

# Block Explorer API

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## API Information

<b>Description</b>	Developed to connect the back-end of the Blockexplorer application to the permissioned blockchain network, database and SPL coin.
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The API is currently live on the following networks:

Network	Base URL
SPL Blockchain	<a href="http://147.135.4.82:3000/">http://147.135.4.82:3000/</a>

## API methods

### Input Parameters

Below is a list of the expected parameters so that the API can perform its main function. This input information will be provided by the platform that will consume this API.

Token Methods	Input Parameters	Required	Description
GET/token/total-supply/	None		This method returns the number of SPL coins in circulation.

GET/token/balance/{address}	wallet_address	Yes	This method checks the SPL balance of a wallet.
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Transactions Methods	Input Parameters	Required	Description
GET/transaction/from/{addresses}	address	Yes	Return list transactions sent by a wallet..
GET/transaction/to/{address}	address	Yes	Return list transactions recieved by a wallet.
GET/transaction/tx/{hash}	DATA - 32-byte transaction hash.	Yes	Returns transaction information for the specified transaction hash.
GET/transaction/latest-transactions/	None		Returns transaction information in the network.

Node Methods	Input Parameters	Required	Description
GET/net/peers/	None		Returns the <i>integer</i> number of connected peers in hexadecimal.
GET/net/current-signers/	None		Returns the address of network signers connected .
GET/net/block-signers/{hash}	DATA - 32-byte hash of a block.	Yes	Returns the address of network signers of a block.

Blocks Methods	Input Parameters	Required	Description
GET/block/latest-blocks/	None		Returns block information in the network.
GET/block/block-number/{height}	blockNumber : quantity - The block number	Yes	Returns information about a block by block number.
GET/block/block-hash/{hash}	DATA - 32-byte hash of a block.	Yes	Returns information about the block by hash.

### Output parameters

Methods	Output Parameter	Description
GET/token/total-supply/	result: totalSupply	Total supply amount of SPL coin.
GET/token/balance/{address}	result: balance	Balance amount in SPL coin.
GET/transaction/from/{address}	result: [list transaction] type: string from: string to: string value: number _id: string, hash: string block: string status: boolean time: number __v: string	List transactions sent by a wallet..
GET/transaction/to/{address}	result: [list transactions] type: string from: string to: string value: number _id: string, hash: string block: string status: boolean time: number __v: string	List transactions recieved by a wallet.
GET/transaction/tx/{hash}	result: [transaction object] type: string from: string to: string value: number _id: string, hash: string block: string status: boolean time: number __v: string	List transaction information
GET/transaction/latest-transactions/	result: [list transaction] type: string from: string to: string value: number	List of 5 latest transactions from network.

	<pre> _id: string, hash: string block: string status: boolean time: number __v: string </pre>	
GET/block/latest-blocks/	<pre> result: [list block object] signers:[string list] size: number _id: string height: number hash: string time: string transactions:array string __v: string </pre>	List of 5 latest blocks from network.
GET/block/block-number/{height}	<pre> result: block object signers:[string list] size: number _id: string height: number hash: string time: string transactions:array string __v: string </pre>	Block information by block number.
GET/block/block-hash/{hash}	<pre> result: block object signers:[string list] size: number _id: string height: number hash: string time: string transactions:array string __v: string </pre>	Block information by block hash.
GET/net/peers/	result: hexadecimal	Integer number of connected peers
GET/net/current-signers/	result: address	Address of signer connected in network
GET/net/block-signers/{hash}	result: list address signers	List address signers by block hash.

## Example Requests / Responses

<b>Postman documentation:</b>	<a href="#">Flavio Gouveia</a>
	<a href="https://documenter.getpostman.com/view/10533219/Szzj9dbu?version=latest">https://documenter.getpostman.com/view/10533219/Szzj9dbu?version=latest</a>

### **GET/token/total-supply/**

Execute the request URL:'

```
<BaseURL>/token/total-supply/
```

Return parameters:

```
{
  "success": true,
  "total": 1000894763
}
```

### **GET/token/balance/{address}**

To request this method it is necessary to inform on PATH the address wallet:

```
<BaseURL>/token/balance/0x390Dc31Ec8Db88C085d2b398BC0A3C668f8acd02
```

Return parameters:

```
{
  "success": true,
  "balance": 1101
}
```

### **GET/transaction/from/{address}**

To request this method it is necessary to inform on PATH the address wallet:

```
<BaseURL>/transaction/from/0xa21a6E7971FCfC9326dAebE2cE467e7d87d421d8
```

