InterlockLedgerAPI Documentation

Release

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CONTENTS:

This package is a python client to the InterlockLedger Node REST API. It connects to InterlockLedger nodes, allowing the creation of chains, interlocks, and storage of records and documents.

CHAPTER

ONE

THE INTERLOCKLEDGER

An InterlockLedger network is a peer-to-peer network of nodes. Each node runs the InterlockLedger software. All communication between nodes is point-to-point and digitally signed, but not mandatorily encrypted. This means that data is shared either publicly or on a need-to-know basis, depending on the application.

In the InterlockLedger, the ledger is composed of myriads of independently permissioned chains, comprised of blockchained records of data, under the control of their owners, but that are tied by Interlockings, that avoid them having their content/history being rewritten even by their owners. For each network the ledger is the sum of all chains in the participating nodes.

A chain is a sequential list of records, back chained with signatures/hashes to the previous records, so that no changes in them can go undetected. A record is tied to some enabled Application, that defines the metadata associate with it, and the constraints defined in this public metadata, forcibly stored in the network genesis chain, is akin to validation that each correct implementation of the node software is able to enforce, but more importantly, any external logic can validate the multiple dimensions of validity for records/chains/interlockings/the ledger.

1.1 Usage

1.1.1 How to use and/or install

To use the *interlockledger_rest* package, you can add the interlockledger_rest folder to your project.

The package can also be installed by running the following command on the `setup.py` folder:

```
pip3 install .
```

1.1.2 Example

How to use the interlockledger rest client to store a text document:

```
>>> import interlockledger_rest as il2

>>> node = il2.RestNode(cert_file = 'documenter.pfx', cert_pass='password', port =␣
↪32020)
>>> print(node.details)
Node 'Node for il2tester on Apollo' Node!qh8D-FVQ8-2ng_EIDN8C9m3pOLAtz0BXKuCh9OBDr6U
Running il2 node#3.6.0 using [Message Envelope Wire Format #1] with Peer2Peer#2.1.0
Network Apollo
Color #20f9c7
Owner il2tester #Owner!yj...<REDACTED>...zk
Roles: Interlocking,Mirror,PeerRegistry,Relay,User
```

```
Chains: 20i...<REDACTED>..._fc, 5rA...<REDACTED>...Pso

>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> doc_resp = chain.store_document_from_text(content = 'Plain text', name = 'text_
↪file.txt')
>>> print(doc_resp)
Document 'text_file.txt' [plain/text] z0F...<REDACTED>...CKQ#SHA256
```

1.2 interlockledger_rest package

1.2.1 interlockledger_rest.client module

RestChain

class interlockledger_rest.client.**RestChain**(*rest*, *chainId*, ***kwargs*)

Bases: object

REST API client to the InterlockLedger chain.

Note: It is not recomended to create an instance of *RestChain* outside of an instance of *RestNode*.

Parameters

- **rest** (*interlockledger_rest.models.ChainIdModel*) – Instance of the node.
- **rest** – Chain model.

id

str – Chain id.

name

str – Chain name.

active_apps

list of int – Enumerate apps that are currently permitted on this chain.

add_record(*model*)

Add a new record.

Parameters **model** (*interlockledger_rest.models.NewRecordModel*) – Model with the description of the new record.

Returns Added record information.

Return type *interlockledger_rest.models.RecordModel*

Example

```
>>> node = RestNode(cert_file = 'recorder.pfx', cert_pass = 'password', port␣
↪= 32020)
>>> chain = node.chain_by_id('cRPeHOITV_t1ZQS9CIL7Yi3djJ33ynZCdSRsEnOvX40')
>>> model = NewRecordModel(applicationId = 1, payloadTagId = 300,
...                payloadBytes = bytes([248, 52, 7, 5, 0, 0, 20, 2, 1, 4]))
>>> record = chain.add_record(model)
>>> print(record)
{
    "applicationId": 1,
```

```
    "chainId": "cRPeHOITV_t1ZQS9CIL7Yi3djJ33ynZCdSRsEnOvX40",
    "createdAt": "2020-02-13T18:59:50.9033962-03:00",
    "hash": "mAwaJCPH1c369GZLLXWsd_E7WkkZ2tdLS3LsZWBcPnw#SHA256",
    "payloadTagId": 300,
    "serial": 4,
    "type": "Data",
    "version": 2,
    "payloadBytes": "+DQHBQAAFAIBBA=="
}
```

add_record_as_json(*applicationId=None*, *payloadTagId=None*, *payload=None*, *rec_type=<RecordType.Data: 'Data'>*, *model=None*)

Add a new record with a payload encoded as JSON. The JSON value will be mapped to the payload tagged format as described by the metadata associated with the payloadTagId

Parameters

- **applicationId** (int) – Application id of the record.
- **payloadTagId** (int) – Payload tag id of the record.
- **payload** (int) – Payload data encoded as json
- **rec_type** (*interlockledger_rest.enumerations.RecordType*) – Type of record.
- **model** (*interlockledger_rest.models.NewRecordModelAsJson*) – Model with the description of the new record as JSON. **NOTE:** if model is not None, the other arguments will be ignored.

Returns Added record information.

Return type *interlockledger_rest.models.RecordModel*

Example

```
>>> node = RestNode(cert_file = 'recorder.pfx', cert_pass = 'password', port␣
↪= 32020)
>>> chain = node.chain_by_id('tdiy2HnWv-4a_h5T4Xy8l93CQ0lVkIeu2r5qgSlALMY')
>>> model = NewRecordModelAsJson(applicationId = 1, payloadTagId = 300, rec_
↪json= {'tagId': 300,'version' : 0, 'apps': [4]})
>>> record = chain.add_record_as_json(model = model)
>>> print(record)
{
    "applicationId": 1,
    "chainId": "tdiy2HnWv-4a_h5T4Xy8l93CQ0lVkIeu2r5qgSlALMY",
    "createdAt": "2020-02-13T18:56:44.3002447-03:00",
    "hash": "Y8Xb9FpTkgxj38xlwzcaZXm8fUq-NYxODVcyOQtzJ3c#SHA256",
    "payloadTagId": 300,
    "serial": 4,
    "type": "Data",
    "version": 2,
    "payload": {
        "tagId": 300,
        "version": 0,
        "apps": [
            4
        ]
```

```
    }
}
```

add_record_unpacked(*applicationId*, *payloadTagId*, *rec_bytes*, *rec_type=<RecordType.Data: 'Data'>*)

Add a new record with an unpacked payload. Payload inner bytes MUST go in the body, in binary form. These inner bytes will be prefixed with the payloadTagId and the lenght, both encoded as ILInt, as required to assemble the record effective payload.

