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# **cloudify-rest-client Documentation**

***Release 3.3.1***

**Gigaspaces**

December 14, 2015



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### What is it?

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This rest client provides access to the REST API exposed by a [Cloudify manager](#).



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## Basic Usage

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This client's API tries to be as consistent as possible when accessing different resource types. The example below will fetch the blueprints currently uploaded to the manager.

```
from cloudify_rest_client import CloudifyClient

client = CloudifyClient('http://MANAGER_HOST')
blueprints = client.blueprints.list()

for blueprint in blueprints:
    print blueprint.id
```

Contents:

### 2.1 Blueprints API

```
class cloudify_rest_client.blueprints.Blueprint (blueprint)
    Bases: dict
```

**id**

**Returns** The identifier of the blueprint.

**created\_at**

**Returns** Timestamp of blueprint creation.

**main\_file\_name**

**Returns** Blueprint main file name.

**plan**

Gets the plan the blueprint represents: nodes, relationships etc...

**Returns** The content of the blueprint.

**description**

Gets the description of the blueprint

**Returns** The description of the blueprint.

```
class cloudify_rest_client.blueprints.BlueprintsClient (api)
    Bases: object
```

**list** (\_include=None, \*\*kwargs)

Returns a list of currently stored blueprints.

**Parameters**

- **\_include** – List of fields to include in response.
- **kwargs** – Optional filter fields. For a list of available fields see the REST service's `models.BlueprintState.fields`

**Returns** Blueprints list.

**publish\_archive** (*archive\_location, blueprint\_id, blueprint\_filename=None*)

Publishes a blueprint archive to the Cloudify manager.

**Parameters**

- **archive\_location** – Path or Url to the archive file.
- **blueprint\_id** – Id of the uploaded blueprint.
- **blueprint\_filename** – The archive's main blueprint yaml filename.

**Returns** Created blueprint.

Archive file should contain a single directory in which there is a blueprint file named *blueprint\_filename* (if *blueprint\_filename* is None, this value will be passed to the REST service where a default value should be used). Blueprint ID parameter is available for specifying the blueprint's unique Id.

**upload** (*blueprint\_path, blueprint\_id*)

Uploads a blueprint to Cloudify's manager.

**Parameters**

- **blueprint\_path** – Main blueprint yaml file path.
- **blueprint\_id** – Id of the uploaded blueprint.

**Returns** Created blueprint.

Blueprint path should point to the main yaml file of the blueprint to be uploaded. Its containing folder will be packed to an archive and get uploaded to the manager. Blueprint ID parameter is available for specifying the blueprint's unique Id.

**get** (*blueprint\_id, \_include=None*)

Gets a blueprint by its id.

**Parameters**

- **blueprint\_id** – Blueprint's id to get.
- **\_include** – List of fields to include in response.

**Returns** The blueprint.

**delete** (*blueprint\_id*)

Deletes the blueprint whose id matches the provided blueprint id.

**Parameters** **blueprint\_id** – The id of the blueprint to be deleted.

**Returns** Deleted blueprint.

**download** (*blueprint\_id, output\_file=None*)

Downloads a previously uploaded blueprint from Cloudify's manager.

**Parameters**

- **blueprint\_id** – The Id of the blueprint to be downloaded.
- **output\_file** – The file path of the downloaded blueprint file (optional)



**Returns** The file path of the downloaded blueprint.

## 2.2 Client API

```
class cloudify_rest_client.client.StreamedResponse(response)
```

Bases: object

**headers**

**bytes\_stream**(*chunk\_size=8192*)

**lines\_stream**()

**close**()

```
class cloudify_rest_client.client.CloudifyClient(host='localhost', port=None, protocol='http', api_version='v2', headers=None, query_params=None, cert=None, trust_all=False)
```

Bases: object

Cloudify's management client.

## 2.3 Deployments API

```
class cloudify_rest_client.deployments.Deployment(deployment)
```

Bases: dict

Cloudify deployment.

