



pyrestresource

User Manual

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status	active	doc	MkDocs	jenkins-unittest	passing	coverage	8.01	maintainability	A
quality score	8.40	licence	CC BY-NC-SA 4.0						

1. pyrestresource

A RESTful API library built on top of pydantic & uvicorn to make service API from a data model.

!\\ early in-progress project for internal use ATM.

Feel free to contribute.

Features (available): - type annotation used - support containers (dict) - support plugins (for hook and biding) - user auth - ACL - daemon mode

Features(planned): - group support - python internal model instance (with possible serialization/auto-save on-disk)

Limitations: - no nested reads / writes

Checkout [Latest Documentation](#).

2. Usage

2.1 Pulvinar dolor

Donec dapibus est fermentum justo volutpat condimentum. Integer quis nunc neque. Donec dictum vehicula justo, in facilisis ex tincidunt in. Vivamus sollicitudin sem dui, id mollis orci facilisis ut. Proin sed pulvinar dolor. Donec volutpat commodo urna imperdiet pulvinar. Fusce eget aliquam risus. Vivamus viverra luctus ex, in finibus mi. Nullam elementum dapibus mollis. Ut suscipit volutpat ex, quis feugiat lacus consectetur eu.

2.2 Condimentum faucibus

Quisque auctor egestas sem, luctus suscipit ex maximus vitae. Duis facilisis augue et condimentum faucibus. Donec cursus, enim a sagittis egestas, lectus lorem eleifend libero, at tincidunt leo magna at libero. Nunc eros velit, suscipit luctus tempor vel, finibus et est. Curabitur efficitur pretium pulvinar. Donec urna lectus, vulputate quis turpis sed, placerat congue urna. Phasellus aliquet fermentum quam, non auctor elit porta nec. Morbi eu ligula at nisl ultricies condimentum vitae id ante.

2.3 Aliquam lacinia

In volutpat lorem ex, et fringilla nibh faucibus quis. Mauris et arcu elementum, auctor dui vitae, egestas arcu. Duis sit amet aliquam quam. Phasellus a odio turpis. Etiam tristique mi eu enim varius, eget facilisis est vestibulum. Aliquam lacinia nec purus sed luctus. Cras at laoreet erat.

3. Reference

3.1 Pyrestresource

3.1.1 metadata

Metadata module module

Attributes

`__NAME__` MODULE-ATTRIBUTE

```
__Name__ = metadata['Name']
```

`__SUMMUARY__` MODULE-ATTRIBUTE

```
__Summuary__ = metadata['Summary']
```

`__VERSION__` MODULE-ATTRIBUTE

```
__version__ = version('pyrestresource')
```

`DIST` MODULE-ATTRIBUTE

```
dist = distribution('pyrestresource')
```

3.1.2 Helpers

Attributes

Functions

FORWARD_EXCEPTION

```
forward_exception(e: Exception, forward: bool) -> None
```

PARSE_DICT_COOKIES

```
parse_dict_cookies(cookies: str) -> dict[str, str | None]
```

3.1.3 rest ACL

Classes

ACL_RECORD

Bases: BaseModel

Attributes

rule instance-attribute

```
rule: ACL_rule
```

target instance-attribute

```
target: ACL_target
```

verbs instance-attribute

```
verbs: list[rsrc_verb]
```

ACL_RULE

Bases: Enum

Attributes

ALLOW class-attribute instance-attribute

```
ALLOW = auto()
```

DENY class-attribute instance-attribute

```
DENY = auto()
```

ACL_TARGET

Bases: BaseModel

ACL_TARGET_GROUP

Bases: ACL_target

Attributes

name instance-attribute

```
name: str
```

ACL_TARGET_GROUP_ANY

Bases: ACL_target_group

Attributes

name class-attribute instance-attribute

```
name: str = '__ANY__'
```

ACL_TARGET_USER

Bases: ACL_target

Attributes

name instance-attribute

```
name: str
```

Functions**from_user_login** classmethod

```
from_user_login(user_login: UserLogin) -> ACL_target_user
```

ACL_TARGET_USER_ANNONYMOUS**Bases:** ACL_target_user**Attributes****name** class-attribute instance-attribute

```
name: str = '__ANNONYMOUS__'
```