Parameters

- **applicationId** (int) – Application id of the record.
- **payloadTagId** (int) – Payload tag id of the record.
- **rec_type** (*interlockledger_rest.enumerations.RecordType*) – Type of record.
- **rec_bytes** (bytes) – Payload bytes.

Returns Added record information.

Return type *interlockledger_rest.models.RecordModel*

Example

```
>>> node = RestNode(cert_file = 'recorder.pfx', cert_pass = 'password', port␣
↪= 32020)
>>> chain = node.chain_by_id('VzCJczfgBeIiIBlnTRbmtsPriqwrkHqtF2yt8nhTcjM')
>>> record = chain.add_record_unpacked(applicationId = 1, payloadTagId = 300,␣
↪rec_bytes = bytes([5, 0, 0, 20, 2, 1, 4]))
>>> print(record)
{
    "applicationId": 1,
    "chainId": "VzCJczfgBeIiIBlnTRbmtsPriqwrkHqtF2yt8nhTcjM",
    "createdAt": "2020-02-13T19:01:37.5175345-03:00",
    "hash": "cY7krS7BSJcBi7Ickq-u4iI6V6lYoKULfQtEZGJ-mC0#SHA256",
    "payloadTagId": 300,
    "serial": 4,
    "type": "Data",
    "version": 2,
    "payloadBytes": "+DQHBQAAFAIBBA=="
}
```

document_as_plain(*fileId*)

Retrieve document from chain as plain text.

Parameters **fileId** (str) – Unique id of the document file.

Returns Document content as a UTF-8 string.

Return type str

document_as_raw(*fileId*)

Retrieve document from chain as raw bytes.

Parameters **fileId** (str) – Unique id of the document file.

Returns Document model with content as raw bytes.

Return type *interlockledger_rest.models.RawDocumentModel*

documents
list of *interlockledger_rest.models.DocumentDetailsModel* – Enumerate documents that are stored on this chain.

force_interlock(*model*)
Forces an interlock on a target chain.

Parameters **model** (*interlockledger_rest.models.ForceInterlockModel*) – Force interlock command details.

Returns Interlocking details.

Return type *interlockledger_rest.models.InterlockingRecordModel*

Example

```
>>> node = RestNode(cert_file = 'mykeymanager.pfx', cert_pass = 'password',␣
↪port = 32020)
>>> chain = node.chain_by_id('VzCJczfgBeIiIBlnTRbmtsPriqwrkHqtF2yt8nhTcjM')
>>> model = ForceInterlockModel(targetChain = '8fox30W54ZkzM-shfUeU5C7ad-_
↪fsf5nICwNpkCUk5w')
>>> interlocks = chain.force_interlock(model)
>>> for il in interlocks :
...     print(il)
Interlocked chain 8fox30W54ZkzM-shfUeU5C7ad-_fsf5nICwNpkCUk5w at record #14␣
↪(offset: 13671) with hash RyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo#SHA256
{
    "applicationId": 3,
    "chainId": "VzCJczfgBeIiIBlnTRbmtsPriqwrkHqtF2yt8nhTcjM",
    "createdAt": "2020-02-19T22:22:02.924546-03:46",
    "hash": "pGNSXOoI822Y_7F1ZNXw-xO02ufXXbrQjNXpTMkZJpQ#SHA256",
    "payloadTagId": 600,
    "serial": 7,
    "type": "Data",
    "version": 2,
    "payloadBytes": "+QFgUgUBACsjAAEA8fox30W54ZkzM+shfUeU5C7ad+/
↪fsf5nICwNpkCUk5wKDgr5NG8nIgEARyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo=",
    "interlockedChainId": "8fox30W54ZkzM-shfUeU5C7ad-_fsf5nICwNpkCUk5w",
    "interlockedRecordHash": "RyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo
↪#SHA256",
    "interlockedRecordOffset": 13671,
    "interlockedRecordSerial": 14
}
```

interlocks
list of *interlockledger_rest.models.InterlockingRecordModel* – List of interlocks registered in the chain.

permit_apps(*apps_to_permit*)
Add apps to the permitted list for the chain.

Parameters **apps_to_permit** (list of int) – List of apps (by number) to be permitted.

Returns Enumerate apps that are currently permitted on this chain.

Return type list of int

Example

```
>>> node = RestNode(cert_file = 'recorder.pfx', cert_pass = 'password', port␣
↪= 32020)
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> apps = chain.permit_apps([4])
>>> print(apps)
[4]
```

permit_keys(*keys_to_permit*)

Add keys to the permitted list for the chain.

Parameters **keys_to_permit** (list of *interlockledger_rest.models.KeyPermitModel*) – List of keys to permitted.

Returns Enumerate keys that are currently permitted on chain.