**id**

**Returns** The identifier of the deployment.

**blueprint\_id**

**Returns** The identifier of the blueprint this deployment belongs to.

**workflows**

**Returns** The workflows of this deployment.

**inputs**

**Returns** The inputs provided on deployment creation.

**outputs**

**Returns** The outputs definition of this deployment.

```
class cloudify_rest_client.deployments.Workflow(workflow)
```

Bases: dict

**id**

**Returns** The workflow's id

**name**

**Returns** The workflow's name

**parameters**

**Returns** The workflow's parameters

**class** `cloudify_rest_client.deployments.DeploymentOutputs` (*outputs*)  
Bases: dict

**deployment\_id**  
Deployment Id the outputs belong to.

**outputs**  
Deployment outputs as dict.

**class** `cloudify_rest_client.deployments.DeploymentOutputsClient` (*api*)  
Bases: object

**get** (*deployment\_id*)  
Gets the outputs for the provided deployment's Id.

**Parameters** **deployment\_id** – Deployment Id to get outputs for.

**Returns** Outputs as dict.

**class** `cloudify_rest_client.deployments.DeploymentsClient` (*api*)  
Bases: object

**list** (*\_include=None, \*\*kwargs*)  
Returns a list of all deployments.

**Parameters**

- **\_include** – List of fields to include in response.
- **kwargs** – Optional filter fields. for a list of available fields see the REST service's models.Deployment.fields

**Returns** Deployments list.

**get** (*deployment\_id, \_include=None*)  
Returns a deployment by its id.

**Parameters**

- **deployment\_id** – Id of the deployment to get.
- **\_include** – List of fields to include in response.

**Returns** Deployment.

**create** (*blueprint\_id, deployment\_id, inputs=None*)  
Creates a new deployment for the provided blueprint id and deployment id.

**Parameters**

- **blueprint\_id** – Blueprint id to create a deployment of.
- **deployment\_id** – Deployment id of the new created deployment.
- **inputs** – Inputs dict for the deployment.

**Returns** The created deployment.

**delete** (*deployment\_id, ignore\_live\_nodes=False*)  
Deletes the deployment whose id matches the provided deployment id. By default, deployment with live nodes deletion is not allowed and this behavior can be changed using the `ignore_live_nodes` argument.

**Parameters**

- **deployment\_id** – The deployment's to be deleted id.

- **ignore\_live\_nodes** – Determines whether to ignore live nodes.

**Returns** The deleted deployment.

## 2.4 Deployment Modifications API

```
class cloudify_rest_client.deployment_modifications.DeploymentModificationNodeInstances (node_id)
    Bases: dict

    added_and_related
        List of added nodes and nodes that are related to them

    removed_and_related
        List of removed nodes and nodes that are related to them

    before_modification
        List of node instances with their state as it existed before the deployment modification started

    before_rollback
        If deployment modification was rolledback, this will be a list of node instances with their state as it existed
        before the deployment modification was rolledback

class cloudify_rest_client.deployment_modifications.DeploymentModification (modification)
    Bases: dict

    STARTED = 'started'

    FINISHED = 'finished'

    ROLLEDBACK = 'rolledback'

    id
        Deployment modification id

    status
        Deployment modification status

    deployment_id
        Deployment Id the outputs belong to.

    node_instances
        Dict containing added_and_related and remove_and_related node instances list

    modified_nodes
        Dict containing original modified nodes that started this modification

    created_at
        Deployment modification creation date

    ended_at
        Deployment modification end date

    context
        Dict containing context that has been attached to modification.

        This context has no predefined schema. Its structure can be whatever has been attached to the modification
        when it was started.

class cloudify_rest_client.deployment_modifications.DeploymentModificationsClient (api)
    Bases: object
```

**list** (*deployment\_id=None, \_include=None, \*\*kwargs*)

List deployment modifications

**Parameters**

- **deployment\_id** – The deployment id (optional)
- **kwargs** – Optional filter fields. for a list of available fields see the REST service's models.DeploymentModification.fields

**start** (*deployment\_id, nodes, context=None*)

Start deployment modification.