3.1.4 Rest exceptions

Classes

RESTRESOURCECONFIGEXCEPTION

Bases: `RestResourceException`

RESTRESOURCEEXCEPTION

Bases: `Exception`

RESTRESOURCEHANDLEREXCEPTION

Bases: `RestResourceException`

RESTRESOURCEHANDLEREXCEPTION_BADREQUEST

Bases: `RestResourceHandlerException`

RESTRESOURCEHANDLEREXCEPTION_FORBIDDEN

Bases: `RestResourceHandlerException`

RESTRESOURCEHANDLEREXCEPTION_METHODNOTALLOWED

Bases: `RestResourceHandlerException`

RESTRESOURCEHANDLEREXCEPTION_RESOURCENOTFOUND

Bases: `RestResourceHandlerException`

RESTRESOURCELOGINEXCEPTION

Bases: `RestResourceException`

RESTRESOURCELOGINEXCEPTION_CLIENTCHANGE

Bases: `RestResourceLoginException`

RESTRESOURCELOGINEXCEPTION_INVALIDCREDENTIALS

Bases: `RestResourceLoginException`

RESTRESOURCELOGINEXCEPTION_INVALIDSESSION

Bases: `RestResourceLoginException`

RESTRESOURCELOGINEXCEPTION_SESSIONTIMEOUT

Bases: `RestResourceLoginException`

RESTRESOURCEMODELEXCEPTION

Bases: `RestResourceException`

RESTRESOURCEMODELEXCEPTION_ACL

Bases: `RestResourceModelException`

RESTRESOURCEPLUGINEXCEPTION

Bases: `RestResourceException`

RESTRESOURCEPLUGINEXCEPTION_INVALIDPLUGINSIGNATURE

Bases: `RestResourcePluginException`

3.1.5 Rest login

CLI interface module

Classes

LOGIN

Bases: RestResourceBase

Attributes

secret `class-attribute` `instance-attribute`

```
secret: Optional[str] = RestField(None, exclude=True, ACL=[ACL_record(verbs=[PUT], target=ACL_target_group_Any(), rule=ALLOW), ACL_record(verbs=[GET], target=ACL_target_group_Any(), rule=DENY)])
```

username `class-attribute` `instance-attribute`

```
username: Optional[str] = RestField(None)
```

USERLOGIN

Bases: BaseModel

Attributes

secret `instance-attribute`

```
secret: str
```

username `instance-attribute`

```
username: str
```

USERSESSION

Bases: BaseModel

Attributes

client `instance-attribute`

```
client: tuple[str, int] | tuple[] | None
```

last_update `instance-attribute`

```
last_update: datetime
```

user_login `instance-attribute`

```
user_login: UserLogin
```

Functions

3.1.6 Rest model

Classes

Functions

RESTFIELD

```
RestField(default: Any = PydanticUndefined, *, default_factory: Callable[[], Any] | None = _Unset, alias: str | None = _Unset, alias_priority: int | None =
_Unset, validation_alias: str | 'AliasPath' | 'AliasChoices' | None = _Unset, serialization_alias: str | None = _Unset, title: str | None = _Unset,
description: str | None = _Unset, examples: 'list[Any] | None' = _Unset, exclude: bool | None = _Unset, discriminator: str | None = _Unset,
json_schema_extra: dict[str, Any] | Callable[[dict[str, Any]], None] | None = _Unset, frozen: bool | None = _Unset, validate_default: bool | None = _Unset,
repr: bool = _Unset, init_var: bool | None = _Unset, kw_only: bool | None = _Unset, pattern: str | None = _Unset, strict: bool | None = _Unset, gt: float |
None = _Unset, ge: float | None = _Unset, lt: float | None = _Unset, le: float | None = _Unset, multiple_of: float | None = _Unset, allow_inf_nan: bool |
None = _Unset, max_digits: int | None = _Unset, decimal_places: int | None = _Unset, min_length: int | None = _Unset, max_length: int | None = _Unset,
union_mode: Literal['smart', 'left_to_right'] = _Unset, ACL: list['ACL_record'] | None = _Unset, plugin: type['ResourcePlugin'] | None = _Unset, **extra:
Unpack[_EmptyKwargs]) -> Any
```

3.1.7 Rest request

A module to handle http requests context

Attributes

Classes

REQUESTFACTORY

Bases: `Generic[_T_RestRequestParams_POST, _T_RestRequestParams_DELETE, _T_RestRequestParams_GET, _T_RestRequestParams_PUT]`, `BaseModel`

RestRequets class factory

Attributes

`cls_RestRequestParams_DELETE` class-attribute instance-attribute

```
cls_RestRequestParams_DELETE: type[RestRequestParams_DELETE] = Field(default=RestRequestParams_DELETE)
```

`cls_RestRequestParams_GET` class-attribute instance-attribute

```
cls_RestRequestParams_GET: type[RestRequestParams_GET] = Field(default=RestRequestParams_GET)
```

`cls_RestRequestParams_POST` class-attribute instance-attribute

```
cls_RestRequestParams_POST: type[RestRequestParams_POST] = Field(default=RestRequestParams_POST)
```

`cls_RestRequestParams_PUT` class-attribute instance-attribute

```
cls_RestRequestParams_PUT: type[RestRequestParams_PUT] = Field(default=RestRequestParams_PUT)
```

