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# Extension Project



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Auto-generated at May 16, 2026

The following article provides instructions on how to bootstrap and deploy your DevOps extension project. This article showcases required CloudBlue Connect Command Line Interface (CLI) commands and demonstrates how to successfully configure your extension. Furthermore, the following outlines all tools and programs that are required to start working with your extension project.



#### Core EaaS Solution

Make sure to check out the Core EaaS repository that provides essential building blocks for developing your extensions. Its documentation also showcases how to work with different extension types and provides examples how to create various applications for Connect. Access this documentation by using the following link: **connect-eaas-core.readthedocs.io**

## Requirements

In order to bootstrap a new extension project, make sure to install the following tools and programs first:

- **Docker**  
Install Docker to run Python.
- **Poetry**  
Deploy the Poetry package manager and get familiar with its documentation.
- **Connect CLI**  
Connect CLI is an essential tool that allows you to bootstrap, test, and validate your extension project.
- Python (3.8, 3.9 or 3.10) is installed
- A CloudBlue Connect **vendor** account is created

## Getting Started

It is required to prepare your account and define a new extension object on Connect before starting to work with your extension. Specifically, it is required to define a new extension object and access required environment identifier via the DevOps module. Furthermore, use the following instructions to learn how to add your Connect account via the CLI tool.

## Prepare Your Vendor Account

First, it is required to generate an API token and add your vendor account via the CLI tool.

Create a new token by using the Connect interface:

- Navigate to **Integrations** and choose Tokens
- Click the **Create Token** button



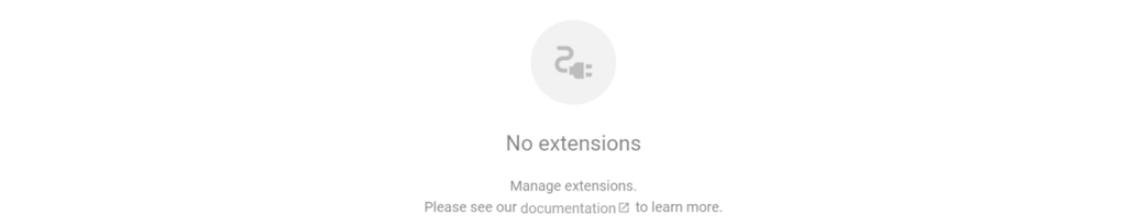
- Provide the name, description, and an optional external ID for your token
- Click **Next** and choose **Custom Integration** from the extension list
- Select the required permissions for your token, at least the **DevOps** option should be selected
- On the **Summary** screen, click **Go to details** to access your token details
- Click the copy icon to copy your token, open your terminal and run:

```
ccli account add "<your copied token>"
```

