

Dominik George, Tom Teichler, Jonathan Weth, the AleksIS® Team and contributors

# The AleksIS® Handbook

## Release 2023.6 "Dewey"

Project Information · Installation and Administration

End-User Handbook · Developer Manual



# ALEKSIS

THE FREE SCHOOL INFORMATION SYSTEM



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## CONTENTS:

<b>1</b>	<b>Preamble</b>	<b>1</b>
1.1	Introduction to AleksIS	1
1.1.1	Welcome	1
1.1.2	On School Information Systems	1
1.1.3	AleksIS, the Free School Information System	2
1.1.4	The wider digital educational ecosystem	2
1.2	The official AleksIS standard distribution	3
1.2.1	Releases and support	3
1.2.2	Apps and versions	3
1.2.3	Installation of the standard distribution	3
1.3	Highlights and notable changes in this release	4
1.3.1	New frontend technology	4
1.3.2	New apps and features	4
1.3.3	Notable changes in existing features for users	4
1.3.4	How to upgrade	4
<b>2</b>	<b>End-user handbook</b>	<b>7</b>
2.1	Using basic features of the AleksIS Core	7
2.1.1	Register a new account	7
2.1.2	Managing your personal account	8
2.1.3	Dashboard	10
2.1.4	PWA (progressive web application)	12
2.2	Timetables and substitution plans with Chronos	15
2.2.1	Finding information about the timetable	15
2.2.2	Substitution plan	18
2.2.3	Notifications about current changes	19
2.2.4	Managing substitutions	19
2.2.5	Configuring the timetable display	21
2.3	Digital class register	21
2.3.1	Concept of Alsijil and overview about functionality	21
2.3.2	Basic data concepts	22
2.3.3	Overviews about lessons and students	23
2.3.4	Viewing and managing lessons	26
2.3.5	Assigning group roles	29
2.3.6	(Archive) printout	30
2.4	Using seating plans	30
2.4.1	Managing seating plans	30
2.4.2	Integration with class register	31

2.5	Time-based documents with Resint	32
2.5.1	Publishing posters	32
2.6	Get support via Hjelp	34
2.6.1	Reading Frequently Asked Questions	34
2.6.2	Reporting issues	35
2.6.3	Giving feedback for AleksSIS	35
<b>3</b>	<b>Administration handbook</b>	<b>37</b>
3.1	Setup of the AleksSIS instance and the AleksSIS core	37
3.1.1	Concepts of the AleksSIS core	37
3.1.2	Install AleksSIS	39
3.1.3	Configuration files and format	44
3.1.4	Configuration options	45
3.1.5	Storage	47
3.1.6	Mail	48
3.1.7	Authenticating against LDAP	48
3.1.8	Registration and user invitations	49
3.1.9	Social accounts	51
3.1.10	Monitoring and health checks	52
3.1.11	Background tasks	54
3.1.12	Data checks	55
3.1.13	Providing important information to users using the dashboard	56
3.2	Managing timetable data and substitution plans in Chronos	59
3.2.1	Managing timetable and substitution data	59
3.2.2	Setup notifications about current changes	59
3.2.3	System-wide settings for timetable and substitution display	60
3.3	Setting up a digital class register with AleksSIS-App-Alsijil	60
3.3.1	Defining base data	60
3.3.2	System-wide settings for the digital class register	64
3.4	Seating plan administration	64
3.4.1	Permissions	64
3.5	Providing time-based documents with Resint	65
3.5.1	Uploadable posters for time-based documents	65
3.5.2	Configuring live documents	66
3.6	Importing timetables and substitutions from Untis	67
3.6.1	Untis data and their relation to AleksSIS	67
3.6.2	Setting up the Untis integration	68
3.7	Importing data from CSV-like sources	71
3.7.1	Base concept of the generic importer	71
3.7.2	Configuring the import	71
3.7.3	Exporting data from various systems	72
3.7.4	Importing data	72
3.8	Show data from external sources on dashboard	73
3.8.1	Introduction	73
3.8.2	RSS feed widget	73
3.8.3	iCalendar feed widget	75
3.9	Advanced LDAP integration	76
3.9.1	Interfacing with an LDAP directory beyond authentication	76
3.9.2	Configuring LDAP synchronisation	77
3.9.3	Managing user accounts in LDAP	78
3.10	Setting up Matrix synchronization	78

3.10.1	Matrix and Element	78
3.10.2	Concepts of rooms and spaces	79
3.10.3	Configuring Matrix connection	79
3.10.4	Synchronizing with Matrix	80
3.11	Support end users and get feedback with Hjelp	81
3.11.1	Managing FAQs	81
3.11.2	Managing issue report form	82
3.11.3	Settings and preferences	84
<b>4</b>	<b>Developer handbook</b>	<b>85</b>
4.1	Development of AlekSIS apps using the AlekSIS core	85
4.1.1	Setting up the development environment	85
4.1.2	Installing apps into development environment	87
4.1.3	Running tests and reports	88
4.1.4	Materialize templates	90
4.1.5	Extensible models	92
4.1.6	Merging of app settings	92
4.1.7	Registering dashboard widgets	93
4.2	Providing auto-generated documents from apps	94
4.2.1	Providing live document types from other apps	94
<b>5</b>	<b>Appendix</b>	<b>97</b>
5.1	About Free Software and Open Source	97
5.1.1	The four freedoms	97
5.1.2	Advantages for schools	98
5.2	Legal Information about the AlekSIS® Software	98
5.2.1	Copyright Note and Licenses	98
5.3	AlekSIS® trademark	99
5.4	EUROPEAN UNION PUBLIC LICENCE v. 1.2	100
5.4.1	1. Definitions	100
5.4.2	2. Scope of the rights granted by the Licence	101
5.4.3	3. Communication of the Source Code	101
5.4.4	4. Limitations on copyright	101
5.4.5	5. Obligations of the Licensee	102
5.4.6	6. Chain of Authorship	102
5.4.7	7. Disclaimer of Warranty	103
5.4.8	8. Disclaimer of Liability	103
5.4.9	9. Additional agreements	103
5.4.10	10. Acceptance of the Licence	103
5.4.11	11. Information to the public	104
5.4.12	12. Termination of the Licence	104
5.4.13	13. Miscellaneous	104
5.4.14	14. Jurisdiction	104
5.4.15	15. Applicable Law	105
5.4.16	Appendix	105
	<b>Bibliography</b>	<b>107</b>





**PREAMBLE**

## 1.1 Introduction to AleksIS

### 1.1.1 Welcome

Welcome to AleksIS, the Free School Information System! This handbook is a comprehensive guide on how to install, administer, and use AleksIS and all included official apps. Its target audience are system administrators seeking to install and maintain an AleksIS installation, people supporting the use of AleksIS in daily processes in educational organisations, and end users who work with the software on a daily basis.



### 1.1.2 On School Information Systems

School Information Systems, or for short, SIS, are software suites that help educational organisations with managing personal information about all members (e.g. students, teachers, parents and guardians) as well as organisational data like plans, pedagogic track records, and much more.

Generally, the goal of using School Information Systems is to help members of the school or other educational organisation to organise their work in learning and teaching, and to simplify digital processes, especially those that involve analytical evaluation, statistics, or information that is updated very frequently and should be made available to its recipients in a timely manner.

Ideally, School Information Systems also promote transparency between teachers and students and improve sustainability by minimising the need for paperwork.

### 1.1.3 AleksIS, the Free School Information System

School Information Systems have been on the rise ever since schools began digitising their management processes. Traditionally, the vendors of school management tools (like for timetabling, personal data management of teachers and students, etc.) also deliver web applications that are tailored towards making the respective data available to those who need it.

As most of these solutions are proprietary products, they tend to be limited to be used together with other software of their vendors, and do not integrate nicely with other software and with processes and data sets not in the focus of the developers.

AleksIS, in contrast, is a generic School Information System that aims at being universally usable for all processes and data sets in any educational organisation, and at interacting closely with other software components employed in management and lessons.

The development and product team has set the following goals for AleksIS, in their dedication to support learning and teaching in the digital world:

- Create a high-quality software product, adhering to high standards regarding data protection, data safety, security, and stability
- Comply with as many national and regional data protection and school laws as possible (cf. [Legal Information about the AleksIS® Software](#) (page 98))
- Provide an extensible framework, allowing schools or their supporting IT companies to create their own apps (cf. [Developer handbook](#) (page 85))
- Help coding clubs and classes to understand the development as deeply as necessary to use AleksIS for learning and creating their own apps
- Keep AleksIS free, open, and transparent (cf. [About Free Software and Open Source](#) (page 97))

### 1.1.4 The wider digital educational ecosystem

AleksIS is a School Information System, and as such, is intended to be a superior tool for data management, and for digitising management processes in education.

As laid out in the Basics of the Unix Philosophy, good software should “do one thing and do it well” [[UnixPhil](#)]. Therefore, AleksIS will not provide features that are covered by other good and free software. The following examples list features that are out of scope for AleksIS:

- **Messenger features:** There are good free software communication platforms, e.g. [Element](#)<sup>1</sup>
- **Learning Management:** Managing online courses, tests, etc. is covered by systems like [Moodle](#)<sup>2</sup>
- **File sharing and groupware:** The [Nextcloud](#)<sup>3</sup> private cloud is a good solution for calendars, file sharing, and other groupware needs

AleksIS strives to provide integrations with popular other platforms, and to ease the process of developing such integrations.

