CYPEX 2.1: Installation Guide

Build applications faster

Created by the
CYPEX development team

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Introduction

Welcome to CYPEX, a cutting edge tool which will improve software development and help you to build applications more quickly.

In this document you will learn how to get started with CYPEX and how to deploy the software in your infrastructure quickly and easily to ensure that you can get started quickly.

Getting started with CYPEX

Running CYPEX in your environment is easy. This section will give you an overview of how things work and how you can get started with CYPEX in no time. Please follow the steps outlined in this document to start your development process.

- Contact sales@cybertec.at for more information
- Get a license including login data
- Download CYPEX to the system
- Start the CYPEX infrastructure
- Deploy your first application

This document describes the process step by step.

Contact CYBERTEC for access

CYPEX is a product of CYBERTEC PostgreSQL International GmbH (www.cybertec-postgresql.com). To get access to our repositories contact sales@cybertec.at. Our team will issue login credentials to our repositories so that you can quickly and easily access our software.

In addition to login data you will receive a set of documentation as well as access to our worldwide support team. This includes:

- Logins to our application repository
- Access to the support ticket system
- Regular software updates

Get login data

CYPEX comes as a set of Docker containers. The following components are available:

- **CYPEX core infrastructure**
  - Containers to run CYPEX
- Pre-configured PostgreSQL
  - Useful in case you don't want to access external databases
  - Features all extensions including PostGIS, etc.
- Test containers with LDAP
  - For testing Single-Sign on easily

The CYPEX core infrastructure is mandatory. However, you can use CYPEX in two ways:

- Use existing PostgreSQL databases
- Use PostgreSQL as shipped with CYPEX

Both options are available. If you are using CYPEX to deploy single applications it can come in handy to use the ready-to-use database container provided by CYBERTEC. It allows you to get started quickly.

If you are running PostgreSQL in your infrastructure already you can use CYPEX to connect to an existing database. In this case we require **PostgreSQL version 13 or higher**.

Once you have received access to our Github repositories you can move forward and install CYPEX.

Download CYPEX

Once you have received access to CYPEX from our sales team here at CYBERTEC (sales@cybertec.at) you can proceed with the installation.

Requirements

Before processing with the installation make sure the following system requirements are met.

CYPEX is distributed as a set of Docker images that are brought up by Docker Compose.

- `docker`
- `docker-compose` (`>= 1.27.0`)
- `git` (`>= 2.20.1`)
- `bash` (`>= 4.0`)

Proceeding with the download

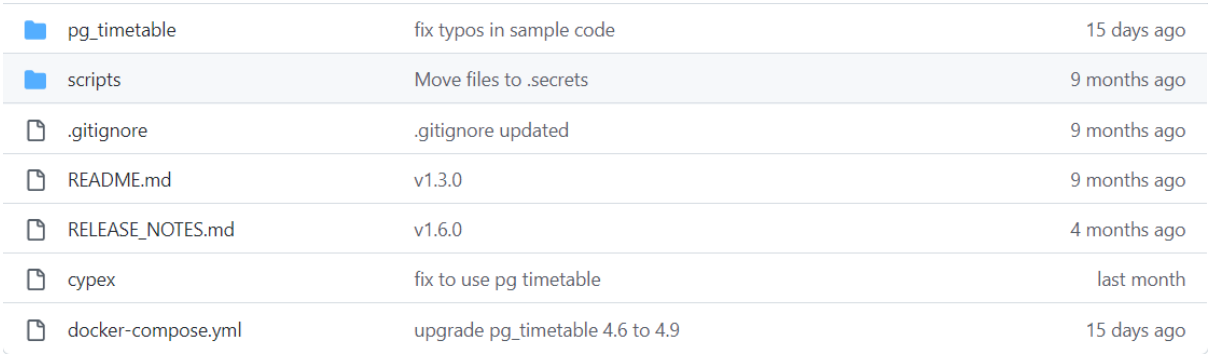
Use the following link to access our Git repository:

https://github.com/cybertec-postgresql/cybertec_cypex

Simply clone the repository to get a copy of CYPEX. Note that it is not possible anymore to use a simple user / password authentication mechanism on Github. Therefore you have to have a PAT (Personal access token). Make that you create a token for yourself.