Functions

`get_RestRequest`

```
get_RestRequest(root_resource: RestResourceBase, url: str, verb: rsrc_verb, data: dict, query_string: Optional[str] = None) -> RestRequest
```

get a RestRequets instance based on LUT_verb configuration

PARAMETER	DESCRIPTION
url	http url of the request TYPE: str
verb	http verb received TYPE: rsrc_verb
data	data associated with the request TYPE: dict

`update_RestRequest`

```
update_RestRequest(request: RestRequest) -> None
```

create an updated copy of a RestRequest object based on a different LUT_verb configuration Args: `origin_request`: the original request

RESTREQUEST

```
RestRequest(type_request_params: type[_T_RestRequestParams], root_resource: RestResourceBase, url: str, verb: rsrc_verb, data: Optional[dict[str, T_SupportedRESTFields]] = None, query_string: Optional[str] = None)
```

Bases: `Generic[_T_RestRequestParams]`

Main `RestRequests` class

class to handle a request context, that will be kept and updated while walking url parts

PARAMETER	DESCRIPTION
<code>type_request_params</code>	type of the request param TYPE: <code>type[_T_RestRequestParams]</code>
<code>url</code>	http url of the request TYPE: <code>str</code>
<code>verb</code>	http verb received TYPE: <code>rsrc_verb</code>
<code>data</code>	data associated with the request In this case, all other argument - but <code>type_request_params</code> - are ignored and inherited from the <code>origin_request</code> TYPE: <code>Optional[dict[str, T_SupportedRESTFields]]</code> DEFAULT: <code>None</code>
<code>query_string</code>	query arguments after url (eg: <code>?arg1=value1&arg2=value2 ...</code>) TYPE: <code>Optional[str]</code> DEFAULT: <code>None</code>

Attributes

`ReqParams` instance-attribute

```
ReqParams: _T_RestRequestParams = type_request_params()
```

`data` instance-attribute

```
data: dict = data
```

`groups` instance-attribute

```
groups: list[ACL_target_group] = []
```

`headers` instance-attribute

```
headers: dict[str, None | str | dict[str, None | str]] = {'host': None, 'cookie': {}}
```

`outgoing_cookie` instance-attribute

```
outgoing_cookie: dict[str, str] = {}
```

`result` instance-attribute

```
result: Optional[str] = None
```

`root_resource` instance-attribute

```
root_resource: RestResourceBase = root_resource
```

`url` instance-attribute

```
url: str = url
```

`url_stack` instance-attribute

```
url_stack: list[str]
```

`url_stack_index` instance-attribute

```
url_stack_index: int = 0
```

user instance-attribute

```
user: ACL_target_user = ACL_target_user_Annonymous()
```

verb instance-attribute

```
verb: rsrc_verb = verb
```

Functions

add_group

```
add_group(group: ACL_target_group)
```

consume_url_stack

```
consume_url_stack(count: int) -> list[str]
```

consume some url stack elements

PARAMETER	DESCRIPTION
count	number of element to consume
	TYPE: int

get_client

```
get_client() -> tuple[str, int] | tuple[]
```

get_cookie

```
get_cookie(key: str) -> str | None
```

get_data

```
get_data() -> dict
```

get the request data

get_host

```
get_host() -> str | dict[str, str] | None | None
```

get_req_params

```
get_req_params() -> _T_RestRequestParams
```

get extracted req_params

get_resource_origin

```
get_resource_origin(deepness: int = 0) -> str
```

get current or previous (consumed) resource in the url

PARAMETER	DESCRIPTION
deepness	backward amount
	TYPE: int DEFAULT: 0

get_result

```
get_result() -> Optional[str]
```

get_root_resource

```
get_root_resource() -> RestResourceBase
```

get_status

```
get_status() -> int
```

get_url

```
get_url() -> str
```

retrieve the raw url

get_url_stack

```
get_url_stack() -> list[str]
```

retrieve the current url stack

get_user

```
get_user()
```

get_verb

```
get_verb() -> rsrc_verb
```

get http request verb

reset_resp_cookie

```
reset_resp_cookie(key: str) -> None
```

reset_url_stack

```
reset_url_stack() -> None
```

set_client

```
set_client(client: tuple[str, int]) -> None
```

set_headers

```
set_headers(headers: list[Any]) -> None
```

set_resp_cookie_value

```
set_resp_cookie_value(key: str, value: str) -> None
```

set_resp_status

```
set_resp_status(status: int) -> None
```

set_result

```
set_result(result: str)
```

set_user

```
set_user(user: ACL_target_user)
```

update_ReqParams

```
update_ReqParams(type_request_params: type[_T_RestRequestParams])
```