Return type list of *interlockledger_rest.models.KeyModel*

Example

```
>>> node = RestNode(cert_file = 'mykeymanager.pfx', cert_pass = 'password',␣
↪port = 32020)
>>> chain = node.chain_by_id('20ic_KPTCIDfrlwQPKBHdKKp1a6ADaFtBvBjvFmf_fc')
>>> model_1 = KeyPermitModel(app = 4, appActions = [1000, 1001], key_id =
↪'Key!MJ0kidltB324mfkiOG0aBlEocPA#SHA1',
...                 name = 'documenter', publicKey = 'PubKey!KPgQEPgItqh<...
↪REDACTED...>BZk4axWhFbTDrxADAQAB#RSA',
...                 purposes = [KeyPurpose.Action, KeyPurpose.Protocol])
>>> model_2 = KeyPermitModel(key_id = 'Key!aWJWFHYDmUXCTCPIW2Ugih5l4XQ#SHA1',␣
↪name = 'recorder',
...                 publicKey = 'PubKey!KPgQEPgItxD<...REDACTED...>
↪t1RvQCHPYtRADAQAB#RSA',
...                 purposes = [KeyPurpose.Action, KeyPurpose.Protocol],
...                 permissions = [AppPermissions(appId = 1, actionIds = [300,
↪301,306,302,304,303,305,307])])
>>> keys = chain.permit_keys([model_1, model_2])
>>> for key in keys :
...     print(keys)
Key 'documenter' Key!MJ0kidltB324mfkiOG0aBlEocPA#SHA1
    Purposes: [Action,Protocol]
    Actions permitted:
      App #4 Actions 1000,1001
Key 'recorder' Key!aWJWFHYDmUXCTCPIW2Ugih5l4XQ#SHA1
    Purposes: [Action,Protocol]
    Actions permitted:
      App #1 Actions 300,301,306,302,304,303,305,307
Key 'mykeymanager' Key!-u07iGMWlkUm3WVBqS867AI-Lbw#SHA1
    Purposes: [KeyManagement,Action,Protocol]
    Actions permitted:
      App #2 Actions 500,501
Key 'emergency!20ic_KPTCIDfrlwQPKBHdKKp1a6ADaFtBvBjvFmf_fc' Key!
↪vckqYtMYIcetbunEJc4w-whbnqtZc9a9qlNp5PePm2E
    Purposes: [Protocol,Action]
    Actions permitted:
      App #0 Action 131
Key 'manager!20ic_KPTCIDfrlwQPKBHdKKp1a6ADaFtBvBjvFmf_fc' Key!hLZkEjBRofw1U-
↪JRkXfFdtBWfyM4sZNx8L3R5acakb4
```

```
Purposes: [Protocol,Action,KeyManagement]
Actions permitted:
  App #2 Actions 500,501
  App #1 Actions 300,301
```

permitted_keys
list of *interlockledger_rest.models.KeyModel* – Enumerate keys that are currently permitted on chain.

record_at(*serial*)
Get an specific record.

Parameters **serial** (int) – Record serial number.

Returns Record with the specific serial number.

Return type *interlockledger_rest.models.RecordModel*

record_at_as_json(*serial*)
Get an specific record with payload mapped to json.

Parameters **serial** (int) – Record serial number.

Returns Record mapped to JSON with the specific serial number.

Return type *interlockledger_rest.models.RecordModelAsJson*

records
list of *interlockledger_rest.models.RecordModel* – List of records in the chain.

records_as_json
list of *interlockledger_rest.models.RecordModelAsJson* – List of records in the chain with payload mapped to JSON.

records_from(*firstSerial*, *lastSerial=None*)
Get list of records starting from a given serial number.

Parameters

- **firstSerial** (int) – Starting serial number.
- **lastSerial** (int, optional) – Last serial number.

Returns List of records in the given interval.

Return type list of *interlockledger_rest.models.RecordModel*

records_from_as_json(*firstSerial*, *lastSerial=None*)
Get list of records with payload mapped to JSON starting from a given serial number.

Parameters

- **firstSerial** (int) – Starting serial number.
- **lastSerial** (int, optional) – Last serial number.

Returns List of records mapped to JSON in the given interval.

Return type list of *interlockledger_rest.models.RecordModelAsJson*

store_document_from_bytes(*doc_bytes*, *name=None*, *content_type=None*, *model=None*)
Store document on chain using bytes.

If more details is needed to upload the document, please use a *interlockledger_rest.models.DocumentUploadModel* model.

Parameters

- **doc_bytes** (bytes) – Document bytes.
- **name** (str) – Document name (may be a file name with an extension).
- **content_type** (str) – Document content type (mime-type).
- **model** (*interlockledger_rest.models.DocumentUploadModel*) – Model with the description of the new document. **NOTE:** if model is not None, the other arguments will be ignored.

Returns Added document details.

Return type *interlockledger_rest.models.DocumentDetailsModel*

Examples

Adding a file document without specifying the name. The file name in the file_path will be used as the name of the document.

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> new_document = chain.store_document_from_bytes(doc_bytes = b'Bytes␣
↪message!', name = 'bytes_file.txt', content_type = 'plain/text')
>>> print(new_document)
Document 'bytes_file.txt' [plain/text]␣
↪ZegBNUskzzJRqKvIuOiuhyhJvXJ5YxMJL99ONvqkcXs#SHA256
```

Using the model to specify the description of the document.

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> model = DocumentUploadModel(name = 'other_bytes_file.txt', contentType =
↪'plain/text')
>>> new_document = chain.store_document_from_bytes(doc_bytes = b'Other bytes␣
↪message!', model = model)
>>> print(new_document)
Document 'other_bytes_file.txt' [plain/text] wLQypXsHLV0H7RdNrrM3NvViA7W1-
↪9pcClPgWGMmF6Q#SHA256
```

store_document_from_file(*file_path*, *content_type=None*, *name=None*, *model=None*)

Store document on chain using a file.

If more details is needed to upload the document, please use a *interlockledger_rest.models.DocumentUploadModel* model.

Parameters

- **file_path** (bytes) – Filepath of the document file.
- **content_type** (str) – Document content type (mime-type).
- **name** (str, optional) – Document name (may be a file name with an extension). Can be derived from the file_path.
- **model** (*interlockledger_rest.models.DocumentUploadModel*) – Model with the description of the new document. **NOTE:** if model is not None, the other arguments will be ignored.

Returns Added document details.

Return type *interlockledger_rest.models.DocumentDetailsModel*

Examples

Adding a file document without specifying the name. The file name in the file_path will be used as the name of the document.

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> new_document = chain.store_document_from_file(file_path = './test.pdf',␣
↪content_type = 'application/pdf')
>>> print(new_document)
Document 'test.pdf' [application/pdf] tZpQvucMOi-
↪FYHNQvI9UaOampVCUPtw3m0Z5TXwuF20#SHA256
```

Using the model to specify the description of the document.

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> model = DocumentUploadModel(name = 'my_test.txt', contentType = 'plain/
↪text', cipher = CipherAlgorithms.AES256)
>>> new_document = chain.store_document_from_file(file_path = './test.txt',␣
↪model = model)
>>> print(new_document)
Document 'my_test.txt' [plain/text] FukEkll0cTDSp4k4zJehM--5ZzjMz-
↪LVeAsSeaMIeeg#SHA256
```

store_document_from_text(*content*, *name*, *content_type='plain/text'*)

Store document on chain using bytes.