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<sup>1</sup> <https://element.io/>

<sup>2</sup> <https://moodle.org/>

<sup>3</sup> <https://nextcloud.com/>

## 1.2 The official AleksIS standard distribution

AleksIS consists of a core, which provides all general functionality and management of basic data, and additional apps that can be installed in a modular fassion.

### 1.2.1 Releases and support

The default distribution is a meta-package that defines which apps are officially supported, and what the development team canonically calls *AleksIS®*. It is released avery 6 months, aligned with the beginning school half-year in summer and winter.

In the official distribution, the core and apps are semantically versioned and limited to their minor version. That means that, if the standard distribution is installed through the meta-package, all apps are kept up to date with bugfixes, but do not receive feature updates or even breaking changes.

The official distribution is supported for one year (in other words, the most recent two distribution versions are supported). The supported versions receive security updates and important bugfixes.

### 1.2.2 Apps and versions

App name	Description	Version
Core	Core functionality and framework	3.1
Chronos	Timetables and substitutions	3.0
Alsijil	Class register	3.0
Untis	Import from Untis	3.0
Hjelp	Support, feedback and FAQ	3.0
DashboardFeeds	Dynamic external feeds as dashboard widgets	3.0
CSVImport	Import generic CSV files	3.0
LDAP	LDAP synchronisation	3.0
Resint	Time-based/live documents	3.0
Matrix	Integration with Matrix/Element	2.0
Stoelindeling	Seating plans	2.0

### 1.2.3 Installation of the standard distribution

The standard distribution is primarily available as the `aleksis` package on PyPI. All installation documentation applies, and to install the standard distribution, the package `aleksis` can be used in all places where `aleksis-core` is installed for custom installations.

## 1.3 Highlights and notable changes in this release

This release of the AleksIS® distributions features the following notable changes for administrators and users, compared to the previous official release.

### 1.3.1 New frontend technology

AleksIS® 2023.6 (with the AleksIS Core 3.0) features a completely rewritten web app using Vue.js and Vuetify. For users, this implies a better usage experience, most importantly with the app feeling more native on mobile devices. For developers, it means that the AleksIS backend now provides a GraphQL API that can be consumed in frontend views, and can also be used to develop other clients.

### 1.3.2 New apps and features

Due to the rewrite of the web app, not many new big features were added. The new web app provides foundational work for new features planned for AleksIS 2023.6.

#### Substitution management in Chronos

The management of substitutions for lessons and supervisions has been re-introduced in a basic version. While most timetable data can still only be imported from foreign sources, these basic changes can now be made in AleksIS directly.

*This feature was sponsored by Erik-Nölting-Grundschule, Hattingen.*

### 1.3.3 Notable changes in existing features for users

- Timetable import from Untis has received a lot of bugfixes and support for edge cases in some Untis features.

### 1.3.4 How to upgrade

To upgrade to the current release, simply install the new version as laid out in the install instructions. These instructions are supposed to be idempotent and can simply be repeated.

The setup instructions are detailed at [Install AleksIS](#) (page 39).

#### Required manual actions after upgrade

Administrators are required to do the following manual steps on or after upgrade:

- Installation of frontend dependencies has changed. Make sure to run `aleksis-admin vite build` as described in the installation steps.
- The AleksIS frontend now needs a stable base URL. If your setup has only one `allowed_host`, you do not need to change anything. If you have more than one `allowed_host`, you should configure the full primary URL of your AleksIS instance, including the `https://` prefix, as `http.base_url`.

- Clearing the browser cache might be necessary in some situations after upgrading.
- The OpenID Connect issuer has been changed to not include the */oauth/* suffix. All clients need to have their configurations aligned after upgrading AleksIS.



## END-USER HANDBOOK

## 2.1 Using basic features of the AlekSIS Core

### 2.1.1 Register a new account

#### Public registration

If public registration is enabled on the AlekSIS instance, you can click the Signup button located in the navigation sidebar and register for an AlekSIS account.

AlekSIS

## Signup

⚠️ Already have an account? Then please [sign in](#).

**Base data**

First name Additional name(s) Last name

Short name

**Adress data**

Street Street number

Postal code Place

**Contact data**

Mobile phone Home phone

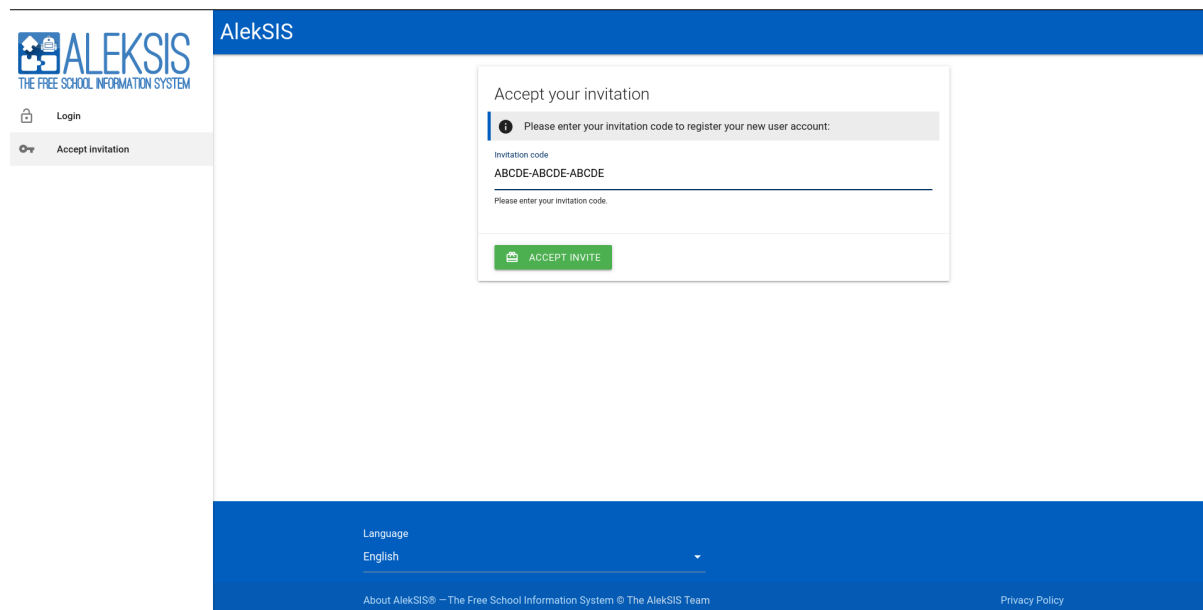
Additional data

If enabled, you have to verify your email address after signup. To do so, click on the link you received on the email address you entered in the signup form.

**Note:** Normally, AlekSIS does not allow public registration, and all accounts are centrally managed by administrators. Public registration is an optional feature that has to be enabled by administrators after careful consideration.

## Using an invitation code

If you have an invitation code, click **Accept invitation** in the sidebar and enter it. You will be redirected to the signup form.



The screenshot shows the AleksIS web interface. At the top left is the AleksIS logo with the tagline 'THE FREE SCHOOL INFORMATION SYSTEM'. Below the logo are two menu items: 'Login' and 'Accept invitation', with 'Accept invitation' selected. The main content area is titled 'Accept your invitation' and contains a form with the following elements: a message 'Please enter your invitation code to register your new user account.', a label 'Invitation code', a text input field containing 'ABCDE-ABCDE', a label 'Please enter your invitation code', and a green button labeled 'ACCEPT INVITE'. At the bottom of the page, there is a language dropdown menu set to 'English', and footer text: 'About AleksIS® - The Free School Information System © The AleksIS Team' and 'Privacy Policy'.

If you've received an invitation link (e.g. via email), clicking the link will redirect you to the signup form automatically.

### 2.1.2 Managing your personal account

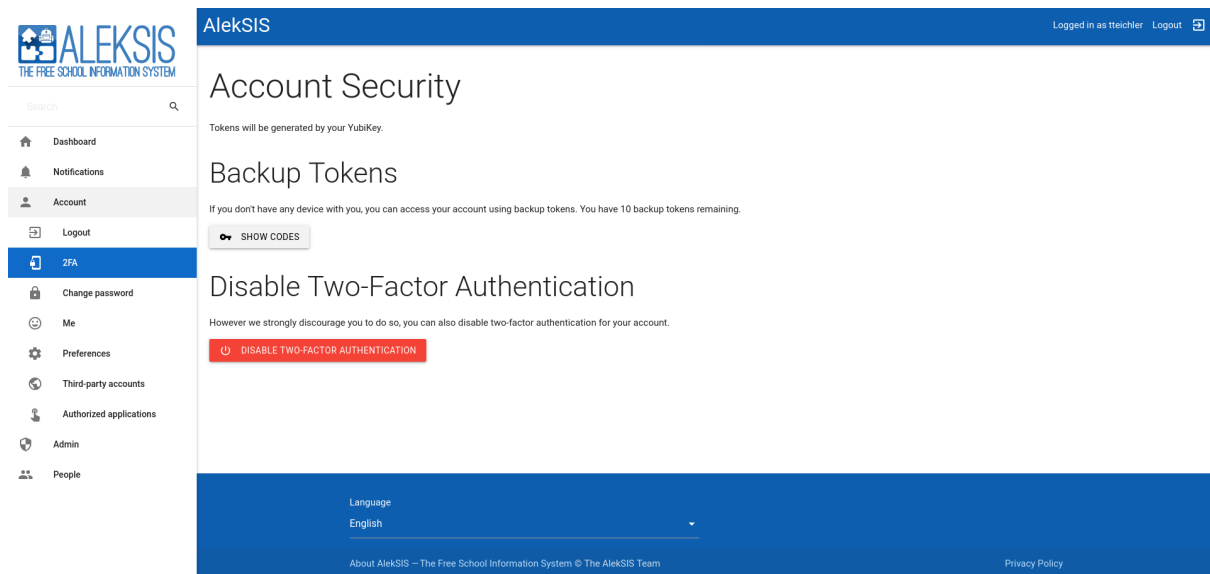
Each logged in user has several options to provided through the AleksIS core. Which of these items are display depends on whether the user has a person and what your system administrator has configured.

