
AnyBlok IO Documentation

Release 1.2.0

Jean-Sebastien SUZANNE

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AnyBlok is a Python framework allowing to create highly dynamic and modular applications on top of the SQLAlchemy ORM. Applications are made of “bloks” that can be installed, extended, replaced, upgraded or uninstalled.

AnyBlok is released under the terms of the *Mozilla Public License version 2*.

Contents

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Information about the AnyBlok project.

1.1 Project Homepage

AnyBlok is hosted on [github](#) - the main project page is at http://github.com/AnyBlok/anyblok_io. Source code is tracked here using [GIT](#).

Releases and project status are available on Pypi at http://pypi.python.org/pypi/anyblok_io.

The most recent published version of this documentation should be at <https://anyblok-io.readthedocs.io/en/latest/>.

1.2 Installation

Install released versions of AnyBlok from the Python package index with [pip](#) or a similar tool:

```
pip install anyblok_io
```

Installation via source distribution is via the `setup.py` script:

```
python setup.py install
```

1.3 Running Tests

To run framework tests with `nose`:

```
pip install nose
nosetests anyblok_io/tests
```

To run tests of all installed bloks:

```
anyblok_nose -c config.file.cfg
```

AnyBlok is tested continuously using [Travis CI](#)

1.4 Contributing (hackers needed!)

Anyblok is at a very early stage, feel free to fork, talk with core dev, and spread the word!

1.5 Author

Jean-Sébastien Suzanne

1.6 Contributors

- Jean-Sébastien Suzanne

1.7 Bugs

Bugs and feature enhancements to AnyBlok should be reported on the [Issue tracker](#).

Contents

- *MEMENTO*
 - *Blok*

2.1 Blok

The **BlokImporter** give some behaviour to help to import file from the blok:

```
from anyblok.blok import Blok
from anyblok_io.blok import BlokImporter

class MyBlok(BlokImporter, Blok):

    required = ['anyblok-io-csv', 'anyblok-io-xml']

    def upload(self, latest_version=None):
        self.import_file_csv(Model, *file_path, **ImporterOptions) # need anyblok-io-
↪CSV
        self.import_file_xml(Model, *file_path, **ImporterOptions) # need anyblok-io-
↪xml
```


Covered Bloks

- *Blok anyblok-io*
- *Blok anyblok-io-csv*
- *Blok anyblok-io-xml*

3.1 Blok anyblok-io

```
class anyblok_io.bloks.io.AnyBlokIO (registry)
```

```
    Bases: anyblok.blok.Blok
```

```
    In / Out tool's:
```

- Formater: convert value 2 str or str 2 value in function of the field,
- Importer: main model to define an import,
- Exporter: main model to define an export,

```
    name = 'anyblok-io'
```

```
    version = '1.3.0'
```

```
    author = 'Suzanne Jean-Sébastien'
```

```
    autoinstall = False
```

```
    priority = 100
```

Note: Require the anyblok-io blok

3.1.1 Mapping

`Model.IO.Mapping` allows to link a `Model` instance by a `Model` namespace and str key. this key is an external *ID*

Save an instance with a key:

```
Blok = self.registry.System.Blok
blok = Blok.query().filter(Blok.name == 'anyblok-core').first()
self.registry.IO.Mapping.set('External ID', blok)
```

Warning: By default if you save another instance with the same key and the same model, an `IOMappingSetException` will be raised. If really you want this mapping you must call the set method with the named argument **`raiseifexist=False`**:

```
self.registry.IO.Mapping.set('External ID', blok, raiseifexist=False)
```

Get an entry in the mapping:

```
blok2 = self.registry.IO.Mapping.get('Model.System.Blok', 'External ID')
assert blok2 is blok
```

3.1.2 Formater

The goal of the formater is to get:

- value from string
- value from mapping key
- string from value
- mapping key from value

The value is the value of the field.