Functions

3.1.8 Rest request opt

Classes

RESTREQUESTPARAMS

Bases: BaseModel

RESTREQUESTPARAMS_DELETE

Bases: RestRequestParams

RESTREQUESTPARAMS_DICT

Bases: RestRequestParams

RESTREQUESTPARAMS_DICT_DELETE

Bases: RestRequestParams_Dict, RestRequestParams_DELETE, Generic[_T_DictKey]

Attributes

API_key class-attribute instance-attribute

```
API_key: Optional[_T_DictKey] = None
```

RESTREQUESTPARAMS_DICT_GET

Bases: RestRequestParams_Dict, RestRequestParams_GET

RESTREQUESTPARAMS_DICT_POST

Bases: RestRequestParams_Dict, RestRequestParams_POST, Generic[_T_DictKey]

Attributes

API_key class-attribute instance-attribute

```
API_key: Optional[_T_DictKey] = None
```

RESTREQUESTPARAMS_DICT_ELEM_GET

Bases: RestRequestParams_Dict, RestRequestParams_GET

RESTREQUESTPARAMS_DICT_ELEM_PUT

Bases: RestRequestParams_Dict, RestRequestParams_GET

RESTREQUESTPARAMS_GET

Bases: RestRequestParams

RESTREQUESTPARAMS_POST

Bases: RestRequestParams

RESTREQUESTPARAMS_PUT

Bases: RestRequestParams

RESTREQUESTPARAMS_RESTRESOURCEBASE

Bases: RestRequestParams

RESTREQUESTPARAMS_RESTRESOURCEBASE_GET

Bases: RestRequestParams_GET, RestRequestParams_RestResourceBase

RESTREQUESTPARAMS_RESTRESOURCEBASE_PUT

Bases: RestRequestParams_PUT, RestRequestParams_RestResourceBase

3.1.9 Rest resource

Attributes

Classes

RESTRESOURCEBASE

Bases: ABC, BaseModel

Functions

`__call__` async

```
__call__(scope, receive, send) -> None
```

`check_acl_field`

```
check_acl_field(request: RestRequest, req_index: int = 0) -> None
```

Check ACL on requested field access

`check_acl_self`

```
check_acl_self(request: RestRequest, new_data: Optional[dict[str, T_SupportedRESTFields]]) -> None
```

Check ACL on requested field operation (involving checking sub-fields)

`process_request`

```
process_request(url: str, verb: rsrc_verb = rsrc_verb.GET, data_json: Optional[str] = None, query_string: Optional[str] = None, client: Optional[tuple[str, int]] = None, headers: Optional[list[Any]] = None, http_mode: bool = False) -> RestRequest
```

`read_body` async

```
read_body(receive)
```

Read and return the entire body from an incoming ASGI message.

`update`

```
update(**new_data)
```

Functions

3.1.10 Rest resource handler

Attributes

Classes

RESOURCEHANDLER

```
ResourceHandler(resource: _T_Resource, url: Optional[str] = None, verb: Optional[rsrc_verb] = None, data: Optional[dict] = None, query_string: Optional[str] = None, prev_handler: Optional[ResourceHandler] = None)
```

Bases: `ABC`, `Generic[_T_Resource, _T_RestRequestParams_POST, _T_RestRequestParams_DELETE, _T_RestRequestParams_GET, _T_RestRequestParams_PUT]`

Attributes

`next_handler` instance-attribute

```
next_handler: Optional[ResourceHandler] = None
```

`prev_handler` instance-attribute

```
prev_handler: Optional[ResourceHandler] = None
```

`req` instance-attribute

```
req: RestRequest
```

`resource` instance-attribute

```
resource: _T_Resource = resource
```

`saved_url` instance-attribute

```
saved_url: list[str] = []
```

Functions

`create_chained_handler` classmethod

```
create_chained_handler(other: ResourceHandler, resource: _T_Resource) -> Self
```

`get_request`

```
get_request() -> RestRequest
```

`process_verb`

```
process_verb() -> Optional[_T_Resource | T_DictKey | list[T_DictKey]]
```

`register_resource_handler` classmethod

```
register_resource_handler(other_cls) -> None
```

RESOURCEHANDLER_RESTRESOURCEBASE

```
ResourceHandler_RestResourceBase(resource: _T_Resource, url: Optional[str] = None, verb: Optional[rsrc_verb] = None, data: Optional[dict] = None, query_string: Optional[str] = None, prev_handler: Optional[ResourceHandler] = None)
```

Bases: `ResourceHandler[RestResourceBase, _T_RestRequestParams_POST, _T_RestRequestParams_DELETE, RestRequestParams_RestResourceBase_GET, RestRequestParams_RestResourceBase_PUT]`