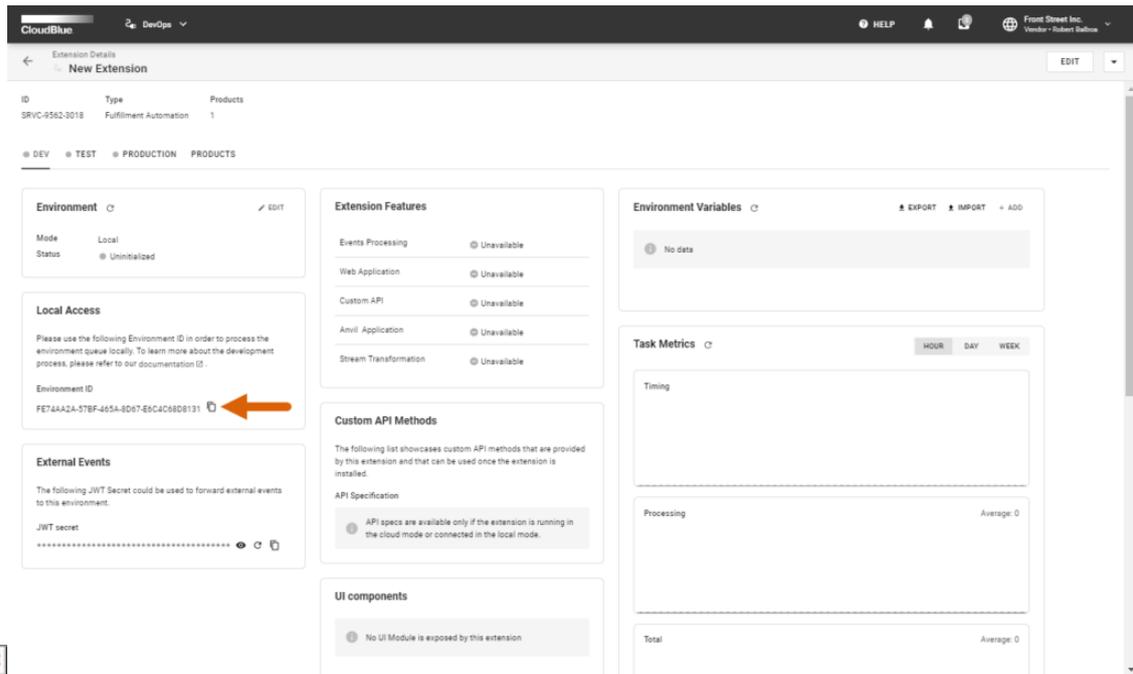
## Create an Extension in DevOps

Access the **DevOps** module to define your extension object on the CloudBlue Connect platform:

- Click the **Add Extension** button to start creating a new extension object
- Provide your extension name, choose at least one product, and click **Create**
- Click the **Open** button to access the details page of your extension
- Locate the **Local Access** widget and click on the copy button to copy your environment ID







## Bootstrap Your Extension

Once your required account is activated and your extension object is created on the Connect platform, you can bootstrap your extension project. Use the following Connect CLI command to start your project configuration:

```
ccli project extension bootstrap
```

Therefore, the CLI tool will prompt to configure your extension project. Get familiar with the provided introduction and click **Next** to continue.

The wizard provides the welcome screen and the following options to configure your extension:



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|  |   |
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| <ol style="list-style-type: none"><li>1. Introduction</li><li>2. Project: name</li><li>3. Project: root</li><li>4. Project: description</li><li>5. Project: version</li><li>6. Project: author</li><li>7. Project: license</li><li>8. Project: package</li><li>9. Project: asyncio</li><li>10. Project: CI</li><li>11. Config: API hostname</li><li>12. Config: API key</li><li>13. Config: environment ID</li><li>14. Extension: Extension type</li><li>15. Extension: Audience</li><li>16. Extension: Features</li><li>17. Extension: Events type</li><li>18. Extension: WebApp</li><li>19. Extension: Background events</li><li>20. Extension: Interactive events</li><li>21. Examples: variables</li><li>22. Summary</li></ol> | <p>Welcome to the Connect Extension Project Bootstrap utility.<br/>Using this utility multiple data will be collected in order to create a project skeleton for your Connect Extension. This skeleton will contain all needed things to start writing your code.</p> <p>For more information please visit <a href="https://connect.cloudblue.com/community/modules/devops">https://connect.cloudblue.com/community/modules/devops</a><br/>Have a nice trip!</p> |
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| <ol style="list-style-type: none"><li>1. Introduction</li><li>2. Project: name</li><li>3. Project: root</li><li>4. Project: description</li><li>5. Project: version</li><li>6. Project: author</li><li>7. Project: license</li><li>8. Project: package</li><li>9. Project: asyncio</li><li>10. Project: CI</li><li>11. Config: API hostname</li><li>12. Config: API key</li><li>13. Config: environment ID</li><li>14. Extension: Extension type</li><li>15. Extension: Audience</li><li>16. Extension: Features</li><li>17. Extension: Events type</li><li>18. Extension: WebApp</li><li>19. Extension: Background events</li><li>20. Extension: Interactive events</li><li>21. Examples: variables</li><li>22. Summary</li></ol> | <p>Enter a friendly name for your Extension:</p> <p>My Awesome Project</p> |
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|--|--|
| <ol style="list-style-type: none"><li>1. Introduction</li><li>2. Project: name</li><li>3. Project: root</li><li>4. Project: description</li><li>5. Project: version</li><li>6. Project: author</li><li>7. Project: license</li><li>8. Project: package</li><li>9. Project: asyncio</li><li>10. Project: CI</li><li>11. Config: API hostname</li><li>12. Config: API key</li><li>13. Config: environment ID</li><li>14. Extension: Extension type</li><li>15. Extension: Audience</li><li>16. Extension: Features</li><li>17. Extension: Events type</li><li>18. Extension: WebApp</li><li>19. Extension: Background events</li><li>20. Extension: Interactive events</li><li>21. Examples: variables</li><li>22. Summary</li></ol> | <p>Choose a name for the root folder of your Extension module.</p> <p>my_awesome_project</p> |
|--|--|

