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# **Connect Reports SDK**

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# **Overview**

Connect Reports SDK provides a set of tools and resources that enables Vendors and Distributors to independently generate custom reports on the CloudBlue Connect platform.

Custom reports allows utilizing any report parameters specified via Connect Report SDK. Therefore, custom reports can provide any required information for export. Additionally, Connect Reports SDK can be used to generate several custom reports at once.

# Requirements

#### Python 3.6+

Make sure that you have a relevant environment to run the Python scripts. It is recommended to use **Python 3.6** or **above**.

#### **Connect CLI SDK**

Next, it is necessary to deploy Connect Command Line Interface. Refer to the Connect CLI GitHub project for more information.

#### **Python OpenAPI Client**

Install and deploy Connect Python OpenAPI Client. It is also recommended to familiarize yourself with the Python OpenAPI Client documentation.

# **Connect Reports Cookiecutter**

Furthermore, deploy Cookiecutter for Connect Reports to bootstrap your project and to simplify your test operations and GitHub integrations.

# **Report Parameters**

The following table introduces all available report parameter types, provides their examples and contains their overview. Place a required parameter within your **parameters** array from the **reports.json** file. Thereafter, code your specified parameter within the **entrypoint.py** file.

Туре	Example	Overview
"product"	{ "id":"product", "type":"product", "name":"Product list", "required":true, "description":"Select the products you want to include in report" },	This parameter type represents your product list. Use the provided example to include specified products to your report.

```
{
"id":"mkp",
""ar
                    "type":"marketplace",
"name":"Marketplaces",
                                                                           This parameter type defines your marketplaces.
"marketplace"
                                                                           Include specified marketplaces to your report by
                    "required":true,
                                                                           using this example.
                    "description": "Select the marketplaces
                    you want to include in report"
                    {
"id":"hub",
":"hub
                    "type":"hub",
"name":"Hubs",
                                                                           This parameter type represents your hub list.
"hub"
                                                                           Include selected hubs by using the provided
                    "required":true,
                                                                           example.
                    "description": "Select the hubs you want
                    to include in report"
                    {
"id":"date",
"'"date
                                                                           This parameter type is used to define your
                    "type":"date_range",
"name":"Report period",
                                                                           report date range. Specify your start date and
"date_range"
                                                                           end date by using this parameter type. Use the
                    "description": "Provide the time period
                                                                           provided example to include and specify your
                    to create the report", "required": true
                                                                           report date range.
                    }
                    "id":"date",
                    "type":"date",
"name":"date",
                                                                           This parameter type is used to specify your
"date"
                                                                           report date. Include a date parameter by
                    "required":true,
                                                                           following the provided example.
                    "description": "Select the date you
                    want"
                    },
                    "id":"object",
                    "type": "object",
                                                                           Use this parameter type to include a JSON
                    "name": "object",
"object"
                                                                           object.
                    "required":true,
                    "description": "give me a json object"
                    },
                    "type":"single_line",
"name":"Single line",
                                                                           Include a single line by using this particular
"single line"
                    "required":true,
                                                                           parameter type.
                    "description": "Tell me how you feel
                    today in 1 sentence"
```

```
"id":"rr_type",
"type":"checkbox",
"name":"Types of requests",
                                                                          This parameter type allows utilizing checkboxes.
                    "required":true,
                                                                          Thus, by using these checkboxes, you can
                    "description": "Select the type of
                                                                          include specific information within your report.
                    requests you want to include in
                    report",
                                                                          Define your checkboxes within the choices
                    "choices":[
"checkbox"
                                                                          array.
                    "value": "setup",
                                                                          The provided example showcases how to
                    "label": "Setup"
                                                                          include tier configuration requests and
                    },
                                                                          setup/update checkboxes to a report.
                    "value":"update",
"label":"Update"
                    {
"id":"rr_status",
"id":"rsica"
                    "type":"choice",
"name":"Request status",
                    "description": "Select the status of the
                    requests you want to include in
                    report",
                    "required":true,
                    "choices":[
                    "value":"tiers_setup",
                    "label":"Tier Setup"
                                                                          Include specified information to your report and
                                                                          filter out unwanted data via this parameter type
                                                                          and specified choices. Define your filters within
                    "value":"inquiring",
                                                                          the choices array.
"choice"
                    "label": "Inquiring"
                                                                          The provided example demonstrates how to
                                                                          include fulfillment requests and their available
                    "value":"pending",
                                                                          statuses as choices to a report.
                    "label": "Pending"
                    "value": "approved",
                    "label": "Approved"
                    },
                    "value": "failed",
                    "label": "Failed"
```

**Report Parameters** 

#### **Use Case**

The following steps represent Connect Reports SDK usage scenario that showcases custom report creation workflow. A new custom report will be generated by completing the provided steps. This custom report will contain subscriptions (assets) of defined product for specified time period.

# 1. Prepare a project skeleton

Prepare your project skeleton via the corresponding Cookiecutter command. Make sure that all of the following files are presented:

- \_\_init\_\_.py
- entrypoint.py
- readme.md
- template.xlsx

Provide a report spreadsheet template within the **template.xlsx** file. Specify your custom report description in the **readme.md** file. Leave your other files untouched for now.

# 2. Edit the Report file

Access the provided **reports.json** file and specify your new custom report within this file.

```
{
   "name": "Custom_Project",
   "readme file": "README.md",
   "version":"1.0.0",
   "language": "python",
   "reports":[
      {
         "name": "tutorial report",
         "readme_file":"reports/tutorial_report/Readme.md",
         "template": "reports/tutorial_report/template.xlsx",
         "start row":2,
         "start_col":1,
         "entrypoint": "reports.tutorial_report.entrypoint.generate",
         "audience":[
            "provider",
            "vendor"
         "report_spec":"1",
         "parameters":[
            {
               "id":"date",
               "type": "date_range",
                "name": "Report period",
                "description": "Provide the time period to create the report",
                "required":true
            },
            {
```

- Enter your custom report *name* within the **reports** array. In this scenario, a custom report with "tutorial\_report" name is created.
- Next, provide the path to your **readme** and **template** files. In this example, a custom report in the *tutorial\_report* folder is created .
- Specify start row and start column for your report via the "start\_row" and "start\_col" attributes.
- Provide your *entrypoint* as in the following example:

```
"entrypoint": "reports. {your_report_name}.entrypoint.generate"
```

- Define your Vendor and/or Distributor (Provider) audience for your report within the following **audience** array. In this scenario, both Distributors and Vendors are selected.
- Finally, place required report parameters in the **parameters** array. In this example, the *date range* and *product* parameters are presented.

### 3. Edit the Entrypoint file

Open your created **entrypoint.py** file and specify your **report generate** code within this file. Use the RQL client or string concatenation to successfully create an entrypoint file. In this example, the RQL client is used.

- Client: This client represents Connect OpenApi client instantiated with a valid token. Thus, it allows accessing the account from where the report is triggered. Refer to the Python OpenAPI Client documentation for more details.
- Parameters: The parameters contain your dictionary with all specified parameters and parameter values. In this example, date after/before and product parameters are presented.
- Progress\_Callback: Define the progress callback via this function. This function provides a mechanism to inform (either via Connect Portals or CLI) about the progress of your report generation.

# 4. Generate your report

Once all required information is provided and your code is ready, run the following command via the Connect CLI:

\$ ccli report execute tutorial\_report -d ./tutorial\_report

Thus, the tutorial report will be successfully generated. Furthermore, report results will be available via a generated **XLSX** file.