If more details is needed to upload the document, please use a *interlockledger_rest.models.DocumentUploadModel* model.

Parameters

- **doc_bytes** (bytes) – Document bytes.
- **content_type** (str) – Document content type (mime-type).
- **name** (str, optional) – Document name (may be a file name with an extension). Can be derived from the file_path.
- **model** (*interlockledger_rest.models.DocumentUploadModel*) – Model with the description of the new document. **NOTE:** if model is not None, the other arguments will be ignored.

Returns Added document details.

Return type *interlockledger_rest.models.DocumentDetailsModel*

Example

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> new_document = chain.store_document_from_text(content = 'Simple text',␣
↪name = 'document.txt')
>>> print(new_document)
Document 'document.txt' [plain/text] d_G2-zQ05L5QZ-
↪omHi7cfyJW1Ses4xovJuFoOUNnxNo#SHA256
```

summary
interlockledger_rest.models.ChainSummaryModel – Chain details

RestNetwork

class interlockledger_rest.client.**RestNetwork**(*rest*)
Bases: object

Informations about the node network.

Parameters **rest** (*RestNode*) – Node of the network.

apps
AppsModel – List of valid apps in the network.

RestNode

class interlockledger_rest.client.**RestNode**(*cert_file*, *cert_pass*, *port=32032*, *address='localhost'*)
Bases: object

REST API client to the InterlockLedger node.

You'll try to establish a bi-authenticated https connection with the configured node API address and port. The client-side certificate used to connect needs to be configured with the proper layered authorization role in the node configuration file and imported into a key permitted to update the chain that will be used.

Parameters

- **cert_file** (str) – Path to the .pfx certificate. Please refer to the InterlockLedger manual to see how to create and import the certificate into the node.
- **cert_pass** (str) – Password of the .pfx certificate.
- **port** (int) – Port number to connect.
- **address** (str) – Address of the node.

base_uri
uri.URI – The base URI address of the node.

network
RestNetwork – Network information client.

add_mirrors_of(*new_mirrors*)
Add new mirrors in this node.

Parameters **new_mirrors** (list of str) – List of mirrors chain ids.

Returns List of the chain information.

Return type list of *interlockledger_rest.models.ChainIdModel*

certificate_name
str – Certificate friendly name.

chain_by_id(*chain_id*)
Get a chain by id.

Parameters **chain_id** (str) – Chain id.

Returns Chain instance with the corresponding id.

Return type *RestChain*

Example

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password',␣
↪port = 32020)
>>> chain = node.chain_by_id('A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE')
>>> print(chain)
Chain '3.6.2 chain name' #A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE
```

chains
list of *RestChain* – List of chain instances.

create_chain(*model*)
Create a new chain.

Parameters **model** (*interlockledger_rest.models.ChainCreationModel*) – Model with the new chain attrbutes.

Returns Chain created model.

Return type *interlockledger_rest.models.ChainCreatedModel*

Example

```
>>> node = RestNode(cert_file = 'admin.pfx', cert_pass = 'password', port =␣
↪32020)
>>> new_chain = ChainCreationModel(name = 'New chain name', description =
↪'New chain',
...          managementKeyPassword = 'keyPassword',␣
↪emergencyClosingKeyPassword = 'closingPassword')
>>> resp = node.create_chain(new_chain)
>>> print(resp)
Chain 'New chain name' #cRPeHOITV_t1ZQS9CIL7Yi3djJ33ynZCdSRsEnOvX40
```

details
interlockledger_rest.models.NodeDetailsModel – Get node details.

interlocks_of(*chain*)
Get the list of interlocking records pointing to a target chain instance.

Parameters **chain** (str) – Chain id.

Returns List of interlockings.

Return type list of *interlockledger_rest.models.InterlockingRecordModel*

Example

```
>>> node = RestNode(cert_file = 'documenter.pfx', cert_pass = 'password')
>>> interlocks = node.interlocks_of('8fox30W54ZkzM-shfUeU5C7ad-_
↪fsf5nICwNpkCUk5w')
>>> for interlock in interlocks :
```

```
...     print(interlock)
Interlocked chain 8fox30W54ZkzM-shfUeU5C7ad-_fsf5nICwNpkCUk5w at record #14␣
↪(offset: 13671) with hash RyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo#SHA256
{
    "applicationId": 3,
    "chainId": "A1wCG9hHhuVNb8hyOALHokYsWyTumHU0vRxtcK-iDKE",
    "createdAt": "2020-02-26T23:17:03.018975-03:75",
    "hash": "0QjOJ-WQjauOF7qXeOxXabHxUgBR_KBNDZVDECbsszw#SHA256",
    "payloadTagId": 600,
    "serial": 9,
    "type": "Data",
    "version": 2,
    "payloadBytes": "+QFgUgUBACsjAAEA8fox30W54ZkzM+shfUeU5C7ad+/
↪fsf5nICwNpkCUk5wKDgr5NG8nIgEARyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo=",
    "interlockedChainId": "8fox30W54ZkzM-shfUeU5C7ad-_fsf5nICwNpkCUk5w",
    "interlockedRecordHash": "RyvOZIjnoUG4QX7FwQs3f6BqDfnOPb3txgXJNxLxtDo
↪#SHA256",
    "interlockedRecordOffset": 13671,
    "interlockedRecordSerial": 14
}
```

mirrors
: list of *RestChain* – Get list of mirrors instances.

peers
: list of *interlockledger_rest.models.PeerModel* – Get list of known peers.

1.2.2 interlockledger_rest.models module

CustomEncoder

class interlockledger_rest.models.**CustomEncoder**(*, *skipkeys=False*, *ensure_ascii=True*, *check_circular=True*, *allow_nan=True*, *sort_keys=False*, *indent=None*, *separators=None*, *default=None*)

Bases: json.encoder.JSONEncoder

Custom JSON encoder for the IL2 REST API models.

default(*obj*)
: Set the behavior of the encoder depending on the type of obj.

BaseModel

class interlockledger_rest.models.**BaseModel**

Bases: object

Base class for all models.

classmethod from_json(*json_data*)
: Convert a dict (JSON like) to a *BaseModel* object.

Parameters **json_data** (dict) – JSON object to be converted.

Returns return an instance of the JSON model.