The following website explains how this can be done:
https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/creating-a-personal-access-token

The repository will contain a set of scripts which will help you to deploy CYPEX by automating access to DockerHub:



pg_timetable	fix typos in sample code	15 days ago
scripts	Move files to .secrets	9 months ago
.gitignore	.gitignore updated	9 months ago
README.md	v1.3.0	9 months ago
RELEASE_NOTES.md	v1.6.0	4 months ago
cypex	fix to use pg timetable	last month
docker-compose.yml	upgrade pg_timetable 4.6 to 4.9	15 days ago

Once you have access to Github there are three ways to clone the repository:

Using HTTPS

To download via HTTPS use the following instruction:

```
git clone
https://github.com/cybertec-postgresql/cybertec_cypex.git
```

Using SSH

If you prefer SSH consider the following command:

```
git clone git@github.com:cybertec-postgresql/cybertec_cypex.git
```

Using the GitHub CLI

Alternatively you can make use of the GitHub CLI which works as follows:

```
GitHub CLI      gh repo clone cybertec-postgresql/cybertec_cypex
```

Checking your local copy

Cloning the repositories will download all those files onto your local machine as shown in the image below:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ git clone https://github.com/cybertec-postgresql/cybertec_cypex.git .
Cloning into '.'...
Username for 'https://github.com': biacsics
Password for 'https://biacsics@github.com':
remote: Enumerating objects: 398, done.
remote: Counting objects: 100% (183/183), done.
remote: Compressing objects: 100% (91/91), done.
remote: Total 398 (delta 122), reused 126 (delta 92), pack-reused 215
Receiving objects: 100% (398/398), 83.78 KiB | 2.09 MiB/s, done.
Resolving deltas: 100% (202/202), done.
```

Once this is done you will find a couple of files which will be needed for the next steps:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ dir -l
total 44
-rwxr-xr-x 1 cypex cypex 20078 Oct 11 09:25 cypex
-rw-r--r-- 1 cypex cypex  2686 Oct 11 09:25 docker-compose.yml
drwxr-xr-x 3 cypex cypex  4096 Oct 11 09:25 pg_timetable
-rw-r--r-- 1 cypex cypex  1139 Oct 11 09:25 README.md
-rw-r--r-- 1 cypex cypex  4329 Oct 11 09:25 RELEASE_NOTES.md
drwxr-xr-x 2 cypex cypex  4096 Oct 11 09:25 scripts
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

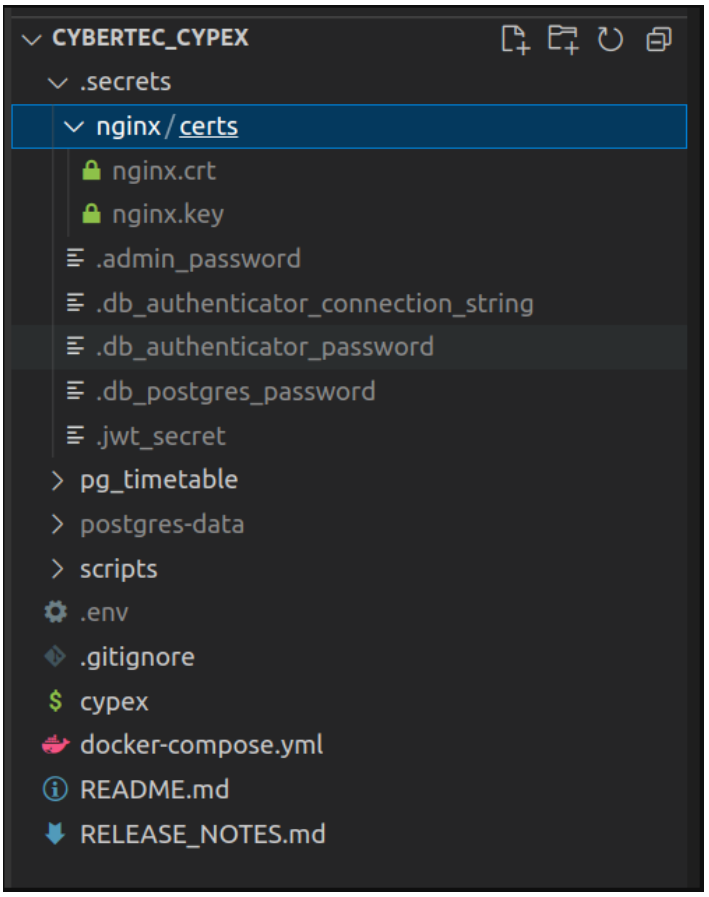
Congratulations. You have successfully cloned the CYPEX repository. You can now continue with the installation process and configure the infrastructure.

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex configure
./cypex configure
Do you want to install Cypex with an existing database?
Enter [y/n]: n
[OK] Successful Configuration
[INFO] Run './cypex install' to complete setup
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

CYPEX can be used with external or internal databases. If you want to test CYPEX using the container shipped by us is totally fine and allows you to test easily without worrying about integration.

If you want to build an application for an existing database you have to configure an external database and use that one.

By running `./cypex configure` the system has created the `.secrets` directory. It contains the password files as well as the nginx/certs directory which contains the server side certificates. To update those certificates replace them with new ones with the same name:



Once we have made our choice we can run `./cypex install`. This command will pull the necessary containers from the web:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex install
./cypex install
Pulling cypex_data_api ... done
Pulling cypex_database ... extracting (1.1%)
Pulling cypex_api      ... waiting
Pulling cypex_gui      ... waiting
Pulling pg_timetable   ... done
```

