



# UCS Intercom Service app

*Release 1.12*

**Univention GmbH**

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Welcome to the documentation about the Univention app **UCS Intercom Service**. The app installs the ICS (UCS Intercom Service), an intermediary for communication between applications like *Nextcloud*, *OX App Suite*, *XWiki* and *Matrix*. The functionalities *File-picker*, *Video conference*, create and accessing the *Univention-Portal* navigation endpoint from other apps and *Univention-Portal* news feed require the app **UCS Intercom Service**.

This documentation is for system administrators who operate the app **UCS Intercom Service** from Univention App Center connected to the LDAP directory in UCS (Univention Corporate Server). It covers the following topics:

1. [Architecture](#) (page 15)
2. [Installation](#) (page 3)
3. [Configuration](#) (page 7)
4. [Requirements and limitations](#) (page 21)
5. [Troubleshooting](#) (page 23)

This documentation doesn't cover the following topics:

- Usage of UCS, see *UCS 5.0 Manual* [1].

To understand this documentation, you need to know the following concepts and tasks:

- Use and navigate in a remote shell on Debian GNU/Linux derivative Linux distributions like UCS. For more information, see [Shell and Basic Commands](#)<sup>1</sup> from *The Debian Administrator's Handbook*, Hertzog and Mas [2].
- [Manage an app through Univention App Center](#)<sup>2</sup> in *UCS 5.0 Manual* [1].

The app **UCS Intercom Service** supports *Keycloak* as *IdP*. In the context of this document, the term *IdP* is synonymous for *Keycloak* in the context of an *IdP* in OIDC (OpenID Connect).

Your feedback is welcome and highly appreciated. If you have comments, suggestions, or criticism, please [send your feedback](#)<sup>3</sup> for document improvement.

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<sup>1</sup> <https://www.debian.org/doc/manuals/debian-handbook/short-remedial-course.en.html#sect.shell-and-basic-commands>

<sup>2</sup> <https://docs.software-univention.de/manual/5.0/en/software/further-software.html#computers-softwareselection>

<sup>3</sup> <https://www.univention.com/feedback/?intercom-service-app=generic>



## INSTALLATION

You can install the app **UCS Intercom Service** like any other app with Univention App Center.

UCS offers two different ways for app installation:

- With the web browser in the UCS management system
- With the command-line

For general information about Univention App Center and how to use it for software installation, see [Univention App Center<sup>4</sup>](#) in *UCS 5.0 Manual* [1].

### 1.1 Prerequisites

Installing this app has various prerequisites:

1. ICS supports OIDC. *Nextcloud* ( $\geq 23.0$ ) and *OX App Suite* ( $\geq 7.10.6$ ) must authenticate through OIDC, as well.
2. For working CSRF (Cross-Site-Request-Forgery) protection all other apps need to be up to date.
3. ICS requires the *Nordeck* bot up and running for Matrix.
4. ICS requires its three secrets before installation, see [Secrets](#) (page 7) for details.
5. ICS requires a configured *Keycloak* ( $\geq 12.0$ ), including a valid Intercom OIDC client before installation.

### 1.2 Add ICS client to IdP

To prepare the existing *IdP* for the installation of the app **UCS Intercom Service**, use the following steps:

1. Enter the *Keycloak Admin Console*.
2. Go to your realm where you want to create the ICS client.
3. Create a OIDC Client. Recommendation is to use the default value `intercom` for the *Client ID* and leave the *Root URL* empty and save it.

During app installation, **UCS Intercom Service** asks for the *Client ID*.

4. Set *Client authentication* to `On`.
5. Set *Authorization*, *Service Accounts Enabled*, and *Standard Token Exchange* to `On`.

#### Note

*Standard Token Exchange* corresponds to Keycloak Token Exchange v2 (RFC 8693). It is enabled by default in Keycloak 26 and later and is the recommended implementation. To use it, also set `intercom-service/settings/token-exchange-v2` (page 13) to `True`.

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<sup>4</sup> <https://docs.software-univention.de/manual/5.0/en/software/app-center.html#software-appcenter>

Keycloak Token Exchange v1 (legacy) is deprecated and disabled by default in Keycloak 26+. If you are running an older Keycloak version that does not support v2, leave *Standard Token Exchange* off and keep *intercom-service/settings/token-exchange-v2* (page 13) at its default value of `False`.

When using Token Exchange v2, verify that the *Client Scopes* of the `intercom` client include the audiences for each enabled backend service (for example `xwikioidc` and `ncoidc`). Keycloak Token Exchange v2 resolves audiences through client scopes rather than granting them directly based on the target client.

6. Set *Front channel logout* to `Off`.
7. Set *Backchannel logout URL* to your intended domain for ICS with protocol and append the `backchannel-logout` path, for example:

```
https://ics.example-domain.example-tld/backchannel-logout
```

This step requires *Keycloak*  $\geq 12.0.0$ .

8. Set *Backchannel logout session required* to `On`.
9. Set the valid redirect URL to your intended ICS domain with protocol and append the `/callback` path, for example:

```
https://ics.example-domain.example-tld/callback
```

10. Go to the tab *Credentials*, copy the secret and save it to `/etc/intercom-client.secret`.
11. Go to the tab *Client Scopes* and add change `offline_access` to *Default*.
12. Make sure the *Access Token* includes a mapper for both the username and the user unique identifier. The documentation for these claims can be found in the *UCR* variables *intercom-service/settings/username-claim* (page 8) and *intercom-service/settings/user-unique-mapper* (page 8).

## 1.3 Installation with the web browser

To install ICS from the UCS management system, use the following steps:

1. Use a web browser and sign in to the UCS management system.
2. Open the *App Center*.
3. Select or search for *Intercom Service* and open the app with a click.
4. To install *Intercom Service*, click *Install*.
5. Leave the *App settings* in their defaults or adjust them to your preferences. For a reference, see *Settings* (page 8).
6. To start the installation, click *Start Installation*.

### Note

To install apps, the user account you choose for login to the UCS management system must have domain administration rights, for example the username `Administrator`. User accounts with domain administration rights belong to the user group `Domain Admins`.

For more information, see [Delegated administration for UMC modules<sup>5</sup>](#) in *UCS 5.0 Manual* [1].

