Remote Data Source Executor

The remote data source executor executes the various data sources stored on BandChain in order to retrieve data from the data providers. The executor itself is a function-as-a-Service hosted on a cloud service provider.

The goal of this design is to separate data source execution processes from processes related to the validator node itself. This separation of execution will be beneficial in cases where the data sources are not working correctly (infinite loop, bad code execution, for example). In those cases, such separation can prevent validator nodes from overloading or crashing due to the error.

Also, from a validator's perspective, all they have to do to execute a data source is to send an executable file content in JSON format (the data source script), along with the relevant calldata, to an endpoint, thus minimizing the work they have to do themselves.

Resource

Endpoint HTTP Request Method Description /execute POST Executes the data source

Request

Request Headers

{ "content-type" :

"application/json" }

Request Body

Field Type Description executable string` Base64-encoded data source that the executor will execute calldata string Bash-encoded input parameters of data source timeout number Execution time limit (in milliseconds)

Example

{ "executable" :

"IyEvYmluL3NoXG5cbN5bWJvbD0kMVxuXG4jlENyeXB0b2N1cnJlbmN5IHByaWNlIGVuZHBvaW50OiBodHRwczovL3d3dy5jb2luZ2Vja28uY29tL2FwaS92M1xudXJsPVwia+
, "calldata" :

"bitcoin" , "timeout" :

1000 }

Response

Response Headers

{ "content-type" :

"application/json" , "access-control-allow-methods" :

"OPTIONS, POST" }

Response Body

Field Type Description returncode number Exit code (0-255) stdout string Data source output stderr string Data source error output error string "" or error message from executor

Response Codes

200 OK

Exit code Description Error Message 0 - 255 Executable errors from data source run successfully N/A 111 Execution timeout Execution time limit exceeded 112 Stdout exceed Stdout exceeded max size 113 Stderr exceed Stderr exceeded max size 126 Execution fail Execution fail

400 Bad Request

Error Error message Missing executable value executable field is missing from JSON request Executable value exceed executable value exceed max size Missing calldata value calldata field is missing from JSON request Calldata value exceed calldata exceeded max size Missing timeout value timeout field is missing from JSON request Invalid timeout format timeout type is invalid Runtime value exceed Runtime exceeded max size Previous Oracle WebAssembly (Owasm) Next Getting Started