

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 [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" :  
  "IyEvYmluL3NoXG5cbnN5bWJvbD0kMVxuXG4jIENyeXB0b2N1cnJlbnN5IHByaWNlIGVuZHBvaW50OiBodHRwczovL3d3dy5jb2luZ2Vja28uY29tL2FwaS9kb2N1bWVudGF0aW9ucy92M1xudXJsPVwiai-  
  ", "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](#)