In case this is successful all the status information should show “done”:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex install
./cypex install
Pulling cypex_data_api ... done
Pulling cypex_database ... done
Pulling cypex_api      ... done
Pulling cypex_gui      ... done
Pulling pg_timetable   ... done
[INFO] Run './cypex up' to start Cypex
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

Start the infrastructure

Finally we can start CYPEX. The infrastructure will create an admin user inside CYPEX, generate a password and display it on the screen:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex up
./cypex up
Creating network "cypex_default" with the default driver
Creating cypex_cypex_database_1 ... done
the setup will be deployed now
Waiting for cypex_database...
Creating cypex_cypex_api_1 ... done
cypex_cypex_api_1 is up-to-date
cypex_cypex_database_1 is up-to-date
Creating cypex_cypex_data_api_1 ... done
Creating cypex_pg_timetable_1   ... done
Creating cypex_cypex_gui_1      ... done
[OK] Started on 'http://172.24.5.220'
[OK] The cypex admin user:  admin
[OK] The cypex admin user password: ZKwVxNosK6gbLeT9KIaZ65HDY6lrqFn3qSrMV43I44
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

Please remember this password. It is essential. Otherwise you cannot log into the system and it cannot be recovered for security reasons.

Optionally you can also deploy CYPEX extensions. However, this is only needed in case you want to use extensions later on:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex install-extensions
./cypex install-extensions
installing cypex extensions...
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

Summary

Let us sum up what we have just done in a single picture representing the entire installation process:

```
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ git clone https://github.com/cybertec-postgresql/cybertec_cypex.git .
git clone https://github.com/cybertec-postgresql/cybertec_cypex.git .
Cloning into '.'...
Username for 'https://github.com': biacsics
Password for 'https://biacsics@github.com':
remote: Enumerating objects: 408, done.
remote: Counting objects: 100% (193/193), done.
remote: Compressing objects: 100% (100/100), done.
remote: Total 408 (delta 128), reused 130 (delta 93), pack-reused 215
Receiving objects: 100% (408/408), 85.21 KiB | 1.98 MiB/s, done.
Resolving deltas: 100% (208/208), done.
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex configure
./cypex configure
Do you want to install Cypex with an existing database?
Enter [y/n]: n
[OK] Successful Configuration
[INFO] Run './cypex install' to complete setup
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex install
./cypex install
Pulling cypex_data_api ... done
Pulling cypex_database ... done
Pulling cypex_api      ... done
Pulling cypex_gui      ... done
Pulling pg_timetable   ... done
[INFO] Run './cypex up' to start Cypex
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex up
./cypex up
Creating network "cypex_default" with the default driver
Creating cypex_cypex_database_1 ... done
the setup will be deployed now
Waiting for cypex_database...
Creating cypex_cypex_api_1 ... done
cypex_cypex_database_1 is up-to-date
cypex_cypex_api_1 is up-to-date
Creating cypex_pg_timetable_1   ... done
Creating cypex_cypex_data_api_1 ... done
Creating cypex_cypex_gui_1      ... done
[OK] Started on 'http://172.24.5.220'
[OK] The cypex admin user:  admin
[OK] The cypex admin user password: VB9bKxaB8TeSdO13febVDHDMCvIwIi7XJv9gSUuC0
cypex@LAPTOP-RFD3JM7E:~/CYPEX$ ./cypex install-extensions
./cypex install-extensions
installing cypex extensions...
cypex@LAPTOP-RFD3JM7E:~/CYPEX$
```

First login

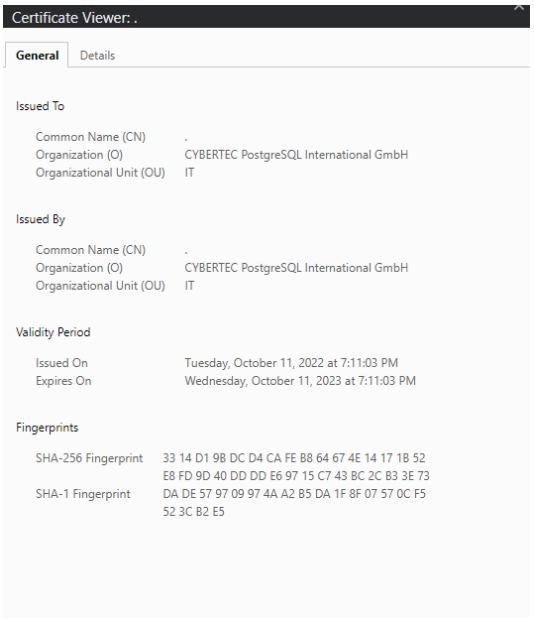
The installation script provides you with an URL indicating where to log into the system. Use the login data provided by the installer to log into the graphical user interface provided by CYPEX.