#### Notifications

The AleksIS core has a built-in notification system which can be used by apps to send urgent information to specific persons (e. g. timetable changes). Notifications are shown on the dashboard and the notifications page reachable over the menu entry **Notifications**. In addition to that, notifications can be sent to users through several communication channels. These channels can be switched on or off in your personal preferences (cf. [Personal preferences](#) (page 10)).



## Setup two-factor authentication



AleksIS provides two factor authentication using hardware tokens such as yubikeys which can generate OTPs or OTP application. Additionally, all devices are supported that make use of FIDO U2F.

To configure the second factor, visit *Account* → *2FA* and follow the instructions.

Please keep the backup codes somewhere safe so you do not lose access to your account. If you are unable to login with two factor authentication, please contact your site administrator.

If you forget to safe your backup codes, but you are still logged in, visit *Account* → *2FA*, and press *Show codes*.

To disable two factor authentication, login to your account and navigate to *Account* → *2FA*, then press the big red button to disable 2fa.

## Change password

If your system administrator has activated this function, you can change your password via *Account* → *Change password*. If you forgot your password, there is a link *Password forgotten?* on this page which helps with resetting your password. The system then will send you a password reset link via email.

## Me page

Reachable under *Account* → *Me*, this page shows the personal information saved about you in the system. If activated, you can upload a picture of yourself or edit some information.

## Personal preferences

You can configure some behavior using the preferences under Account → Preferences. By default, the Core only provides some preferences, but apps can extend this list. You can find further information about such preferences in the chapter of the respective apps.

- **Notifications**

- **Name format for addressing:** Here you can select how AleksIS should address you.
- **Channels to use for notifications:** This channel is used to sent notifications to you (cf. [Notifications](#) (page 8)).

## Third-party accounts

If you logged in using a third-party account (e. g. a Google or Microsoft account), you can manage the connections to these accounts on the page Account → Third-party accounts.

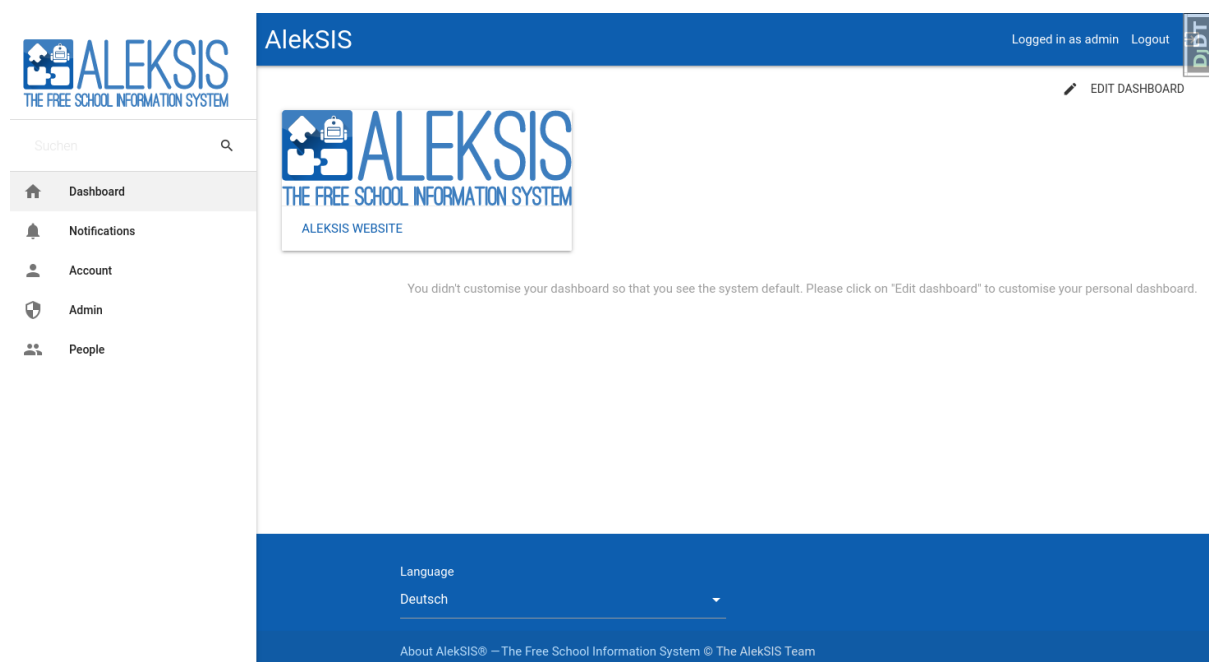
The feature to use third-party accounts needs to be enabled by an administrator, as described in [Social accounts](#) (page 51).

## Authorized applications

On the page Account → Authorized applications you can see all external applications you authorized to retrieve data about you from AleksIS. That can be services provided by your local institution like a chat platform, for example.

### 2.1.3 Dashboard

The first thing you will see after the login is the dashboard. Depending on what your system administrator configured, you will be able to see information from different apps at one glance.

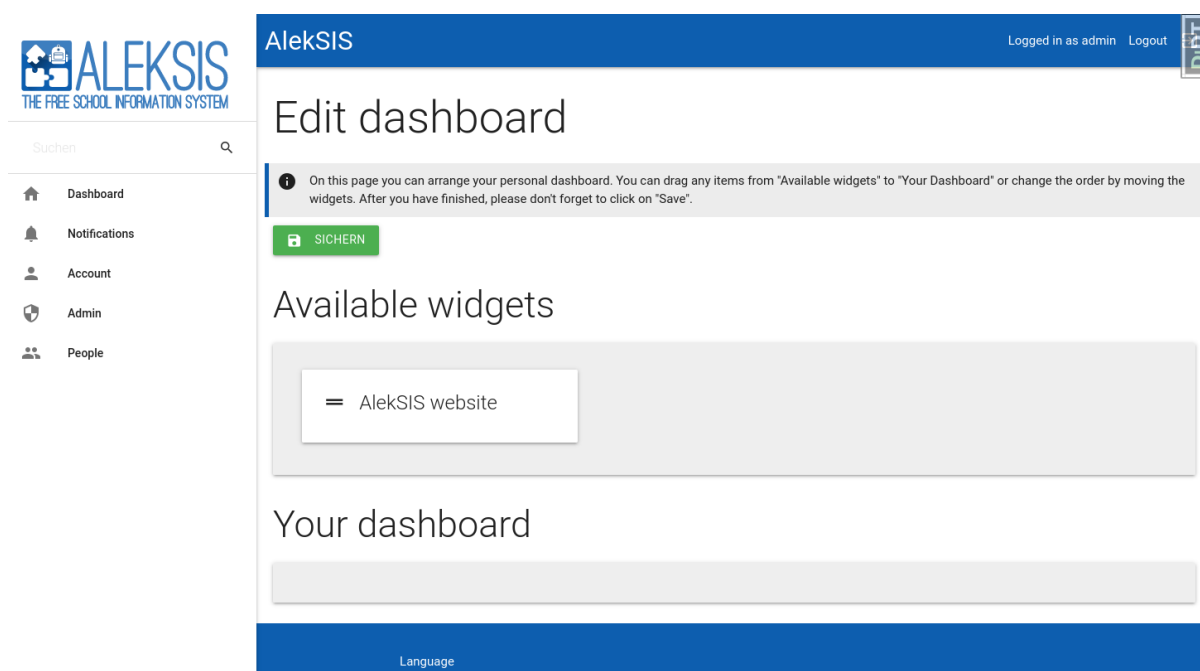


## Dashboard widgets

The dashboard consists of different parts, the so-called *dashboard widgets*. They are configured by the system administrator and can be freely arranged on the dashboard (cf. [Customising the dashboard](#) (page 11)).

## Customising the dashboard

There are several options for customising your personal dashboard. By default, you will see a layout provided by your system administrator. Using the button *Edit dashboard* on the top right corner of the dashboard, you can change the selection and position of the widgets.



On the edit page, you will see a list of all available widgets and your current dashboard. If the section *Your dashboard* is empty, the default dashboard will be shown. To make an own layout, you can drag widgets from the *Available widgets* to *Your dashboard*. Within *Your dashboard* you also can arrange the widgets by dragging them. To remove widgets from the dashboard, you just have to drag them back to *Available widgets*.

In addition to editing the dashboard, you can also change some preferences referring to the dashboard. This is done under the menu item *Account* → *Preferences* → *General*:

- **Automatically update the dashboard and its widgets:** If enabled by you and the system administrator, the dashboard will be updated automatically every 15 seconds.

## 2.1.4 PWA (progressive web application)

### What is a progressive web application?

A PWA is an application developed with common web technologies and delivered in form of a website, but which offers some features a traditional website does not and overall creates an impression that resembles that of a native application.