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Briefly describe your Extension:

Project description

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Introduce a version identifier for your Extension:

0.1.0

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Enter the name of the Extension author:

Globex Corporation

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16. Extension: Features  
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19. Extension: Background events  
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21. Examples: variables  
22. Summary

Choose a name for the root python package of your extension module. This must be a valid python identifier:

connect\_ext

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22. Summary

Do you want to develop your Extension using the Python asyncio library ?

No  
 Yes

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21. Examples: variables  
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If you plan to host the Extension code on GitHub, are you also planning to use GitHub actions as your continuous integration system ?

No  
 Yes

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| <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Project: name</li> <li>3. Project: root</li> <li>4. Project: description</li> <li>5. Project: version</li> <li>6. Project: author</li> <li>7. Project: license</li> <li>8. Project: package</li> <li>9. Project: asyncio</li> <li>10. Project: CI</li> <li>11. Config: API hostname</li> <li>12. Config: API key</li> <li>13. Config: environment ID</li> <li>14. Extension: Extension type</li> <li>15. Extension: Audience</li> <li>16. Extension: Features</li> <li>17. Extension: Events type</li> <li>18. Extension: WebApp</li> <li>19. Extension: Background events</li> <li>20. Extension: Interactive events</li> <li>21. Examples: variables</li> <li>22. Summary</li> </ol> | <p>Connect API hostname:</p> <p><input style="width: 90%;" type="text" value="api.connect.cloudblue.com"/></p> |
| <p>&lt; Next &gt; &lt; Back &gt; &lt; Cancel &gt;</p>   |  |



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| <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Project: name</li> <li>3. Project: root</li> <li>4. Project: description</li> <li>5. Project: version</li> <li>6. Project: author</li> <li>7. Project: license</li> <li>8. Project: package</li> <li>9. Project: asyncio</li> <li>10. Project: CI</li> <li>11. Config: API hostname</li> <li>12. Config: API key</li> <li>13. Config: environment ID</li> <li>14. Extension: Extension type</li> <li>15. Extension: Audience</li> <li>16. Extension: Features</li> <li>17. Extension: Events type</li> <li>18. Extension: WebApp</li> <li>19. Extension: Background events</li> <li>20. Extension: Interactive events</li> <li>21. Examples: variables</li> <li>22. Summary</li> </ol> | <p>Enter the API key that will be used to authenticate API calls to Connect:<br/>         The API key can be created within the integration module of <a href="#">Connect</a>.<br/>         It defaults to the current active CLI account.</p> <p><input style="width: 90%;" type="text"/></p> |
| <p>&lt; Next &gt; &lt; Back &gt; &lt; Cancel &gt;</p>   |  |



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| <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Project: name</li> <li>3. Project: root</li> <li>4. Project: description</li> <li>5. Project: version</li> <li>6. Project: author</li> <li>7. Project: license</li> <li>8. Project: package</li> <li>9. Project: asyncio</li> <li>10. Project: CI</li> <li>11. Config: API hostname</li> <li>12. Config: API key</li> <li>13. Config: environment ID</li> <li>14. Extension: Extension type</li> <li>15. Extension: Audience</li> <li>16. Extension: Features</li> <li>17. Extension: Events type</li> <li>18. Extension: WebApp</li> <li>19. Extension: Background events</li> <li>20. Extension: Interactive events</li> <li>21. Examples: variables</li> <li>22. Summary</li> </ol> | <p>Type of extension:</p> <p><input checked="" type="radio"/> Fulfillment Automation</p> <p><input type="radio"/> Multi-Account installation</p> |
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21. Examples: variables
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Which features do you want to support in your extension:

< All > < None >

- Events Processing
- Anvil Application

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21. Examples: variables
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Which types of event do you want to support in your extension:

< All > < None >

- Background Events
- Interactive Events
- Scheduled Event Example

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17. Extension: Events type
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20. Extension: Interactive events
21. Examples: variables
22. Summary

What types of backgroundevents do you want your Extension to process?