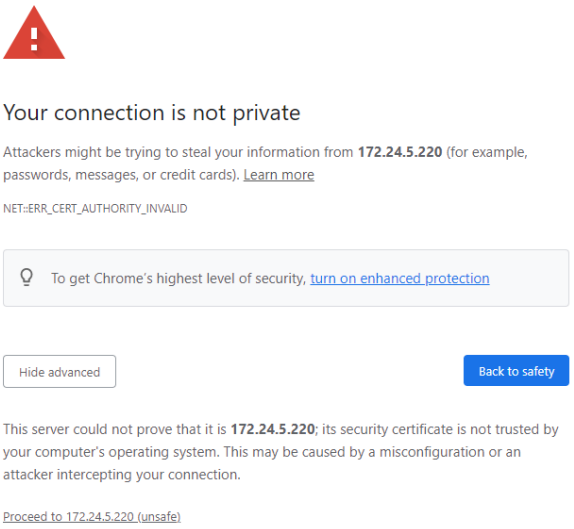
The following screen will open allowing you to get started quickly.

Handling certificates and browser security

It might happen that your browser complains about security related issues. Note that this is NOT a CYPEX deficiency but a necessary security precaution made by browsers which fancy secure communication these days.

Open your browser configuration and take a look at the following site: Note that in case the error pops up the certificate is not right as shown in the next listing:

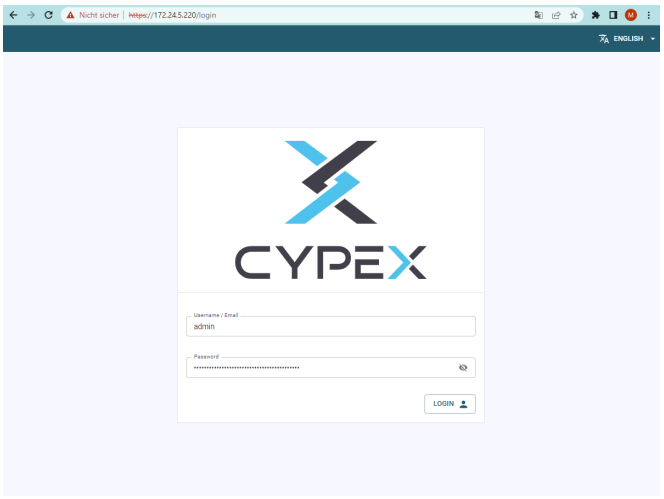


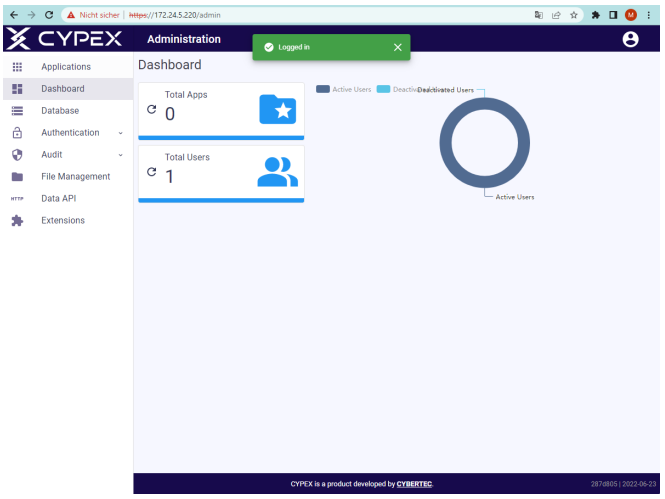


Fixing this problem can be done by replacing the certificates on the server (see above) during the installation process. Make sure that you have valid certificates in place.
Your IT department will be aware of those requirements.

Alternatively you can set certificates in your browser. However, in a large scale organization this is usually not feasible. Still, it is a good option often used for testing purposes.

Once your certificates are set you will see the login screen without security warnings:





Getting help and support

Thank you for using CYPEX.
If you need more information or if you are facing issues consider reaching out to our team:

More information:	sales@cybertec.at
Defects and bugs:	support@cybertec.at

Further reading

To learn more about CYPEX consider checking out the ...

- Official documentation
- Official videos tutorials

Those resources will provide you with all the information needed to build more powerful applications.

Recommend us

We are looking forward to your feedback and we are working hard to improve the product to satisfy your needs.

Please recommend us further.

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