**Parameters**

- **deployment\_id** – The deployment id
- **nodes** – the nodes to modify

**Returns** DeploymentModification dict

**Return type** *DeploymentModification*

**get** (*modification\_id, \_include=None*)

Get deployment modification

**Parameters** **modification\_id** – The modification id

**finish** (*modification\_id*)

Finish deployment modification

**Parameters** **modification\_id** – The modification id

**rollback** (*modification\_id*)

Rollback deployment modification

**Parameters** **modification\_id** – The modification id

## 2.5 Events API

**class** `cloudify_rest_client.events.EventsClient` (*api*)

Bases: object

**get** (*execution\_id, from\_event=0, batch\_size=100, include\_logs=False*)

Returns event for the provided execution id.

**Parameters**

- **execution\_id** – Id of execution to get events for.
- **from\_event** – Index of first event to retrieve on pagination.
- **batch\_size** – Maximum number of events to retrieve per call.
- **include\_logs** – Whether to also get logs.

**Returns** Events list and total number of currently available events (tuple).

**list** (*include\_logs=False, message=None, from\_datetime=None, to\_datetime=None, \_include=None, \*\*kwargs*)

List events

**Parameters**

- **include\_logs** – Whether to also get logs.

- **message** – an expression used for wildcard search events by their message text
- **from\_datetime** – search for events later or equal to datetime
- **to\_datetime** – search for events earlier or equal to datetime
- **\_include** – return only an exclusive list of fields

**Returns** dict with 'metadata' and 'items' fields

## 2.6 Exceptions API

```
exception cloudify_rest_client.exceptions.CloudifyClientError (message,  
                                                                server_traceback=None,  
                                                                status_code=-1, er-  
                                                                ror_code=None)
```

Bases: `exceptions.Exception`

```
exception cloudify_rest_client.exceptions.DeploymentEnvironmentCreationInProgressError (message,  
                                                                                          server_tr  
                                                                                          status_co  
                                                                                          1,  
                                                                                          er-  
                                                                                          ror_code
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when there's attempt to execute a deployment workflow and deployment environment creation workflow execution is still running. In such a case, workflow execution should be retried after a reasonable time or after the execution of deployment environment creation workflow has terminated.

**ERROR\_CODE** = 'deployment\_environment\_creation\_in\_progress\_error'

```
exception cloudify_rest_client.exceptions.DeploymentEnvironmentCreationPendingError (message,  
                                                                                          server_traceb  
                                                                                          status_code=  
                                                                                          1,  
                                                                                          er-  
                                                                                          ror_code=No
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when there's attempt to execute a deployment workflow and deployment environment creation workflow execution is pending. In such a case, workflow execution should be retried after a reasonable time or after the execution of deployment environment creation workflow has terminated.

**ERROR\_CODE** = 'deployment\_environment\_creation\_pending\_error'

```
exception cloudify_rest_client.exceptions.IllegalExecutionParametersError (message,  
                                                                              server_traceback=None,  
                                                                              status_code=-  
                                                                              1,  
                                                                              er-  
                                                                              ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when an attempt to execute a workflow with wrong/missing parameters has been made.

**ERROR\_CODE** = 'illegal\_execution\_parameters\_error'

```
exception cloudify_rest_client.exceptions.NoSuchIncludeFieldError (message,  
                                                                    server_traceback=None,  
                                                                    status_code=-  
                                                                    1,          er-  
                                                                    ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when an `_include` query parameter contains a field which does not exist for the queried data model.