Warning: The relationships are particulare cases. The value is the json of the primary keys. The `Many2Many` and the `One2Many` are the json of the list of the primary keys

3.1.3 Exporter

The `Model.IO.Exporter` export some entries in fonction of configuration. `anyblok-io` blok doesn't give complete exporter, just the base `Model` to standardize all the possible export:

```
exporter = registry.IO.Exporter.insert(...) # create a exporter
entries = ... # entries are instance of model
fp = exporter.run(entries)
# fp is un handler on the opened file (StringIO)
```

3.1.4 Importer

The `Model.IO.Importer` import some entries in fonction of configuration. `anyblok-io` blok doesn't give complete importer, just the base `Model` to standardize all the possible import:

```
importer = registry.IO.Importer.insert(...) # create an importer
# the file to import are filled in the parameter
entries = importer.run()
```

3.1.5 API doc

exceptions

exception `anyblok_io.bloks.io.exceptions.IOException`

Bases: `Exception`

IO exception

exception `anyblok_io.bloks.io.exceptions.IOMappingCheckException`

Bases: `anyblok_io.bloks.io.exceptions.IOException`

IO Exception for setter

exception `anyblok_io.bloks.io.exceptions.IOMappingSetException`

Bases: `anyblok_io.bloks.io.exceptions.IOException`

IO Exception for setter

exception `anyblok_io.bloks.io.exceptions.ImporterException`

Bases: `Exception`

Simple Exception for importer

exception `anyblok_io.bloks.io.exceptions.ExporterException`

Bases: `Exception`

Simple Exception for exporter

exception `anyblok_io.bloks.io.exceptions.FormatterException`

Bases: `Exception`

Simple Exception for importer

core

class `anyblok_io.bloks.io.core.Query`

Bases: `object`

AnyBlok registration:

- Type: Core
- Registry name: `Core.Query`

delete (**args*, ***kwargs*)

Inherit the `Query.delete` methods.: `Model.query().delete(remove_mapping=True)`

Parameters `remove_mapping` – boolean, if check (default) the mapping is removed

class anyblok_io.bloks.io.core.SqlBase

Bases: object

AnyBlok registration:

- Type: Core
- Registry name: Core.SqlBase

delete (*args, **kwargs)

Inherit the Model.delete methods.:

`instance.delete(remove_mapping=True)`

Parameters `remove_mapping` – boolean, if check (default) the mapping is removed

mapping

class anyblok_io.bloks.io.mapping.Mapping

Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Mapping
- Tablename: io_mapping

Fields	
key	<ul style="list-style-type: none"> • Type - <code>anyblok.column.String</code> • <code>primary_key</code> - <code>True</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code> • <code>size</code> - <code>64</code>
model	<ul style="list-style-type: none"> • Type - <code>anyblok.column.String</code> • <code>primary_key</code> - <code>True</code> • <code>foreign_key</code> - <code>Model.System.Model => name</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code> • <code>size</code> - <code>256</code>
primary_key	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Json</code> • <code>nullable</code> - <code>False</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code>
blokname	<ul style="list-style-type: none"> • Type - <code>anyblok.column.String</code> • <code>Label</code> - <code>'Blok name'</code> • <code>foreign_key</code> - <code>Model.System.Blok => name</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code> • <code>size</code> - <code>64</code>

classmethod `check_primary_keys` (*model*, **pks*)

check if the all the primary keys match with primary keys of the model

Parameters

- **model** – model to check
- **pks** – list of the primary keys to check

Exception `IOMappingCheckException`

classmethod `clean` (*bloknames=None*, *models=None*)

Clean all mapping with removed object linked:

```
Mapping.clean(bloknames=['My blok'])
```

Warning: For filter only the no blokname:

```
Mapping.clean(bloknames=[None])
```

Params `bloknames` filter by blok, keep the order to remove the mapping

Params models filter by model, keep the order to remove the mapping

classmethod delete (*model, key, mapping_only=True, byquery=False*)

Delete the key for this model

Parameters

- **model** – model of the mapping
- **key** – string of the key

Return type Boolean True if the mapping is removed

classmethod delete_for_blokname (*blokname, models=None, byquery=False*)

Clean all mapping with removed object linked:

```
Mapping.clean('My blok')
```

Warning: For filter only the no blokname:

```
Mapping.clean(None)
```

Params blokname filter by blok

Params models filter by model, keep the order to remove the mapping

filter_by_model_and_key (*model, key*)

SQLAlchemy hybrid method to filter by model and key

Parameters

- **model** – model of the mapping
- **key** – external key of the mapping

Hybrid method

filter_by_model_and_keys (*model, *keys*)

SQLAlchemy hybrid method to filter by model and key

Parameters

- **model** – model of the mapping
- **key** – external key of the mapping

Hybrid method

classmethod get (*model, key*)

return instance of the model with this external key

Parameters

- **model** – model of the mapping
- **key** – string of the key

Return type instance of the model

classmethod get_mapping_primary_keys (*model, key*)

return primary key for a model and an external key

Parameters

- **model** – model of the mapping

- **key** – string of the key

Return type dict primary key: value or None

classmethod `multi_delete` (*model, *keys, **kwargs*)