< All > < None >

- Subscription: Purchase Request
- Subscription: Change Request
- Subscription: Suspend Request
- Subscription: Resume Request
- Subscription: Cancel Request
- Subscription: Adjustment Request
- Tier Configuration: Setup Request
- Tier Configuration: Change Request
- Tier Configuration: Adjustment Request
- Usage: Reporting File
- Tier Account: Tier Account Request

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16. Extension: Features  
17. Extension: Events type  
18. Extension: WebApp  
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20. Extension: Interactive events  
21. Examples: variables  
22. Summary

What types of interactiveevents do you want your Extension to process?

< All > < None >

[\*] Subscription: Purchase Request Validation  
[\*] Subscription: Change Request Validation  
[\*] Tier Config: Setup Request Validation  
[\*] Tier Config: Change Request Validation  
[\*] Product: Product Action  
[\*] Product: Custom Event

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21. Examples: variables  
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Do you want to include an example of environment variables ?

No  
 Yes

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21. Examples: variables  
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Project  
Project Name: My Awesome Project - Package Name: connect\_ext  
Description: Project description  
Author: Globex Corporation  
Version: 0.1.0 - License: Apache Software License 2.0  
Use Github Actions: Yes - Use Asyncio: No

Config  
API Key: ApiKey SU-037-200-000:8d19ea069402743aef699bbf35da1d1447037000  
Environment ID: sss  
Server Address: api.cnct.info

Extension  
Type: Fulfillment Automation  
Events: Scheduled Event Example, Interactive Events, Background Events

Examples  
Variables: Yes

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- **Project name:** The extension name will be used for packaging metadata.
- **Project root:** The root folder with all the required files will be created after you finish running the wizard.

- **Project description:** The description will be used to generate a readme file and for packaging metadata.
- **Project version:** This initial version will be used for packaging metadata.
- **Project author:** The author name will be used for packaging metadata and to add a copyright header in each generated file.
- **Project package:** Select a package name for your extension. It must be a valid python identifier (e.g., *connect\_ext*).
- **Project asyncio:** Enable or disable the asynchronous library for your project. Note that it is possible to use only either *asynchronous* library or *synchronous* library. Your project will not be deployed in case it uses both libraries.
- **Project CI:** Enable or disable GitHub actions for your extension project.

Proceed with your extension project configuration as described below.

- **Config API hostname:** The wizard will propose to use the hostname of the Connect production environment by default.
- **Config API key:** The wizard will suggest using the same *Api Key* that is configured for your vendor account.
- **Config Environment ID:** Use your copied environment ID value from the **Local Access** widget of the details screen.
- **Extension Features:** Choose **Events Processing** to generate an **Events Application** class.
- **Event categories:** Select categories of events you want to handle.
- **Background events:** Choose the required background events.
- **Interactive events:** Choose interactive events you are interested in.
- **Environment variables:** If your extension should use environment variables, choose **yes** to generate example environment variables.
- **Summary:** Select **Create** and press **Enter** to generate your extension project.

## Run your extension locally

In order to run your extension locally, it is required to build a docker image for your extension.

Go to the generated project folder and run:

```
$ docker compose build
```

Then use the following command to execute your extension:

```
$ docker compose up <your_extension_slug>_dev
```

Now go to your extension details page in the Connect UI DevOps module and click the refresh button to see your extension up and running.



Advice

If you still use extensions built based on SDK version 1, it is highly recommended that you

migrate your data to an SDK2-based extension according to the instructions of this migration guide.