### AleksIS PWA features

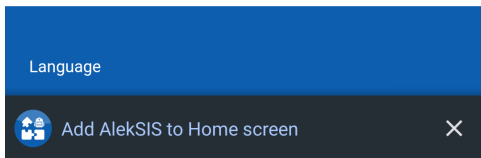
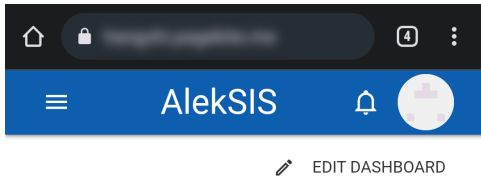
The AleksIS PWA offers the following features (not all available on all platforms):

- Installable and displayable in a separate window
- Caching and serving, if given page cannot be accessed, of non-interactive pages and needed assets
- Provision of an offline fallback page if wanted page cannot be accessed and there is no cached one
- Indicator whether the served page is served from the PWA cache

### Installation of the PWA

The procedure to get a native feeling using the AleksIS PWA varies from platform to platform. On some, you are prompted to add AleksIS to your home screen of desktop using a popup; on others, you have to take action yourself and find the corresponding menu entry. As of the time of writing, "installable" PWAs are supported by all major platforms except Firefox Desktop and Safari Desktop which nevertheless support the other features.

Chromium-based browsers (e.g. Chromium, Google Chrome, Microsoft Edge) will usually prompt you to install the PWA by a popup on both mobile and desktop devices; for the former using a banner

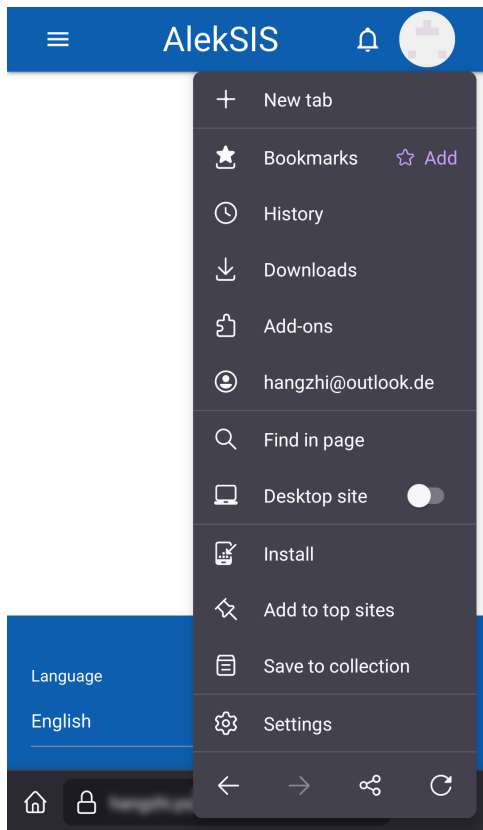


and for the latter using an appearing button in the address bar.

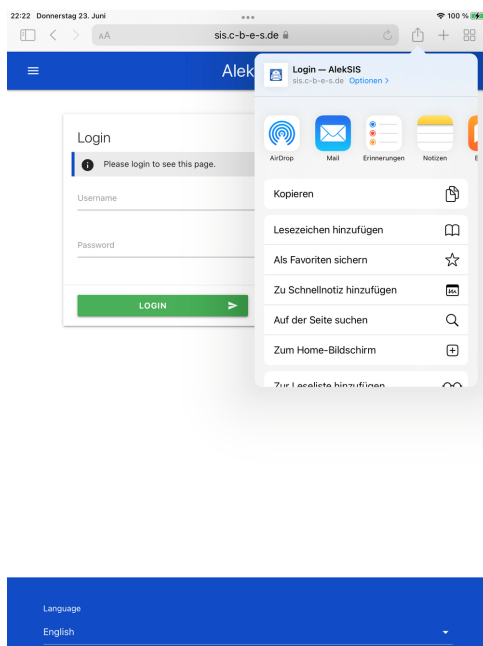


In both cases, a click on the notification is enough to start the installation process.

Firefox Mobile will also prompt you using a dot near the menu button; then Install has to be clicked.



On Safari Mobile, you need to open the share popup and click on the Add to Home Screen button.



No matter what platform is used, AleksIS can be accessed as an independent application entry, just like any other installed native application, after installation.

## 2.2 Timetables and substitution plans with Chronos

### 2.2.1 Finding information about the timetable

Timetables are provided in several ways in AleksIS. Using the different views, it is possible to both find information about the regular lessons taking place, as well as up-to-date information generated from most recent information, e.g. substitutions, cancellations, or extra lessons.

#### Viewing the personal timetable

One of the most useful features is the ability to see your daily or weekly timetable at a glance – with all recent information included. This view, called “My timetable”, can be accessed in two ways: Just add the timetable widget to the dashboard or use the menu entry *Timetables* → *My timetable*. On this page, you can switch between different days (on mobile devices) or different weeks (on desktop devices) to see future information.

#### Smart plan

By default, the personal timetable is displayed in *smart plan* mode. This means that all available information, like substitutions or cancellations, is merged into the regular plan to create an up-to-date version of the timetable. At one glance, the actual timetable for a specific day can thus be viewed.

Using the button *Show regular timetable* above the plan, the view can be switched into regular mode, showing only what was planned ahead, without up-to-date information.

The screenshot shows the 'My timetable' page in AleksIS. The interface is in 'SMART PLAN' mode. The main content is a weekly timetable for user 'ALB'. The current view is for Tuesday, Sept. 28, 2021. The timetable is organized into a grid with rows representing lesson periods and columns representing days of the week. The lessons are color-coded: green for '5c-Ek Ek 004', red for 'Eb-DE ALB DE 209', and blue for 'Ea-Ek ALB Ek G11'. Some cells are empty, indicating cancellations or holidays (Herbstferien). The interface also includes a navigation menu on the left and a header with the user's name and login status.

	Montag Sept. 27, 2021	Dienstag Sept. 28, 2021	Mittwoch Sept. 29, 2021	Donnerstag Sept. 30, 2021 Herbstferien	Freitag Oct. 1, 2021 Herbstferien
1. 8 a.m. 8:45 a.m.	5c-Ek Ek 004	Eb-DE ALB DE 209 Klausur	-Verf. Verf.		
2. 8:45 a.m. 9:30 a.m.	5c-Ek Ek 004	Eb-DE ALB DE 209 Klausur	Eb-DE DE 209		
3. 9:45 a.m. 10:30 a.m.	7b-Ek Ek 007	8b-De De 107	Ea-Ek ALB Ek G11		

The colours of the lessons are defined by the subject of the lesson, and was probably imported from a time-tabling software. In addition, the following highlighting is done for changes:

- Substituted lessons are decorated with a red border, and changes in the lesson data are struck through and replaced with the new information
- Cancelled lessons have their background removed, and a *Cancelled* label added

- Remarks from the substitution plan are added in italics underneath the lesson information

### Dashboard widget

A dashboard widget is provided that shows the *smart plan* for the current day. Right when logging into AleksIS, or opening the PWA, the timetable can thus be immediately viewed.

The widget needs to be enabled by an administrator.

### Week timetables

Using the menu entry *Timetables* → *All timetables* will give you access to all timetables of your institution (or whatever your administrator allowed you to see). It's divided into three main sections:

- Teachers
- Groups
- Rooms

The screenshot shows the 'All timetables' page in the AleksIS system. The page is divided into three main sections: Teachers, Groups, and Rooms. Each section contains a grid of buttons representing different timetable entries. The Teachers section has 27 buttons, the Groups section has 27 buttons, and the Rooms section has 27 buttons. The buttons are arranged in a grid format, with each button containing a short name for the timetable entry.

Teachers			Groups			Rooms		
?	ALB	ALD	5A	5B	5C	000	004	005
BAM	BAR	BAU	5D	6A	6B	007	008	009
BDT	BEC	BEG	6C	6D	7A	011	012	102
BEK	BEM	BER	7B	7C	7D	103	104	105
BOH	BRA	BRU	8A	8B	8C	107	108	109
BUS	DIE	ENG	8D	9A	9B	111	112	118
ERN	FIS	FRA	9C	9D	-AG	119	120	121
FRE	FRI	FUC	-CAG	EA	EB	202	203	204
GRA	GUE	HAA	EC	ED	-KER	205	207	208
HAH	HEI	HER	-MIST	-PR.	Q1A	209	210	211
HOR	HUB	JAN	Q1B	Q1C	Q1D	212	214	AUL
JEN	JUN	KAI	Q2A	Q2B	Q2C	BIH	BIÜ	CHH

If you open one of these timetables, by default you see the *smart plan* of the current week. By clicking on *Show regular plan* or using the *print* button, you can access the corresponding regular plan. To easily jump between timetables, every teacher, subject, or group short name is linked to the respective timetable.



**AleksIS** THE FREE SCHOOL INFORMATION SYSTEM

Logged in as admin Logout

## Timetable Q2b (Q2b) (2021/2022)

Group teachers: ALB, LUT

SMART PLAN SHOW REGULAR TIMETABLE

CW 42 (18.10.-10/24/2021)

		Montag Oct. 18, 2021	Dienstag Oct. 19, 2021	Mittwoch Oct. 20, 2021	Donnerstag Oct. 21, 2021	Freitag Oct. 22, 2021
1.	8 a.m. 8:45 a.m.	KAI PHY PhH	LUT MA 211	SOL Cancelled	Dra Sponsorenlauf	ALB DE 211
2.	8:45 a.m. 9:30 a.m.	KAI PHY PhH	LUT MA 211	WIN If G14	Dra Sponsorenlauf	ALB DE 211
3.	9:45 a.m. 10:30 a.m.	ROT EN1 202 JAN EN2 G12	KAI PHY PhH	BEG Cancelled	ALB DE 211	SOL Cancelled
		OTT Cancelled		GRA Fr1 211		
		LUD EN3 119		SUL La1 112		
		VOT Cancelled		FUC La2 SBü		
4.	10:35 a.m.	ERN Phi1 108		BEG	ERN Phi1 211	

The *print* button will generate the currently displayed plan as a PDF file, which can either be printed, or used for display on digital signage.