RESOURCEHANDLER_DICT

```
ResourceHandler_dict(resource: _T_Resource, url: Optional[str] = None, verb: Optional[rsrc_verb] = None, data: Optional[dict] = None, query_string: Optional[str] = None, prev_handler: Optional[ResourceHandler] = None)
```

Bases: ResourceHandler[T_Dict, RestRequestParams_Dict_POST, RestRequestParams_Dict_DELETE, RestRequestParams_Dict_GET, _T_RestRequestParams_PUT]

RESOURCEHANDLER_DICT_ELEM

```
ResourceHandler_dict_elem(resource: _T_Resource, url: Optional[str] = None, verb: Optional[rsrc_verb] = None, data: Optional[dict] = None, query_string: Optional[str] = None, prev_handler: Optional[ResourceHandler] = None)
```

Bases: ResourceHandler[T_DictValues, _T_RestRequestParams_POST, _T_RestRequestParams_DELETE, RestRequestParams_RestResourceBase_GET, _T_RestRequestParams_PUT]

RESOURCEHANDLER_SIMPLE

```
ResourceHandler_simple(resource: _T_Resource, url: Optional[str] = None, verb: Optional[rsrc_verb] = None, data: Optional[dict] = None, query_string: Optional[str] = None, prev_handler: Optional[ResourceHandler] = None)
```

Bases: ResourceHandler[T_SupportedRESTFields, _T_RestRequestParams_POST, _T_RestRequestParams_DELETE, _T_RestRequestParams_GET, _T_RestRequestParams_PUT]

3.1.11 Rest resource login

Classes

RESTRESOURCEBASELOGIN

Bases: RestResourceBase

Attributes

login class-attribute instance-attribute

```
login: Login = RestField(default=Login(), plugin=ResourcePlugin_Login)
```

Functions

get_new_cookie_expiration_date

```
get_new_cookie_expiration_date() -> datetime
```

user_login

```
user_login(user_name: str, user_secret: str, request: RestRequest) -> str
```

Functions

3.1.12 Rest resource plugin

Attributes

Classes

RESOURCEPLUGIN

```
ResourcePlugin()
```

Bases: `ABC`

Attributes

`__request` instance-attribute

```
__request: RestRequest
```

`__root_resource` instance-attribute

```
__root_resource: RestResourceBase
```

Functions

`get_new_cookie_expiration_date`

```
get_new_cookie_expiration_date() -> datetime
```

`get_user_login`

```
get_user_login() -> str
```

`reset_resp_cookie`

```
reset_resp_cookie(key: str) -> None
```

`set_context`

```
set_context(request: RestRequest, root_resource: RestResourceBase) -> None
```

`set_resp_cookie_value`

```
set_resp_cookie_value(key: str, value: str) -> None
```

`set_resp_status`

```
set_resp_status(status: int) -> None
```

`user_login`

```
user_login(user_name: str, user_secret: str) -> str
```

RESOURCEPLUGIN_RESTRESOURCEBASE

```
ResourcePlugin_RestResourceBase()
```

Bases: `ResourcePlugin`, `Generic[TV_RestResourceBase]`

Functions

`handle_resource_get` abstractmethod

```
handle_resource_get(resource: TV_RestResourceBase, params: RestRequestParams_RestResourceBase_GET) -> TV_RestResourceBase
```

`handle_resource_put` abstractmethod

```
handle_resource_put(resource: TV_RestResourceBase, params: RestRequestParams_RestResourceBase_PUT) -> TV_RestResourceBase
```

RESOURCEPLUGIN_RESTRESOURCEBASE_DEFAULT

```
ResourcePlugin_RestResourceBase_default()
```

Bases: ResourcePlugin_RestResourceBase[TV_RestResourceBase]

default implementation of RestResourcePlugin_RestResourceBase

Functions

handle_resource_get

```
handle_resource_get(resource: TV_RestResourceBase, params: RestRequestParams_RestResourceBase_GET) -> TV_RestResourceBase
```

handle_resource_put

```
handle_resource_put(resource: TV_RestResourceBase, params: RestRequestParams_RestResourceBase_PUT) -> TV_RestResourceBase
```

RESOURCEPLUGIN_DICT

```
ResourcePlugin_dict()
```

Bases: ResourcePlugin, Generic[_T_DictKey, _T_DictValues]