Delete all the keys for this model

Parameters

- **model** – model of the mapping
- **keys** – list of the key

Return type Boolean True if the mappings are removed

classmethod `set` (*key, instance, raiseifexist=True, blokname=None*)

Add or update a mmping with a model and a external key

Parameters

- **model** – model to check
- **key** – string of the key
- **instance** – instance of the model to save
- **raiseifexist** – boolean (True by default), if True and the entry exist then an exception is raised
- **blokname** – name of the blok where come from the mapping

Exception IOMappingSetException

classmethod `set_primary_keys` (*model, key, pks, raiseifexist=True, blokname=None*)

Add or update a mmping with a model and a external key

Parameters

- **model** – model to check
- **key** – string of the key
- **pks** – dict of the primary key to save
- **raiseifexist** – boolean (True by default), if True and the entry exist then an exception is raised
- **blokname** – name of the blok where come from the mapping

Exception IOMappingSetException

mixin

class `anyblok_io.bloks.io.mixin.IOMixin`

Bases: `object`

AnyBlok registration:

- Type: Mixin
- Registry name: `Mixin.IOMixin`

Fields	
id	<ul style="list-style-type: none">• Type - <code>anyblok.column.Integer</code>• <code>primary_key</code> - <code>True</code>• <code>autoincrement</code> - <code>True</code>• <code>default</code> - <code>anyblok.column.NoDefaultValue</code>
mode	<ul style="list-style-type: none">• Type - <code>anyblok.column.Selection</code>• <code>nullable</code> - <code>False</code>• <code>default</code> - <code>anyblok.column.NoDefaultValue</code>• <code>selections</code> - <code>'get_mode_choices'</code>• <code>size</code> - <code>64</code>
model	<ul style="list-style-type: none">• Type - <code>anyblok.column.String</code>• <code>nullable</code> - <code>False</code>• <code>foreign_key</code> - <code>Model.System.Model => name</code>• <code>default</code> - <code>anyblok.column.NoDefaultValue</code>• <code>size</code> - <code>256</code>

importer

class `anyblok_io.bloks.io.importer.Importer`

Bases: `anyblok.mixin.IOMixin`

AnyBlok registration:

- Type: `Model`
- Registry name: `Model.IO.Importer`
- Tablename: `io_importer`
- Inherited Models or Mixins:
 - `anyblok.mixin.IOMixin`

Fields	
file_to_import	<ul style="list-style-type: none"> • Type - <code>anyblok.column.LargeBinary</code> • nullable - <code>False</code> • default - <code>anyblok.column.NoDefaultValue</code>
offset	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Integer</code> • default - <code>0</code>
nb_grouped_lines	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Integer</code> • nullable - <code>False</code> • default - <code>50</code>
commit_at_each_grouped	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Boolean</code> • default - <code>True</code>
check_import	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Boolean</code> • default - <code>False</code>

exporter

class `anyblok_io.bloks.io.exporter.Exporter`

Bases: `anyblok.mixin.IOMixin`

AnyBlok registration:

- Type: `Model`
- Registry name: `Model.IO.Exporter`
- Tablename: `io_exporter`
- Inherited Models or Mixins:
 - `anyblok.mixin.IOMixin`

formater

class `anyblok_io.bloks.io.formater.Formatter`

Bases: `object`

AnyBlok registration:

- Type: `Model`
- Registry name: `Model.IO.Formatter`
- Tablename: `io_formater`

class `anyblok_io.bloks.io.formater.Float`

Bases: `anyblok.model.Formatter`

AnyBlok registration:

- Type: `Model`

- Registry name: Model.IO.Formatter.Float
- Tablename: io_formatter_float
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formatter.Decimal
Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Decimal
- Tablename: io_formatter_decimal
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formatter.Json
Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Json
- Tablename: io_formatter_json
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formatter.Interval
Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Interval
- Tablename: io_formatter_interval
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formatter.Integer
Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Integer
- Tablename: io_formatter_integer
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formater.**BigInteger**

Bases: anyblok.model.Integer

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.BigInteger
- Tablename: io_formatter_biginteger
- Inherited Models or Mixins:
 - anyblok.model.Integer

class anyblok_io.bloks.io.formater.**Boolean**

Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Boolean
- Tablename: io_formatter_boolean
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formater.**Time**

Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Time
- Tablename: io_formatter_time
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formater.**Date**

Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.Date
- Tablename: io_formatter_date
- Inherited Models or Mixins:
 - anyblok.model.Formatter

class anyblok_io.bloks.io.formater.**DateTime**

Bases: anyblok.model.Formatter

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Formatter.DateTime
- Tablename: io_formatter_datetime

- Inherited Models or Mixins:
 - `anyblok.model.Formatter`

class `anyblok_io.bloks.io.formater.Many2One`
Bases: `anyblok.model.Formatter`

AnyBlok registration:

- Type: Model
- Registry name: `Model.IO.Formatter.Many2One`
- Tablename: `io_formatter_many2one`
- Inherited Models or Mixins:
 - `anyblok.model.Formatter`

class `anyblok_io.bloks.io.formater.One2One`
Bases: `anyblok.model.Many2One`

AnyBlok registration:

- Type: Model
- Registry name: `Model.IO.Formatter.One2One`
- Tablename: `io_formatter_one2one`
- Inherited Models or Mixins:
 - `anyblok.model.Many2One`

class `anyblok_io.bloks.io.formater.Many2Many`
Bases: `anyblok.model.Formatter`

AnyBlok registration:

- Type: Model
- Registry name: `Model.IO.Formatter.Many2Many`
- Tablename: `io_formatter_many2many`
- Inherited Models or Mixins:
 - `anyblok.model.Formatter`

class `anyblok_io.bloks.io.formater.One2Many`
Bases: `anyblok.model.Many2Many`

AnyBlok registration:

- Type: Model
- Registry name: `Model.IO.Formatter.One2Many`
- Tablename: `io_formatter_one2many`
- Inherited Models or Mixins:
 - `anyblok.model.Many2Many`

3.2 Blok anyblok-io-csv

```
class anyblok_io.bloks.io_csv.AnyBlokIOCSV (registry)
    Bases: anyblok.blok.Blok

    CSV Importer / Exporter behaviour

    name = 'anyblok-io-csv'
    version = '1.3.0'
    author = 'Suzanne Jean-Sébastien'
    autoinstall = False
    priority = 100
```

Note: Require the anyblok-io-csv blok

3.2.1 Exporter

Add an exporter mode (CSV) in AnyBlok:

```
Exporter = registry.IO.Exporter.CSV
```

Define what export:

```
csv_delimiter = ','
csv_quotechar = '"'
model = ``Existing model name``
fields = [
    {'name': 'field name'},
    {'name': 'fieldname1.fieldname2. ... .fieldnamen} # fieldname1, fieldname 2_
    ↳ must be Many2One or have foreign keys
    {'name': 'field', model="external_id"} # field must be Many2One or foreign_keys_
    ↳ or primary keys
    ...
]
```

Create the Exporter:

```
exporter = Exporter.insert(csv_delimiter=csv_delimiter,
                           csv_quotechar=csv_quotechar,
                           model=model,
                           fields=fields)
```

Warning: You can also make insert with registry.IO.Exporter directly

Run the export:

```
fp = exporter.run(entries) # entries are instance of the ``model``
```

3.2.2 Importer

Add an importer mode (CSV) in AnyBlok:

```
Importer = registry.IO.Importer.CSV
```

Define what import:

```
csv_delimiter = ','  
csv_quotechar = '"'  
model = ``Existing model name``  
with open(..., 'rb') as fp:  
    file_to_import = fp.read()
```

Create the Importer:

```
importer = Importer.insert(csv_delimiter=csv_delimiter,  
                           csv_quotechar=csv_quotechar,  
                           model=model,  
                           file_to_import=file_to_import)
```

Warning: You can also make insert with `registry.IO.Importer` directly

Run the import:

```
res = importer.run()
```

The result is a dict with:

- `error_found`: List the error, durring the import
- `created_entries`: Entries created by the import
- `updated_entries`: Entries updated by the import

List of the options for the import:

- **csv_on_error:**
 - `raise_now`: Raise now
 - `raise_at_the_end` (default): Raise at the end
 - `ignore`: Ignore and continue
- **csv_if_exist:**
 - `pass`: Pass to the next record
 - `overwrite` (default): Update the record
 - `create`: Create another record
 - `raise`: Raise an exception
- **csv_if_does_not_exist:**
 - `pass`: Pass to the next record
 - `create` (default): Create another record
 - `raise`: Raise an exception

