

第一步：解压下载得到的zip文件

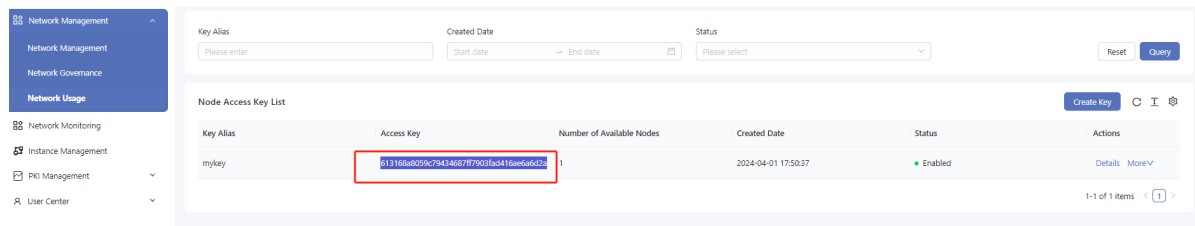
可以得到 接入节点地址 和 授权节点名称

网关地址：可以在解压文件中的nodeInfo.xlsx中获取网关http地址：<http://10.0.51.35:18601>

授权节点名称：可以访问的节点名称，当前示例为：bor-node1.default-no2024032600001.shanghai.bsnbase.com

第二步：获取节点授权key

当前示例为：613168a8059c79434687ff7903fad416ae6a6d2a



第三步：请求Bor节点

- RPC访问地址

网关地址/api/[Access Key]/rpc;

示例：

<http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc>

3.1 eth_blockNumber

Returns the number of most recent block.

Parameters

None

Returns

QUANTITY - integer of the current block number the client is on.

Example

```
// Request
curl -X POST -H "Content-Type:application/json" --data
'{"jsonrpc":"2.0","method":"eth_blockNumber","params":[],"id":83}'
// Result
{
  "id":83,
  "jsonrpc": "2.0",
  "result": "0x3597572"
}
```

- 通过网关请求上述接口方式：

```
curl -X POST -H "Content-Type:application/json" -H "Host:bor-node1.default-  
no2024032600001.shanghai.bsnbase.com" --data  
'{"jsonrpc":"2.0","method":"eth_blockNumber","params":[],"id":1}'  
http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc
```

3.2 eth_getBlockByNumber

Returns information about a block by block number.

Parameters

1. `QUANTITY|TAG` - integer of a block number, or the string `"earliest"`, `"latest"`, `"pending"`, `"safe"` or `"finalized"`, as in the [default block parameter](#).
2. `Boolean` - If `true` it returns the full transaction objects, if `false` only the hashes of the transactions.

```
params: [  
  "0x1b4", // 436  
  true,  
]
```

Returns

`object` - A block object, or `null` when no block was found:

- `number`: `QUANTITY` - the block number. `null` when its pending block.
- `hash`: `DATA`, 32 Bytes - hash of the block. `null` when its pending block.
- `parentHash`: `DATA`, 32 Bytes - hash of the parent block.
- `nonce`: `DATA`, 8 Bytes - hash of the generated proof-of-work. `null` when its pending block.
- `sha3Uncles`: `DATA`, 32 Bytes - SHA3 of the uncles data in the block.
- `logsBloom`: `DATA`, 256 Bytes - the bloom filter for the logs of the block. `null` when its pending block.
- `transactionsRoot`: `DATA`, 32 Bytes - the root of the transaction trie of the block.
- `stateRoot`: `DATA`, 32 Bytes - the root of the final state trie of the block.
- `receiptsRoot`: `DATA`, 32 Bytes - the root of the receipts trie of the block.
- `miner`: `DATA`, 20 Bytes - the address of the beneficiary to whom the mining rewards were given.
- `difficulty`: `QUANTITY` - integer of the difficulty for this block.
- `totalDifficulty`: `QUANTITY` - integer of the total difficulty of the chain until this block.
- `extraData`: `DATA` - the "extra data" field of this block.
- `size`: `QUANTITY` - integer the size of this block in bytes.
- `gasLimit`: `QUANTITY` - the maximum gas allowed in this block.
- `gasUsed`: `QUANTITY` - the total used gas by all transactions in this block.
- `timestamp`: `QUANTITY` - the unix timestamp for when the block was collated.
- `transactions`: `Array` - Array of transaction objects, or 32 Bytes transaction hashes depending on the last given parameter.
- `uncles`: `Array` - Array of uncle hashes.