**AleksIS** THE FREE SCHOOL INFORMATION SYSTEM

Timetable Q2b

Jan. 12, 2022, 4:54 p.m.

Automatischer Zoom

		Mo	Di	Mi	Do	Fr
1.	8 a.m. 8:45 a.m.	KAI PHY PhH	LUT MA 211	SOL Bi BIH	OTT Sp Sp1	ALB DE 211
2.	8:45 a.m. 9:30 a.m.	KAI PHY PhH	LUT MA 211	WIN If G14	OTT Sp Sp1	ALB DE 211
3.	9:45 a.m. 10:30 a.m.	ROT EN1 202 JAN EN2 G12	KAI PHY PhH	BEG En1 G13	ALB DE 211	SOL Bi BiÜ
		OTT EN4 211		GRA Fr1 211		
		LUD EN3 119		SUL La1 112		
		VOT LA1 205		FUC La2 SBü		
4.	10:35 a.m. 11:20 a.m.	ERN Phi1 108	KAI PHY PhH	BEG En1 G13	ERN Phi1 211	SOL Bi BiÜ
		SEI Phi2 SBü		GRA Fr1 211	SEI Phi2 SBü	
		SIM Re1 205		SUL La1 112	SIM Re1 205	
		BRU Re2 207		FUC La2 SBü	BRU Re2 207	
5.	11:35 a.m. 12:20 p.m.	BEG En1 G13		HAH Ge 211	ROT EN1 212	HAH Ge 211
		GRA Fr1 211			JAN EN2 G12	
		SUL La1 112			OTT EN4	
		FUC La2 SBü			LUD EN3 112	
6.	12:25 p.m. 1:10 p.m.	LUT MA 211	ROT EN1 202 JAN EN2 G12	ALB DE 211	LUT MA 211	FUC Gr1 205
			OTT EN4 211			
			LUD EN3 119			

## 2.2.2 Substitution plan

In addition to the *smart plan*, substitutions can be displayed as a traditional substitution plan. The substitution plan lists all changes made to the regular plan, on a daily basis, as a table.

### View in AleksIS

In AleksIS, the substitution plan is available from the menu under *Timetable* → *Substitutions*. This function provides a browsable list, where substitution plans can be navigated by week.

The screenshot shows the AleksIS interface for the 'Substitutions' page. At the top, it says 'AleksIS' and 'Logged in as admin'. Below the header, there's a search bar and a navigation menu with items like Dashboard, Notifications, Account, Admin, People, Documents, and Timetables. The main content area is titled 'Substitutions' and shows a summary box with the following information:

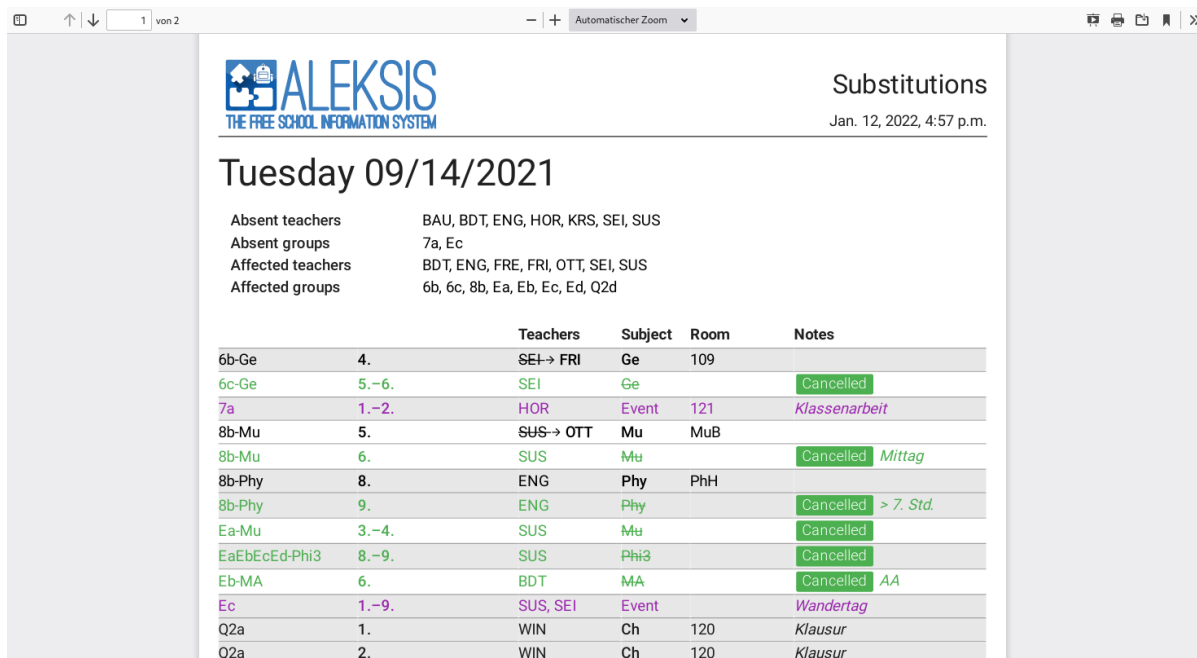
- Absent teachers: BAU, BDT, ENG, HOR, KRS, SEI, SUS
- Absent groups: 7a, Ec
- Affected teachers: BDT, ENG, FRE, FRI, OTT, SEI, SUS
- Affected groups: 6b, 6c, 8b, Ea, Eb, Ec, Ed, Q2d

Below this is a date selector for '14.9.2021'. The main table displays substitutions for 'Tuesday, Sept. 14, 2021' with columns for Teacher, Subject, Room, and Notes. Some entries are marked as 'Cancelled'.

Teacher	Subject	Room	Notes
SEL → FRI	Ge	109	
SEI	Ge		Cancelled
HOR	Event	121	Klassenarbeit
SUS → OTT	Mu	MuB	
SUS	Mu		Mittag Cancelled
ENG	Phy	PhH	
ENG	Phy		> 7. Std. Cancelled

### Print view

Like for the regular timetable, the substitution plan can be printed (as a PDF file), to make hard-copies, or to display it on digital signage.



**ALEKSIS**  
THE FREE SCHOOL INFORMATION SYSTEM

Substitutions  
Jan. 12, 2022, 4:57 p.m.

**Tuesday 09/14/2021**

Absent teachers: BAU, BDT, ENG, HOR, KRS, SEI, SUS  
 Absent groups: 7a, Ec  
 Affected teachers: BDT, ENG, FRE, FRI, OTT, SEI, SUS  
 Affected groups: 6b, 6c, 8b, Ea, Eb, Ec, Ed, Q2d

		Teachers	Subject	Room	Notes
6b-Ge	4.	SEI → FRI	Ge	109	
6c-Ge	5.-6.	SEI	Ge		Cancelled
7a	1.-2.	HOR	Event	121	Klassenarbeit
8b-Mu	5.	SUS → OTT	Mu	MuB	
8b-Mu	6.	SUS	Mu		Cancelled Mittag
8b-Phy	8.	ENG	Phy	PhH	
8b-Phy	9.	ENG	Phy		Cancelled > 7. Std.
Ea-Mu	3.-4.	SUS	Mu		Cancelled
EaEbEcEd-Phi3	8.-9.	SUS	Phi3		Cancelled
Eb-MA	6.	BDT	MA		Cancelled AA
Ec	1.-9.	SUS, SEI	Event		Wandertag
Q2a	1.	WIN	Ch	120	Klausur
Q2a	2.	WIN	Ch	120	Klausur

### 2.2.3 Notifications about current changes

Users can get notifications about current changes to their personal timetables. If the system administrator has enabled the feature, they can activate it by setting the personal preference **Send notifications for current timetable changes** (cf. [Personal preferences](#) (page 10)).

The notifications are sent as standard AleksIS notifications. In [Notifications](#) (page 8), you can find more information about the available channels and your configuration options.

### 2.2.4 Managing substitutions

AleksIS has basic support for managing substitutions and cancellations.

In the menu under *Timetable* → *Daily lessons*, a list of all lessons taking place on a day can be found.

AleksIS Logged in as admin Logout

## Lessons Tuesday, Sept. 7, 2021 7.9.2021

Number of period	Groups	Teachers	Subject	Room	Manage substitution
1	6a-Bi	Koch, Norman	Bi (Biologie)	Biologie Übungsraum (BiÜ)	SUBSTITUTION
1	5a-Bi	Becker, Herrmann	Bi (Biologie)	Biologie Hörsaal (BiH)	SUBSTITUTION
1	Ed-Ch	Friedrich, Gabriele	Ch (Chemie)	Chemie Übungsraum (ChÜ)	SUBSTITUTION
1	Q2d-Ch	Franke, Sebastian	Ch (Chemie)	Chemie Hörsaal (ChH)	SUBSTITUTION
1	9a-De	Walter, Marie	De (Deutsch)	R. 2.08 (208)	SUBSTITUTION
1	5d-De	Heinrich, Constanze	De (Deutsch)	R. 0.05 (005)	SUBSTITUTION
1	9d-De	Schwenck, Vera	De (Deutsch)	R. 1.03 (103)	SUBSTITUTION
1	9c-De	Krüger, Barbara	De (Deutsch)	R. 2.04 (204)	SUBSTITUTION
1	Fr-De	Albrecht, Carl	De (Deutsch Kernfach alt)	R. 2.06 (206)	SUBSTITUTION

The list allows editing a substitution for each lesson.