Return type *BaseModel*

json(*hide_null=True*, *return_as_str=False*)
Convert a BaseModel class to a dict (JSON like).

Parameters

- **hide_null** (bool, optional) – If True, discards every item (key, value) where value is None.
- **return_as_str** (bool, optional) – If True, return the JSON as a string instead of a dict.

Returns return obj as a JSON

Return type dict/str

classmethod to_json(*obj*, *hide_null=True*, *return_as_str=False*)
Convert an object to a dict (JSON like).

Parameters

- **obj** (list/dict/*BaseModel*) – Object to be converted to JSON.
- **hide_null** (bool, optional) – If True, discards every item (key, value) where value is None.
- **return_as_str** (bool, optional) – If True, return the JSON as a string instead of a dict.

Returns return obj as a JSON

Return type dict/str

AppsModel

class interlockledger_rest.models.**AppsModel**(*network=None*, *validApps=[]*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Details of the InterlockApps available in the chain.

Parameters

- **network** (str) – Network name.
- **validApps** (list of *PublishedApp*/list of dict) – List of currently valid apps for this network.
- ****kwargs** – Arbitrary keyword arguments.

network
str – Network name

validApps
list of *PublishedApp* – Currently valid apps for this network

class PublishedApp(*alternativeId=None*, *appVersion=None*, *description=None*, *app_id=None*, *name=None*, *publisherId=None*, *dataModels=None*, *publisherName=None*, *reservedILTagIds=None*, *simplifiedHashCode=None*, *start=None*, *version_=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

InterlockApp permitted in the chain.

alternativeId
int

appVersion
version – Application semantic version, with four numeric parts.

description
str – Description of the application.

id
int – Unique id for the application.

name
str – Application name.

publisherId
str – Publisher id, which is the identifier for the key the publisher uses to sign the workflow requests in its own chain. It should match the PublisherName

publisherName
str – Publisher name as registered in the Genesis chain of the network.

reservedILTagIds
list of interlockledger_rest.util.LimitedRange – The list of ranges of ILTagIds to reserve for the application.

simplifiedHashCode
int – The start date for the validity of the app, but if prior to the effective publication of the app will be overridden with the publication date and time.

start
datetime.datetime – The start date for the validity of the app, but if prior to the effective publication of the app will be overridden with the publication date and time.

version
int

__eq__(*other*)
bool: Return True if self and other have the same id and appVersion.

__lt__(*other*)
bool: Return self.id < other.id. If self and other have the same id, return self.appVersion < other.appVersion.

__str__()
str: String representation of the published app.

compositeName
str – Concatenation of the App's publisher name, name and version.

AppPermissions

class interlockledger_rest.models.**AppPermissions**(*appId=None*, *actionIds=[]*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

App permissions

appId
int – App to be permitted (by number)

actionIds
list of int – App actions to be permitted by number.

__str__()
str: String representation of app permissions.

classmethod from_str(*permissions*)
Parse a string into an *AppPermissions* object.

Parameters **permissions** (str) – App permissions in the format used by the JSON response ('#<appId>,<actionId_1>,...,<actionId_n>').

Returns return an *AppPermissions* instance.

Return type *AppPermissions*

to_str()
str: String representation of app permissions in the JSON format ('#<appId>,<actionId_1>,...,<actionId_n>').

DataModel

class interlockledger_rest.models.**DataModel**(*description=None*, *dataFields=None*, *indexes=None*, *payloadName=None*, *payloadTagId=None*, *version=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Data model

description
str – Description of the data model.

dataFields
list of *DataModel.DataFieldModel* – TODO

indexes
list of *DataModel.DataIndexModel* – List of indexes for records of this type.

payloadName
str – Name of the record model.

payloadTagId
int – Tag id for this payload type. It must be a number in the reserved ranges.

version
int – Version of this data model, should start from 1.

class DataFieldModel(*cast=None*, *elementTagId=None*, *isOpaque=None*, *isOptional=None*, *description=None*, *Enumeration=None*, *enumerationAsFlags=None*, *name=None*, *serializationVersion=None*, *subDataFields=None*, *tagId=None*, *version=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Data field

cast
interlockledger_rest.enumerations.DataFieldCast – TODO

elementTagId
int – TODO

isOpaque
bool – TODO

isOptional
bool – TODO

name
str – TODO

serializationVersion
int – TODO

subDataFields
list of *DataModel.DataFieldModel* – TODO

tagId
int – TODO

version
int – TODO

class DataIndexModel(*elements=None*, *isUnique=None*, *name=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Data index

elements
list of *DataModel.DataIndexModel.DataIndexElementModel* – TODO

isUnique
bool – TODO

name
str – TODO

class DataIndexElementModel(*descendingOrder=None*, *fieldPath=None*, *function=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Data index element

descendingOrder
bool – TODO

fieldPath
str – TODO

function
str – TODO

ExportedKeyFile

class interlockledger_rest.models.**ExportedKeyFile**(*keyFileBytes=None*, *keyFileName=None*, *keyName=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Key file info.

keyFileBytes
bytes – TODO

keyFileName
str – TODO

keyName
str – TODO

ChainIdModel

class interlockledger_rest.models.**ChainIdModel**(*chain_id=None*, *name=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Chain Id

id
str – Unique record id

name
str – Chain name

__eq__(*other*)
bool: Return self.id == other.id.

__hash__()
int: Hash representation of self.

__lt__(*other*)
bool: Return self.id < other.id.

__str__()
str: String representation of the *ChainIdModel*.

ChainCreatedModel

class interlockledger_rest.models.**ChainCreatedModel**(*chain_id=None*, *name=None*, *keyFiles=[]*, ***kwargs*)

Bases: *interlockledger_rest.models.ChainIdModel*

Chain created response.

id
str – Unique record id.

keyFiles
list of *ExportedKeyFile* – Emergency key file names.

name
str – Chain name.