Example

```
// Request
```

[illegible]

- 通过网关请求上述接口方式:

```
curl -X POST -H "Content-Type:application/json" -H "Host:bor-node1.default-no2024032600001.shanghai.bsnbase.com" --data '{"jsonrpc":"2.0","method":"eth_getBlockByNumber","params":["0x1b4",true],"id":1}' http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc
```

3.3 net_version

Returns the current network id.

Parameters

None

Returns

- **String** - The current network id.

Example

```
curl https://localhost:8545 -X POST -H "Content-Type: application/json" --data '{"jsonrpc":"2.0","method":"net_version","params":[],"id":1}'
```

- 通过网关请求上述接口方式:

```
curl -X POST -H "Content-Type:application/json" -H "Host:bor-node1.default-no2024032600001.shanghai.bsnbase.com" --data '{"jsonrpc":"2.0","method":"net_version","params":[],"id":1}' http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc
```

3.4 txpool_status

Returns the number of transactions currently pending for inclusion in the next block(s), as well as the ones that are being scheduled for future execution only.

Parameters

None

Example

```
curl https://rpc-endpoint.io:8545 -X POST -H "Content-Type: application/json" --data '{"jsonrpc":"2.0","method":"txpool_status","params":[],"id":1}'
```

- 通过网关请求上述接口方式:

```
curl -X POST -H "Content-Type:application/json" -H "Host:bor-node1.default-no2024032600001.shanghai.bsnbase.com" --data '{"jsonrpc":"2.0","method":"txpool_status","params":[],"id":1}' http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc
```

更多Bor节点接口可以参考相关命令。 [了解更多](#)

第四步：请求heimdall节点

- RPC访问地址

网关地址/api/[Access Key]/rpc;

示例：

<http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc>

4.1 net_info

Get network info.

Parameters

None

Example

```
// Request
curl -X POST -H "Content-Type:application/json" http://localhost:26657/net_info

// Result
{
  "id": 0,
  "jsonrpc": "2.0",
  "result": {
    "listening": true,
    "listeners": [
      "Listener(@)"
    ],
    "n_peers": "1",
    "peers": [
      {
        "node_info": {
          "protocol_version": {
            "p2p": "7",
            "block": "10",
            "app": "0"
          },
          "id": "5576458aef205977e18fd50b274e9b5d9014525a",
          "listen_addr": "tcp:0.0.0.0:26656",
          "network": "cosmoshub-2",
          "version": "0.32.1",
          "channels": "4020212223303800",
          "moniker": "moniker-node",
          "other": {
            "tx_index": "on",
            "rpc_address": "tcp:0.0.0.0:26657"
          }
        },
        "is_outbound": true,
        "connection_status": {
          "Duration": "168901057956119",
          "SendMonitor": {
            "Active": true,
            "Start": "2019-07-31T14:31:28.66Z",
```

```

        "Duration": "168901060000000",
        "Idle": "168901040000000",
        "Bytes": "5",
        "Samples": "1",
        "InstRate": "0",
        "CurRate": "0",
        "AvgRate": "0",
        "PeakRate": "0",
        "BytesRem": "0",
        "TimeRem": "0",
        "Progress": 0
    },
    "RecvMonitor": {
        "Active": true,
        "Start": "2019-07-31T14:31:28.66Z",
        "Duration": "168901060000000",
        "Idle": "168901040000000",
        "Bytes": "5",
        "Samples": "1",
        "InstRate": "0",
        "CurRate": "0",
        "AvgRate": "0",
        "PeakRate": "0",
        "BytesRem": "0",
        "TimeRem": "0",
        "Progress": 0
    },
    "channels": [
        {
            "ID": 48,
            "SendQueueCapacity": "1",
            "SendQueueSize": "0",
            "Priority": "5",
            "RecentlySent": "0"
        }
    ]
},
"remote_ip": "95.179.155.35"
}
]
}
}

```

- 通过网关请求上述接口方式:

```

curl -X POST -H "Content-Type:application/json" -H "Host:heimdall-node1.default-5ce0a8f9dc0872b.shenzhen.bsnbase.com"
http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc/net_info

```

4.2 status

Get Tendermint status including node info, pubkey, latest block hash, app hash, block height and time.