<sup>5</sup> <https://docs.software-univention.de/manual/5.0/en/central-management-umc/delegated-administration.html#delegated-administration>

## 1.4 Installation with command-line

To install the app **UCS Intercom Service** from the command-line, use the following steps:

1. Sign in to a terminal or remote shell with a username with administration rights, for example `root`.
2. Choose between default and custom settings and run the appropriate installation command.

For installation with default settings, run:

```
$ univention-app install intercom-service
```

To pass customized settings to the app during installation, run the following command:

```
$ univention-app install --set $SETTING_KEY=$SETTING_VALUE intercom-service
```

### Caution

Some settings don't allow changes after installation. To overwrite their default values, set them before the installation. For a reference, see [Settings](#) (page 8).

**Example:** To define a different Keycloak-realm in ICS, run:

```
$ univention-app install intercom-service \  
--set intercom-service/keycloak/realm-name=master
```



## CONFIGURATION

The app **UCS Intercom Service** offers various configuration options. Some settings don't allow changes after installation. Therefore, you must set them **before** installation. You find those settings marked with *Only before installation* in [Settings](#) (page 8). You can change all other settings at any time after the installation.

To change settings after installation, sign in to the UCS management system with a username with administration rights and go to *App Center* ▶ *UCS Intercom Service* ▶ *Manage Installation* ▶ *App Settings*. On the appearing *Configure UCS Intercom Service* page, you can change the settings and apply them to the app by clicking *Apply Changes*.

The App Center then *re-initializes* the Docker container for the app **UCS Intercom Service**. *Reinitialize* means the App Center throws away the running ICS Docker container and creates a fresh ICS Docker container with the just changed settings.

### 2.1 Intercom Service

The app **UCS Intercom Service** provides the backend for inter-app communication of *Nextcloud*, the *UCS Portal*, *Matrix* through the *Nordeck* bot, *OX App Suite* and *XWiki*.

#### Warning

This app doesn't configure any *Keycloak* settings. It requires an existing client and realm setup in *Keycloak*.

### 2.2 Secrets

The app **UCS Intercom Service** requires secrets, that aren't automatically generated. Those secrets are:

#### `/etc/intercom-client.secret`

The client secret for authenticating with the *IdP*. You can retrieve the client secret from the *Keycloak Admin Console* in the *Authorization* tab of the *intercom-client*.

#### `/etc/matrix.secret`

The secret for backend communication with the *Matrix* server. You can retrieve it from the automatic join app service on the system running *Matrix*.

The following command shows how to retrieve the secret for the backend communication with the *Matrix* server:

```
$ kubectl exec --stdin --tty synapse-0 -n matrix-000-prod -- \
  /bin/bash -c "cat /data/autojoin-appservice.yaml \
  | grep as_token \
  | sed -e 's/as_token. \(.\+\)/\1/'"
```

#### `/etc/intercom-portal.secret`

The secret to communicate with the UCS Portal navigation service. You can retrieve the secret from `/etc/portal-navigation-service.secret`.

**/etc/intercom-redis.secret**

The secret to communicate with the app *Redis*, that stores the sessions. It is only needed if you use an external *Redis* server. Otherwise, it will be generated during installation.

## 2.3 Settings

The following references show the available settings within the app **UCS Intercom Service**. Univention recommends to keep the default values.

**intercom-service/settings/client-id**

Defines the OIDC client name of ICS in *Keycloak*. The file `/etc/ics_client.secret` stores the secret of this client.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| Yes      | intercom      | Only before installation |

**intercom-service/settings/user-unique-mapper**

Defines the *Keycloak* ICS client token claim name mapper configured. The field must uniquely identify the user across *Matrix*, *Nextcloud*, *OX App Suite*, and the *Nubus*. Only the value `entryuuid` is guaranteed to be unique in Nubus.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| Yes      | entryuuid     | Only before installation |

**intercom-service/settings/username-claim**

Defines the *Keycloak* ICS client token claim name mapper configured. The field must contain the username of the user.

| Required | Default value   | Set                      |
|----------|-----------------|--------------------------|
| Yes      | phoenixusername | Only before installation |

**intercom-service/settings/enable-session-cookie**

Enable session cookie (transient cookie). If enabled, the session cookie will be deleted at the end of the browser session. Otherwise, the session will be a rolling session (reset every time the user is active).

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| No       | False         | Only before installation |

**intercom-service/settings/session-rolling-duration**

Rolling session duration in seconds. The session will be reset if the user is active within the duration. Otherwise, the user will be logged out, requiring a silent login. If `intercom-service/settings/enable-session-cookie` (page 8) is set to true, this setting will be ignored.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| No       | 86400         | Only before installation |

**intercom-service/settings/intercom-url**

Defines the URL where you can reach ICS. This needs to be an externally reachable address as it's used by the browser to connect to ICS.

| Required | Default value                            | Set                      |
|----------|------------------------------------------|--------------------------|
| Yes      | <code>https://ics.%%@domainname%%</code> | Only before installation |

**intercom-service/settings/base-url**

Defines the base URL used to identify with the *IdP*. This URL must match the base URL defined in the OIDC client used on the *IdP*. The value should be the same as in *intercom-service/settings/intercom-url* (page 8).

| Required | Default value                            | Set                      |
|----------|------------------------------------------|--------------------------|
| Yes      | <code>https://ics.%%@domainname%%</code> | Only before installation |

**intercom-service/keycloak/url**

URL of the *Keycloak* instance that ICS uses as *IdP*. ICS ignores this value, if *intercom-service/settings/issuer-base-url* (page 9) is defined.

| Required | Default value                           | Set                      |
|----------|-----------------------------------------|--------------------------|
| Yes      | <code>https://id.%%@domainname%%</code> | Only before installation |

**intercom-service/keycloak/realm-name**

Name of the realm containing the configured OIDC ICS client. ICS ignore this value, if *intercom-service/settings/issuer-base-url* (page 9) is defined.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| Yes      | UCS           | Only before installation |

**intercom-service/settings/issuer-base-url**

Defines a full base URL for the OIDC token issuer. Usually, the *IdP Keycloak* issues OIDC tokens.

This variable overwrites *intercom-service/keycloak/url* (page 9) and *intercom-service/keycloak/realm-name* (page 9).

