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# **docker-services-cli Documentation**

***Release 0.7.0***

**CERN**

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Python module to start external services needed to tests Invenio modules and applications.



## USER'S GUIDE

This part of the documentation will show you how to get started in using docker-services-cli.

### 1.1 Installation

Docker-Services-CLI can be installed from PyPI.

```
$ pip install docker-services-cli
```

### 1.2 Configuration

Configuration module.

Configuration values (e.g. service configuration) need to be set through environment variables. However, sane defaults are provided below.

The list of services to be configured is taken from SERVICES. Each one should contain a <SERVICE\_NAME>\_VERSION variable.

Service's version are treated slightly different:

- If the variable is not found in the environment, it will use the set default.
- If the variable is set with a version number (e.g. 10, 10.7) it will use said value.
- If the variable is set with a string point to one of the configured latests it will load the value of said latest and use it.

This means that the environment set/load logic will first set the default versions before loading a given service's version.

```
docker_services_cli.config.DOCKER_SERVICES_FILEPATH = 'docker-services.yml'
```

Docker services file default path.

```
docker_services_cli.config.ELASTICSEARCH = {'DEFAULT_VERSIONS':  
{ 'ELASTICSEARCH_7_LATEST': '7.10.2', 'ELASTICSEARCH_VERSION': 'ELASTICSEARCH_7_LATEST'}}
```

Elasticsearch service configuration.

```
docker_services_cli.config.MYSQL = {'CONTAINER_CONFIG_ENVIRONMENT_VARIABLES':  
{ 'MYSQL_DB': 'invenio', 'MYSQL_PASSWORD': 'invenio', 'MYSQL_ROOT_PASSWORD': 'invenio',  
'MYSQL_USER': 'invenio'}, 'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': { 'db':  
{ 'SQLALCHEMY_DATABASE_URI': 'mysql+pymysql://invenio:invenio@localhost:3306/invenio' }},  
'DEFAULT_VERSIONS': { 'MYSQL_5_LATEST': '5.7', 'MYSQL_8_LATEST': '8.1', 'MYSQL_VERSION':  
'MYSQL_8_LATEST'}}
```

MySQL service configuration.

```
docker_services_cli.config.OPENSEARCH = {'DEFAULT_VERSIONS': {'OPENSEARCH_1_LATEST':  
'1.3.5', 'OPENSEARCH_2_LATEST': '2.3.0'}, 'OPENSEARCH_VERSION': 'OPENSEARCH_2_LATEST'}
```

Opensearch service configuration.

```
docker_services_cli.config.POSTGRESQL = {'CONTAINER_CONFIG_ENVIRONMENT_VARIABLES':  
{'POSTGRESQL_DB': 'invenio', 'POSTGRESQL_PASSWORD': 'invenio', 'POSTGRESQL_USER':  
'invenio'}, 'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': {'db':  
{'SQLALCHEMY_DATABASE_URI':  
'postgresql+psycopg2://invenio:invenio@localhost:5432/invenio'}}}, 'DEFAULT_VERSIONS':  
{'POSTGRESQL_11_LATEST': '11.21', 'POSTGRESQL_12_LATEST': '12.16',  
'POSTGRESQL_13_LATEST': '13.12', 'POSTGRESQL_14_LATEST': '14.9', 'POSTGRESQL_15_LATEST':  
'15.4'}, 'POSTGRESQL_VERSION': 'POSTGRESQL_14_LATEST'}
```

Postgresql service configuration.

```
docker_services_cli.config.RABBITMQ = {'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES':  
{'mq': {'BROKER_URL': 'amqp://localhost:5672/'}}, 'DEFAULT_VERSIONS':  
{'RABBITMQ_3_LATEST': '3'}, 'RABBITMQ_VERSION': 'RABBITMQ_3_LATEST'}
```

RabbitMQ service configuration.

```
docker_services_cli.config.REDIS = {'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES':  
{'cache': {'CACHE_TYPE': 'redis'}, 'mq': {'BROKER_URL': 'redis://localhost:6379/0'}},  
'DEFAULT_VERSIONS': {'REDIS_6_LATEST': '6', 'REDIS_7_LATEST': '7'}, 'REDIS_VERSION':  
'REDIS_7_LATEST'}
```