**ERROR\_CODE** = 'no\_such\_include\_field\_error'

```
exception cloudify_rest_client.exceptions.MissingRequiredDeploymentInputError (message,  
                                                                                server_traceback=None,  
                                                                                status_code=-  
                                                                                1,          er-  
                                                                                ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when a required deployment input was not specified on deployment creation.

**ERROR\_CODE** = 'missing\_required\_deployment\_input\_error'

```
exception cloudify_rest_client.exceptions.UnknownDeploymentInputError (message,  
                                                                        server_traceback=None,  
                                                                        status_code=-  
                                                                        1,          er-  
                                                                        ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when an unexpected input was specified on deployment creation.

**ERROR\_CODE** = 'unknown\_deployment\_input\_error'

```
exception cloudify_rest_client.exceptions.FunctionsEvaluationError (message,  
                                                                     server_traceback=None,  
                                                                     status_code=-  
                                                                     1,          er-  
                                                                     ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when function evaluation failed.

**ERROR\_CODE** = 'functions\_evaluation\_error'

```
exception cloudify_rest_client.exceptions.UnknownModificationStageError (message,  
                                                                           server_traceback=None,  
                                                                           status_code=-  
                                                                           1,          er-  
                                                                           ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when an unknown modification stage was provided.

**ERROR\_CODE** = 'unknown\_modification\_stage\_error'

```
exception cloudify_rest_client.exceptions.ExistingStartedDeploymentModificationError (message,  
                                                                                        server_trace-  
                                                                                        back=None,  
                                                                                        status_code=-  
                                                                                        1,          er-  
                                                                                        ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when a deployment modification start is attempted while another deployment modification is currently started

**ERROR\_CODE = 'existing\_started\_deployment\_modification\_error'**

```
exception cloudify_rest_client.exceptions.DeploymentModificationAlreadyEndedError (message,
                                                                                     server_traceback=
                                                                                     status_code=-
                                                                                     1,
                                                                                     er-
                                                                                     ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when a deployment modification finish/rollback is attempted on a deployment modification that has already been finished/rolledback

**ERROR\_CODE = 'deployment\_modification\_already\_ended\_error'**

```
exception cloudify_rest_client.exceptions.UserUnauthorizedError (message,
                                                                 server_traceback=None,
                                                                 status_code=-
                                                                 1,
                                                                 er-
                                                                 ror_code=None)
```

Bases: `cloudify_rest_client.exceptions.CloudifyClientError`

Raised when a call has been made to a secured resource with an unauthorized user (no credentials / bad credentials)

**ERROR\_CODE = 'unauthorized\_error'**

`cloudify_rest_client.exceptions.error`  
alias of `UserUnauthorizedError`

## 2.7 Executions API

**class** `cloudify_rest_client.executions.Execution` (*execution*)

Bases: `dict`

Cloudify workflow execution.

**id**

**Returns** The execution's id.

**deployment\_id**

**Returns** The deployment's id this execution is related to.

**status**

**Returns** The execution's status.

**error**

**Returns** The execution error in a case of failure, otherwise None.

**workflow\_id**

**Returns** The id of the workflow this execution represents.

**parameters**

**Returns** The execution's parameters

**is\_system\_workflow**

**Returns** True if the workflow executed is a system workflow, otherwise False

**created\_at**

**Returns** The execution creation time.

**class** `cloudify_rest_client.executions.ExecutionClient` (*api*)

Bases: `object`

**list** (*deployment\_id=None, include\_system\_workflows=False, \_include=None, \*\*kwargs*)

Returns a list of executions.

**Parameters**

- **deployment\_id** – Optional deployment id to get executions for.
- **\_include\_system\_workflows** – Include executions of system workflows
- **\_include** – List of fields to include in response.
- **kwargs** – Optional filter fields. For a list of available fields see the REST service's `models.Execution.fields`

**Returns** Executions list.

**get** (*execution\_id, \_include=None*)

Get execution by its id.

**Parameters**

- **execution\_id** – Id of the execution to get.
- **\_include** – List of fields to include in response.

**Returns** Execution.

**update** (*execution\_id, status, error=None*)

Update execution with the provided status and optional error.

**Parameters**

- **execution\_id** – Id of the execution to update.
- **status** – Updated execution status.
- **error** – Updated execution error (optional).