Only set this variable, if you really need to change the default URL generated from the before mentioned variables.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| No       | None          | Only before installation |

**intercom-service/settings/origin-regex**

Defines the origin *CORS* regular expression. Normally this will be the shared domain name. Changing this value may have security implications.

| Required | Default value                | Set                      |
|----------|------------------------------|--------------------------|
| Yes      | <code>%%@domainname%%</code> | Only before installation |

**intercom-service/settings/log-level**

Logging level for the standard output, as well as, log file at `intercom-service.log`.

| Required | Default value     | Set                      |
|----------|-------------------|--------------------------|
| Yes      | <code>info</code> | Only before installation |

**intercom-service/settings/proxy**

This setting is passed to *node-axios* within the container. It allows or disallows connections through a proxy server between ICS and apps like *Matrix*, *Nextcloud*, or *OX App Suite*, instead of a direct connection to the backends.

| Required | Default value      | Set                                                     |
|----------|--------------------|---------------------------------------------------------|
| Yes      | <code>False</code> | Before installation or application settings afterwards. |

**intercom-service/redis/host**

Defines the host name of the *Redis* server. By default ICS uses the bundled *Redis* server.

| Required | Default value               | Set                                                     |
|----------|-----------------------------|---------------------------------------------------------|
| Yes      | <code>redis-intercom</code> | Before installation or application settings afterwards. |

**intercom-service/redis/port**

Port where the *Redis* server is available.

| Required | Default value     | Set                                                     |
|----------|-------------------|---------------------------------------------------------|
| Yes      | <code>6379</code> | Before installation or application settings afterwards. |

**intercom-service/redis/user**

The user name for the *Redis* server. By default ICS uses the *default* user.

| Required | Default value        | Set                                                     |
|----------|----------------------|---------------------------------------------------------|
| Yes      | <code>default</code> | Before installation or application settings afterwards. |

**intercom-service/redis/ssl**

Activates the SSL connection to the *Redis* server. Set to `False` by default.

| Required | Default value      | Set                                                     |
|----------|--------------------|---------------------------------------------------------|
| Yes      | <code>False</code> | Before installation or application settings afterwards. |

**intercom-service/redis/mtls**

Activates the mTLS authentication for the connection to the *Redis* server. Set to `False` by default.

| Required | Default value      | Set                                                     |
|----------|--------------------|---------------------------------------------------------|
| Yes      | <code>False</code> | Before installation or application settings afterwards. |

**intercom-service/redis/certificates/mtls/cert**

Defines the host path to the certificate to identify the ICS client during the mTLS authentication to the *Redis* server. The file must be in PEM (Privacy Enhanced Mail) format.

| Required | Default value | Set                       |
|----------|---------------|---------------------------|
| No       | Empty         | Only before installation. |

**intercom-service/redis/certificates/mtls/key**

Defines the host path to the certificate private key for the mTLS authentication of the ICS client to the *Redis* server. The file must be in PEM format.

| Required | Default value | Set                       |
|----------|---------------|---------------------------|
| No       | Empty         | Only before installation. |

**intercom-service/matrix/url**

Defines the URL, where you can reach the *Matrix* server. The file `/etc/ics_matrix_as.secret` stores the Matrix secret.

| Required | Default value                                   | Set                      |
|----------|-------------------------------------------------|--------------------------|
| Yes      | <code>https://matrix.<br/>%%domainname%%</code> | Only before installation |

**intercom-service/matrix/enabled**

Defines if the *Matrix* proxy functionality is enabled. Set to `False` to disable *Matrix*.

| Required | Default value     | Set                      |
|----------|-------------------|--------------------------|
| Yes      | <code>True</code> | Only before installation |

**intercom-service/matrix/server-name**

Defines the server name of the *Matrix* server, that is a unique identifier configured in *Matrix*. The server name must match the configured server name in *Matrix*.

It isn't necessarily the server name defined in `intercom-service/matrix/url` (page 11).

| Required | Default value                      | Set                      |
|----------|------------------------------------|--------------------------|
| Yes      | <code>matrix.%%domainname%%</code> | Only before installation |

**intercom-service/matrix/login-type**

Defines the login type that ICS uses for the *Matrix* server.

Refer to the [Matrix<sup>6</sup>](https://matrix.org/docs/) documentation for more information about login types.

| Required | Default value                                                    | Set                      |
|----------|------------------------------------------------------------------|--------------------------|
| Yes      | <code>uk.half-shot.msc2778.login.<br/>application_service</code> | Only before installation |

<sup>6</sup> <https://matrix.org/docs/>

**intercom-service/matrix/nordeck-mode**

Defines the connection mode of the *Nordeck* bot.

Possible values: `test`, `live`, `test proxies`.

| Required | Default value     | Set                      |
|----------|-------------------|--------------------------|
| Yes      | <code>test</code> | Only before installation |

**intercom-service/matrix/nordeck-url**

Defines the URL, where you can reach the *Nordeck* bot.

| Required | Default value                                                | Set                      |
|----------|--------------------------------------------------------------|--------------------------|
| Yes      | <code>https://meetings-widget-bot.<br/>%%domainname%%</code> | Only before installation |

**intercom-service/portal/portal-url**

Defines the URL for the UCS portal. The file `/etc/ics_portal.secret` stores the Portal API key.

| Required | Default value                        | Set                      |
|----------|--------------------------------------|--------------------------|
| Yes      | <code>%%ucs/server/sso/fqdn%%</code> | Only before installation |

**intercom-service/xwiki/url**

Defines the URL where you can reach *XWiki*. Set to empty to disable *XWiki*.

| Required | Default value                             | Set                      |
|----------|-------------------------------------------|--------------------------|
| Yes      | <code>https://xwiki.%%domainname%%</code> | Only before installation |

**intercom-service/xwiki/enabled**

Defines the *XWiki* proxy functionality is enabled. Set to `False` to disable *XWiki*.

| Required | Default value     | Set                      |
|----------|-------------------|--------------------------|
| Yes      | <code>True</code> | Only before installation |

**intercom-service/xwiki/audience**

Defines the *OIDC audience* setting for *XWiki* that *XWiki* uses in the *IdP Keycloak*.

| Required | Default value      | Set                      |
|----------|--------------------|--------------------------|
| Yes      | <code>xwiki</code> | Only before installation |

