project link: https://gitlab.com/red-pirates/near-plugin/-/tree/main

The project consists of two parts:

- An integration backend code (server) written in Node.js that interacts with the Near blockchain using near-api-js library.
- A UE5 plugin that sends HTTP requests to the server and receives responses from it. Below is a diagram illustrating the interaction between project layers.

NEAR NODE.JS API

NEAR NODE.JS API contains the following functions:

URL	Description
POST /accounts	Create a new child account
GET /accounts/:accountId/balance	Get wallet balance by accountId
GET /accounts/:accountId/contracts/:contractId/ft-balance	Get balance of fungible tokens owned by account and a given contract
GET /accounts/:accountId/contracts/:contractId/nft-list	Get a list of NFTs owned by an account and a given contract
GET /accounts/:accountId/contracts/:contractId/nft-supply	Get the number of NFTs owned by an account and a givencontract
POST /contracts/login-url	Generate a link to get restricted access to an account
POST /contracts/transaction-url	Generate a link to confirm a transaction
POST /contracts/view	Call the view method of a specific contract
GET /docs	OpenApi

To use the server, you must have the Node.js framework installed and a NEAR account. In the environment variables (.env file) you need to set the Account ID and the private key for the account and the type of network (mainnet/testnet). This account will be used to create new accounts as child accounts, as well as to call the view methods of contracts used on the server.

To get a balance of fungible tokens, the contract passed in the parameters must support the NEP-141 and NEP-148.

To get a list of NFTs and their number, the contract must support the NEP-181.

UE NEAR PLUGIN API

UE NEAR Plugin contains the following functions:

Function	Description
SendCreateAccountRequest	Create a new child account
SendAccountBalanceRequest	Get the account balance
SendAccountFTBalanceRequest	Get the balance of fungible tokens of a certain contract located on the user's wallet
SendAccountNFTRequest	Get the list of non-fungible tokens for the account
SendAccountNFTSupplyRequest	Get the number of non-account
Login	Creates a key pair, generates and opens a link to the Near wallet, after a successful login, the accountId is returned.

Also contains the following structures to save the received information:

Structure	Property	Type
FAccountBalanceStruct	Total	FString
	StateStaked	FString
	Staked	FString
	Available	FString

FFTBalanceStruct	TokenName	FString

	Symbol	FString
	Icon	FString
	Balance	FString

FNFTMetadataStruct	TokenId	FString
	OwnerId	FString
	Title	FString
	Description	FString
	Media	FString
	Copies	int32
	MediaHash	FString
	IssuedAt	int32
	ExpiresAt	int32
	StartsAt	int32
	UpdatedAt	int32
	Extra	FString
	Reference	FString

	ReferenceHash	FString

FAccountNFTSruct	AccountNFTList	TArray<FNFTMetadataStruct>

These functions and structures can be used in blueprints to provide the required functionality.