Return parameters:

```
{
  "success": true,
  "transactions": [
    {
      "type": "transfer",
      "from": "0xa21a6E7971FCfC9326dAebE2cE467e7d87d421d8",
      "to": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "value": 10,
      "id": "5ef137739192ed5b702c652c",
      "hash": "0x82619b5738af87393a03561f94630f0a5b967bccaa73696f76c7f57cf1d65a7f",
      "block": "0xf05163710d5e4e716b486ed187927112e8c6b72c6b9c03acbe8d2f98793a1887",
      "status": true,
      "time": 1592866673,
      "v": 0
    },
    {
      "type": "transfer",
      "from": "0xa21a6E7971FCfC9326dAebE2cE467e7d87d421d8",
      "to": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "value": 1,
      "id": "5ef137539192ed5b702c6527",
      "hash": "0x2836a2553a3015399eef3b2bc9417ba26c263bb138c85370cce9da77d8c22b84",
      "block": "0xc9849869c97aa4d46c46949180ee542d59ade3cfbbbcc534bb24b70fb684e195",
      "status": true,
      "time": 1592866643,
      "v": 0
    }
  ]
}
```

### GET/transaction/to/{address}

To request this method it is necessary to inform on PATH the address wallet:

```
<BaseURL>/transaction/to/0x2EC80fDa8b5B28a3a5C86CB246c4c910952192dC
```

Return parameters:

```
{
  "success": true,
  "transaction": {
    "type": "transfer",
    "from": "0xa21a6E7971FCfC9326dAebE2cE467e7d87d421d8",
    "to": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
    "value": 10,
    "id": "5ef137739192ed5b702c652c",
    "hash": "0x82619b5738af87393a03561f94630f0a5b967bccaa73696f76c7f57cf1d65a7f",
    "block": "0xf05163710d5e4e716b486ed187927112e8c6b72c6b9c03acbe8d2f98793a1887",
    "status": true,
    "time": 1592866673,
    "v": 0
  }
}
```

### GET/transaction/tx/{hash}

To request this method it is necessary to inform on PATH the transaction hash:

```
<BaseURL>/transaction/tx/0x0b84615e37cfd005b204606be21b42bc089ef692a0c0430235b1253ca30a0607
```

Return parameters:

```
{
  "success": true,
  "transaction": {
    "type": "transfer",
    "from": "0x63D70AaE7F033098D8E6501A64d7A307266ae01bE",
    "to": "0x9a041C0A38bF76Da1727E80Dc693a2B1580463AC",
    "value": 0,
    "_id": "5ef13ea79192ed5b702c65ae",
    "hash":
      "0x0b84615e37cfd005b204606be21b42bc089ef692a0c0430235b1253ca30a0607",
    "block":
      "0x23308559c6b23109db91955cad865178d7bb168d192ee903a4bc9ff5b2f26afa",
    "status": true,
    "time": 1592868518,
    "___v": 0
  }
}
```

**GET/transaction/latest-transactions/**

Execute the request URL:

```
<BaseURL>/transaction/latest-transactions/
```

Return parameters:

```

{
  "success": true,
  "transactions": [
    {
      "type": "transfer",
      "from": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "to": "0x9a041C0A3BbF76Da1727E80Dc693a2B1580463AC",
      "value": 0,
      "_id": "5ef13ea79192ed5b702c65ae",
      "hash": "0x0b84615e37cfd005b204606be21b42bc089ef692a0c0430235b1253ca30a0607",
      "block": "0x23308559c6b23109db91955cad865178d7bb168d192ee903a4bc9ff5b2f26afa",
      "status": true,
      "time": 1592868518,
      "__v": 0
    },
    {
      "type": "transfer",
      "from": "0x9a041C0A3BbF76Da1727E80Dc693a2B1580463AC",
      "to": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "value": 1,
      "_id": "5ef13a439192ed5b702c6562",
      "hash": "0x22da959092e5feb42bf5414b75af7d36a858522e84c402ffe7525ba2a969cb9e",
      "block": "0x9d2e81caad0e56bb97e6bbc848b1a473b2c85a4ebc9153a6fd39b9ea764dd641",
      "status": true,
      "time": 1592867393,
      "__v": 0
    },
    {
      "type": "transfer",
      "from": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "to": "0x9a041C0A3BbF76Da1727E80Dc693a2B1580463AC",
      "value": 1,
      "_id": "5ef139639192ed5b702c6552",
      "hash": "0x7019a7a032f06cee3d54fcf91f922f61aedc16e778a64912bd34f89003fcdacb",
      "block": "0x6cca16c16ad78f0a4a34fed6e345760c2eae9802761032d03d2e82f4462ab7f9",
      "status": true,
      "time": 1592867168,
      "__v": 0
    },
    {
      "type": "transfer",
      "from": "0x63D70AaE7F033098DE6501A64d7A307266ae01bE",
      "to": "0x17cA6A08758F4A078B9c53ca25E6F6736dF34094",
      "value": 1,
      "_id": "5ef1389f9192ed5b702c6544",
      "hash": "0x4477d6efb462a3c27cc03f5e57a3a958069a4cccc129beecac3ad63ca85117e21",
      "block": "0xe83600e2ce6230e2905ec0e7014ada77d4e48096c7f5a709e241eb894c0051ff",
      "status": true,
      "time": 1592866973,
      "__v": 0
    },
    {
      "type": "transfer",
      "from": "0xcaBeAF4afD85e12284763E82F2AB63674874eD41",
      "to": "0x95b5582e7824EB8Df5BDA1D89a1790B066b3F27B",
      "value": 142221,
      "_id": "5ef1379f9192ed5b702c6532",
      "hash": "0xb6b64be206fc8b46d884d502c829838c733b7c85106e77857790cb2d751fc3af",
      "block": "0xdde332c1b2d644f9b99c0dbf8e7fff24d849aaf8196bed5d3ef4fc9a03309289",
      "status": true,
      "time": 1592866718.
    }
  ]
}

