



BUBBLE PLUGIN – BLOCKCHAIN CORE

SUPPORTING DOCUMENTATION

Version 1.0

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INTRODUCTION

What is Nexus

Nexus is a community driven project with the common vision of a world inspired by innovative and responsible values, expansive technology, and the fundamental quality of connection being ubiquitous, free, and available to everyone. Nexus has been mined into existence since September 23rd, 2014 with no ICO or premine. The platform is designed and intended to simplify lives, empower communities, and streamline business.

The release of the Tritium Protocol in late 2019 ushered in the era of the TAO Framework being the first of the three major architectural upgrades (Tritium, Amine, & Obsidian). Nexus is a seven-layered software stack that powers a register-based process virtual machine, serving as a powerful DApp and contract platform creating value across many industries. Development is accessible via an array of industry specific JSON-based APIs including but not limited to: encrypted communication, digital identifiers, supply chain, asset management, cryptography, & tokenization.

Nexus uses post-quantum signature schemes (FALCON), and automated key management functions through a technology called "Signature Chains". This technology eliminates key management issues (wallet.dat) by allowing users to access their accounts with the familiarity of a username, password and PIN. Additional technology being developed by Nexus includes a Decentralized Autonomous Organization (DAO) for governance, Safenet, a hack resistant Operating System, a decentralized satellite & mesh network all connected through a multi-dimensional chaining structure that employs sharding, low latency transaction finality, and truly decentralized multi-layer consensus.

Nexus is the embodiment of the founding principles of Satoshi Nakamoto, working towards fulfilling the vision that was promised with the creation of Bitcoin.

Why use this plugin?

This plugin will enable the creation of a blockchain-based application, without the coding experience required or significant costs typically associated with blockchain development.

Note: The plugin exposes the most commonly used methods of the Nexus API, allowing rapid development of your application. For more complex or feature-rich integrations, the source code of this plugin can be used as a reference implementation to add additional API calls using the bubble API connector plugin.

Plugin functionality

This Plugin provides the following functionality:

- User account (signature chain) creation and management
- Create and retrieve NXS wallet accounts, send (debit) NXS, list account transactions
- Create and retrieve fungible tokens, create token accounts, send (debit) tokens, and list token/account transactions
- Create non-fungible tokens (known as Assets), store arbitrary data on-chain in assets, transfer assets to other users, and asset tokenization
- Retrieve blockchain data (blocks, transactions)

PLUGIN INSTALLATION AND CONFIGURATION

If you are not familiar with using Bubble to build webapps this probably a good time to get acquainted. The [Bubble Academy](#) and [forum](#) are great resources for those who are unfamiliar. The following instructions will guide you through installing the plugin on a new project.

Create an account on the [Bubble](#) website if you do not have one already and login. From the home screen, navigate to “My Apps” using the menu at the top right corner of the Bubble webpage, then click “new app”. Enter the appropriate information in the web form related to the app you are creating, and click “create new app”. Close the assistant at the bottom left corner and use the left menu bar to navigate to the Plugin section, then select “Add plugins” on the top right. In the search window type “Nexus Blockchain” and press enter. Click “Install” then “Done” to finalize.

The plugin can be used “out of the box” with no further configuration. By default each API method is configured to use the Nexus API server at <http://api.nexus.io:8080>, which provides access to the Nexus mainnet.

Note: some actions, such as creating assets and tokens, will incur a NXS fee when used on the Nexus mainnet. Therefore you will need to fund your “default” account with NXS coins first.

We also provide access to a private-mode testnet on port 6080. This allows you to create and use accounts, tokens, assets, etc for free, without incurring any transaction fees, whilst you develop your application.

Direct link to the blockchain-core plugin:

<https://bubble.io/plugin/nexus-blockchain-1595919363741x219916062308433920>

SETTING UP A PRIVATE BLOCKCHAIN NETWORK

Nexus provides a public API server at <http://api.nexus.io> that enables developers to easily communicate with the mainnet (port 8080) or a private-mode testnet (port 6080). If you wish to set up your own private Nexus network instead, you may do so with the following instructions.