**Returns** Updated execution.

**start** (*deployment\_id, workflow\_id, parameters=None, allow\_custom\_parameters=False, force=False*)

Starts a deployment's workflow execution whose id is provided.

**Parameters**

- **deployment\_id** – The deployment's id to execute a workflow for.
- **workflow\_id** – The workflow to be executed id.
- **parameters** – Parameters for the workflow execution.
- **allow\_custom\_parameters** – Determines whether to allow parameters which weren't defined in the workflow parameters schema in the blueprint.
- **force** – Determines whether to force the execution of the workflow in a case where there's an already running execution for this deployment.



**Raises** `IllegalExecutionParametersError`

**Returns** The created execution.

**cancel** (*execution\_id*, *force=False*)

Cancels the execution which matches the provided execution id.

**Parameters**

- **execution\_id** – Id of the execution to cancel.
- **force** – Boolean describing whether to send a ‘cancel’ or a ‘force-cancel’ action # NOQA

**Returns** Cancelled execution.

## 2.8 Manager API

**class** `cloudify_rest_client.manager.ManagerClient` (*api*)

Bases: `object`

**get\_status** ()

**Returns** Cloudify’s management machine status.

**get\_version** ()

**Returns** Cloudify’s management machine version information.

**get\_context** (*\_include=None*)

Gets the context which was stored on management machine bootstrap. The context contains Cloudify specific information and Cloud provider specific information.

**Parameters** **\_include** – List of fields to include in response.

**Returns** Context stored in manager.

**create\_context** (*name*, *context*)

Creates context in Cloudify’s management machine. This method is usually invoked right after management machine bootstrap with relevant Cloudify and cloud provider context information.

**Parameters**

- **name** – Cloud provider name.
- **context** – Context as dict.

**Returns** Create context result.

**update\_context** (*name*, *context*)

Updates context in Cloudify’s management machine. The context is imperative for the manager to function properly, only use this method if you know exactly what you are doing. Note that if the provider context does not exist, this call will result with an error.

**Parameters**

- **name** – Cloud provider name.
- **context** – Context as dict.

**set\_global\_parallel\_executions\_limit** (*limit*)

Sets the global parallel executions limit (relevant only in transient deployment workers mode)

**Parameters** **limit** – the new (integer) limit for the global parallel executions limit. -1 means no limit.

## 2.9 Node Instances API

```
class cloudify_rest_client.node_instances.NodeInstance (node_instance)
    Bases: dict
    Cloudify node instance.

    id
        Returns The identifier of the node instance.

    node_id
        Returns The identifier of the node whom this is in instance of.

    relationships
        Returns The node instance relationships.

    host_id
        Returns The node instance host_id.

    deployment_id
        Returns The deployment id the node instance belongs to.

    runtime_properties
        Returns The runtime properties of the node instance.

    state
        Returns The current state of the node instance.

    version
        Returns The current version of the node instance (used for optimistic locking on update)

class cloudify_rest_client.node_instances.NodeInstancesClient (api)
    Bases: object

    get (node_instance_id, _include=None)
        Returns the node instance for the provided node instance id.

        Parameters
            • node_instance_id – The identifier of the node instance to get.
            • _include – List of fields to include in response.

        Returns The retrieved node instance.

    update (node_instance_id, state=None, runtime_properties=None, version=0)
        Update node instance with the provided state & runtime_properties.

        Parameters
            • node_instance_id – The identifier of the node instance to update.
            • state – The updated state.
            • runtime_properties – The updated runtime properties.
```

- **version** – Current version value of this node instance in Cloudify’s storage (used for optimistic locking).

**Returns** The updated node instance.

**list** (*deployment\_id=None, node\_name=None, node\_id=None, \_include=None, \*\*kwargs*)

Returns a list of node instances which belong to the deployment identified by the provided deployment id.