**intercom-service/nextcloud/audience**

Defines the *OIDC audience* setting for *Nextcloud* that *Nextcloud* uses in the *IdP Keycloak*.

| Required | Default value       | Set                      |
|----------|---------------------|--------------------------|
| Yes      | <code>ncoidc</code> | Only before installation |

**intercom-service/nextcloud/url**

Defines the URL where you can reach *Nextcloud*. Set to empty to disable *Nextcloud*.

| Required | Default value                           | Set                      |
|----------|-----------------------------------------|--------------------------|
| Yes      | <code>https://fs.%%@domainname%%</code> | Only before installation |

**intercom-service/nextcloud/enabled**

Defines the *Nextcloud* proxy functionality is enabled. Set to `False` to disable *Nextcloud*.

| Required | Default value     | Set                      |
|----------|-------------------|--------------------------|
| Yes      | <code>True</code> | Only before installation |

**intercom-service/nextcloud/origin**

Defines the *Nextcloud* *CORS* setting. Usually this value is the same as *intercom-service/nextcloud/url* (page 12).

| Required | Default value                           | Set                      |
|----------|-----------------------------------------|--------------------------|
| Yes      | <code>https://fs.%%@domainname%%</code> | Only before installation |

**intercom-service/certificates/external/root-ca-pem**

Defines the host path to self-signed external certificates, allowing for secure communication with *Nextcloud*, *Matrix*, *Redis* and *OX App Suite*. The file must be in PEM format, allowing for multiple certificates in one file.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| No       | Empty         | Only before installation |

**intercom-service/certificates/external/root-ca-crt**

Defines the host path to self-signed external certificates, allowing for secure communication with *Nextcloud*, *Matrix* and *OX App Suite*. The file must be in CRT (Certificate) format.

| Required | Default value | Set                      |
|----------|---------------|--------------------------|
| No       | Empty         | Only before installation |

**intercom-service/settings/token-exchange-v2**

Enables Keycloak Token Exchange v2 (standard, RFC 8693) instead of the legacy Token Exchange v1.

Token Exchange v2 is enabled by default in *Keycloak* 26 and later and is the recommended implementation going forward. Token Exchange v1 is deprecated and disabled by default in *Keycloak* 26+.

To use Token Exchange v2, the following additional *Keycloak* configuration is required on the *intercom* client:

- Enable the *Standard Token Exchange* toggle in the *Keycloak Admin Console* under the client's *Settings* tab.
- Ensure the *Client Scopes* of the *intercom* client include the audiences for each enabled backend service, for example `xwikioidc` for *XWiki* (see *intercom-service/xwiki/audience* (page 12)) and `ncoidc` for *Nextcloud* (see *intercom-service/nextcloud/audience* (page 12)). Token Exchange v2 resolves audiences through client scopes rather than granting them directly based on the target client.

See [Installation](#) (page 3) for the full client setup procedure.

| Required | Default value | Set      |
|----------|---------------|----------|
| No       | False         | Any time |

## ARCHITECTURE

The **UCS Intercom Service** app architecture consists of the following elements:

- The operating environment UCS with the App Center and the Docker engine running the ICS container.
- The ICS software based on *Node.js*® running in the ICS container.
- The *Keycloak Identity Access Management*, used by ICS to authenticate sessions and retrieve login tokens for applications.
- A *Redis* container to store OIDC sessions.

### Note

The following sections may refer to the *browser* rather than to the *client* to avoid confusion with OIDC clients configured in *Keycloak*.

*Back end communication* as referred to in the following section isn't related to the *Backchannel Logout* path, which is a specific part of the OIDC protocol.

## 3.1 Design decisions

The app **UCS Intercom Service** aims to provide a way to facilitate *CORS* conform communication to different backends directly from the browser. It can proxy, modify, and authenticate requests and use *Keycloak* as *IdP* and its own session storage to hold OIDC sessions. It acquires those sessions through a silent background login, provided a valid OIDC cookie is already available in the browser.

## 3.2 Overview

Starting from the basics, ignoring everything related to login, authentication, and sessions for now, this is how ICS works on a basic level.

1. The browser opens the intended app.
2. The app contains ICS related JavaScript code as part of its responses.
3. This code instructs the browser to send a requests to ICS, after the browser needs communication to a separate app.
4. ICS acts as a middleware to modify and forward those requests appropriately to the relevant, second app using a backend communication channel.
5. ICS receives the response and finally sends an appropriately modified response to the browser.

For a visual representation, refer to [Fig. 3.1](#).

The following list describes how this fits into the wider OIDC authentication scheme. See also [Fig. 3.2](#).

1. The browser starts unauthenticated at the login endpoint of an app that supports ICS, for example *Matrix*, *Nextcloud*, *XWiki* or *OX App Suite*.

2. The browser follows the OIDC login procedure. The app redirects the browser to the *IdP Keycloak* and upon successful login assigns an OIDC session for the app to the browser.
3. A silent login happens in the background, that uses the information stored in the browser to authenticate ICS with the *IdP Keycloak* through a hidden *IFrame*<sup>7</sup>.
4. The browser requests an action, for example to create a video conference, as part of a calendar entry. The browser requests an interaction from *OX App Suite* to *Matrix*. In detail, the browser requests the *Nordeck* bot that runs in the Matrix user frontend *Element*.
5. The functional interaction begins as displayed in Fig. 3.1.
6. ICS sends a requests to the backend, usually another app on UCS. ICS acts as a middleware between the browser and backends, for example apps.

**Note**

ICS may use shared secrets rather than relying on OIDC authentication when communicating with backends.

**Warning**

Back end communication is only safe, if done through HTTPS or a secure network. Otherwise, attackers may eavesdrop secrets on application layer.