3.2.3 API doc

exceptions

exception `anyblok_io.bloks.io_csv.exceptions.CSVImporterException`

Bases: `anyblok_io.bloks.io.exceptions.ImporterException`

Simple exception for CSV importer

exception `anyblok_io.bloks.io_csv.exceptions.CSVExporterException`

Bases: `anyblok_io.bloks.io.exceptions.ExporterException`

Simple exception for CSV exporter

mixin

class `anyblok_io.bloks.io_csv.mixin.IOCSVFieldMixin`

Bases: `object`

AnyBlok registration:

- Type: Mixin
- Registry name: `Mixin.IOCSVFieldMixin`

Fields	
id	<ul style="list-style-type: none"> • Type - <code>anyblok.column.Integer</code> • <code>primary_key</code> - <code>True</code> • <code>autoincrement</code> - <code>True</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code>
name	<ul style="list-style-type: none"> • Type - <code>anyblok.column.String</code> • <code>nullable</code> - <code>False</code> • <code>default</code> - <code>anyblok.column.NoDefaultValue</code> • <code>size</code> - <code>64</code>

class `anyblok_io.bloks.io_csv.mixin.IOCSVMixin`

Bases: `object`

AnyBlok registration:

- Type: Mixin
- Registry name: `Mixin.IOCSVMixin`

Fields	
csv_delimiter	<ul style="list-style-type: none">• Type - <code>anyblok.column.String</code>• nullable - <code>False</code>• default - <code>','</code>• size - <code>64</code>
csv_quotechar	<ul style="list-style-type: none">• Type - <code>anyblok.column.String</code>• nullable - <code>False</code>• default - <code>'\"'</code>• size - <code>64</code>

importer

class `anyblok_io.bloks.io_csv.importer.Importer`

Bases: `anyblok.mixin.IOCVMixin`

AnyBlok registration:

- Type: `Model`
- Registry name: `Model.IO.Importer`
- Tablename: `io_importer`
- Inherited Models or Mixins:
 - `anyblok.mixin.IOCVMixin`

Fields	
csv_on_error	<ul style="list-style-type: none">• Type - <code>anyblok.column.Selection</code>• default - <code>'raise_at_the_end'</code>• size - <code>64</code>
csv_if_exist	<ul style="list-style-type: none">• Type - <code>anyblok.column.Selection</code>• default - <code>'overwrite'</code>• size - <code>64</code>
csv_if_does_not_exist	<ul style="list-style-type: none">• Type - <code>anyblok.column.Selection</code>• default - <code>'create'</code>• size - <code>64</code>

class `anyblok_io.bloks.io_csv.importer.CSV (importer, blokname=None)`

Bases: `object`

AnyBlok registration:

- Type: `Model`
- Registry name: `Model.IO.Importer.CSV`
- Tablename: `io_importer_csv`

exporter

class anyblok_io.bloks.io_csv.exporter.**Exporter**

Bases: anyblok.mixin.IOCSVMixin

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Exporter
- Tablename: io_exporter
- Inherited Models or Mixins:
 - anyblok.mixin.IOCSVMixin

class anyblok_io.bloks.io_csv.exporter.**Field**

Bases: anyblok.mixin.IOCSVFieldMixin

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Exporter.Field
- Tablename: io_exporter_field
- Inherited Models or Mixins:
 - anyblok.mixin.IOCSVFieldMixin

Fields	
exporter	<ul style="list-style-type: none"> • Type - anyblok.relationship.Many2One • backref - 'fields_to_export' • model - Model.IO.Exporter • index - False
mode	<ul style="list-style-type: none"> • Type - anyblok.column.Selection • nullable - False • default - 'any' • selections - 'get_selection' • size - 64
mapping	<ul style="list-style-type: none"> • Type - anyblok.column.String • default - anyblok.column.NoDefaultValue • size - 64

class anyblok_io.bloks.io_csv.exporter.**CSV** (*exporter*)

Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Exporter.CSV

- Tablename: io_exporter_csv

3.3 Blok anyblok-io-xml

class anyblok_io.bloks.io_xml.**AnyBlokIOXML** (*registry*)
Bases: anyblok.blok.Blok
XML Importer / Exporter behaviour

Warning: Importer and Exporter are not implemented yet

```
name = 'anyblok-io-xml'  
version = '1.3.0'  
author = 'Suzanne Jean-Sébastien'  
autoinstall = False  
priority = 100
```