ChainCreationModel

class interlockledger_rest.models.**ChainCreationModel**(*name*, *emergencyClosingKeyPassword*, *managementKeyPassword*, *additionalApps=None*, *description=None*, *emergencyClosingKeyStrength=<KeyStrength.ExtraStrong: 'ExtraStrong'>*, *managementKeyStrength=<KeyStrength.Strong: 'Strong'>*, *keysAlgorithm=<Algorithms.RSA: 'RSA'>*, *operatingKeyStrength=<KeyStrength.Normal: 'Normal'>*, *parent=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Chain creation parameters.

additionalApps
list of int – List of additional apps (only numeric ids).

description
str – Description (perhaps intended primary usage).

emergencyClosingKeyPassword
str – Emergency closing key password.

emergencyClosingKeyStrength
interlockledger_rest.enumerations.KeyStrength – Emergency closing key strength of key.

managementKeyPassword
str – Key management key password.

managementKeyStrength
interlockledger_rest.enumerations.KeyStrength – Key management strength of key.

keysAlgorithm
interlockledger_rest.enumerations.Algorithms – Keys algorithm.

name
str – Name of the chain.

operatingKeyStrength
interlockledger_rest.enumerations.KeyStrength – Operating key strength of key.

parent
str – Parent record Id.

ChainSummaryModel

class interlockledger_rest.models.**ChainSummaryModel**(*chain_id=None*, *name=None*, *activeApps=[]*, *description=None*, *isClosedForNewTransactions=False*, *lastRecord=None*, ***kwargs*)

Bases: *interlockledger_rest.models.ChainIdModel*

Chain summary.

activeApps
`list` of `int` – List of active apps (only the numeric ids).

description
`str` – Description (perhaps intended primary usage).

isClosedForNewTransactions
`bool` – Indicates if the chain accepts new records.

lastRecord
`int` – Serial number of the last record.

DocumentBaseModel

class interlockledger_rest.models.**DocumentBaseModel**(*cipher=<CipherAlgorithms.NONE: 'None'>*, *keyId=None*, *name=None*, *previousVersion=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Document base model.

cipher
interlockledger_rest.enumerations.CipherAlgorithms – Cipher algorithm used to cipher the document.

keyId
`str` – Unique id of key that ciphers this document.

name
`str` – Document name, may be a file name with an extension.

previousVersion
`str` – A reference to a previous version of this document (ChainId and RecordNumber).

is_ciphered
(`bool`) – Return True if the document is ciphered.

DocumentDetailsModel

class interlockledger_rest.models.**DocumentDetailsModel**(*cipher=<CipherAlgorithms.NONE: 'None'>*, *keyId=None*, *name=None*, *previousVersion=None*, *contentType=None*, *fileId=None*, *physicalDocumentID=None*, ***kwargs*)

Bases: *interlockledger_rest.models.DocumentBaseModel*

Document details.

contentType
`str` – Document content type (mime-type).

fileId
`str` – Unique id of the document derived from its content. The same content stored in different chains will have the same FileId.

physicalDocumentID
str – Compound id for this document as stored in this chain.

__str__()
(str): String representation of the document: 'Document '{name}' [{contentType}] {fileId}'.

is_plain_text
(bool) – Return True if the content type is plain/text.

DocumentUploadModel

class interlockledger_rest.models.**DocumentUploadModel**(*cipher=<CipherAlgorithms.NONE: 'None'>*, *keyId=None*, *name=None*, *previousVersion=None*, *contentType=None*, ***kwargs*)

Bases: *interlockledger_rest.models.DocumentBaseModel*

Document model used to upload/post documents in the chain.

contentType
str – Document content type (mime-type).

to_query_string
(str) – Request query representation.

RawDocumentModel

class interlockledger_rest.models.**RawDocumentModel**(*contentType=None*, *content=None*, *name=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Document as raw data.

Parameters

- **contentType** (str) – Document content type (mime-type).
- **content** (bytes/bytes) – Content of the document in raw bytes. If loaded from JSON, can be input as a base64 string which will be decoded to bytes.
- **name** (str) – Document name, may be a file name with an extension.

contentType
str – Document content type (mime-type).

content
bytes – Content of the document in raw bytes.

name
str – Document name, may be a file name with an extension.

ForceInterlockModel

class interlockledger_rest.models.**ForceInterlockModel**(*hashAlgorithm=<HashAlgorithms.SHA256: 'SHA256'>*, *minSerial=0*, *targetChain=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Force interlock command details.

hashAlgorithm
interlockledger_rest.enumerations.HashAlgorithms – Hash algorithm to use.

minSerial
int – Required minimum of the serial of the last record in target chain whose hash will be pulled.

targetChain
str – Id of chain to be interlocked.

__str__()
(str): String representation of the interlock.

KeyModel

class interlockledger_rest.models.**KeyModel**(*key_id=None*, *name=None*, *permissions=None*, *publicKey=None*, *purposes=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Key model

Parameters

- **key_id** (str) – Unique key id.
- **name** (str) – Key name.
- **permissions** (list of *AppPermissions*) – List of Apps and Corresponding Actions to be permitted by numbers.
- **publicKey** (str) – Key public key.
- **purposes** (list of *interlockledger_rest.enumerations.KeyPurpose*/str) – Key valid purposes.
- ****kwargs** – Arbitrary keyword arguments.

id
str – Unique key id.

name
str – Key name.

permissions
list of *AppPermissions* – List of Apps and Corresponding Actions to be permitted by numbers.

publicKey
str – Key public key.

purposes
list of *interlockledger_rest.enumerations.KeyPurpose*/str – Key valid purposes.

__str__()
(str): String representation of the key details.

actionable
(bool) – Return True if 'Action' is in the list of purposes.

KeyPermitModel

class interlockledger_rest.models.**KeyPermitModel**(*key_id=None*, *name=None*, *permissions=None*, *publicKey=None*, *purposes=[]*, *app=None*, *appActions=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Key to permit.

Parameters

- **key_id** (str) – Unique key id.
- **name** (str) – Key name.
- **permissions** (list of *AppPermissions*) – List of Apps and Corresponding Actions to be permitted by numbers.
- **publicKey** (str) – Key public key.
- **purposes** (list of *interlockledger_rest.enumerations.KeyPurpose*/str) – Key valid purposes.
- **app** (int) – App to be permitted (by number). *Note*: If app and appActions is passed as parameter, permissions parameter will be ignored.
- **appActions** (list of int) – App actions to be permitted by number. *Note*: If app and appActions is passed as parameter, permissions parameter will be ignored.
- ****kwargs** – Arbitrary keyword arguments.

id
str – Unique key id.

name
str – Key name.

permissions
list of *AppPermissions* – List of Apps and Corresponding Actions to be permitted by numbers.

publicKey
str – Key public key.

purposes
list of *interlockledger_rest.enumerations.KeyPurpose*/str – Key valid purposes.