Functions

handle_dict_delete abstractmethod

```
handle_dict_delete(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, params: RestRequestParams_Dict_DELETE[_T_DictKey]) -> None
```

handle_dict_delete_all abstractmethod

```
handle_dict_delete_all(resource_dict: dict[_T_DictKey, _T_DictValues], params: RestRequestParams_Dict_DELETE[_T_DictKey]) -> None
```

handle_dict_elem_get abstractmethod

```
handle_dict_elem_get(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, params: RestRequestParams_Dict_elem_GET) -> _T_DictValues
```

handle_dict_elem_put abstractmethod

```
handle_dict_elem_put(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, resource: _T_DictValues, params: RestRequestParams_Dict_elem_PUT) -> None
```

handle_dict_get_keys abstractmethod

```
handle_dict_get_keys(resource_dict: dict[_T_DictKey, _T_DictValues], params: RestRequestParams_Dict_GET) -> list[_T_DictKey]
```

handle_dict_post abstractmethod

```
handle_dict_post(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, resource: _T_DictValues, params: RestRequestParams_Dict_POST[_T_DictKey]) -> Optional[_T_DictKey]
```

RESOURCEPLUGIN_DICT_DEFAULT

```
ResourcePlugin_dict_default()
```

Bases: ResourcePlugin_dict[_T_DictKey, _T_DictValues]

default implementation of RestResourcePlugin_dict

Functions

handle_dict_delete

```
handle_dict_delete(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, params: RestRequestParams_Dict_DELETE[_T_DictKey]) -> None
```

handle_dict_delete_all

```
handle_dict_delete_all(resource_dict: dict[_T_DictKey, _T_DictValues], params: RestRequestParams_Dict_DELETE[_T_DictKey]) -> None
```

handle_dict_elem_get

```
handle_dict_elem_get(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, params: RestRequestParams_Dict_elem_GET) -> _T_DictValues
```

handle_dict_elem_put

```
handle_dict_elem_put(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, resource: _T_DictValues, params: RestRequestParams_Dict_elem_PUT) -> None
```

handle_dict_get_keys

```
handle_dict_get_keys(resource_dict: dict[_T_DictKey, _T_DictValues], params: RestRequestParams_Dict_GET) -> list[_T_DictKey]
```

handle_dict_post

```
handle_dict_post(resource_dict: dict[_T_DictKey, _T_DictValues], key: _T_DictKey, resource: _T_DictValues, params: RestRequestParams_Dict_POST[_T_DictKey]) -> Optional[_T_DictKey]
```

RESOURCEPLUGIN_FIELD

```
ResourcePlugin_field()
```

Bases: ResourcePlugin, Generic[TV_SupportedRESTFields]

Functions

handle_field_get abstractmethod

```
handle_field_get(resource: TV_SupportedRESTFields, params: RestRequestParams_GET) -> TV_SupportedRESTFields
```

handle_field_put abstractmethod

```
handle_field_put(resource: TV_SupportedRESTFields, params: RestRequestParams_PUT) -> TV_SupportedRESTFields
```

RESOURCEPLUGIN_FIELD_DEFAULT

```
ResourcePlugin_field_default()
```

Bases: ResourcePlugin_field[TV_SupportedRESTFields]

default implementation of RestResourcePlugin_simple

Functions

handle_field_get

```
handle_field_get(resource: TV_SupportedRESTFields, params: RestRequestParams_GET) -> TV_SupportedRESTFields
```

handle_field_put

```
handle_field_put(resource: TV_SupportedRESTFields, params: RestRequestParams_PUT) -> TV_SupportedRESTFields
```

3.1.13 Rest resource plugin login

Classes

RESOURCEPLUGIN_LOGIN

```
ResourcePlugin_Login()
```

Bases: ResourcePlugin_RestResourceBase_default

Attributes

ar_UserLogin class-attribute instance-attribute

```
ar_UserLogin: list[UserLogin] = []
```

Functions

handle_resource_get

```
handle_resource_get(resource: Login, params: RestRequestParams_RestResourceBase_GET) -> Login
```

handle_resource_put

```
handle_resource_put(resource: Login, params: RestRequestParams_RestResourceBase_PUT) -> Login
```

3.1.14 Rest resource rootpoint

Classes

RESTRESOURCEWALKER_ROOT__TREE_INIT

```
RestResourceWalker_Root__tree_init(resource: RestResourceBase | type[RestResourceBase])
```

Bases: RestResourceWalker_Root

Attributes

cls_RestResourceWalker_Sub class-attribute instance-attribute

```
cls_RestResourceWalker_Sub = [RestResourceWalker_Sub_T_Dict__tree_init, RestResourceWalker_Sub_RestFields__tree_init, RestResourceWalker_Sub_RestResourceBase__tree_init]
```

RESTRESOURCEWALKER_SUB_RESTFIELDS__TREE_INIT

```
RestResourceWalker_Sub_RestFields__tree_init(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: RestResourceWalker_Sub_RestFields

Functions

process

```
process() -> None
```

RESTRESOURCEWALKER_SUB_RESTRESOURCEBASE__TREE_INIT

```
RestResourceWalker_Sub_RestResourceBase__tree_init(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: RestResourceWalker_Sub_RestResourceBase