**Parameters**

- **deployment\_id** – Optional deployment id to list node instances for.
- **node\_name** – Optional node name to only fetch node instances with this name. The node\_name positional argument will be deprecated as of the next rest-client version. Use node\_id instead.
- **node\_id** – Equivalent to node\_name.
- **\_include** – List of fields to include in response.
- **kwargs** – Optional filter fields. for a list of available fields see the REST service’s models.DeploymentNodeInstance.fields

**Returns** Node instances.

**Return type** *list*

## 2.10 Nodes API

**class** `cloudify_rest_client.nodes.Node` (*node\_instance*)

Bases: `dict`

Cloudify node.

**id**

**Returns** The identifier of the node.

**deployment\_id**

**Returns** The deployment id the node belongs to.

**properties**

**Returns** The static properties of the node.

**operations**

**Returns** The node operations mapped to plugins.

**Return type** `dict`

**relationships**

**Returns** The node relationships with other nodes.

**Return type** *list*

**blueprint\_id**

**Returns** The id of the blueprint this node belongs to.

**Return type** `str`

**plugins**

**Returns** The plugins this node has operations mapped to.

**Return type** dict

**number\_of\_instances**

**Returns** The number of instances this node has.

**Return type** int

**planned\_number\_of\_instances**

**Returns** The planned number of instances this node has.

**Return type** int

**deploy\_number\_of\_instances**

**Returns** The number of instances this set for this node when the deployment was created.

**Return type** int

**host\_id**

**Returns** The id of the node instance which hosts this node.

**Return type** str

**type\_hierarchy**

**Returns** The type hierarchy of this node.

**Return type** *list*

**type**

**Returns** The type of this node.

**Return type** str

**class** `cloudify_rest_client.nodes.NodesClient` (*api*)

Bases: `object`

**list** (*deployment\_id=None, node\_id=None, \_include=None, \*\*kwargs*)

Returns a list of nodes which belong to the deployment identified by the provided deployment id.

**Parameters**

- **deployment\_id** – The deployment’s id to list nodes for.
- **node\_id** – If provided, returns only the requested node. This parameter is deprecated, use ‘id’ instead.
- **\_include** – List of fields to include in response.
- **kwargs** – Optional filter fields. for a list of available fields see the REST service’s models.DeploymentNode.fields

**Returns** Nodes.

**Return type** *list*

**get** (*deployment\_id, node\_id, \_include=None*)

Returns the node which belongs to the deployment identified by the provided deployment id .

**Parameters**

- **deployment\_id** – The deployment’s id of the node.
- **node\_id** – The node id.

- **\_include** – List of fields to include in response.

**Returns** Nodes.

**Return type** *Node*

## 2.11 Search API

**class** `cloudify_rest_client.search.SearchClient` (*api*)  
Bases: object

**run\_query** (*query*)  
Run the provided Elasticsearch query.

**Parameters** **query** – Elasticsearch query.

**Returns** Elasticsearch result hits.

## 2.12 Evaluate API

**class** `cloudify_rest_client.evaluate.EvaluatedFunctions` (*evaluated\_functions*)  
Bases: dict

Evaluated functions.

**deployment\_id**  
**Returns** The deployment id this request belongs to.

**payload**  
**Returns** The evaluation payload.

**class** `cloudify_rest_client.evaluate.EvaluateClient` (*api*)  
Bases: object

**functions** (*deployment\_id, context, payload*)  
Evaluate intrinsic functions in payload in respect to the provided context.

**Parameters**

- **deployment\_id** – The deployment's id of the node.
- **context** – The processing context (dict with optional self, source, target).
- **payload** – The payload to process.

**Returns** The payload with its intrinsic functions references evaluated.

**Return type** *EvaluatedFunctions*

## 2.13 Tokens API

**class** `cloudify_rest_client.tokens.Token` (*token*)  
Bases: dict

**value**  
**Returns** The value of the token.

**class** `cloudify_rest_client.tokens.TokensClient` (*api*)  
Bases: `object`

**get** ()  
Get an authentication token.

**Return type** *Token*

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