NewRecordModelBase

class interlockledger_rest.models.**NewRecordModelBase**(*applicationId=None*, *rec_type=<RecordType.Data: 'Data'>*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Base model for new Record.

applicationId
int – Application id this record is associated with.

rec_type
interlockledger_rest.enumerations.RecordType – Block type. Most records are of the type 'Data'. Corresponds to the 'type' field in the JSON.

NewRecordModelAsJson

class interlockledger_rest.models.**NewRecordModelAsJson**(*applicationId=None*, *rec_type=<RecordType.Data: 'Data'>*, *rec_json=None*, *payloadTagId=None*, ***kwargs*)

Bases: *interlockledger_rest.models.NewRecordModelBase*

New record model to be added to the chain as a JSON.

json
dict – The payload data matching the metadata for PayloadTagId.

payloadTagId
interlockledger_rest.enumerations.RecordType – The tag id for the payload, as registered for the application.

to_query_string
(str) – Request query representation.

NewRecordModel

class interlockledger_rest.models.**NewRecordModel**(*applicationId=None*, *rec_type=<RecordType.Data: 'Data'>*, *payloadBytes=None*, ***kwargs*)

Bases: *interlockledger_rest.models.NewRecordModelBase*

New record model to be added to the chain as raw bytes.

payloadBytes
dict – The payload in bytes. Must match the bytes schema of the application Id.

NodeCommonModel

class interlockledger_rest.models.**NodeCommonModel**(*color=None*, *node_id=None*, *name=None*, *network=None*, *ownerId=None*, *ownerName=None*, *roles=None*, *softwareVersions=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Node/Peer common details

color
Color – Mapping color.

id
str – Unique node id

name
str – Node name.

network
str – Network this node participates on.

ownerId
str – Node owner id

ownerName
str – Node owner name.

roles
list of str – List of active roles running in the node

softwareVersions
Versions – Version of software running the Node.

fancy_color
(str) – Return the color as its name or the corresponding hexadecimal values.

NodeDetailsModel

class interlockledger_rest.models.**NodeDetailsModel**(*color=None*, *node_id=None*, *name=None*, *network=None*, *ownerId=None*, *ownerName=None*, *roles=None*, *softwareVersions=None*, *chains=[]*, ***kwargs*)

Bases: *interlockledger_rest.models.NodeCommonModel*

Node details

chains
list of str – List of owned records, only the ids

PeerModel

class interlockledger_rest.models.**PeerModel**(*color=None*, *node_id=None*, *name=None*, *network=None*, *ownerId=None*, *ownerName=None*, *roles=None*, *softwareVersions=None*, *address=None*, *port=None*, *protocol=None*, ***kwargs*)

Bases: *interlockledger_rest.models.NodeCommonModel*

Peer details.

address
str – Network address to contact the peer.

port
int – Port the peer is listening.

protocol
interlockledger_rest.enumerations.NetworkProtocol – Network protocol the peer is listening.

RecordModelBase

class interlockledger_rest.models.**RecordModelBase**(*applicationId=None*, *chainId=None*, *createdAt=None*, *rec_hash=None*, *payloadTagId=None*, *serial=None*, *rec_type=None*, *version=None*, ***kwargs*)

Bases: *interlockledger_rest.models.BaseModel*

Base model for records.

Parameters

- **applicationId** (int) – Application id this record is associated with.
- **chainId** (str) – Chain id that owns this record.
- **createdAt** (datetime.datetime) – Time of record creation.
- **rec_hash** (str) – Hash of the full encoded bytes of the record.
- **payloadTagId** (int) – The payload's TagId.
- **serial** (int) – Block serial number. For the first record this value is zero (0).
- **rec_type** (*interlockledger_rest.enumerations.RecordType*) – Block type. Most records are of the type 'Data'. Corresponds to the 'type' field in the JSON.
- **version** (int) – Version of this record structure.

applicationId
int – Application id this record is associated with.

chainId
str – Chain id that owns this record.

createdAt
datetime.datetime – Time of record creation.

hash
str – Hash of the full encoded bytes of the record.

payloadTagId
int – The payload's TagId.

serial
int – Block serial number. For the first record this value is zero (0).

type
interlockledger_rest.enumerations.RecordType – Block type. Most records are of the type 'Data'. Corresponds to the 'type' field in the JSON.

version
int – Version of this record structure.

__str__()
(str): JSON representation of the record as string.

RecordModel

class interlockledger_rest.models.**RecordModel**(*applicationId=None*, *chainId=None*, *createdAt=None*, *rec_hash=None*, *payloadTagId=None*, *serial=None*, *rec_type=None*, *version=None*, *payloadBytes=None*, ***kwargs*)

Bases: *interlockledger_rest.models.RecordModelBase*

Generic opaque record.

Parameters **payloadBytes** (bytes/str) – The payload's bytes. If loaded from JSON, can be input as a base64 string which will be decoded to bytes.

payloadBytes
bytes – The payload's bytes.

RecordModelAsJson

class interlockledger_rest.models.**RecordModelAsJson**(*applicationId=None*, *chainId=None*, *createdAt=None*, *rec_hash=None*, *payloadTagId=None*, *serial=None*, *rec_type=None*, *version=None*, *payload=None*, ***kwargs*)

Bases: *interlockledger_rest.models.RecordModelBase*

Record model as JSON.

payload
Payload bytes.

InterlockingRecordModel

class interlockledger_rest.models.**InterlockingRecordModel**(*applicationId=None*, *chainId=None*, *createdAt=None*, *rec_hash=None*, *payloadTagId=None*, *serial=None*, *rec_type=None*, *version=None*, *payloadBytes=None*, *interlockedChainId=None*, *interlockedRecordHash=None*, *interlockedRecordOffset=None*, *interlockedRecordSerial=None*, ***kwargs*)

Bases: *interlockledger_rest.models.RecordModel*

Interlocking details.

interlockedChainId
str – Interlocked Chain.

interlockedRecordHash
str – Interlock Record Hash.

interlockedRecordOffset
int – Interlocked Record Offset.

interlockedRecordSerial
int – Interlocked Record Serial.