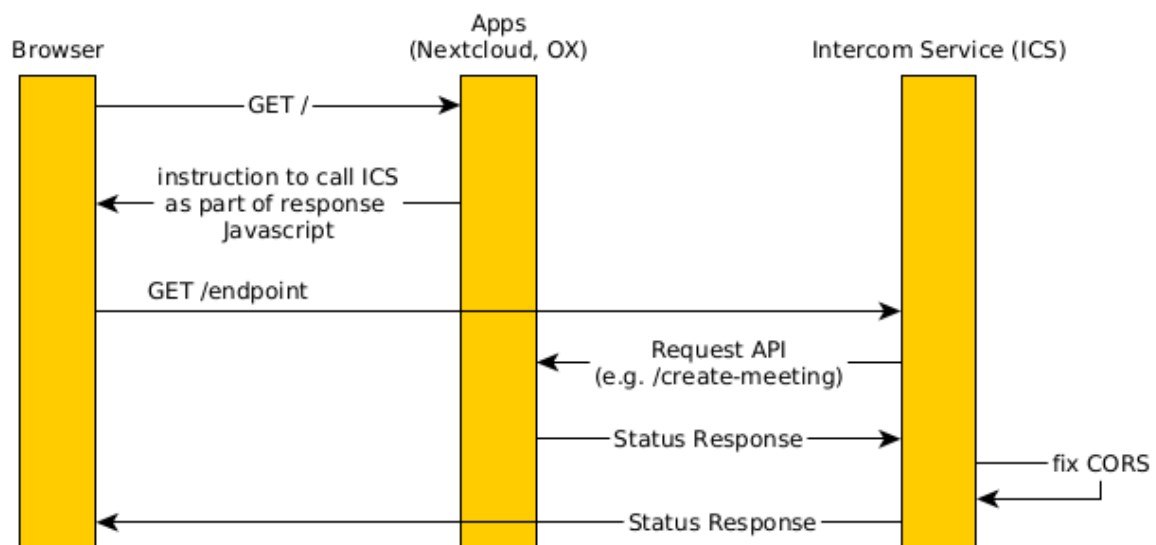
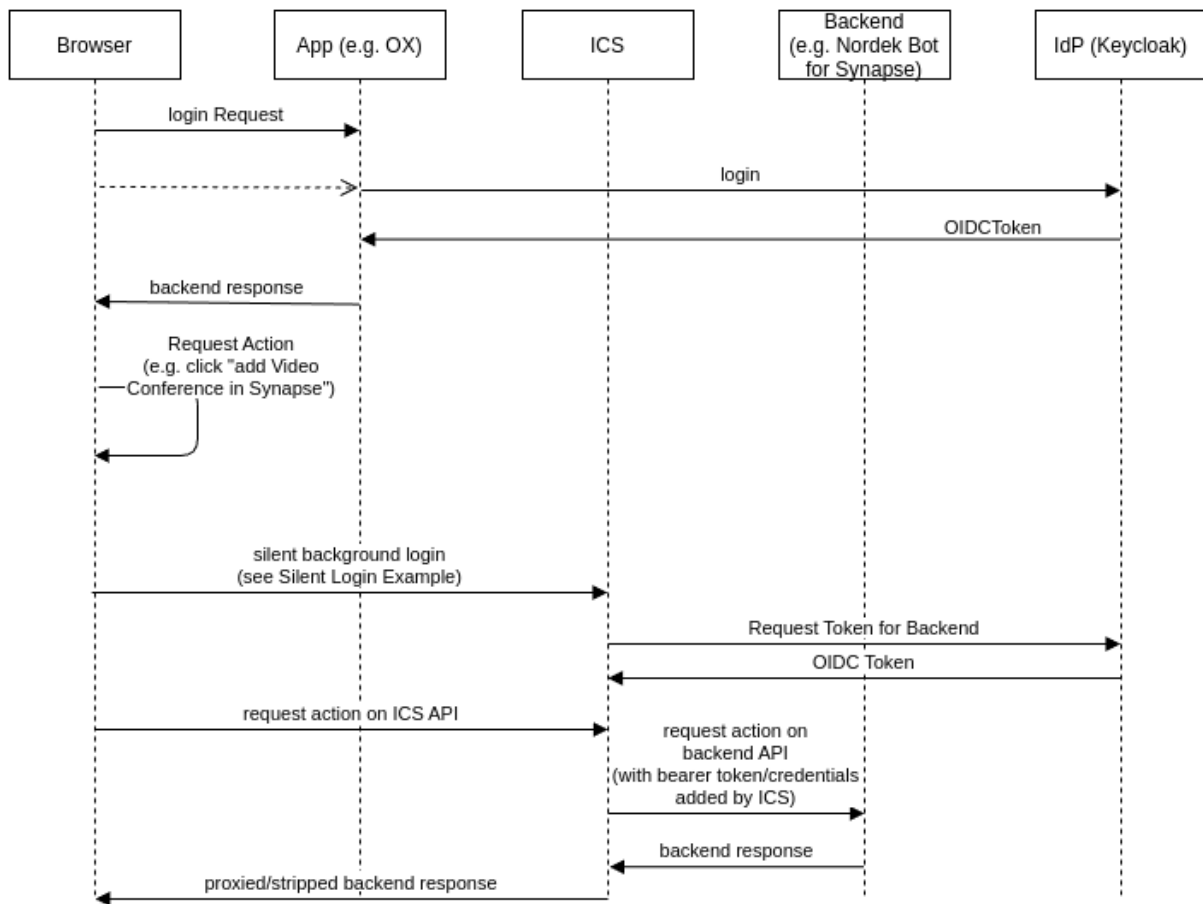


Fig. 3.1: Interactions of ICS without OIDC

<sup>7</sup> [https://en.wikipedia.org/wiki/HTML\\_element#Frames](https://en.wikipedia.org/wiki/HTML_element#Frames)