Parameters

None

Example

```
// Request
curl -X POST -H "Content-Type:application/json" http://localhost:26657/status

// Result
{
  "id": 0,
  "jsonrpc": "2.0",
  "result": {
    "node_info": {
      "protocol_version": {
        "p2p": "7",
        "block": "10",
        "app": "0"
      },
      "id": "5576458aef205977e18fd50b274e9b5d9014525a",
      "listen_addr": "tcp:0.0.0.0:26656",
      "network": "cosmoshub-2",
      "version": "0.32.1",
      "channels": "4020212223303800",
      "moniker": "moniker-node",
      "other": {
        "tx_index": "on",
        "rpc_address": "tcp:0.0.0.0:26657"
      }
    },
    "sync_info": {
      "latest_block_hash":
"790BA84C3545FCCC49A5C629CEE6EA58A6E875C3862175BDC11EE7AF54703501",
      "latest_app_hash":
"C9AEBB441B787D9F1D846DE51F3826F4FD386108B59B08239653ABF59455C3F8",
      "latest_block_height": "1262196",
      "latest_block_time": "2019-08-01T11:52:22.818762194Z",
      "earliest_block_hash":
"790BA84C3545FCCC49A5C629CEE6EA58A6E875C3862175BDC11EE7AF54703501",
      "earliest_app_hash":
"C9AEBB441B787D9F1D846DE51F3826F4FD386108B59B08239653ABF59455C3F8",
      "earliest_block_height": "1262196",
      "earliest_block_time": "2019-08-01T11:52:22.818762194Z",
      "catching_up": false
    },
    "validator_info": {
      "address": "5D6A51A8E9899C44079C6AF90618BA0369070E6E",
      "pub_key": {
        "type": "tendermint/PubKeyEd25519",
        "value": "A6DoBUypNtUAYeHwtQ9bfjFNg8Bo9CrnkUGl6k6OHN4="
      },
      "voting_power": "0"
    }
  }
}
```

```
}  
}  
}
```

- 通过网关请求上述接口方式:

```
curl -X POST -H "Content-Type:application/json" -H "Host:heimdalld-  
node1.default-5ce0a8f9dc0872b.shenzhen.bsnbase.com"  
http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc/status
```

4.3 block

Get Block.

If the `height` field is set to a non-default value, upon success, the `Cache-Control` header will be set with the default maximum age.

Parameters

`height` - height to return. If no height is provided, it will fetch the latest block.

Example

```
// Request  
curl -X POST -H "Content-Type:application/json" http://localhost:26657/block?  
height=1  
  
// Result  
{  
  "id": 0,  
  "jsonrpc": "2.0",  
  "result": {  
    "node_info": {  
      "protocol_version": {  
        "p2p": "7",  
        "block": "10",  
        "app": "0"  
      },  
      "id": "5576458aef205977e18fd50b274e9b5d9014525a",  
      "listen_addr": "tcp:0.0.0.0:26656",  
      "network": "cosmoshub-2",  
      "version": "0.32.1",  
      "channels": "4020212223303800",  
      "moniker": "moniker-node",  
      "other": {  
        "tx_index": "on",  
        "rpc_address": "tcp:0.0.0.0:26657"  
      }  
    },  
    "sync_info": {  
      "latest_block_hash":  
"790BA84C3545FCCC49A5C629CEE6EA58A6E875C3862175BDC11EE7AF54703501",  
      "latest_app_hash":  
"C9AEBB441B787D9F1D846DE51F3826F4FD386108B59B08239653ABF59455C3F8",  
      "latest_block_height": "1262196",  
      "latest_block_time": "2019-08-01T11:52:22.818762194z",  
    }  
  }  
}
```



```

    "earliest_block_hash":
    "790BA84C3545FCCC49A5C629CEE6EA58A6E875C3862175BDC11EE7AF54703501",
    "earliest_app_hash":
    "C9AEBB441B787D9F1D846DE51F3826F4FD386108B59B08239653ABF59455C3F8",
    "earliest_block_height": "1262196",
    "earliest_block_time": "2019-08-01T11:52:22.818762194Z",
    "catching_up": false
  },
  "validator_info": {
    "address": "5D6A51A8E9899C44079C6AF90618BA0369070E6E",
    "pub_key": {
      "type": "tendermint/PubKeyEd25519",
      "value": "A6DoBUypNtUAYEHwtQ9bFjFNg8Bo9CrnkUG16k6OHN4="
    },
    "voting_power": "0"
  }
}

```

- 通过网关请求上述接口方式:

```

curl -X POST -H "Content-Type:application/json" -H "Host:heimdalld-
node1.default-5ce0a8f9dc0872b.shenzhen.bsnbase.com"
http://10.0.51.35:18601/api/613168a8059c79434687ff7903fad416ae6a6d2a/rpc/block?
height=1

```