Note: Require the anyblok-io-xml blok

3.3.1 Exporter

TODO

3.3.2 Importer

Add an importer mode (XML) in AnyBlok:

```
Importer = registry.IO.Importer.XML
```

Define what import:

```
model = ``Existing model name``  
with open(..., 'rb') as fp:  
    file_to_import = fp.read()
```

Create the Importer:

```
importer = Importer.insert(model=model,  
                           file_to_import=file_to_import)
```

Warning: You can also make insert with registry.IO.Importer directly

Run the import:

```
res = importer.run()
```

The result is a dict with:

- `error_found`: List the error, durring the import
- `created_entries`: Entries created by the import
- `updated_entries`: Entries updated by the import

Root structure of the XML file:

```
<records on_error="...">
  ...
</records>
```

raise can have the value:

- raise (dafault)
- ignore

records node can have:

- `commit`: commit the import, only if no error found
- `record`: import one record

Add a record:

```
<records>
  <record>
    ...
    <field name="..." />
    ...
  </record>
</records>
```

Record attribute:

- `model`: if not filled, then the importer will indicate the model
- `external_id`: Mapping key
- `param`: Mapping key only for the import (not save)
- **`on_error`:**
 - raise
 - ignore (default)
- **`if_exist`:**
 - overwrite (default)
 - create
 - pass: continue to the next record
 - continue: continue on the sub record without take this record
 - raise
- **`id_does_not_exist`:**
 - create (default)
 - pass

- raise

The field node represents a Field, a Column or Relationship, the attributes are:

- **name** (required): name of the field, column or relationship

Case of the relationship, they have some more attributes:

- **external_id**:
- **param**:
- **on_error**:
 - raise
 - ignore (default)
- **if_exist**:
 - overwrite (default)
 - create
 - pass: continue to the next record
 - continue: continue on the sub record without take this record
 - raise
- **id_does_not_exist**:
 - create (default)
 - pass
 - raise

Many2One and One2One declaration is directly in the field node:

```
<records
  <record
    ...
    <field name="Many2One or One2One">
      ...
      <field name="..." />
      ...
    </field>
    ...
  </record>
</records>
```

One2Many and Many2Many declarations are also in the field but with a record node:

```
<records
  <record
    ...
    <field name="Many2Many or One2Many">
      ...
      <record>
        ...
        <field name="..." />
        ...
      </record>
    ...
  </record>
  ...
</records>
```

(continues on next page)

(continued from previous page)

```

        </field>
        ...
    </record>
</records>

```

In the case of polymorphisme you may use the attribute model on record:

```

<records
  <record
    ...
    <field name="Many2Many or One2Many">
      ...
      <record model="`polymorphic model`">
        ...
        <field name="..." />
        ...
      </record>
      <record model="`another polymorphic model`">
        ...
        <field name="..." />
        ...
      </record>
      ...
    </field>
    ...
  </record>
</records>

```

3.3.3 API doc

exceptions

exception anyblok_io.bloks.io_xml.exceptions.**XMLImporterException**

Bases: anyblok_io.bloks.io.exceptions.ImporterException

Simple exception for XML importer

exception anyblok_io.bloks.io_xml.exceptions.**XMLExporterException**

Bases: anyblok_io.bloks.io.exceptions.ExporterException

Simple exception for XML exporter

importer

class anyblok_io.bloks.io_xml.importer.**Importer**

Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Importer
- Tablename: io_importer

class anyblok_io.bloks.io_xml.importer.**XML** (*importer, blokname=None*)

Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Importer.XML
- Tablename: io_importer_xml

exporter

class anyblok_io.bloks.io_xml.exporter.**Exporter**
Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Exporter
- Tablename: io_exporter

class anyblok_io.bloks.io_xml.exporter.**XML** (*exporter*)
Bases: object

AnyBlok registration:

- Type: Model
- Registry name: Model.IO.Exporter.XML
- Tablename: io_exporter_xml

4.1 1.2.0 (2021-8-16)

- Adapted to **AnyBlok** ≥ 1.2

4.2 1.1.1 (2020-10-16)

- Fixed the size of the fields **model**, because they have a foreign key to the model **Model.System.Model** on the field **name**. The next version of AnyBlok check that the size are the same

4.3 1.1.0 (2020-05-06)

- Removed **Python 3.4** capability
- Removed **Python 3.5** capability
- Refactored unittest, replaced nose by pytest
- Fixed #1 added hook to render primary key serializable

4.4 1.0.0 (2018-05-30)

- Cherry pick io bloks from AnyBlok distribution

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