Fig. 3.2: Interactions of ICS with OIDC, *OX App Suite* and *Nordeck*

### 3.3 Portal navigation

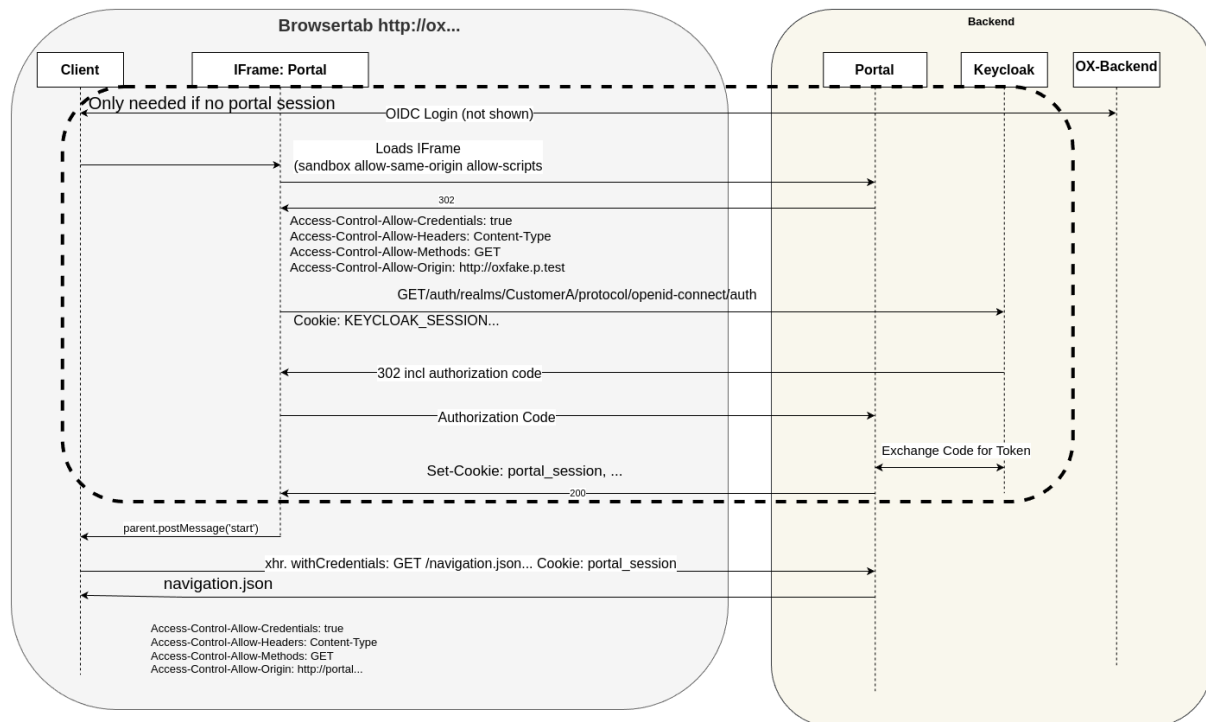


Fig. 3.3: Communication overview for the Central Navigation capability, which requires cross app communication between OX App Suite and the UCS Portal.

## 3.4 Filepicker

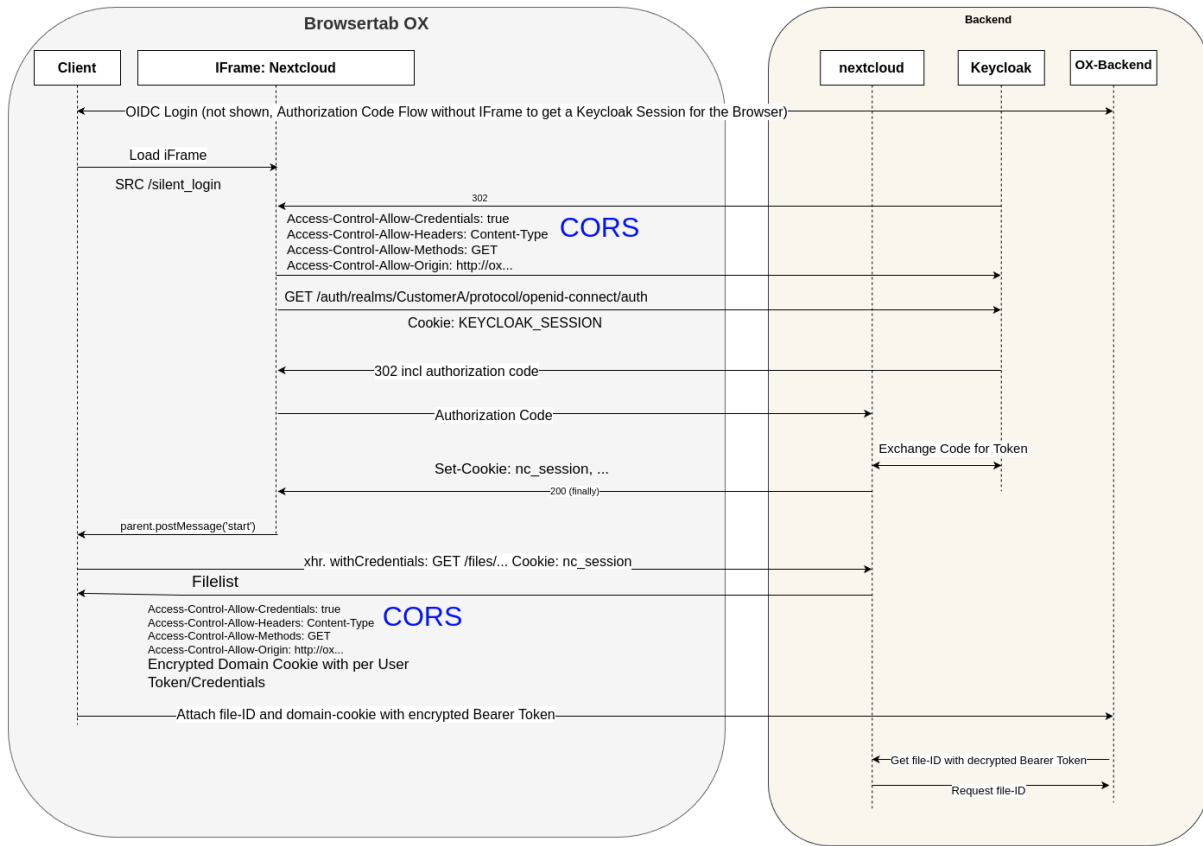


Fig. 3.4: Communication overview for the Filepicker capability, which requires cross-app communication between OX App Suite and Nextcloud.

## 3.5 Endpoints

The app **UCS Intercom Service** offers the API endpoints listed below.

### 3.5.1 General

- / Alive test only
- /silent Silent OIDC login endpoint
- /backchannel-logout Endpoint for OIDC back channel logout requests

### 3.5.2 App specific

- /fs Proxy for *Nextcloud*
- /navigation.json Proxy to Univention-portal for central navigation data
- /nob Proxy for the *Nordeck* bot. In a testing environment, developers can use this endpoint to requests to the plain *Matrix* *UserInfo* service.

