

# Cacoo Enterprise Installation Manual

Nulab, Inc.  
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# Update History

| Version | Date             | Changes  |
|---------|------------------|--|
| 1       | March 30, 2011   | First edition  |
| 2       | March 31, 2011   | SSL+Reverse Proxy settings, Additional notes for SMTPAuth  |
| 3       | January 23, 2012 | Added description about wkhtmltoimage<br>Added description about creating custom stencils and managing samples |
| 4       | January 17, 2013 | Updated to the newest version<br>Updated OS and other software versions for installation examples              |
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| 14      | Nov 8, 2018      | Updated to the latest(14) version  |

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# System Requirements

## Server - Hardware

|           |   |
|-----------|---|
| CPU       | 3GHz or above   |
| Memory    | 16GB or above   |
| Hard disk | 500GB or above<br>To save one diagram, usually the following will be required: <ul style="list-style-type: none"><li>- 5MB per diagram</li><li>- 0.5MB per saving a diagram to record history</li></ul> |

## Server - Software

|             |   |
|-------------|---|
| OS          | Linux (RHEL 7 or CentOS 7 or above)   |
| AWS CLI     | 1.14 or above   |
| Docker      | 17.09.1 or above  |
| Database    | PostgreSQL 9.5 or above   |
| SMTP Server | SMTP server<br>Sendmail, which comes with Red Hat Enterprise Linux or CentOS by default, can be used. |
| Font        | Selected languages' fonts (used for creating PDF file on the server)                                  |

## Client

### HTML5 version

|         |   |
|---------|---|
| OS      | Windows 7+ or Mac OS X  |
| Browser | Microsoft Edge (After Creators Update)<br>Safari 10.1 or older<br>Mozilla Firefox |

|             |   |
|-------------|---|
|             | Google Chrome   |
| FlashPlayer | FlashPlayer 11.2 or above<br>(only for detecting installed fonts) |

## Flash version

|             |   |
|-------------|---|
| OS          | Windows or Mac OS X                       |
| Browser     | IE, FireFox, Safari (only on Mac), Chrome |
| FlashPlayer | FlashPlayer 11.2 or above                 |

# Contents of package

|                                 |  |
|---------------------------------|--|
| cacoo-docker/.env               | Cacoo environment configuration file   |
| cacoo-docker/docker-compose.yml | Cacoo environment Docker file          |
| database/*.sql                  | SQL for creating database              |
| blazeds_patch.zip               | Patch for BlazeDS revision file        |
| update/*.sql                    | SQL for updating from previous version |

## Example of extraction package

```
# mkdir /root/temp
# unzip cacoo-enterprise-2.02.zip -d /root/temp/
```

# Preparation

Please install the modules listed under System Requirements: Server - Software.

- PostgreSQL
- SMTP Server
- AWS CLI
- Docker
- Font

Installation method varies depending on the environment. The example below shows when the modules are installed on CentOS 7.4(x86\_64) by **root** user. The destination of download is set along with CentOS 7.4(x86\_64) but it needs to be adjusted depending on your environment (OS version/CPU). Also the URL could be changed and you might not be able to refer. In that case, please update the URL published. Change the settings, such as memory size, depending on your server's spec.

## Example of installing PostgreSQL

Install pgdg repository to install with yum.

```
# yum install -y
https://download.postgresql.org/pub/repos/yum/9.5/redhat/rhel-7-x86_64/pgdg-centos95-9.5-3.noarch.rpm
```

Install PostgreSQL with yum.

```
# yum install -y postgresql95-server postgresql95
```

### Note: About PostgreSQL version

We checked that Cacao works with PostgreSQL 9.5 or above. For backup and other purposes, we recommend you to use the latest but below PostgreSQL 9.6 version.

Initialize database.

```
# /usr/pgsql-9.5/bin/postgresql95-setup initdb
```

Change local connection's authentication setting.

```
# vi /var/lib/pgsql/9.5/data/pg_hba.conf
```

```
# IPv4 local connections:
host    all             all             127.0.0.1/32      md5
# IPv6 local connections:
host    all             all             ::1/128           md5
# Docker internal network:
host    all             all             127.17.0.0/16     md5
```

**\* "127.17.0.0/16" means Docker's default network address. Please set actual address on the server environment.**

Adjust other settings, etc. if necessary.

```
# vi /var/lib/pgsql/9.5/data/postgresql.conf
```

```
shared_buffers = 512MB          # min 128kB
...
work_mem = 4MB                  # min 64kB
...
effective_cache_size = 1024MB
```

**※ Please set the memory size depending on the server specification and the usage.**

#### Note: About PostgreSQL memory setting

Please make sure to set PostgreSQL memory. Not setting the memory often cause performance decrement and errors.

Set so that the service will launch automatically.

```
# systemctl enable postgresql-9.5.service
```

Launch the service.

```
# systemctl start postgresql-9.5
```

## Installing AWS CLI (Command Line Interface)

To install Cacoo, you need to get Docker image etc. distributed by AWS (Amazon Web Service). Please install AWS CLI for using AWS.

To install AWS CLI, Python (version 2.6.5 or higher, or version 3.3 or higher) is required. Please check the version of installed Python by the following command and install or upgrade as necessary.



```
# python --version
```

Download the AWS CLI bundle installer and execute install.

```
# curl "https://s3.amazonaws.com/aws-cli/awscli-bundle.zip" -o  
"awscli-bundle.zip"  
# unzip awscli-bundle.zip  
# ./awscli-bundle/install -i /usr/local/aws -b /usr/local/bin/aws
```

For more details on installing AWS CLI, please visit the following site.

<http://docs.aws.amazon.com/cli/latest/userguide/awscli-install-bundle.html>

## Installing Docker

Cacoo environment builds an operating environment on Docker.

Add a yum repository for installing Docker and execute install.

```
# yum install -y yum-utils device-mapper-persistent-data lvm2  
# yum-config-manager --add-repo  
https://download.docker.com/linux/centos/docker-ce.repo  
# yum-config-manager --disable docker-ce-edge  
# yum install -y docker-ce
```

Set the service to start up automatically.

```
# systemctl enable docker
```

Start up the service.

```
#systemctl start docker
```

Then, install docker-compose command.

```
# sudo curl -L  
https://github.com/docker/compose/releases/download/1.18.0/docker-compose-  
`uname -s`-`uname -m` -o /usr/local/bin/docker-compose  
# chmod +x /usr/local/bin/docker-compose  
# docker-compose --version  
docker-compose version 1.18.0, build 8dd22a9
```

For more details on installing Docker, please visit the following site.

<https://docs.docker.com/engine/installation/linux/docker-ce/centos/>

For more details on installing docker-compose, please also visit the following site.

<https://docs.docker.com/compose/install/#install-compose>

# Installation

## 1. Create database

Cacoo connects to the database using the following initial setting.

|                    |                            |
|--------------------|----------------------------|
| Host               | IP address in setting file |
| Port               | 5432                       |
| Database name      | cacoo                      |
| Database user name | postgres                   |
| Database password  | postgres                   |

Above settings can be changed in settings file (Refer [Change database connection](#)).

[Content] Add data using enterprise.sql, stencils.sql and templates.sql.

Example of Command for creating

```
# cp /root/temp/cacoo/database/*.sql /var/lib/pgsql
# su - postgres
$ psql
postgres=# alter role postgres with password 'postgres';
postgres=# create database cacoo;
postgres=# \c cacoo
cacoo=# \i enterprise.sql
cacoo=# \i stencils.sql
cacoo=# \i templates.sql
cacoo=# \q
```

## 2. Building Cacoo operating environment

First, we set the environment variable for download.

```
# export AWS_ACCESS_KEY_ID=*****
# export AWS_SECRET_ACCESS_KEY=*****
```

Please specify AWS\_ACCESS\_KEY\_ID and AWS\_SECRET\_ACCESS\_KEY as instructed separately.