Redis service configuration.

```
docker_services_cli.config.SERVICES = {'elasticsearch': {'DEFAULT_VERSIONS':  
{'ELASTICSEARCH_7_LATEST': '7.10.2'}, 'ELASTICSEARCH_VERSION': 'ELASTICSEARCH_7_LATEST'},  
'mysql': {'CONTAINER_CONFIG_ENVIRONMENT_VARIABLES': {'MYSQL_DB': 'invenio',  
'MYSQL_PASSWORD': 'invenio', 'MYSQL_ROOT_PASSWORD': 'invenio', 'MYSQL_USER': 'invenio'},  
'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': {'db': {'SQLALCHEMY_DATABASE_URI':  
'mysql+pymysql://invenio:invenio@localhost:3306/invenio'}}}, 'DEFAULT_VERSIONS':  
{'MYSQL_5_LATEST': '5.7', 'MYSQL_8_LATEST': '8.1'}, 'MYSQL_VERSION': 'MYSQL_8_LATEST'},  
'opensearch': {'DEFAULT_VERSIONS': {'OPENSEARCH_1_LATEST': '1.3.5',  
'OPENSEARCH_2_LATEST': '2.3.0'}, 'OPENSEARCH_VERSION': 'OPENSEARCH_2_LATEST'},  
'postgresql': {'CONTAINER_CONFIG_ENVIRONMENT_VARIABLES': {'POSTGRESQL_DB': 'invenio',  
'POSTGRESQL_PASSWORD': 'invenio', 'POSTGRESQL_USER': 'invenio'},  
'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': {'db': {'SQLALCHEMY_DATABASE_URI':  
'postgresql+psycopg2://invenio:invenio@localhost:5432/invenio'}}}, 'DEFAULT_VERSIONS':  
{'POSTGRESQL_11_LATEST': '11.21', 'POSTGRESQL_12_LATEST': '12.16',  
'POSTGRESQL_13_LATEST': '13.12', 'POSTGRESQL_14_LATEST': '14.9', 'POSTGRESQL_15_LATEST':  
'15.4'}, 'POSTGRESQL_VERSION': 'POSTGRESQL_14_LATEST'}, 'rabbitmq':  
{'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': {'mq': {'BROKER_URL':  
'amqp://localhost:5672/'}}, 'DEFAULT_VERSIONS': {'RABBITMQ_3_LATEST': '3'},  
'RABBITMQ_VERSION': 'RABBITMQ_3_LATEST'}, 'redis':  
{'CONTAINER_CONNECTION_ENVIRONMENT_VARIABLES': {'cache': {'CACHE_TYPE': 'redis'}, 'mq':  
{'BROKER_URL': 'redis://localhost:6379/0'}}, 'DEFAULT_VERSIONS': {'REDIS_6_LATEST': '6',  
'REDIS_7_LATEST': '7'}, 'REDIS_VERSION': 'REDIS_7_LATEST'}}
```

List of services to configure.



```
docker_services_cli.config.SERVICES_ALL_DEFAULT_VERSIONS = {'ELASTICSEARCH_7_LATEST':  
'7.10.2', 'MYSQL_5_LATEST': '5.7', 'MYSQL_8_LATEST': '8.1', 'OPENSEARCH_1_LATEST':  
'1.3.5', 'OPENSEARCH_2_LATEST': '2.3.0', 'POSTGRESQL_11_LATEST': '11.21',  
'POSTGRESQL_12_LATEST': '12.16', 'POSTGRESQL_13_LATEST': '13.12', 'POSTGRESQL_14_LATEST':  
'14.9', 'POSTGRESQL_15_LATEST': '15.4', 'RABBITMQ_3_LATEST': '3', 'REDIS_6_LATEST': '6',  
'REDIS_7_LATEST': '7'}
```

Services default latest versions.

```
docker_services_cli.config.SERVICE_TYPES = {'cache': ['redis'], 'db': ['mysql',  
'postgresql'], 'mq': ['rabbitmq', 'redis'], 'search': ['opensearch', 'elasticsearch']}
```

Types of offered services.

## 1.3 Usage

Module to ease the creation and management of services.

The specific version for the services can be set through environment variables

```
$ export OPENSEARCH_VERSION=2.3.0
```

It can also use the centrally managed (supported) major version:

```
$ export OPENSEARCH_VERSION=OPENSEARCH_2_LATEST
```

Then it simply needs to boot up the services. Note that if no version was exported in the environment, the CLI will use the default values set in `env.py`.

```
$ docker-services-cli up --search opensearch --db postgresql --cache redis
```

And turn them off once they are not needed anymore:

```
$ docker-services-cli down
```



## API REFERENCE

If you are looking for information on a specific function, class or method, this part of the documentation is for you.

### 2.1 API Docs

#### 2.1.1 CLI

CLI module.

**class** `docker_services_cli.cli.ServicesCtx(filepath, verbose)`

Context class for docker services cli.

Constructor.

`docker_services_cli.cli.env_output(env_set_command)`

Decorate command to print exportable environment settings.

`docker_services_cli.cli.services_by_type(func)`

Decorate command adding all service types as options.

**Parameters**

**func** – The function that implements the Click command to which the service types options will be added.

**Returns**

A wrapped function around the passed Click command which exposes all `config.SERVICES_TYPES` as Click options. The list of services by type is injected as `services` keyword argument.



## ADDITIONAL NOTES

Notes on how to contribute, legal information and changes are here for the interested.

### 3.1 Contributing

### 3.2 Changes

### 3.3 License

MIT License

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