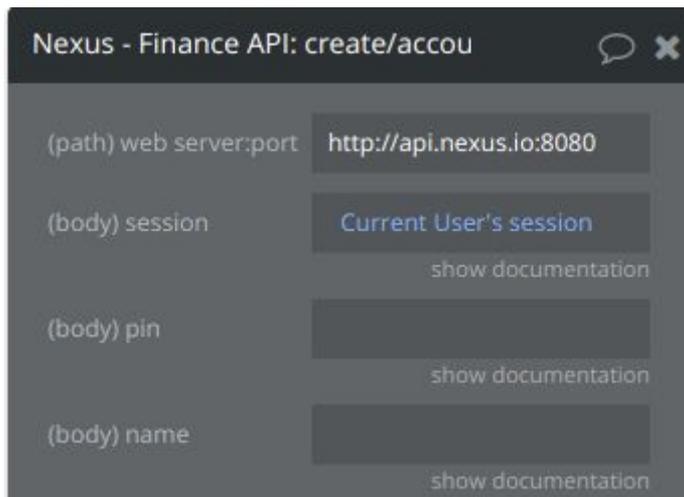
<https://github.com/Nexussoft/LLL-TAO/wiki/Private-Testnet-Build-Instructions:-Ubuntu-&-Debian>

Once you have set up your own Nexus node for your private blockchain, don't forget to change the server/port configuration in each API call (described earlier in this document) to use your new server.

Note: Future revisions of this guide will provide instructions on setting up a private network using a VPS.

API Server/Port

The API server address and port number are set on each API call that your application makes. For example when invoking a plugin API call from a workflow action you are prompted to enter the API call parameters. The first parameter on each API call is “**(path) web server:port**”. Here you can change the server hostname/ip address and port.



API Authentication

The API server at <http://api.nexus.io> can be used without any HTTP authentication. However when using your own Nexus server it is recommended to configure it to require authentication. The Nexus API uses HTTP Basic authentication and the Nexus Blockchain plugin can be configured with the required username/password. Browse to the applications Installed Plugins, select the Nexus Blockchain plugin, and the resultant configuration allows you to enter the Username and Password fields

API Error handling

By default the Nexus API will return an HTTP status code of 400 for all non-critical errors encountered when making an API call. These include things like missing parameters, validation errors, insufficient balance etc. Bubble interprets anything other than status 200 as an API exception, and furthermore does not allow developers to interrogate or interpret the status code. Developers can add a generic error handler to their application to handle the workflow appropriately. Alternatively the Nexus API allows a special HTTP header to be set with the HTTP status to use in the event of an API error. By setting this to 200, Bubble developers do not have to worry about separate error handling as they will only need to check whether the API call's "result" is null or not

API SUPPORT

API Documentation

Details on specific API calls can be found on the Nexus GitHub site. These pages provide granular details on the APIs, helping you understand and successfully implement the different methods.

USERS API: <https://github.com/Nexussoft/LLL-TAO/blob/master/docs/API/USERS.MD>

FINANCE API: <https://github.com/Nexussoft/LLL-TAO/blob/master/docs/API/FINANCE.MD>

ASSETS API: <https://github.com/Nexussoft/LLL-TAO/blob/master/docs/API/ASSETS.MD>

TOKENS API: <https://github.com/Nexussoft/LLL-TAO/blob/master/docs/API/TOKENS.MD>

LEDGER API: <https://github.com/Nexussoft/LLL-TAO/blob/master/docs/API/LEDGER.MD>

GET vs POST API Calls

GET calls can be found in the 'Data' workflow section in Bubble.

POST calls can be found in the 'Action' workflow section in Bubble.

BUBBLE DESIGN RECOMMENDATIONS

Store Session ID and Genesis but keep data private

Many calls require the logged-on user's signature chain's Session ID and Genesis. These are only generated following a successful Blockchain user login. We recommend Bubble developers capture the Session ID and Genesis of the user in the workflow following a successful Blockchain login.

Note: This data should be private due to its sensitivity.

Custom API calls

If you need to customize a specific Nexus API call for your use case which is not covered by this plugin, we recommend creating this unique call through the API Connector.