First, build the Cacoo operating environment on Docker. Please login to download files to install Cacoo operating environment with following command.

```
# aws ecr get-login --region ap-northeast-1 --no-include-email | sh -
```

Next, edit ".env" file according to your environment.

```
# cd cacoo-docker
# vi .env
```

Please change the following parts as necessary. (Lines beginning with a # are ignored from configuration. If you need to specify those values, please remove the first # character.)

|                        |   |
|------------------------|---|
| CACOO_DB_HOST          | PostgreSQL database server IP address<br><b>* Cannot use "localhost" or "127.0.0.1"</b>                           |
| CACOO_DB_PORT          | PostgreSQL database connection port   |
| CACOO_DB_NAME          | Cacoo's database name   |
| CACOO_DB_USER          | PostgreSQL connection user  |
| CACOO_DB_PASSWORD      | PostgreSQL connection password  |
| CACOO_DB_MAX_POOL_SIZE | PostgreSQL connection pool size   |
| CACOO_SMTP_HOST        | SMTP server IP address<br><b>* Cannot use "localhost" or "127.0.0.1"</b>  |
| CACOO_SMTP_USER        | SMTP server connection user<br>* If your SMTP server requires authentication                                      |
| CACOO_SMTP_PASSWORD    | SMTP server connection password<br>* If your SMTP server requires authentication                                  |
| JWT_SECRET             | Secret key to generate token  |
| CACOO_MAX_UPLOAD_SIZE  | Maximum image data size for importing (KB)  |
| CACOO_CONTEXT_PATH     | "true" that if you use Cacoo with /cacoo context  |
| CACOO_SSL              | "true" if you use Cacoo with https protocol   |
| CACOO_PORT             | Running port number of Cacoo<br>If you use Cacoo with reverse proxy, specify internal port number from the proxy. |

|                                  |  |
|----------------------------------|--|
| CACOO_HTTP_PORT                  | Actual running port number of Cacoo  |
| CACOO_TIMEZONE                   | Server timezone  |
| CACOO_EXPIRATION_OBJECT_REMOVER  | Default : true<br>If you run multiple Cacoo servers, only one server should have "true" and the others should have "false" |
| CACOO_COMMAND_HISTORY_REMOVER    | Default : true<br>If you run multiple Cacoo servers, only one server should have "true" and the others should have "false" |
| CACOO_GOOGLE_DRIVE_BACKGROUND    | "true" if you use the function that sends all diagrams to Google Drive automatically.                                      |
| CACOO_SHAPE_VIEW_LOG_COUNTER     | Default : true<br>If you run multiple Cacoo servers, only one server should have "true" and the others should have "false" |
| CACOO_EXPIRATION_OBJECT_REMOVER2 | Default : true<br>If you run multiple Cacoo servers, only one server should have "true" and the others should have "false" |
| CACOO_COM_CONSUMER_KEY           | Consumer Key of your registered application<br>* If you use the function to import diagrams from cacoo.com                 |
| CACOO_COM_CONSUMER_SECRET        | Consumer Secret of your registered application<br>* If you use the function to import diagrams from cacoo.com              |

After editing the file, build and start the environment of Cacoo with the docker-compose command.

```
# docker-compose up -d
```

If you need to change any environment configuration variable, please stop Cacoo first and edit ".env" file, then start Cacoo with the above command again. To stop the Cacoo, run the command below.

```
# docker-compose down
```

## **Installing Font**

To export diagrams to PDF on the server, fonts need to be installed. Please copy fonts you are going to use into the fonts directory then start Cacao. If the specific font used in the diagram is not available on the server, it will be replaced with other fonts.


# Initial Settings

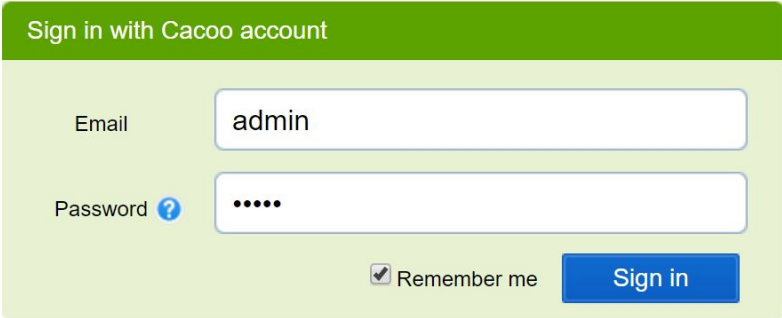
Access [http://\(installed host:port\)/](http://(installed host:port)/).

On the sign in page, sign in with Email : **admin** and password : **cacoo** .

\* After all settings below are done, please change the admin's password.



 Please Sign in

The image shows a sign-in form within a green-bordered container. At the top of the form is a green header with the text "Sign in with Cacoo account". Below this, there are two input fields: "Email" with the value "admin" and "Password" with masked characters ".....". To the right of the password field is a "Remember me" checkbox and a blue "Sign in" button. Below the input fields is a link that says "Forgot your password?" with a sad face icon.

## License settings

After signing in, license settings page will be shown. Enter the received license code and save the settings.

|              |  |
|--------------|--|
| License Code | To use application, license code is required.<br>Please enter the license code provided to register.<br>When you see "License is activated", you can use this application. |
|--------------|--|

## Set email address



Please change email address on Settings > Email tab.

## Settings

Set general settings on Management > Setting tab.

**Organization's administrator**  
Cacoo

Basic settings  
External Connection  
Organization member  
Samples  
Exclusive Stencils  
Exclusive Templates  
License  
All projects in organization  
All diagrams in organization

### Basic settings

**Theme color**

Notification emails

\*From address: from@example.com

\*Reply-to address: reply-to@example.com

**sign in**

☐ Allow to sign in with email address and password

☒ Allow to sing in with Google Apps account

**Security**

☒ Allow users to change their email addresses

☒ Allow users to change their password

☐ Disable "Open diagram to public by URL" ?

☒ Disable "Anyone can edit" ?

☐ Disable access from other tools except Cacoo ?

Save changes

## Notification mails

|  |  |
|--|--|
| Sender email address for notification mails    | When users are invited to the diagrams, Cacoo sends notification mails. Please specify the email address of the sender (From). |
| Return-to email address for notification mails | When users are invited to the diagrams, Cacoo sends notification mails. Please specify the email address to reply (Reply-to).  |

## Sign in

|                 |   |
|-----------------|---|
| Sign in setting | <b>Allow to sign in with email address and password</b> |
|-----------------|---|

|  |  |
|--|--|
|  | <p>Tick this box to let users to sign in their email addresses and passwords.</p> <p><b>Allow to sing in with Google Apps account</b><br/> Tick this box to let users sign in to Cacoo with their Google Apps' account information. Users won't need to enter their email addresses and passwords.</p> <p>At least one of them needs to be selected.</p> |
|--|--|

\* Even you don't check "Allow to sign in with email address and password" box for the sign in setting, administrator can sign in with his email address and password. An administrator will see the email address and password fields on the sign in panel.

## Security

|                      |  |
|----------------------|--|
| Change email address | Choosing "Allow users to change their email addresses" will allow users to change their email addresses on the settings page.            |
| Change password      | Choosing "Allow users to change their password" will allow users to change their passwords on their settings pages.                      |
| Public diagram       | Choosing "Disable Open diagram to public by URL" cancels the sharing option even the user changes it to "Open diagram to public by URL". |
| Editing diagram      | Choosing "Disable Anyone can edit" cancels the sharing option even the user changes it to "Anyone can edit".                             |
| API Access           | Choosing "Disable access from other tools except Cacoo" disables access to the diagrams in the organization with API.                    |

## External connection setting

Set connected services on Management > External connection setting tab.