Functions

process

```
process() -> None
```

RESTRESOURCEWALKER_SUB_T_DICT__TREE_INIT

```
RestResourceWalker_Sub_T_Dict__tree_init(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: RestResourceWalker_Sub_T_Dict

Functions

process

```
process() -> None
```

Functions

REGISTER_REST_ROOTPOINT

```
register_rest_rootpoint(klass: type[RestResourceBase])
```

3.1.15 Rest resource walker

Attributes

TV_RESTRESOURCEWALKERFUTURERESULT MODULE-ATTRIBUTE

```
TV_RestResourceWalkerFutureResult = TypeVar('TV_RestResourceWalkerFutureResult')
```

Classes

RESTRESOURCEWALKERFUTURERESULT

```
RestResourceWalkerFutureResult(source: RestResourceWalker_Sub)
```

Bases: ABC, Generic[TV_RestResourceWalkerFutureResult]

Attributes

source instance-attribute

```
source: RestResourceWalker_Sub = source
```

Functions

chain_process_future

```
chain_process_future() -> Optional[TV_RestResourceWalkerFutureResult]
```

process_future abstractmethod

```
process_future(result: Optional[list[TV_RestResourceWalkerFutureResult]]) -> Optional[TV_RestResourceWalkerFutureResult]
```

RESTRESOURCEWALKER_ROOT

```
RestResourceWalker_Root(resource: RestResourceBase | type[RestResourceBase])
```

Attributes

cls_RestResourceWalker_Sub class-attribute instance-attribute

```
cls_RestResourceWalker_Sub: list[type[RestResourceWalker_Sub]] = [RestResourceWalker_Sub_T_Dict, RestResourceWalker_Sub_RestFields, RestResourceWalker_Sub_RestResourceBase]
```

resource instance-attribute

```
resource: type[RestResourceBase]
```

subwalker_argument instance-attribute

```
subwalker_argument: Any = None
```

Functions

process

```
process(argument: Optional[Any] = None, deep_limit: Optional[int] = None) -> Optional[TV_RestResourceWalkerFutureResult]
```

RESTRESOURCEWALKER_SUB

```
RestResourceWalker_Sub(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: ABC, Generic[TV_RestResourceWalkerFutureResult]

Attributes**annotation** instance-attribute

```
annotation: type[RestResourceBase]
```

argument instance-attribute

```
argument: Any = argument
```

cls_RestResourceWalkerFutureResult class-attribute instance-attribute

```
cls_RestResourceWalkerFutureResult: Optional[type[RestResourceWalkerFutureResult[TV_RestResourceWalkerFutureResult]]] = None
```

future_result instance-attribute

```
future_result: Optional[RestResourceWalkerFutureResult[TV_RestResourceWalkerFutureResult]] = None
```

future_results_subs instance-attribute

```
future_results_subs: Optional[list[RestResourceWalkerFutureResult[TV_RestResourceWalkerFutureResult]]] = None
```

optional instance-attribute

```
optional: bool
```

parent instance-attribute

```
parent: Optional[RestResourceWalker_Sub] = parent
```

resource instance-attribute

```
resource: FieldInfo | type[RestResourceBase] = resource
```

resource_name instance-attribute

```
resource_name: str = resource_name
```

subdatatype instance-attribute

```
subdatatype = get_args(annotation)
```

Functions**ProcessAnnotation** staticmethod

```
ProcessAnnotation(resource: FieldInfo | type[RestResourceBase]) -> tuple[type[Any], bool]
```

chain_process_future

```
chain_process_future() -> Optional[TV_RestResourceWalkerFutureResult]
```

check_type abstractmethod classmethod

```
check_type(resource: FieldInfo | type[RestResourceBase]) -> tuple[bool, type[Any], bool]
```

implementation interface to Factory. The factory will call this specialized method on each implementation to find a supported one.

collect_future_result

```
collect_future_result(process_future_result: Optional[RestResourceWalkerFutureResult[TV_RestResourceWalkerFutureResult]]) -> None
```

get classmethod

```
get(subs: list[type[RestResourceWalker_Sub]], resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, argument: Optional[Any] = None) -> Optional[RestResourceWalker_Sub]
```

`get_future` abstractmethod

```
get_future() -> Optional[RestResourceWalkerFutureResult]
```

`get_sub_resources`

```
get_sub_resources() -> list[tuple[str, FieldInfo]]
```

`process`

```
process()
```

RESTRESOURCEWALKER_SUB_RESTFIELDS

```
RestResourceWalker_Sub_RestFields(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None,
annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: `RestResourceWalker_Sub`

Functions

`check_type` classmethod