```

**GET/block/block-number/{height}**



To request this method it is necessary to inform on PATH the block number:

```
<BaseURL>/block/block-number/33163
```

Return parameters:

```
{
  "success": true,
  "block": {
    "signers": [
      "0x95b5582e7824eb8df5bdald89a1790b066b3f27b"
    ],
    "size": 0,
    "id": "5ef221e076fe7d09c6af1888",
    "height": 33163,
    "hash":
      "0xe9c21cc2194f107fddd79eelea37add1079912c9a9933eeea37065768af8c3f4",
    "time": 1592926688,
    "transactions": 0,
    "v": 0
  }
}
```

**GET/block/block-hash/{hash}**

To request this method it is necessary to inform on PATH the block hash:

```
<BaseURL>/block/block-hash/0xe9c21cc2194f107fddd79eelea37add1079912c9a9933eeea37065768af8c3f4
```

Return parameters:

```
{
  "success": true,
  "block": {
    "signers": [
      "0x95b5582e7824eb8df5bdald89a1790b066b3f27b"
    ],
    "size": 0,
    "id": "5ef221e076fe7d09c6af1888",
    "height": 33163,
    "hash": "0xe9c21cc2194f107fddd79eelea37add1079912c9a9933eeea37065768af8c3f4",
    "time": 1592926688,
    "transactions": 0,
    "v": 0
  }
}
```

**GET/block/latest-blocks/**

Execute the request URL:

```
<BaseURL>/block/latest-blocks/
```

Return parameters:

```

{
  "success": true,
  "blocks": [
    {
      "signers": [
        "0x95b5582e7824eb8df5bda1d89a1790b066b3f27b"
      ],
      "size": 0,
      "_id": "5ef224fc76fe7d09c6af18bd",
      "height": 33216,
      "hash": "0xbde0130de56f6b0467b311c2797dea5db5c9f912439155a6914db4d8ea6b44f1",
      "time": 1592927483,
      "transactions": 0,
      "__v": 0
    },
    {
      "signers": [
        "0x95b5582e7824eb8df5bda1d89a1790b066b3f27b"
      ],
      "size": 0,
      "_id": "5ef224ec76fe7d09c6af18bc",
      "height": 33215,
      "hash": "0xaeef3d5c6a933c87b3cff3acd3cbf5c86f8eadd68c39bb886ef28394bebaa95",
      "time": 1592927468,
      "transactions": 0,
      "__v": 0
    },
    {
      "signers": [
        "0x95b5582e7824eb8df5bda1d89a1790b066b3f27b"
      ],
      "size": 0,
      "_id": "5ef224e076fe7d09c6af18bb",
      "height": 33214,
      "hash": "0x4ae86b64ec4709f9d55cd279c1100b09e4c94de429b6387beb16dfe0225b369c",
      "time": 1592927453,
      "transactions": 0,
      "__v": 0
    }
  ]
}

```

### GET/net/current-signers/

Execute the request URL:

```
<BaseURL>/net/current-signers/
```

Return parameters:

```
{
  "success": true,
  "signers": [
    "0x95b5582e7824eb8df5bda1d89a1790b066b3f27b"
  ]
}
```

### **GET/net/peers/**

Execute the request URL:

```
<BaseURL>/net/peers/
```

Return parameters:

```
{
  "success": true,
  "total": "0x01"
}
```

### **GET/net/block-signers/{hash}**

To request this method it is necessary to inform on PATH the block hash:

```
<BaseURL>/net/block-signers/0xe9c21cc2194f107fddd79ee1ea37add1079912c9a9933eeea37065768af8c3f4
```

Return parameters:

```
{
  "success": true,
  "signers": [
    "0x95b5582e7824eb8df5bda1d89a1790b066b3f27b"
  ]
}
```

### **Parameters Description**

**Transaction**

Parameter s	Description
type	Type transaction
from	Address by the sender
to	Address by the reciver
value	Transferred amount
_id	MongoDB field: automatically generated when a document is inserted into a collection.
hash	Transaction hash
block	BlockHash that the transaction belongs.
status	Returns true if the transaction was successful in confirmation.
time	Timestamp for block assembly.

## Block

Parameter s	Description
signers	Lists signers contained in a block.
size	Size of block in bytes.
_id	MongoDB field: automatically generated when a document is inserted into a collection.
height	Number of the block
hash	Block hash
time	Timestamp for block assembly.
transactions	Lists transactions objects contained in a block

## Connections