Organization's administrator  
Cacoo

Basic settings  
External Connection  
Organization member  
Samples  
Exclusive Stencils  
Exclusive Templates  
License  
All projects in organization  
All diagrams in organization

### External Connection

#### Google Apps setting

Domains permitted to access from

Enter multiple domains by separating them with comma (,). Permit all domains by leaving this field empty.

☒ Create user accounts when they first sign in

Administrators do not need to create accounts initially.

API Access file has been already registered.

[Change](#)

#### Google Drive setting

☒ Use Google Drive connection

Domains permitted to access from

Enter multiple domains by separating them with comma (,). Permit all domains by leaving this field empty.

☒ Connect to Google Drive when user signs in

API Access file has been already registered.

[Change](#)

Save changes

## Google Apps Setting

This setting is only available when "Allow to sing in with Google Apps account" is selected on Settings page.

|                                  |  |
|----------------------------------|--|
| Domains permitted to access from | <p>Specify the allowed Google Apps' domain for signing in to Cacoo.</p> <p>You can set multiple domains by separating them with comma (,).</p> <p>All Google Apps domain will be accepted if this field is left empty.</p> <p>When multiple domains are entered or no domain is entered, users need to enter the domain name on the sign in page after clicking Google Apps button.</p> <p>When only one domain is entered, users do not need to enter the domain name after clicking Google Apps button on the sign in page.</p> <p>* Alias domains don't need to be specified.</p> |
| Create accounts automatically    | <p><b>Create user accounts when they first sign in</b></p> <p>When you select this option, users without Cacoo account can sign in with their Google Apps accounts. Their Cacoo account will be created automatically when they sign in. If this option is not selected, users cannot sign in with their Google Apps accounts until</p>  |

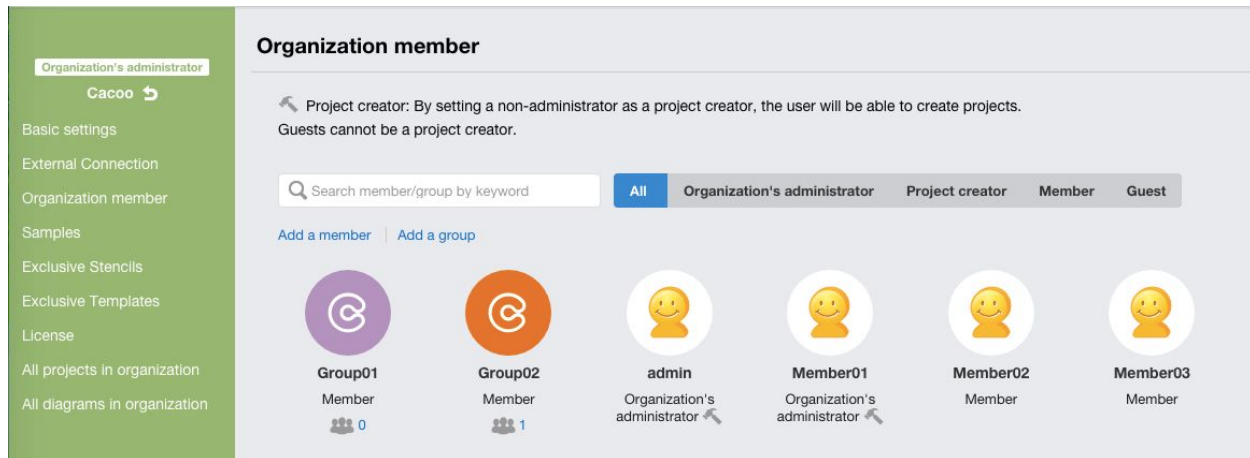
|  |   |
|--|---|
|  | <p>their accounts (email addresses) are registered on Cacoo.</p> <p><b>Register API Access file.</b><br/>To use Google Apps account, API access file needs to be registered. Please follow "Cacoo Enterprise Google Apps / Drive Setup Guide" to register the file.</p> |
|--|---|

## Google Drive setting

|                                  |   |
|----------------------------------|---|
| Domains permitted to access from | List Google account domains permitted to connect with Google Drive.   |
| Other settings                   | <p><b>Use Google Drive connection</b><br/>Select this option to let users to create, edit and share their diagrams created on Cacoo Enterprise on Google Drive.<br/>To connect to Google Drive, each user needs to connect to his Google Drive account on Settings &gt; Account page.</p> <p><b>Connect to Google Drive when user signs in</b><br/>When this option is selected, each user doesn't need to connect to his Google Drive on Settings &gt; Account page. Users' Cacoo accounts will be automatically connected to their Google Drive accounts. Select this option to let all Google Apps users to connect their Cacoo accounts to Google Drive.</p> <p><b>Register API Access file.</b><br/>To use Google Drive connection, API access file needs to be registered. Please follow "Cacoo Enterprise Google Apps / Drive Setup Guide" to register the file.</p> |

## Organization member

Show account list on Management > Accounts.



## Adding an account

Click "Add Account" link and the fields to add accounts will appear. Please enter the user's name and email address then press "Add" button. Entering default password is optional.

Press "Add a member" button and a pop-up window will appear. Enter the user's name, email address and default password (optional) and press "Add" button.

Please note that once the number of users for the license reaches to its maximum number, you will not be able to add more accounts.

The screenshot shows a pop-up window titled 'Check each role' with a close button (X) in the top right corner. The form contains the following fields and options: 'Name' with the value 'Member'; 'Email Address' with the value 'Member@example.com'; 'Initial Password' with a masked password field and a help icon (?); 'Guest' section with a radio button for 'Organization's administrator' and a selected radio button for 'Member'; a description for the 'Member' role: 'The user can use Cacoo regularly. With project creator permission, the user will be able to add new projects.'; a checkbox 'Set as a project creator' with a key icon; and a radio button for 'Guest'. At the bottom are 'Cancel' and 'OK' buttons, with a help icon (?) next to the 'OK' button.

Explain about account role.

### **Organization Administrator**

The Administrators can do the following operations:

- Go to the organization settings page and change settings
- Set the project member's roles
- Show all diagrams in the organization and change their settings
- Edit, delete and change the owner of all diagrams in the organization
- Create projects

### **Users**

Users have the access to the regular Cacao functions.

By setting a non-administrator as a project creator, the user will be able to create projects.

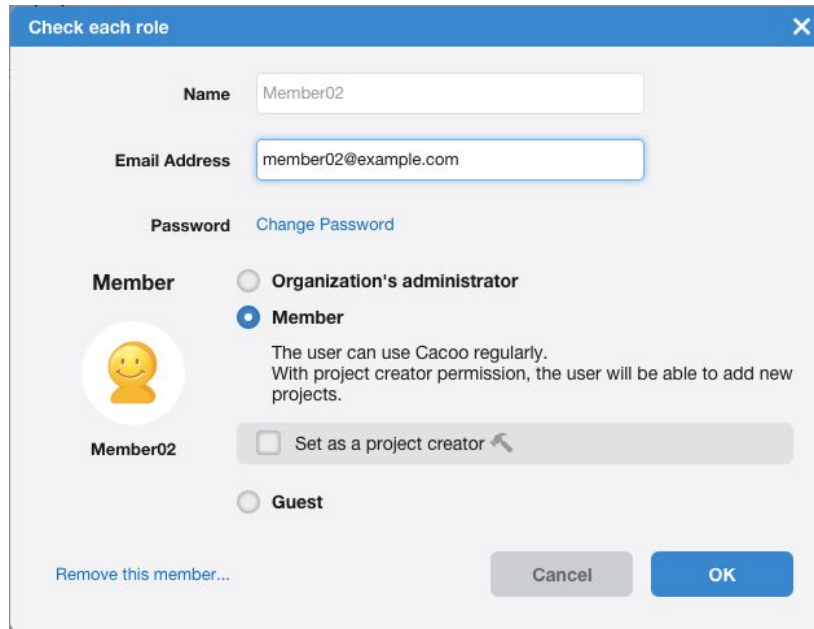
### **Guest**

Users have the access to the regular Cacao functions. Guests have the following restrictions:

- Cannot be a project creator.
- Cannot be an administrator.
- Cannot see the organization's settings.
- Can only see the other members of the groups they belong to and not all of the members in the organization.