__str__()
(str): String representation.

Versions

class interlockledger_rest.models.**Versions**(*coreLibs=None*, *messageEnvelopeWireFormat=None*, *node=None*, *peer2peer=None*, ***kwargs*)
Bases: *interlockledger_rest.models.BaseModel*

Versions for parts of the software.

coreLibs
str – Core libraries and il2apps version.

messageEnvelopeWireFormat
str – Message envelope wire format version.

node
str – Interlockledger node daemon version.

peer2peer
str – Peer2Peer connectivity library version.

1.2.3 interlockledger_rest.enumerations module

Algorithms

class interlockledger_rest.enumerations.**Algorithms**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the digital signature algorithms available in IL2.

DSA = 'DSA'

EcDSA = 'EcDSA'

EdDSA = 'EdDSA'

ElGamal = 'ElGamal'

RSA = 'RSA'

RSA15 = 'RSA15'

AutoName

class interlockledger_rest.enumerations.**AutoName**
Bases: enum.Enum

Base Enum class to automatically generate the enumerations values based on the enumeration name.

DataFieldCast

class interlockledger_rest.enumerations.**DataFieldCast**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of casting options for DataField

DateTime = 'DateTime'

Integer = 'Integer'

NONE = 'None'

TimeSpan = 'TimeSpan'

CipherAlgorithms

class interlockledger_rest.enumerations.**CipherAlgorithms**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the cipher algorithms available in IL2.

AES256 = 'AES256'

NONE = 'None'

HashAlgorithms

class interlockledger_rest.enumerations.**HashAlgorithms**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the hash algorithms available in IL2.

Copy = 'Copy'

SHA1 = 'SHA1'

SHA256 = 'SHA256'

SHA3_256 = 'SHA3_256'

SHA3_512 = 'SHA3_512'

SHA512 = 'SHA512'

KeyPurpose

class interlockledger_rest.enumerations.**KeyPurpose**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the purpose of keys in IL2.

Action = 'Action'

ChainOperation = 'ChainOperation'

ClaimSigner = 'ClaimSigner'

Encryption = 'Encryption'

ForceInterlock = 'ForceInterlock'

InvalidKey = 'InvalidKey'

KeyManagement = 'KeyManagement'

Protocol = 'Protocol'

KeyStrength

class interlockledger_rest.enumerations.**KeyStrength**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the strength of keys.

Normal = 'Normal'
RSA 2048

Strong = 'Strong'
RSA 3072

ExtraStrong = 'ExtraStrong'
RSA 4096

MegaStrong = 'MegaStrong'
RSA 5120

SuperStrong = 'SuperStrong'
RSA 6144

HyperStrong = 'HyperStrong'
RSA 7172

UltraStrong = 'UltraStrong'
RSA 8192

NetworkProtocol

class interlockledger_rest.enumerations.**NetworkProtocol**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the network protocols.

HTTPS_Proxied = 'HTTPS_Proxied'

Originator_Only = 'Originator_Only'

TCP_Direct = 'TCP_Direct'

TCP_Proxied = 'TCP_Proxied'

NetworkPredefinedPorts

class interlockledger_rest.enumerations.**NetworkPredefinedPorts**
Bases: enum.IntEnum

Enumeration of the default ports of the IL2 networks.

MainNet = 32032

MetaNet = 32036

TestNet_Apollo = 32020

TestNet_Janus = 32022

TestNet_Jupiter = 32030

TestNet_Liber = 32018

TestNet_Minerva = 32024

TestNet_Neptune = 32026

TestNet_Saturn = 32028

RecordType

class interlockledger_rest.enumerations.**RecordType**
Bases: *interlockledger_rest.enumerations.AutoName*

Enumeration of the types of Records available in IL2.

Closing = 'Closing'

Corrupted = 'Corrupted'

Data = 'Data'

EmergencyClosing = 'EmergencyClosing'

Root = 'Root'

1.2.4 interlockledger_rest.util module

LimitedRange

class interlockledger_rest.models.**LimitedRange**(*start*, *count=1*, *end=None*)
Bases: object

A closed interval of integers represented by the notation '[start-end]'. If the range has only one value, the range is represented by '[start]'.

Parameters

- **start** (int) – Initial value of the interval
- **count** (int, optional) – How many elements are in the range
- **end** (int, optional) – If defined, define the end value of the interval

Raises ValueError – If 'count' is 0

start
int – Initial value of the interval

end
int – End value of the interval

__contains__(*item*)
Check if item is in self.

Parameters **item** (int/*LimitedRange*) – Item to check if is in self.

Returns Return item in self.

Return type bool

__eq__(*other*)
bool: Return self == other.

__hash__()
int: Hash representation of self.

__str__()
str: String representation of self.

count
int – Number of elements in the interval.

overlaps_with(*other*)
Check if there is an overlap between the intervals of self and other.

Returns Return True if there is an overlap.

Return type bool

classmethod resolve(*text*)
Parses a string into a *LimitedRange*.

Parameters **text** (str) – String representing the range in the format of '[start]' or '[start-end]'.

Returns An instance of the LimitedRange represented by the *text*.

Return type *LimitedRange*

null_condition_attribute

interlockledger_rest.models.**null_condition_attribute**(*obj*, *attribute*)
Return the value of the item with key equals to attribute.

Parameters

- **obj** (dict) – Dictionary object.
- **attribute** (str) – Attribute name of obj.

Returns The value of the item. If obj is None, return None.

filter_none

interlockledger_rest.models.**filter_none**(*d*)
Remove items of a dictionary with None values.

Parameters **d** (dict) – Dictionary object.

Returns Dictionary without None items.

Return type dict

string2datetime

interlockledger_rest.models.**string2datetime**(*time_string*)
Convert a string to datetime object. The format of the string is as follows: 'yyyy-mm-ddTHH:MM:SS+HH:MM'.

Parameters **time_string** (str) – string with date and time.

Returns date time object.

Return type datetime.datetime

to_bytes

interlockledger_rest.models.**to_bytes**(*value*)

Decodes value to bytes.

Parameters **value** – Value to decode to bytes

Returns

Return the value as bytes:

if type(value) is `bytes`, return value;

if type(value) is `str`, return the string encoded with UTF-8;

otherwise, returns bytes(value).

Return type `bytes`

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