AleksIS Logged in as admin Logout

## Edit substitution

Week: 36

Lesson period: Dienstag, 1., Ed-Ch, Ch, FRI

Subject: -----

Teachers: -----

Room: -----

Cancelled?

SAVE DELETE

Language: English

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When editing a substitution, the week, date, and lesson is pre-filled. The fields for *teacher*, *room*, and *subject* allow replacing the respective information for the selected lesson.

It should be noted that support for editing substitutions is currently very basic, and the feature should not be used when substitution data is imported from an external source.

## 2.2.5 Configuring the timetable display

Some display options can be changed by the user, under *Account* → *Settings* → *Timetables*:

- **Shorten groups in timetable views:** With this setting activated, lists with more groups than set in the system-wide limit will be collapsed into a shorter string (e.g. 5a,b,c,d,e,f might be abbreviated as 5a-f)

## 2.3 Digital class register

### 2.3.1 Concept of Alsijil and overview about functionality

AleksIS provides a privacy-compliant online class register solution. It is not simply the digital equivalent of a paper class book, although elements are adopted for easier orientation and smoother transition for teachers. For example, there is a weekly view of all lessons and a list of all the students in the class. Lesson content, notes about the student and also remarks about the learning group can be entered.

However, the application uses the possibilities and therefore the advantages of a digital application. The student lists do not have to be filled in by the class teacher, but are provided automatically by the system. The timetable is also already stored.

In addition, statistical evaluation, like counting absences, is done automatically.

In an overview, Alsijil currently provides the following functionality:

- Direct link to the lesson currently taking place
- **Overview with all lessons of one week**
  - Navigation between lessons
  - Filtering according to learning groups/courses and teachers
- **List of learning groups**
  - List of students with current statistics (absences, lateness, etc.)
  - printing of the group-specific class register
- “My overview” for pupils with an overview of “personal notes” such as omissions, lateness, remarks
- **“My overview” for teachers with a list of their own lessons over the last four weeks and the following filtering options:**
  - Specifying the period
  - Restriction to lessons with or without entry for lesson content
  - Restriction to certain groups
  - Restriction to certain lesson contents
- Only for teachers: Listing of students from their own lessons with totalled absences and lateness as well as other remarks
- Only for teachers with special privileges: Listing of all lessons of a specific class in preparation for printing the class register

- For administrators only: Definition of types of excuses, e.g. for absences due to school-related reasons
- For administrators only: Determination of types of remark, e.g. HA for homework forgotten
- Only for administrators: Assignment of special group roles, e.g. for the evaluation of class book entries or access to the print function
- Only for administrators: Creating group roles

### 2.3.2 Basic data concepts

#### Timetable data

The class register uses the data from the timetable app. This means that timetables with all current changes such as substitutions, events and exams can be found directly in the class book. Even basic settings such as lesson times, holidays and public holidays do not have to be entered separately in the class book, as they are managed centrally.

#### Lesson documentations

Three input fields are provided for the lesson content:

1. **Lesson topic:** The content of the lesson is to be noted here, if necessary with information on the material used.
2. **Homework:** In this field, the teacher can enter the homework for the next lesson.
3. **Group note:** Here, there is space for notes that concern the whole learning group, e.g. instructions, dates, or similar.

#### Personal notes

Under the tab 'Personal Notes', you will find a student list of the group. The following entries can be made there:

1. **Absent:**
2. **Tardiness in minutes**
3. **Excused**
4. **Excuse type:** Several types can be set up for an excuse for absence, e.g. in case a student was absent due to a school event.
5. **Extra marks:** This item is also configurable. A selection field for missing homework or similar would be possible here.
6. **Remarks:**

With the appropriate configuration, students can view all personal notes concerning themselves.

## 2.3.3 Overviews about lessons and students

### Week overview

In the weekly overview, all lessons of the week for the respective user are displayed in a weekly schedule. Clicking on a lesson takes you to the data for that lesson. Above the schedule, you can navigate to the previous or following week. It is also possible to filter the schedule according to certain groups or teachers.

**AleksIS** LESSON DOCUMENTATIONS PERSONS

Logged in as may Logout

TOGGLE

CW 3 (17.1.–01/23/2022)

### CW 3: Mayer, Elisa

Montag, Jan. 17, 2022

Period	Groups	Subject	Teachers	Lesson topic	Homework	Group note
3.	5a-Ek	Geographie	Mayer, Elisa	United Kingdom	Learn map of UK	-
4.	5a-Ek	Geographie	Mayer, Elisa	United Kingdom	Learn map of UK	-
5.	-Verf.	Verfügungsstunde	Mayer, Elisa	-	-	-
5.	-Verf.	Verfügungsstunde	Mayer, Elisa	-	-	-
5.	-Verf.	Verfügungsstunde	Mayer, Elisa	-	-	-
5.	-Verf.	Verfügungsstunde	Mayer, Elisa	-	-	-
7.	8b-Ek	Geographie	Mayer, Elisa	Repetition: Global Energy Systems	Nothing	-

**AleksIS** LESSON DOCUMENTATIONS PERSONS

Logged in as may Logout

TOGGLE

CW 3 (17.1.–01/23/2022)

### CW 3: Mayer, Elisa

Personal notes

[Jacobs, Stacy](#)  
 Absent: 0 (0 unexcused)  
 Summed up tardiness: 00h 00m  
 Count of tardiness: 0 x

[Miranda, Stacy](#)  
 Absent: 0 (0 unexcused)  
 Summed up tardiness: 00h 00m  
 Count of tardiness: 0 x

[Fisher, Carl](#)  
 Absent: 0 (0 unexcused)  
 Summed up tardiness: 00h 00m  
 Count of tardiness: 0 x





[Alexander, Sean](#)  
 Absent: 0 (0 unexcused)  
 Summed up tardiness: 00h 00m  
 Count of tardiness: 0 x

## My overview

### Personal overview for students

This menu item provides the student with an overview of the personal notes such as tardiness, absences and remarks that teachers have entered in the class register. This enables them to quickly check whether excuses still need to be submitted, and to verify what notes have been made about them.



-  Dashboard
-  Account
-  Timetables
-  Class register

AleksIS
Logged in as may [Logout](#)

[← BACK](#) Class register overview for Baker, Jennifer

PERSONAL NOTES

### Relevant personal notes

Action RUN ▶ FILTER RESULTS (1) ▼

Mark as excused

<input type="checkbox"/>	Date	Period	Groups	Teachers	Subject	Absent	Tardiness	Excuse	Extra marks
<input type="checkbox"/>	Jan. 21, 2022	6.	8b-Ek	Mayer, Elisa	Geographie	-	6 late	-	-
<input type="checkbox"/>	Jan. 17, 2022	7.	8b-Ek	Mayer, Elisa	Geographie	Absent	-	Excused	-
<input type="checkbox"/>	Jan. 10, 2022	7.	8b-Ek	Mayer, Elisa	Geographie	-	-	-	-

Language  
English

### Personal overview for teachers

For teachers, this view shows their own lessons for the last four weeks. A filter can be used to adjust the list with regard to period, missing entries, certain groups or certain lesson contents. A corresponding symbol in each line immediately shows whether entries are still missing for the lesson in question. Individual lessons can be called up from the list to add or change entries.





- Dashboard
- Account
- Timetables
- Class register
- Current lesson
- Current week
- My groups
- My overview
- My students
- Assign group role

AleksIS
Logged in as may Logout

[BACK](#)

## Class register overview for Mayer, Elisa

LESSON DOCUMENTATIONS    PERSONAL NOTES

**Lesson filter**

School term: 2021/2022    Start date: 2021-12-22    End date: 2022-01-21

Has lesson documentation: No    Group: -----    Subject: -----

[UPDATE FILTERS](#)

Lesson table										Action
Status	Date	Period	Groups	Teachers	Subject	Topic	Homework	Group note		Mark as excused
▲	Jan. 4, 2022	1.	8a-Ek	Mayer, Elisa	Geographie	–	–	–		
▲	Jan. 4, 2022	2.	8a-Ek	Mayer, Elisa	Geographie	–	–	–		
▲	Jan. 4, 2022	3.	8d-Ek	Mayer, Elisa	Geographie	–	–	–		

### My groups

This menu item is only available for teachers.

With this quick access to your own learning groups, you can on the one hand access the relevant student lists and the weekly view of the lessons of this group, and on the other hand you can print the course-specific class book.



- Dashboard
- Account
- Timetables
- Class register
- Current lesson
- Current week
- My groups
- My overview
- My students
- Assign group role

AleksIS
Logged in as may Logout

## My groups

Name	Students	
8b: Ek (8b-Ek) (2021/2022)	24	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
Ea, Eb, Ec, Ed: EN5 (EaEbEcEd-EN5) (2021/2022)	27	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
Ec (Ec) (2021/2022)	25	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
7d: Ek (7d-Ek) (2021/2022)	28	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
8d: Ek (8d-Ek) (2021/2022)	25	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
Ec: Ek (Ec-Ek) (2021/2022)	25	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
5a: Ek (5a-Ek) (2021/2022)	28	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
Ed: Ek (Ed-Ek) (2021/2022)	23	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>
5d: Ek (5d-Ek) (2021/2022)	22	<a href="#">STUDENTS LIST</a> <a href="#">WEEK VIEW</a> <a href="#">ROLES</a> <a href="#">GENERATE PRINTOUT</a>

## My students

With this menu item, teachers receive a list of all students from their lessons. From each entry, you can switch to a detailed view to add specific data.