### **Editing and deleting accounts**

Click the user's account, a pop-up window to edit the account will appear. The account information can be edited or the account can be deleted from this window. Deleting an account will not delete the diagrams created in that account. All diagrams can be checked in the "Diagrams in the organization" page.



**Check each role**

Name: Member02

Email Address: member02@example.com

Password: [Change Password](#)

**Member**

☐ Organization's administrator

☒ **Member**

The user can use Cacao regularly.  
With project creator permission, the user will be able to add new projects.

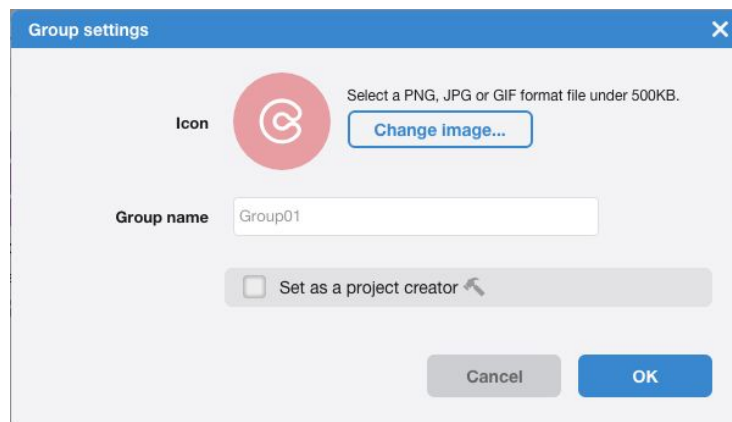
☐ Set as a project creator

☐ Guest


[Remove this member...](#) Cancel OK

## Adding groups

Click "Add group" button and a pop-up window to add a group will appear. Specify the group creator and click "Add" button. The roles of the group are always set to "Member".



**Group settings**

Icon:  Select a PNG, JPG or GIF format file under 500KB. [Change image...](#)

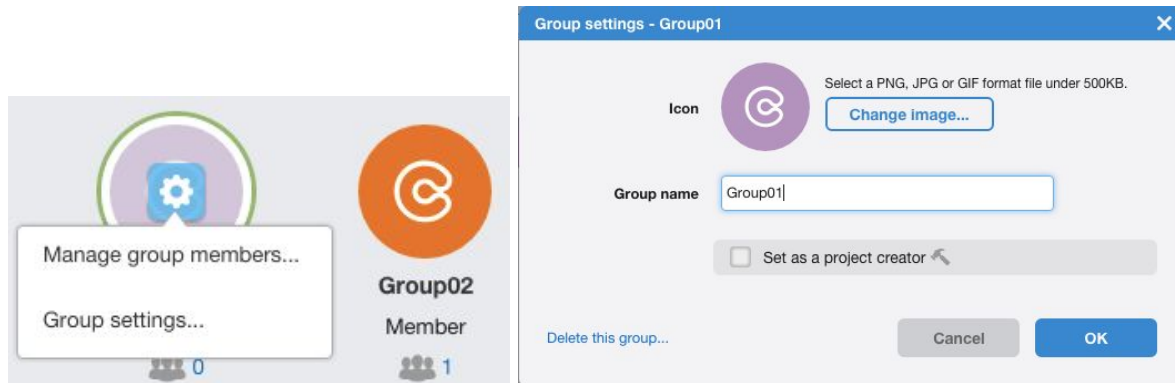
Group name: Group01

☐ Set as a project creator

Cancel OK

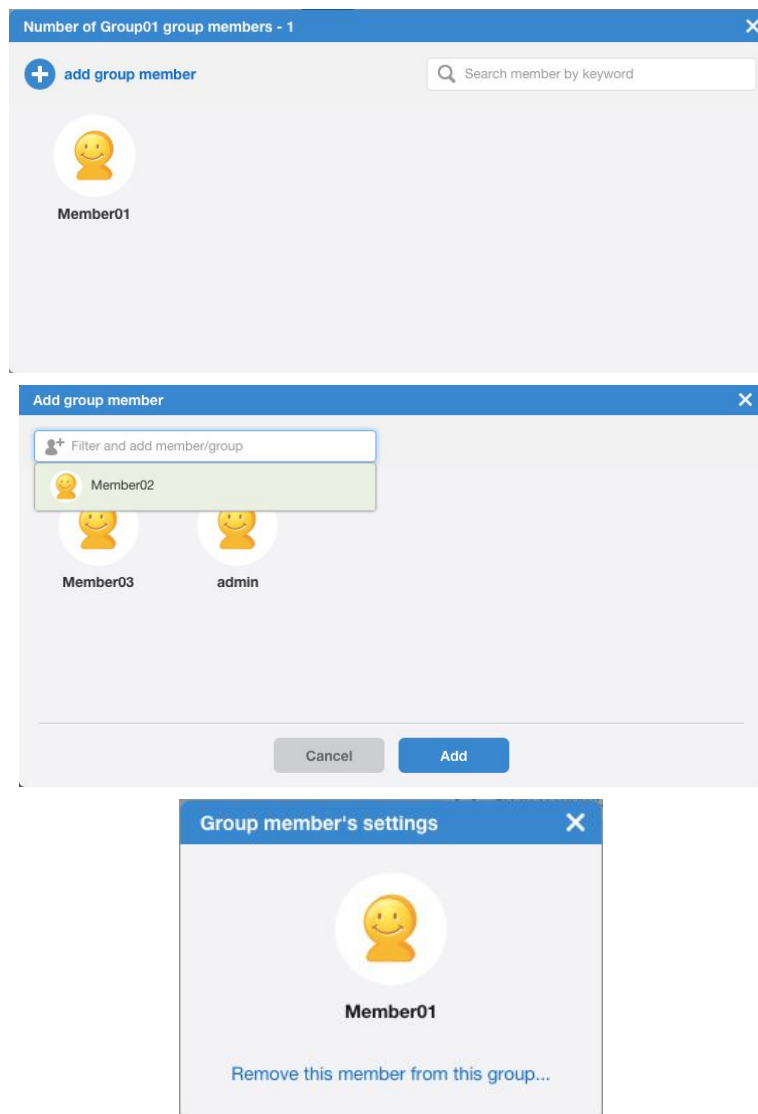
## Editing and deleting groups

Click Group's icon > Group settings to show the Group settings panel. Enter the Group name and set the group creator. The group can be deleted from here, too.



## Manage group members

Click Group's icon > Manage group members. You may add and delete members in the pop-up panel.





## Managing samples

The default diagrams can be preset so that users will see them when they sign in. Create a diagram and add the diagram's URL on the "Manage Samples" page.

To delete the samples, press "Remove Sample" button. The original diagrams will not be deleted. Please note that deleting the original diagrams will delete it from the samples.

The screenshot shows the 'Manage Samples' interface. On the left, a sidebar displays '1 Sheet(s)' and a 'Wireframe' thumbnail. The main area shows a wireframe diagram titled 'Examples -Wireframe-' with a central image of donuts and a sidebar menu. On the right, a 'Share URL' panel is visible, containing options for 'Current sheet' and 'First sheet', a 'Diagram page' URL, and social media sharing buttons. An orange callout points to the 'Share URL' button, and another points to the 'Diagram page' URL.