```
check_type(resource: FieldInfo | type[RestResourceBase]) -> tuple[bool, type[Any], bool]
```

`get_future`

```
get_future() -> Optional[RestResourceWalkerFutureResult]
```

RESTRESOURCEWALKER_SUB_RESTRESOURCEBASE

```
RestResourceWalker_Sub_RestResourceBase(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None,
annotation: Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: `RestResourceWalker_Sub`

Functions

`check_type` classmethod

```
check_type(resource: FieldInfo | type[RestResourceBase]) -> tuple[bool, type[Any], bool]
```

`get_future`

```
get_future() -> Optional[RestResourceWalkerFutureResult]
```

`get_sub_resources`

```
get_sub_resources() -> list[tuple[str, FieldInfo]]
```

RESTRESOURCEWALKER_SUB_T_DICT

```
RestResourceWalker_Sub_T_Dict(resource_name: str, resource: FieldInfo | type[RestResourceBase], parent: Optional[RestResourceWalker_Sub] = None, annotation:
Optional[type[RestResourceBase]] = None, _optional: Optional[bool] = None, argument: Optional[Any] = None)
```

Bases: `RestResourceWalker_Sub`

Functions

`check_type` classmethod

```
check_type(resource: FieldInfo | type[RestResourceBase]) -> tuple[bool, type[Any], bool]
```

`get_future`

```
get_future() -> Optional[RestResourceWalkerFutureResult]
```

`get_sub_resources`

```
get_sub_resources() -> list[tuple[str, FieldInfo]]
```

3.1.16 Rest types

Attributes

NONETYPE MODULE-ATTRIBUTE

```
NoneType = type(None)
```

TV_RESTRESOURCEBASE MODULE-ATTRIBUTE

```
TV_RestResourceBase = TypeVar('TV_RestResourceBase', bound='RestResourceBase')
```

TV_SUPPORTEDRESTFIELDS MODULE-ATTRIBUTE

```
TV_SupportedRESTFields = TypeVar('TV_SupportedRESTFields', UUID, str, int, float, bool, bytes, datetime, Path, IPv4Address, IPv4Network, NoneType)
```

T_ALLSUPPORTEDCONTAINERS MODULE-ATTRIBUTE

```
T_AllSupportedContainers = Union[T_Dict, 'RestResourceBase']
```

T_ALLSUPPORTEDFIELDS MODULE-ATTRIBUTE

```
T_AllSupportedFields = T_Dict | T_FieldValue
```

T_DICT MODULE-ATTRIBUTE

```
T_Dict = dict[T_DictKey, T_DictValues]
```

T_DICTKEY MODULE-ATTRIBUTE

```
T_DictKey = Union[UUID, str, int, float, bool, bytes, Path, IPv4Address, IPv4Network]
```

T_DICTVALUES MODULE-ATTRIBUTE

```
T_DictValues = T_FieldValue
```

T_FIELDVALUE MODULE-ATTRIBUTE

```
T_FieldValue = Union[T_SupportedRESTFields, 'RestResourceBase']
```

T_GEN_DICTKEYS MODULE-ATTRIBUTE

```
T_Gen_DictKeys: type = type(keys())
```

T_LISTINDEX MODULE-ATTRIBUTE

```
T_ListIndex = NewType('T_ListIndex', int)
```

T_LISTSIZE MODULE-ATTRIBUTE

```
T_ListSize = NewType('T_ListSize', int)
```

T_SUPPORTEDRESTFIELDS MODULE-ATTRIBUTE

```
T_SupportedRESTFields = Union[UUID, str, int, float, bool, bytes, datetime, Path, IPv4Address, IPv4Network, NoneType]
```

T_T_DICTKEY MODULE-ATTRIBUTE

```
T_T_DictKey = type[T_DictKey]
```

T_T_DICTVALUES MODULE-ATTRIBUTE

```
T_T_DictValues = type[T_DictValues]
```

T_T_FIELDVALUE MODULE-ATTRIBUTE

```
T_T_FieldValue = type[T_FieldValue]
```

Classes

RSRC_TYPE

Bases: `Enum`

Attributes

dict `class-attribute` `instance-attribute`

```
dict = auto()
```

field `class-attribute` `instance-attribute`

```
field = auto()
```

list `class-attribute` `instance-attribute`

```
list = auto()
```

resource `class-attribute` `instance-attribute`

```
resource = auto()
```

RSRC_VERB

Bases: `Enum`

Attributes

DELETE `class-attribute` `instance-attribute`

```
DELETE = auto()
```

GET `class-attribute` `instance-attribute`

```
GET = auto()
```

POST `class-attribute` `instance-attribute`

```
POST = auto()
```

PUT `class-attribute` `instance-attribute`

```
PUT = auto()
```