The screenshot shows the 'Students list' page for group 5a (5a) in the 2021/2022 school year. The page includes a sidebar with navigation options like Dashboard, Admin, People, Documents, Support, Class register, and Timetables. The main content area displays a table of students with the following data:

Name	Primary group	Absences				Tardiness	Actions
		Sum	(e)	(custom)	(u)		
Albrecht, Carl	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE
Amato, Yago	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE
Arnold, Tobias	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE
Franko, Sebastian	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE
Friedrich, Gabriele	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE
Lorenz, Matthias	-	0	0	0	0	00h 00m 0+	SHOW MORE DETAILS REGISTER ABSENCE

Below the table is a legend for absence types:

- (a) Absences (blue circle)
- (u) Unexcused absences (red circle)
- (e) Excused absences (green circle)

There is also a section for 'Excuse types' with a dropdown menu showing '(custom) custom type 1'.

You are also able to create custom excuse types via the menu entry "Excuse types". These custom types are also shown in the statistical overview. The custom excuse types are also shown in the legend under the students overview table.

## All lessons

For the head teacher or the coordinators of certain grades, this menu item gives the possibility to see all lessons of a learning group in a list. By means of a filter, the list can be specified to certain entries. This makes it possible to call up all lessons with missing entries and to send a request for completion of the data to the teachers concerned via a button.

### 2.3.4 Viewing and managing lessons

The lesson documentation can be called up in different ways:

1. **Via 'Current lesson':** During the current lesson, this is the quickest way to access the lesson documentation.
2. **Via 'Weekly overview':** This menu item shows all lessons of the current week. Individual lessons can be clicked on to access the lesson documentation.
3. **'My Overview':** This menu item shows teachers a list of all hours worked in the last weeks. Individual lessons can be called up directly.

The lesson documentation consists of four main parts accessible via tabs. The data can be entered, changed and saved via the relevant forms. In addition, navigation to the previous or next lesson is possible.

### Tab 'Lesson Documentation'

The lesson documentation is a strictly non-personal information about the contents of the lesson. It contains the topic, describing what contents were taught, and an optional homework, describing what tasks students got for the next lesson.

Everything entered here should be considered public knowledge.

**Warning:** Never add any personal information to the lesson documentation.

The screenshot shows the AleksIS interface. On the left is a navigation menu with options like Dashboard, Account, Timetables, Class register, Current lesson, Current week, My groups, My overview, My students, and Assign group role. The main content area displays the lesson details for 01/17/2022, 7. period, with the topic '8b-Ek, Ek, MAY'. Below this is the 'Lesson documentation' form. The form has three main sections: 'Lesson topic' with the value 'Global Energy Systems', 'Repitition' with the value 'Global Energy Systems', and 'Homework for the next lesson' with the value 'Nothing'. There is also a 'Group note' field which is currently empty. At the bottom of the form is a green 'SAVE' button. The interface also shows navigation buttons for 'PREVIOUS EK LESSON' and 'NEXT EK LESSON'.

If enabled in the preferences, lesson documentation is carried over to adjacent lessons. So if one subject is held in a double or triple lesson, only one needs to be filled in.

### Tab 'Personal Notes'

Personal notes are specific to single students, and contain information about absences, tardiness, any extra marks defined in the system, and a free text comment.

This information can never be viewed by other students. It is visible to any teacher in the class by default, and might also be visible to the concerned student.

AleksIS

Logged in as may Logout

PERIOD PERSONS MORE

WEEK VIEW MY PREVIOUS LESSON Mayer, Elisa MY NEXT LESSON

01/17/2022, 7. period  
8b-Ek, Ek, MAY

SAVE PREVIOUS EK LESSON NEXT EK LESSON

Personal notes

Person	Absent	Tardiness	Excused	Excuse type	Extra marks	Remarks
Baker, Jennifer	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	-----		Remarks
Baker, Mariah	<input type="checkbox"/>	10	<input type="checkbox"/>	-----		Remarks
Beard, Rachel	<input type="checkbox"/>	0	<input type="checkbox"/>	-----		Good presentation!

### Behaviour of absences and tardiness

When a student is marked as absent, this information is carried over to all future lessons on the same day, meaning that for any teacher holding lessons in the class after the one that marked them as absent will automatically see them as absent.

Likewise, if a student returns and is marked as not absent, this is carried over to all future lessons.

### Tab 'Previous lesson'

This tab shows information about the previous lesson in the same group and subject for reference.

### Tab 'More'

This tab contains several special items not mentioned before:

- **Changes:** Alsijil tracks all changes made to class register entries. This list shows a log of all these changes.

### 2.3.5 Assigning group roles

This menu item enables the assignment of a previously defined group role to a specific person, e.g. for ventilation services or class representatives.

## 2.3.6 (Archive) printout

Via the menu item *My Groups*, extensive documentation can be generated for each group. This class register will be generated as a printable PDF file.

It contains a list of the lessons taught staggered according to timetable periods, a collection of all the students' personal notes as well as all lesson contents.

An alternative path to printing a class register is via the weekly view. There, the relevant group can be selected via the filter to print the class book.

---

**Note:** This mechanism can be used for archival purposes required by law.

---

## 2.4 Using seating plans

### 2.4.1 Managing seating plans

A seating plan is always linked to a combination of Group and Room. Additionally, a Subject can be specified. When a group, e.g. a class, has a seating plan without a subject, all subgroups, e.g. a course of that class, will inherit that plan, as long as they do not have their own seating plan. More specific relations precede more general ones, so if there exists a plan for group 5a and one for group 5a with subject English, the latter will be shown. All seating plans can be viewed, edited and created under Seating plans in the navigation.

The screenshot shows a web interface titled "Seating plans". At the top left, there is a green button with a plus sign and the text "CREATE SEATING PLAN". Below this is a table with the following structure:

Name	Edit	Delete
5a (5a) (2021/2022) - Nw1 (Ang. Naturwissenschaften 1) - Aula (Aul)	BEARBEITEN	LÖSCHEN
5a (5a) (2021/2022) - Ag (Arbeitsgemeinschaft) - Biologie Übungsraum (BiÜ)	BEARBEITEN	LÖSCHEN
5a (5a) (2021/2022) - None - Biologie Hörsaal (BiH)	BEARBEITEN	LÖSCHEN
5a: Mu (5a-Mu) (2021/2022) - Mu (Musik) - Refektorium (Rto)	BEARBEITEN	LÖSCHEN
5a: Bi (5a-Bi) (2021/2022) - None - Biologie Hörsaal (BiH)	BEARBEITEN	LÖSCHEN

To create a new seating plan, click on **Create seating plan**. Select a group, subject and room and continue to the seat arrangement page. There you can use drag-and-drop to place available persons in the grid at the bottom. Extend the size of the plan, if necessary, using the expand buttons at each edge.

< ZURÜCK Edit seating plan

Fach Nw1 (Ang. Naturwissenschaften 1) Raum Aula (Aul)

**SICHERN**

Available persons

Alexander, Angela	Colon, Maria	Drake, Nicholas	Hall, Chelsea	Howard, Elizabeth	Jackson, Lisa	Jimenez, Amanda	Nixon, Kelly	Smith, Carlos	Steele, Marcus	Lane, Lindsey	Hebert, Julie	Jones, Barbara
-------------------	--------------	-----------------	---------------	-------------------	---------------	-----------------	--------------	---------------	----------------	---------------	---------------	----------------

Seating plan

Montoya, Michael	Taylor, Benjamin	Morrow, Jason	Jackson, Don	Moreno, Allison	McPherson, Gregory
Duncan, Christopher	Elliott, Caroline	Harris, Michael	Gonzales, Billy	Miller, Olivia	Johnson, Anne

Seating plans can be viewed by clicking on their name in the overview, where they can also be edited or deleted.