Click the "Share URL" button

Copy the Diagram page URL

Past the Diagram page URL and click "Add" button

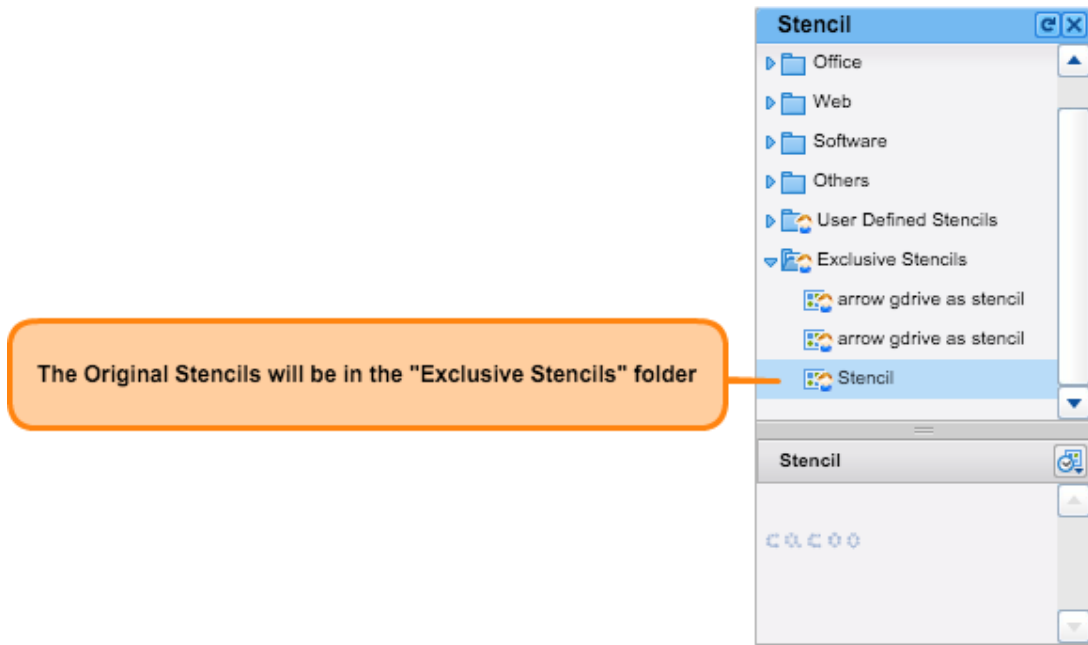
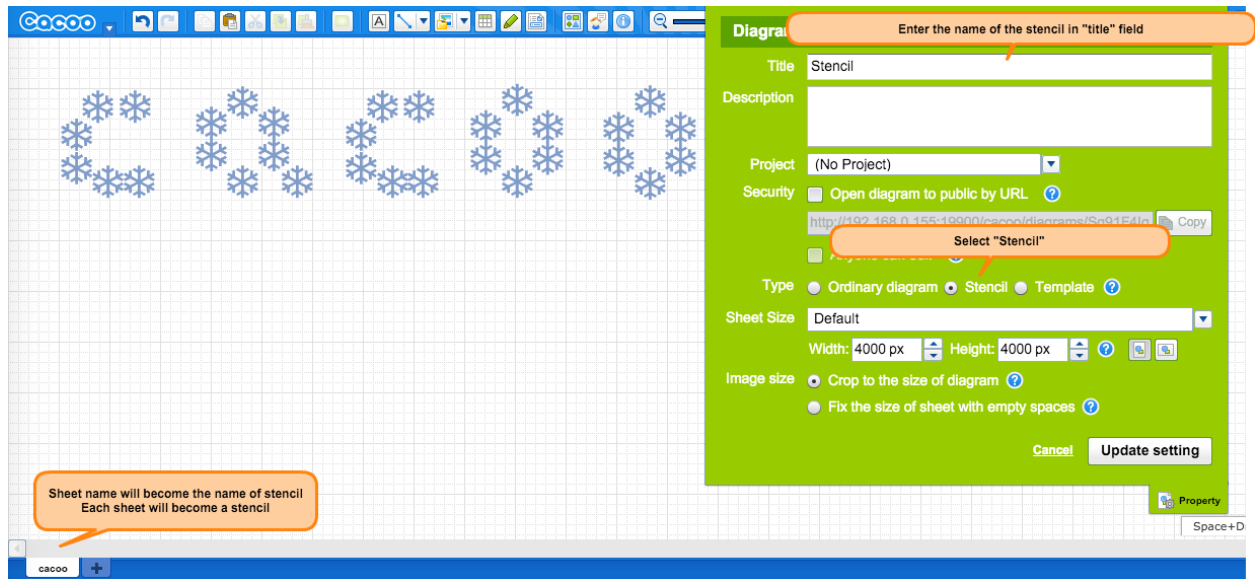
http://192.168.0.48/diagrams/u09S6sYcvxF9L3oo

Add Cancel

| Title    | Owner | Updated      | Action                 |
|----------|-------|--------------|------------------------|
| Top Page | Cacoo | 14 hours ago | <a href="#">Remove</a> |

## Managing customized stencils

Manage the stencils that are available for all users using this package. Create a diagram and set its type as "Stencil". Add diagram's URL on the "Manage Stencils" page.



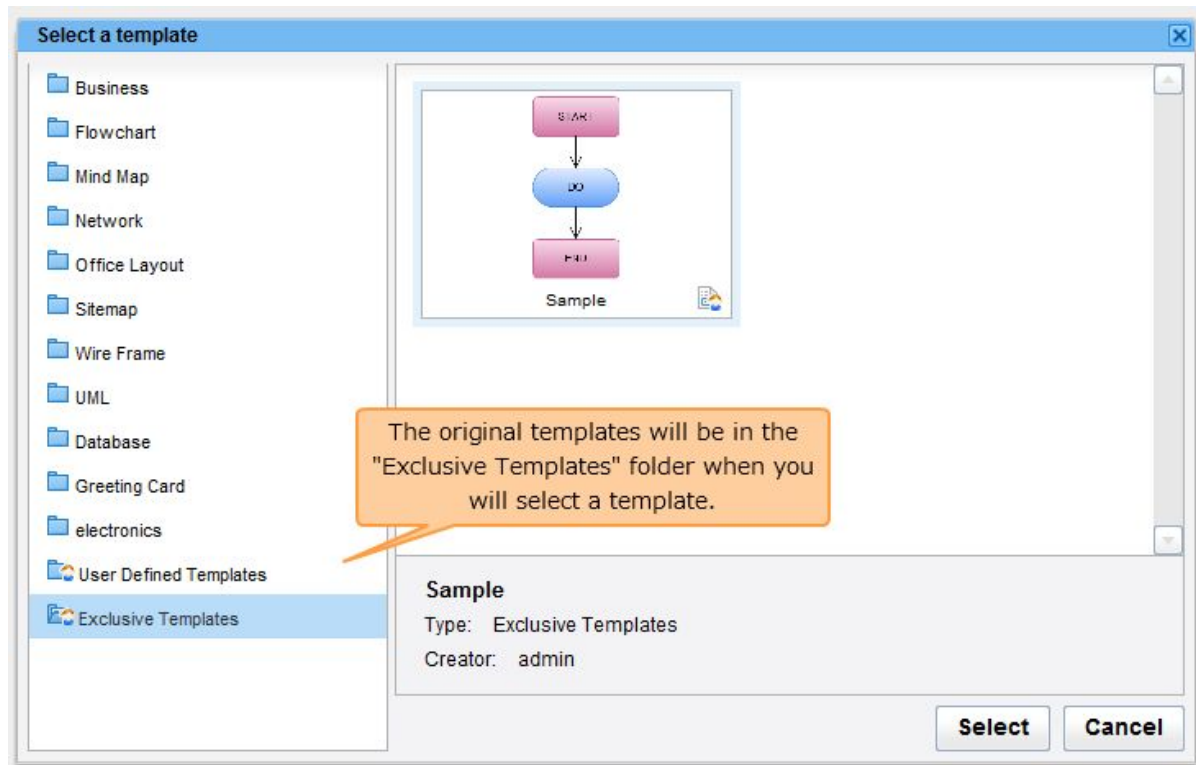
Changes to the stencils will be automatically applied to the registered stencils. To delete the stencil, press "Remove stencil" button. The original diagram will not be deleted.