## 3.6 Terms

The document uses the terms that may not be clear to the reader. The following list provides context and explanation.

### CORS

CORS stands for *Cross-Origin Resource Sharing* and is a mechanism that allows restricted resources on a web page to be requested from another domain outside the domain from which the first resource was served.

For more information about CORS (Cross-Origin Resource Sharing), refer to [Wikipedia: Cross-origin resource sharing](#)<sup>8</sup>.

### IdP

stands for *Identity Provider*. An IdP offers user authentication as service. In the context of the app **UCS Intercom Service** the software *Keycloak* offers the IdP service to ICS and its app backends.

### OIDC audience

The OIDC audience is a required claim within the ID Token for all OAuth 2.0 flows used by OIDC. According to the specification, it must contain the OAuth 2.0 `client_id` of the relying party as audience value.

For more information, see [section ID Token](#)<sup>9</sup> in *OpenID Connect Core 1.0 incorporating errata set 1* [3].

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<sup>8</sup> [https://en.wikipedia.org/wiki/Cross-origin\\_resource\\_sharing](https://en.wikipedia.org/wiki/Cross-origin_resource_sharing)

<sup>9</sup> [https://openid.net/specs/openid-connect-core-1\\_0.html#IDToken](https://openid.net/specs/openid-connect-core-1_0.html#IDToken)

## REQUIREMENTS AND LIMITATIONS

To ensure a smooth operation of the app **UCS Intercom Service** on UCS, administrators need to know the following requirements and limitations.

### 4.1 Cross-Site-Request-Forgery protection

**Warning**

CSRF protection wasn't extensively tested and may break at any time.

CSRF protection may not be working for *Matrix*, *Nextcloud*, and *OX App Suite* versions released before September 2022.



## TROUBLESHOOTING

When you encounter problems with the operation of the app **UCS Intercom Service**, this section provides information where you can look closer into and to get an impression about what's going wrong.

### 5.1 Log files

The app **UCS Intercom Service** produces different logging information in different places.

**/var/log/univention/appcenter.log**

Contains log information around activities in the App Center.

The App Center writes ICS relevant information to this file, when you run app lifecycle tasks like install, update and uninstall or when you change the app settings.

**/var/log/univention/join.log**

Contains log information from join processes. When the App Center installs ICS, the app also joins the domain.

**ICS Docker container**

The app uses a custom built node image. The App Center runs the container. You can view log information from the ICS Docker container with the following command:

```
$ univention-app logs intercom-service
```

**/var/log/apache2/\*.log**

Reverse proxy logs may contain relevant information for queried URLs by **UCS Intercom Service**, for example the status of middleware queries to other components.

**Note**

For externalized setups, like for example the *BMI-UX* setup, ICS proxies the queries through the external *HA-Proxy*. Therefore, you can find the proxy log files in `/var/log/haproxy.log` on the *HA-Proxy* server.

### 5.2 Common problems

Failing to provide the protocol, for example HTTP or HTTPS, for middleware relevant URLs like `intercom-service/nextcloud/url` (page 12), `intercom/portal/portal-url`, and `intercom/matrix/nordeck-url` leads to an error during the request in the form of:

```
TypeError: Cannot read properties of null (reading 'split')
    at required (/app/node_modules/requires-port/index.js:13:23)
```



## CHANGELOG

This changelog documents all notable changes to the ICS app. [Keep a Changelog](#)<sup>10</sup> is the format and this project adheres to [Semantic Versioning](#)<sup>11</sup>.

### 6.1 v1.12

Released: 17. July 2026

#### 6.1.1 Add

- UCR variables to enable support for Keycloak Token Exchange v2.
  - `intercom-service/settings/token-exchange-v2` (page 13) to enable support for Keycloak Token Exchange v2 in the Intercom service

#### 6.1.2 Changed

- The app's container image is now pulled from `artifacts.software-univention.de` instead of `docker.software-univention.de`. Operators who restrict outbound traffic with a firewall or proxy must, before upgrading, allow both `artifacts.software-univention.de` and `s3.de-west-1.psmanaged.com`: the registry answers image blob downloads with an HTTP 307 redirect to the latter (its S3 backing storage), so pulls fail if only the registry host is reachable. See [Allowing artifacts.software-univention.de in firewalls and proxies](#)<sup>12</sup> for guidance.

### 6.2 v1.11

Released: 20. March 2026

#### 6.2.1 Security

- Update dependencies to fix critical and high CVEs.

#### 6.2.2 Fix

- Enforce lowercase usernames for *Matrix* login as per [Matrix specification](#)<sup>13</sup>.

### 6.3 v1.10

Released: 9. December 2025

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<sup>10</sup> <https://keepachangelog.com/en/1.0.0/>

<sup>11</sup> <https://semver.org/spec/v2.0.0.html>

<sup>12</sup> <https://help.univention.com/t/allowing-artifacts-software-univention-de-in-firewalls-and-proxies/25333>

<sup>13</sup> <https://spec.matrix.org/v1.17/appendices/#user-identifiers>

### 6.3.1 Add

- *UCR* variables to allow configuration of session cookies.
  - `intercom-service/settings/enable-session-cookie` (page 8) to enable session cookie (transient cookie).
  - `intercom-service/settings/session-rolling-duration` (page 8) in seconds. The duration for which the session will be reset if the user is active within this time.

### 6.3.2 Security

- Critical CVE [CVE-2025-49844](https://www.cve.org/CVERecord?id=CVE-2025-49844)<sup>14</sup> in `redis-server`.

## 6.4 v1.9

Released: 28. January 2025

### 6.4.1 Add

- Access Tokens are now attempted to be fetched from an integration if the integration is enabled but a current session does not have a token for the service. This allows for *XWiki* and *Matrix* integrations to become healthy in a user session once a user has used those services once, thus the account exists in the respective service.
- The *Redis* connection now supports TLS. Also, mTLS authentication can be configured.
- *UCR* variables to configure SSL connection to *Redis*.
  - `intercom-service/redis/ssl` (page 10) to activate or deactivate the SSL connection to the *Redis* server.
  - `intercom-service/redis/mtls` (page 10) to activate or deactivate the mTLS authentication to the *Redis* server.
  - `intercom-service/redis/certificates/mtls/cert` (page 10) to specify the path to certificate used during mTLS.
  - `intercom-service/redis/certificates/mtls/key` (page 11) to specify the path to certificate secret key used during mTLS.