Please note that deleting the original diagram will delete it from the list of custom stencils.

The stencils will be listed as they were added and the order cannot be changed. To change the order, please delete them all and add them again.

# Manage templates

Manage the templates that are available for all users using this package. Create a diagram and set its type as "Template". Add diagram's URL on the "Manage Templates" page.



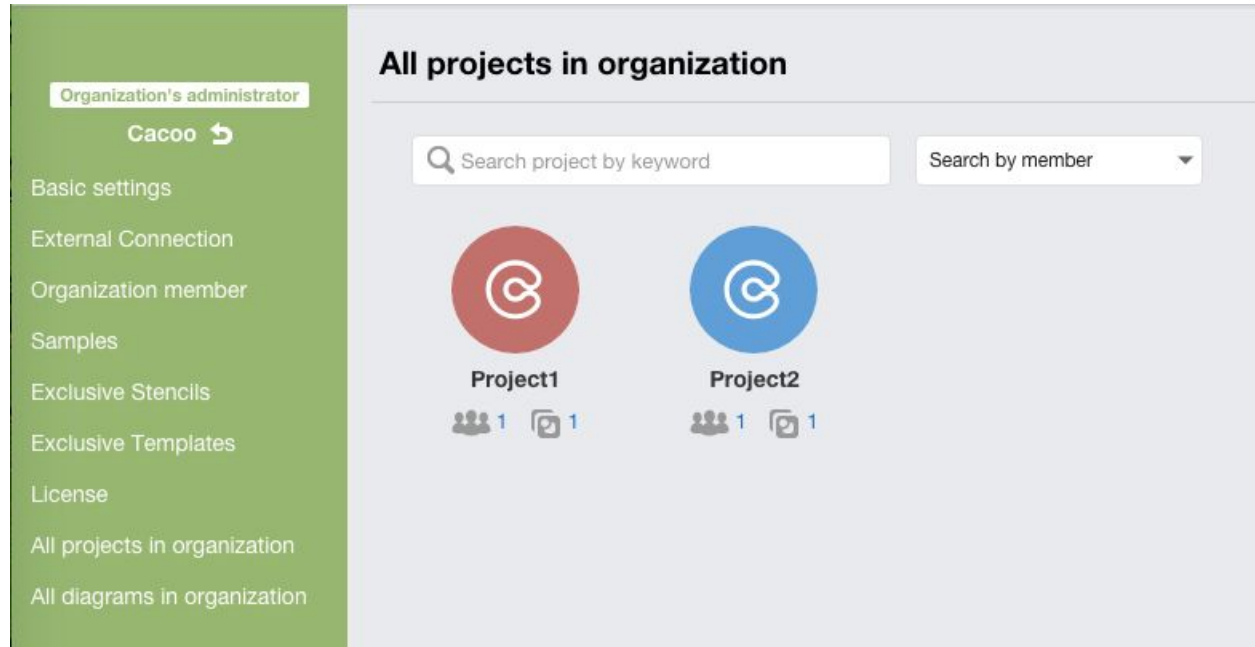
Changes to the templates will be automatically applied to the registered templates. To delete the template, press "Remove Template" button. The original diagram will not be deleted.

Please note that deleting the original diagram will delete it from the list of custom templates.

The templates will be listed as they were added and the order cannot be changed. To change the order, please delete them all and add them again.

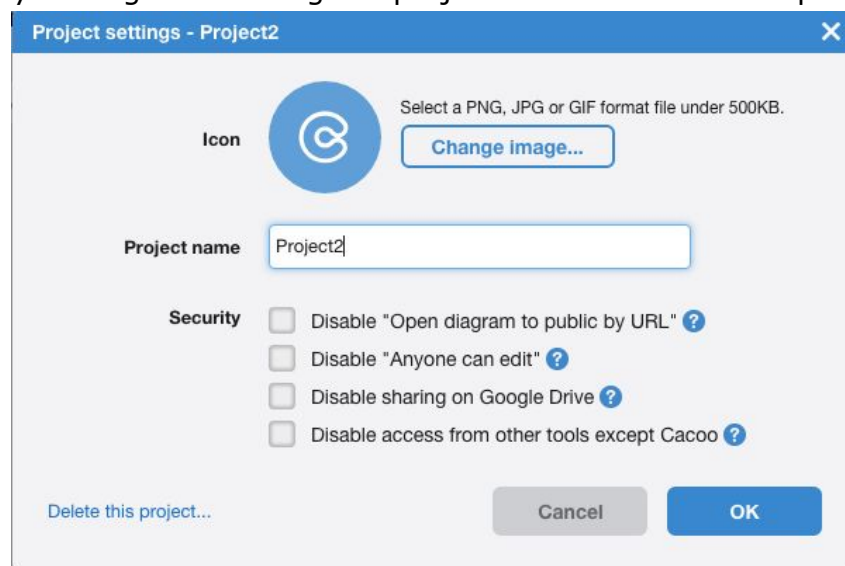
## Projects in the organization

Select “All projects in organization” in the left menu of Organization settings to change settings of each project, manage project members and diagrams in the projects.



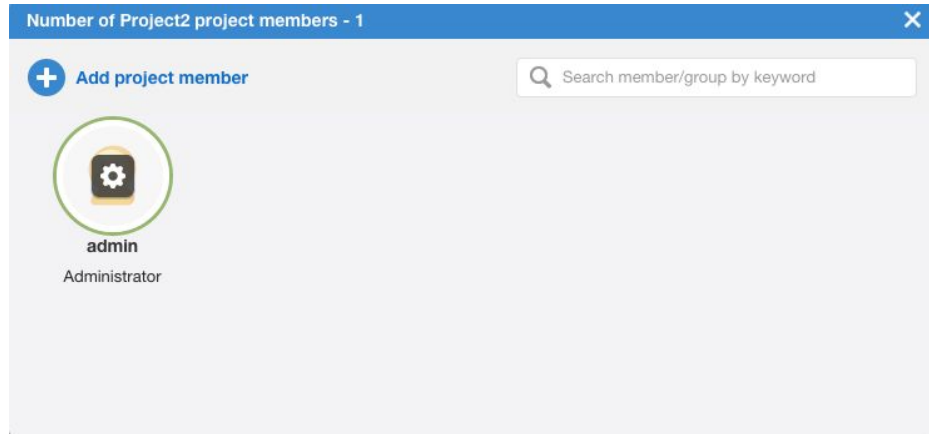
## Project settings

Click the project icon and the Project settings panel will appear. Changing the icon, name, security settings or deleting the project can be done in this panel.



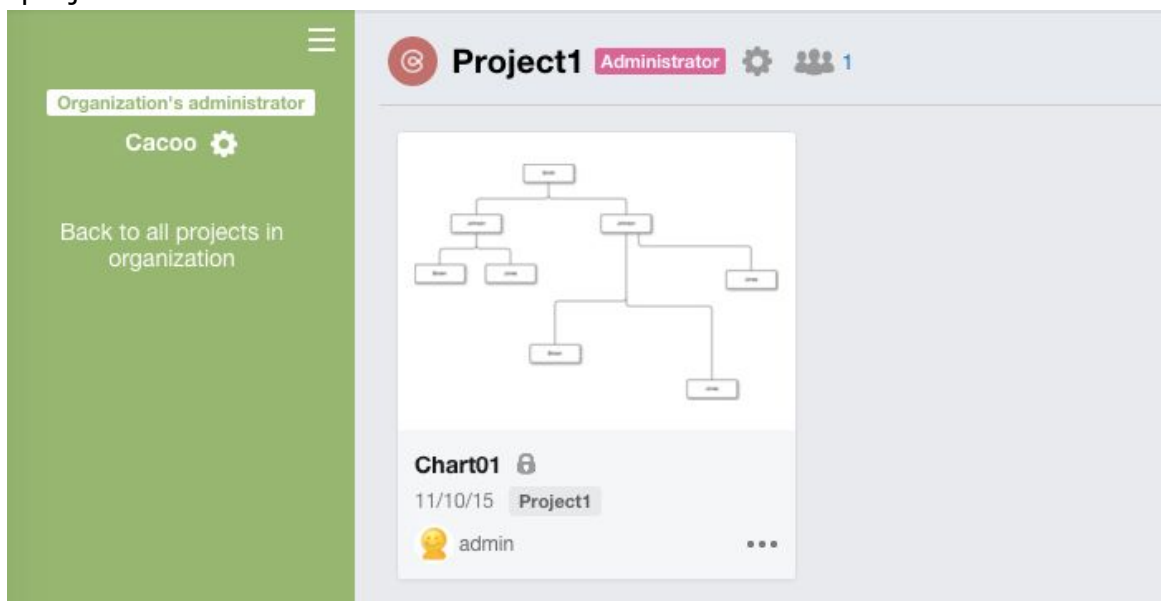
## Managing project members

Clicking the people icon under each project icon will open the panel to edit its project members. Adding and deleting members can be done in this panel.



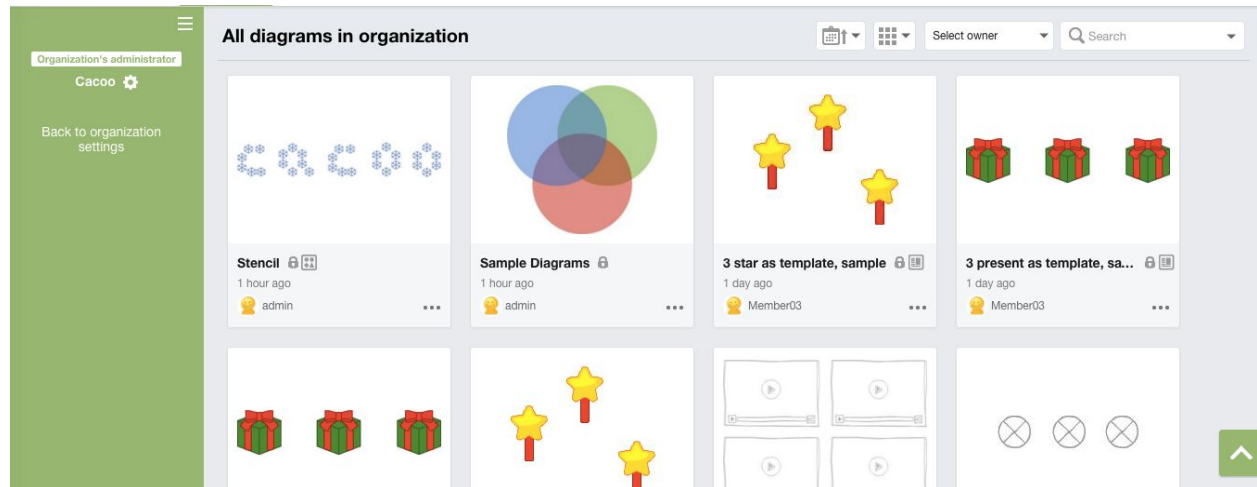
## Managing diagrams in a project

Clicking the diagrams icon under each project icon will show the list of diagrams in the project.



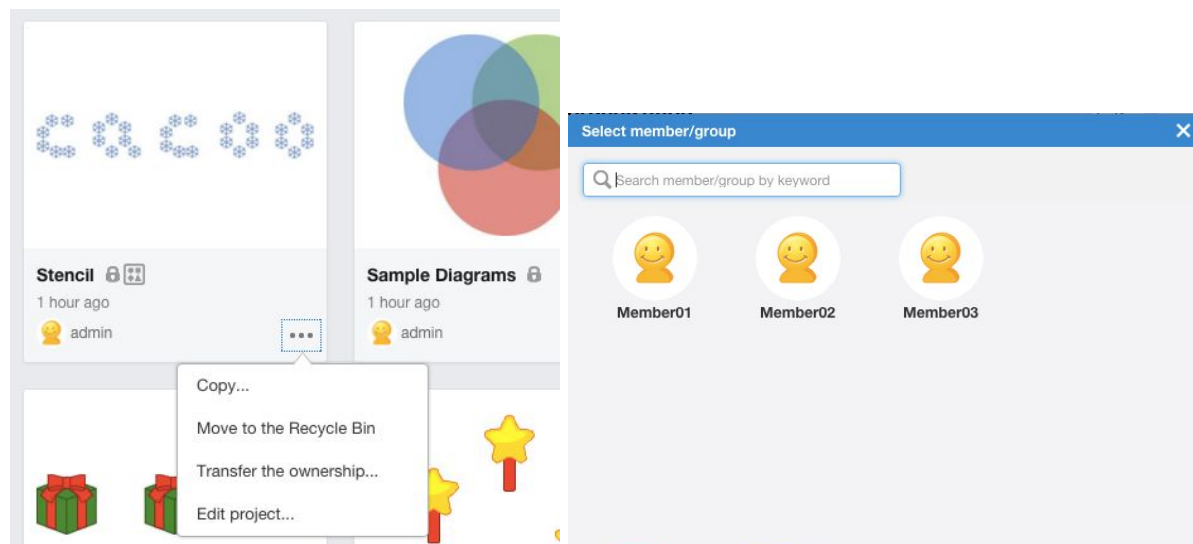
# Diagrams in the organization

Go to Settings > Diagrams in the organization to show all diagrams in the organization. All diagrams, regardless the projects or diagram creator, will be shown. On this page, the following operations can be done.



## Changing the diagram's owner

Click the "..." icon under the diagram thumbnail and select "Transfer the ownership..." from the menu. A panel to change the ownership of the diagram will appear. Please choose a new owner.



# Troubleshooting

## How to check logs

If your Cacoo server is not running as expected, it may be possible to identify the cause by checking the logs. To check Cacoo's logs, please run the "docker logs" command to each Docker container as below.

```
# docker logs cacoo-enterprise-app
# docker logs cacoo-enterprise-editor-api
# docker logs cacoo-enterprise-editor-messaging
# docker logs cacoo-reverse-proxy
# docker logs cacoo-redis
```

If you need to write the log into a file, please send docker log command result to a specific file, like below.

```
# docker logs cacoo-enterprise-app > cacoo-enterprise-app-180118.log
# docker logs cacoo-enterprise-editor-api >
cacoo-enterprise-editor-api-180118.log
# docker logs cacoo-enterprise-editor-messaging >
cacoo-enterprise-editor-messaging-180118.log
# docker logs cacoo-reverse-proxy > cacoo-reverse-proxy-180118.log
# docker logs cacoo-redis > cacoo-redis-180118.log
```

When you need any technical support, please contact us via <https://cacoo.com/contact> with these log files.