### 6.4.2 Change

- Better log formatting in JSON for proxied routes.

### 6.4.3 Fix

- Missing imports in the *XWiki* proxy caused the service to crash under certain circumstances.
- Wrong logger configuration caused some log messages to not be correctly formatted.

## 6.5 v1.8

Released: 15. December 2024

### 6.5.1 Add

- Endpoint to securely proxy requests from *Univention-Portal* to *XWiki* on `/wiki`, allowing to load *RSS* feeds from *XWiki*.
- *UCR* variables to configure *XWiki*.

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<sup>14</sup> <https://www.cve.org/CVERecord?id=CVE-2025-49844>

- `intercom-service/xwiki/enabled` (page 12) to activate or deactivate *XWiki* integration.
- `intercom-service/xwiki/url` (page 12) to set the URL of the *XWiki* instance.
- `intercom-service/xwiki/audience` (page 12) to configure the OIDC client.
- UCR variable `intercom-service/settings/username-claim` (page 8) to configure the claim in the identity token that contains the username.
- UCR variable `intercom-service/nextcloud/enabled` (page 13) and `intercom-service/matrix/enabled` (page 11) to activate or deactivate the respective services.

## 6.5.2 Change

- Load all the configuration during initialization to improve asynchronous performance.
- Updated base image to UCS 5.2-0 December 2024 build.

## 6.5.3 Fix

- *Univention-Portal* navigation crashed the application if the `intercom-service/settings/username-claim` (page 8) Keycloak mapping was missing in the access token.

## 6.6 v1.7

Released: 15. November 2024

### 6.6.1 Add

- UCR variable `intercom-service/settings/user-unique-mapper` (page 8) to configure the unique user claim name for the *Keycloak* OIDC client.

### 6.6.2 Change

- Order of middlewares for *Nextcloud* proxying caused authentication prompts in some cases.

## 6.7 v1.6

Released: 22. April 2024

### 6.7.1 Add

- Reconnect to *Redis* after the service was down.
- UCR variables to allow users to configure an external *Redis* server.
  - `intercom-service/redis/host` (page 10) to set the hostname of the *Redis* server.
  - `intercom-service/redis/port` (page 10) to set the port of the *Redis* server.
  - `intercom-service/redis/user` (page 10) to set the password of the *Redis* server.

### 6.7.2 Change

- Image is now based on *UCS* base image.

### 6.7.3 Fix

- AppCenter settings are now correctly applied during after installation.

## 6.8 v1.5

Released: 20. June 2023

### 6.8.1 Add

- *UCR* variables to set the path to external self-signed certificates.

### 6.8.2 Security

- Updated dependencies.

## 6.9 v1.4

Released: 13. December 2022

### 6.9.1 Change

- Refresh *Nextcloud* token when expired before proxying the request.
- Improved logging messages with JSON formatting.

### 6.9.2 Add

- *UCR* variable to set the log level.
- Logging to files and standard output.

### 6.9.3 Security

- Intercom service requests *Nextcloud* tokens with the *Nextcloud* audience, instead of the audience of *OX App Suite*.

## 6.10 v1.3

Released: 28. October 2022

### 6.10.1 Change

- Treat expired refresh tokens as no token, triggering a silent login attempt.
- Matrix login type set to *m.login.application\_service* and is not configurable any more.
- Switch to v3 Matrix client API.

## 6.11 v1.2

Released: 29. September 2022

### 6.11.1 Add

- Various debug logs

### 6.11.2 Change

- Apply firewall rules during installation to make ICS accessible from outside of UCS.
- Set Docker DNS based on the *UCR* variables *nameserver1*, *nameserver2* and *nameserver3*.

### 6.11.3 Security

- The *Filepicker* functionality of ICS now fetches a separate token for authenticating with the file hosting application *Nextcloud*. The *OX* OIDC-client in the IdP must be allowed, to fetch a token for the *Nextcloud* OIDC-client. This was always intended, but not correctly enforced in earlier versions.

### 6.11.4 Fix

- Update deprecated usage of *express.urlencoded*.
- ICS health check failed because of *Nordeck* URL returning *404*.
- Video conferences created as the wrong user.
- Central navigation returning *navigation.json* for the wrong user under certain circumstances.

## 6.12 v1.1

Released: 16. September 2022

### 6.12.1 Add

#### Stability

- ICS split the cookie headers by a logic that didn't consider certain cases. Now, ICS uses a standard cookie library for the handling cookie headers.
- During app installation, ICS tests the URLs of the required services **Keycloak**, *Nextcloud*, *Nordeck*, and *UCS Portal*, if it can reach them. The installation shows a warning, if the test can't reach the services. Additionally, ICS runs a health check within the Docker container every 60 seconds to test, if it can reach the services.

#### Refreshing Access Tokens

A middleware that automatically refreshes access tokens when they expire.

### 6.12.2 Change

- Improve the readability of user documentation.

### 6.12.3 Security

- The *Redis* database provides persistence for app sessions. The update applies the following security fixes to *Redis*:
  - Password protection provided in `/etc/intercom-redis.secret`.
  - The Redis container is only accessible from the **docker-compose** internal network (`external: false`).
- Verify the JWT (JSON Web Token) access or ID token with the public key of the *Keycloak* issuer.
- Enable `backchannel-logout` and remove the appropriated app-session from ICS.

### 6.12.4 Fix

- Convert the uppercase value for the environment variable `PROXY` to lowercase. Using the variable in JavaScript requires the value in a lowercase string.

## 6.13 v1.0

Released: 22. August 2022

### 6.13.1 Add

- Endpoint for OIDC silent login against **Keycloak** on `/silent`.
- Endpoint to securely proxy requests from *Open-Xchange* to *Nordeck* on `/nob`, allowing the creation of Element videoconferences from *Open-Xchange*.
- Endpoint to securely proxy requests from *Open-Xchange* to *Nextcloud* on `/fs`, allowing to use the email *Filepicker* with *Nextcloud*.
- Endpoint to securely proxy requests from *Open-Xchange* to *UCS Portal* `/navigation.json`, allowing for use of *UCS Portal* central navigation from *Open-Xchange*.
- Session storage with *Redis*.

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