## Opened the editing page but cannot edit the diagram

If the result below shows something other than 0, it means stencils.sql has not executed. Please enter (refer [1. Create database](#)):

```
cacoo=# select count(*) from stencil_data;
```

## No notification emails are sent

If you see errors like those below in the "cacoo-enterprise-app" log, please check the connection settings to SMTP server.

```
Caused by: javax.mail.MessagingException: 501 Syntax: HELO hostname
```

```
    at
com.sun.mail.smtp.SMTPTransport.issueCommand(SMTPTransport.java:1634)
~[mail-1.4.2.jar:1.4.2]
    at com.sun.mail.smtp.SMTPTransport.helo(SMTPTransport.java:1070)
~[mail-1.4.2.jar:1.4.2]
    at
com.sun.mail.smtp.SMTPTransport.protocolConnect(SMTPTransport.java:458)
~[mail-1.4.2.jar:1.4.2]
    at javax.mail.Service.connect(Service.java:291)
~[mail-1.4.2.jar:1.4.2]
    at
com.ozacc.mail.impl.SendMailProImpl.connect(SendMailProImpl.java:113)
~[ozacc-mail-1.2.3.jar:na]
```

## Cannot connect to the database

If you see some errors like below in the "cacoo-enterprise-app" log, please check the connection settings to PostgreSQL server.

```
ERROR 2018-01-15 07:12:40,386 [localhost-startStop-1]
##### DB connection error
com.zaxxer.hikari.pool.HikariPool$PoolInitializationException: Failed to
initialize pool: Connection to 192.168.0.190:5432 refused. Check that the
hostname and port are correct and that the postmaster is accepting TCP/IP
connections.
```

Please confirm the network of Docker is allowed in the PostgreSQL's "postgresql.conf" and "pg\_hba.conf" too.

## Very slow response/many errors

When memory allotment setting for tomcat is too small, bad responses and many errors tend to occur. If the response is very slow or you get many errors, please check the log of "cacoo-enterprise-app" to see whether it's showing the error caused by insufficient memory size.

```
...
java.lang.OutOfMemoryError: PermGen space
...
```

If you see "OutOfMemoryError" in the log, please increase the "JAVA\_OPTS" value to increase allocated memory on Cacoo's Java.  
e.g. : -Xmx1024M -Xms1024M



## Each operation takes long time when many users use Cacao at the same time

When many users use Cacao at once, the number of connection to the database could reach the limit. In that case, operations of each user will be put in the queue and might take a while to be applied. If you are suspicious that the connection number to the database might be causing the delay, please increase the "CACOO\_DB\_MAX\_POOL\_SIZE" environment value in the .env file.

Then open PostgreSQL's "postgresql.conf" on database server and change the number of "max\_connections" to the same value as "CACOO\_DB\_MAX\_POOL\_SIZE" or higher.

```
...  
max_connections = 100  
...
```

After changing these settings, restart PostgreSQL and Cacao and check the operation. Depending on the PostgreSQL's settings, it might be better to change the "shared\_buffers" settings, too. For details, please refer to the PostgreSQL manual and change the settings.

# Other information

## Backup

All Cacoo data are stored in PostgreSQL database. Please backup Cacoo data regularly by using PostgreSQL's or system's functionality to backup Cacoo data.

## Access Cacoo through Reverse proxy on Apache HTTP Server

If you want to access the Cacoo 443 (HTTPS) through reverse proxy server that uses mod\_proxy\_http module, the following setting for Cacoo and Apache HTTP Server is required.

### 1. Apache HTTP Server setting

Please stop Apache HTTP Server, follow the instruction below and start it again. In this example, we assume Tomcat is running on port 80, the same server (localhost) where mod\_proxy\_http module is installed.

(1) Add following reverse proxy setting in Apache HTTP Server configuration.

```
...
RequestHeader set X-Forwarded-Proto "http"
ProxyRequests off
ProxyPreserveHost on
ProxyPass /editor-messaging/ ws://localhost:80/editor-messaging/
ProxyPassReverse /editor-messaging/ ws://localhost:80/editor-messaging/
ProxyPass / http://localhost:8080/
ProxyPassReverse / http://localhost:8080/
...
```

If you use 443 port (HTTPS), set X-Forwarded-Proto "https". Please change it to the actual URL that Cacoo is running in "ProxyPass" and "ProxyPassReverse".

### 2. Cacoo setting

Please stop Cacoo then edit .env file to change "CACOO\_PORT" as internal port number and "CACOO\_HTTP\_PORT" as external (Apache HTTP Server's) port number. If you use HTTPS with Cacoo, set "CACOO\_SSL" to "true". After you edit .env file, please start Cacoo again.

# To add database disk

As more you use Cacoo, the disk used by its usage increases. When the empty portion of the disk became small, you can add a disk and move all or a part of the data to the new disk.

## Note: About moving database to another disc

Before you move database, please make sure to backup the data so that you'll be able to restore when something unexpected happens.

Also please note that this procedure might take a while. Therefore, we recommend you to plan ahead.

If possible, build a similar environment from the backup and estimate how long it will take. Also please make sure to stop tomcat and stop using Cacoo before you move database.

### 1. Move all database to another disk

To move whole Cacoo database to another disk, please connect to PostgreSQL and do the commands below.

First, create a table space on the new disk.

(In this example, we are going to mount additional disk on "/disk1" and creating a table space called "space1" under the mount point.)

```
# su - postgres
$ psql
postgres=# CREATE TABLESPACE space1 LOCATION '/disk1/pgdata';
```

Next, move database to this new table space.

```
postgres=# ALTER DATABASE cacoo SET TABLESPACE space1;
```

Cacoo database will be moved to "/disk1" disk. Please restart tomcat after this operation.

### 2. Move parts of table to new disks

To move parts of Cacoo database table to different disks, connect to PostgreSQL and do the commands below.

First, add disks and create table spaces on the new disks.

(In this example, we are going to mount additional disks on "/disk1" and "/disk2", and creating table spaces called "space1" and "space2" under the mount points.)

```
# su - postgres
$ psql
postgres=# CREATE TABLESPACE space1 LOCATION '/disk1/pgdata';
postgres=# CREATE TABLESPACE space2 LOCATION '/disk2/pgdata';
postgres=# CREATE TABLESPACE space3 LOCATION '/disk3/pgdata';
```

Next, move large tables to each table spaces. (Tables shown here are the ones tends to become large with regular usage. Large tables depends on the usage and

diagrams you create often.)

```
postgres=# \c cacao
cacao=# ALTER TABLE shape_sheet_snapshot SET TABLESPACE space1;
cacao=# ALTER TABLE shape_history SET TABLESPACE space2;
```

With commands above, shape\_sheet\_snapshot table is moved to "/disk1" disk, shape\_history table is moved to "/disk2. Tables not specified will remain in the disk where original database directory is stored. Please restart tomcat after this operation.

To find the larger sized tables, following SQL can be used to check each table size.

```
SELECT
    objname as table_name,
    pg_total_relation_size(objname::regclass) as table_size
FROM (
    SELECT tablename as objname
    FROM pg_tables
    WHERE schemaname = 'public'
) as objects
ORDER BY table_size DESC;
```

```
# su - postgres
$ psql
postgres=# \c cacao
cacao=# SELECT
cacao=# objname as table_name,
cacao=# pg_total_relation_size(objname::regclass) as table_size
cacao=# FROM (
cacao=# SELECT tablename as objname
cacao=# FROM pg_tables
cacao=# WHERE schemaname = 'public'
cacao=# ) as objects
cacao=# ORDER BY table_size DESC;
      table_name      | table_size
-----+-----
shape_sheet_snapshot | 131153920
shape_history         | 112500736
image_shape_store     | 73105408
shape_image           | 68853760
shape                 | 44335104
...
```

With general usage, following tables tend to become large.

- shape\_sheet\_snapshot
- shape\_history
- shape\_image
- image\_shape\_store

# Contact us

If you have any questions, please contact us from the inquiry form on <https://cacao.com/contact> .