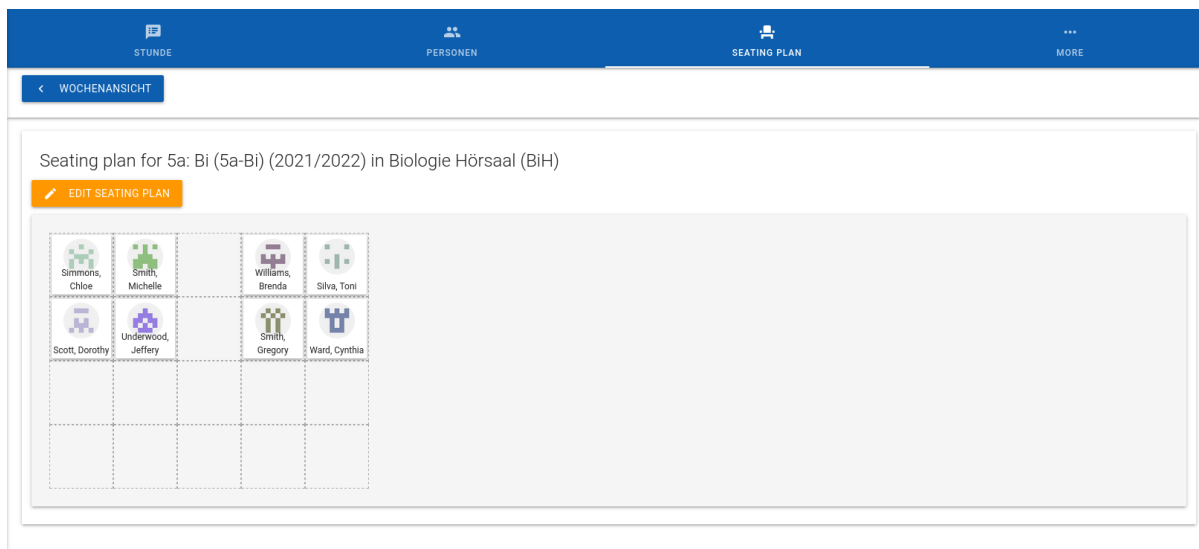
< ZURÜCK Seating plan: 5a (5a) (2021/2022) - Nw1 (Ang. Naturwissenschaften 1) - Aula (Aul)

**BEARBEITEN** **LÖSCHEN**

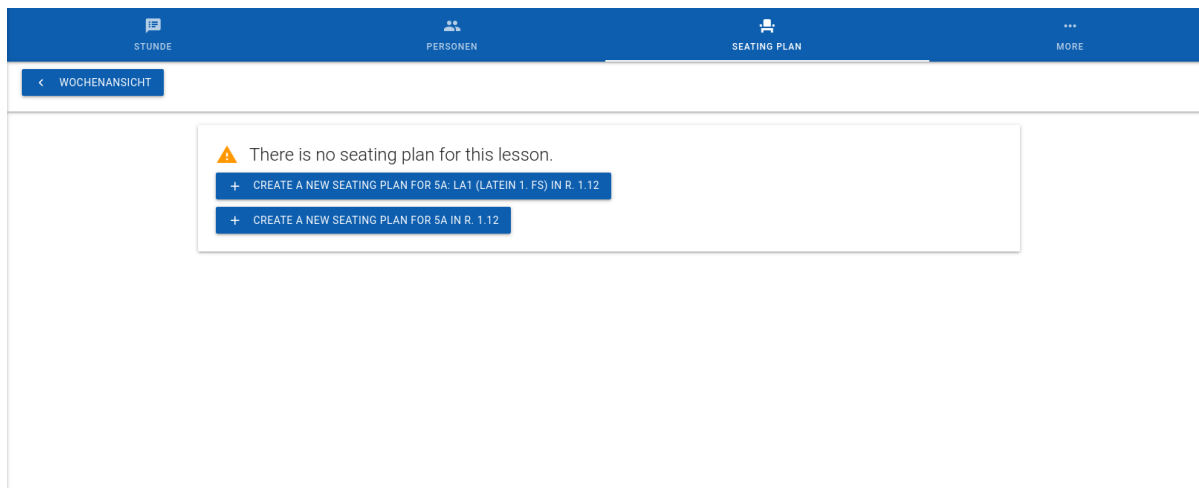
Montoya, Michael	Taylor, Benjamin	Morrow, Jason	Jackson, Don	Moreno, Allison	McPherson, Gregory
Duncan, Christopher	Elliott, Caroline	Harris, Michael	Gonzales, Billy	Miller, Olivia	Johnson, Anne

### 2.4.2 Integration with class register

When the class register functionality of AleksIS is used, there will be a tab for seating plans on lesson documentation pages.



If there is no seating plan for a lesson, i.e. no one for that specific combination of Group, Room and Subject, no one for the combination of Group and Room and if none of the parent groups has one, options for creating a seating plan are displayed.



## 2.5 Time-based documents with Resint

### 2.5.1 Publishing posters

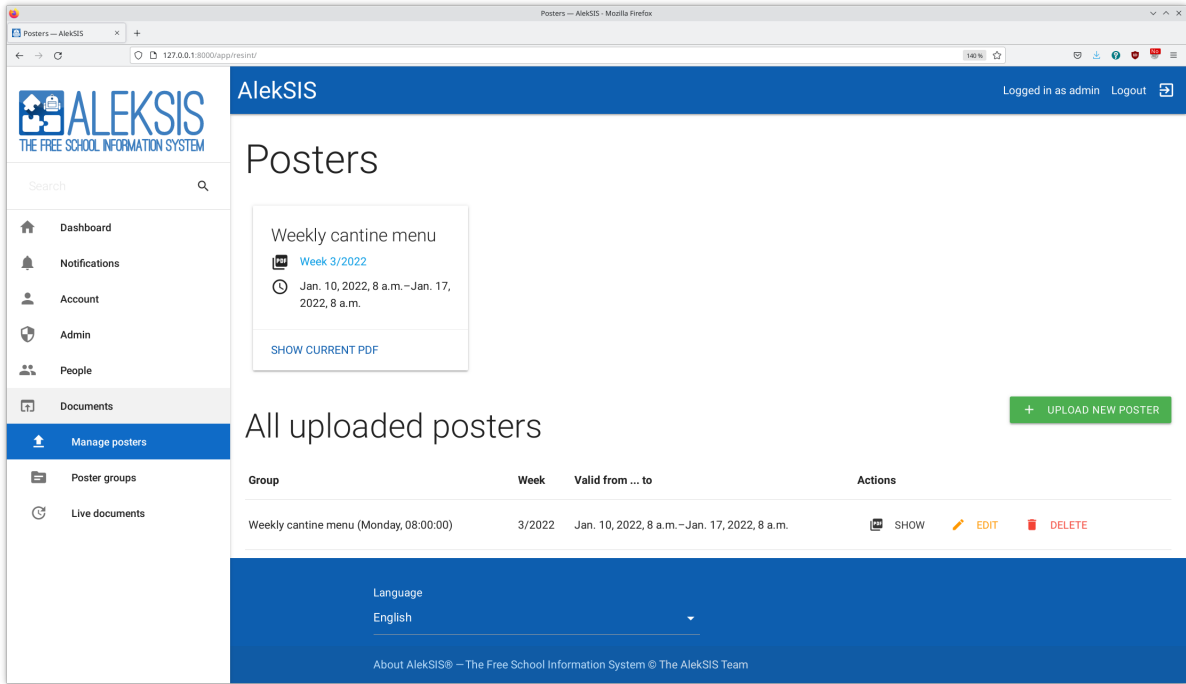
Posters are documents that can be manually supplied in a time-based manner.

Poster files can be uploaded for a defined time period, and AleksIS will then deliver the currently valid version under a stable menu item and URL.

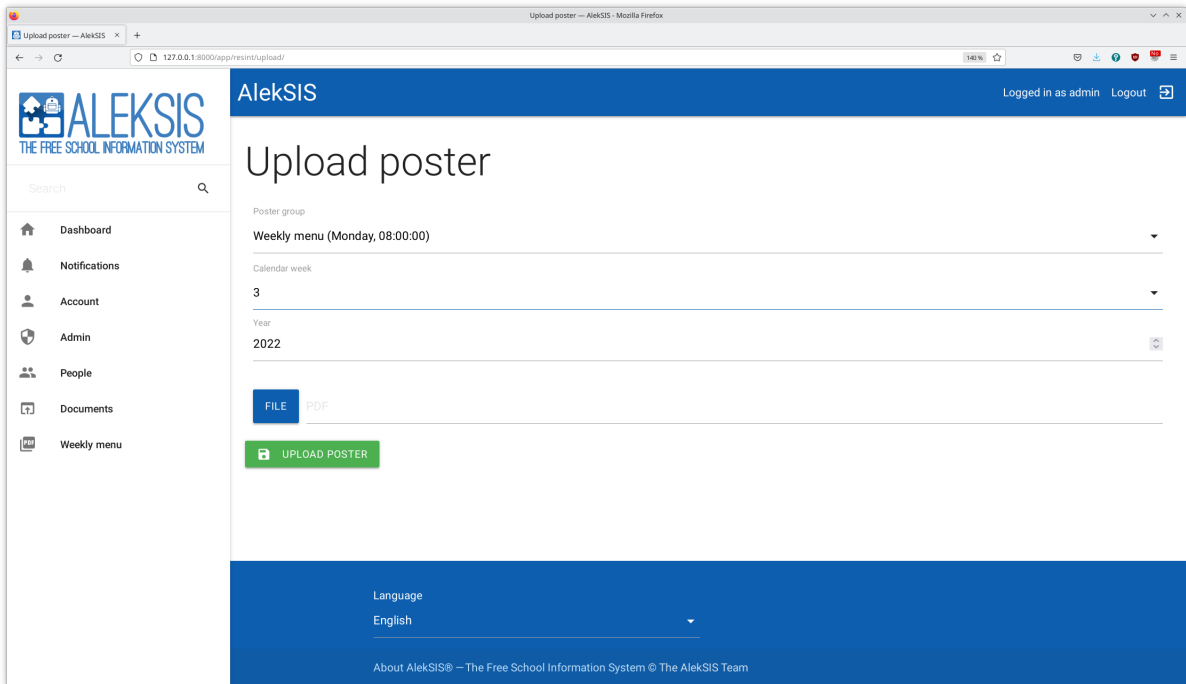
Posters are organised in poster groups, which can be created by administrators. Users can then upload PDF files which shall be published for each time period.

Users who have the permission to upload posters for at least one poster group can manage their posters from the main menu under the *Documents* → *Manage posters* menu item.





Using the *Upload poster* button or the *Edit* action for an already uploaded poster will open the dialog for managing a document for one time period.

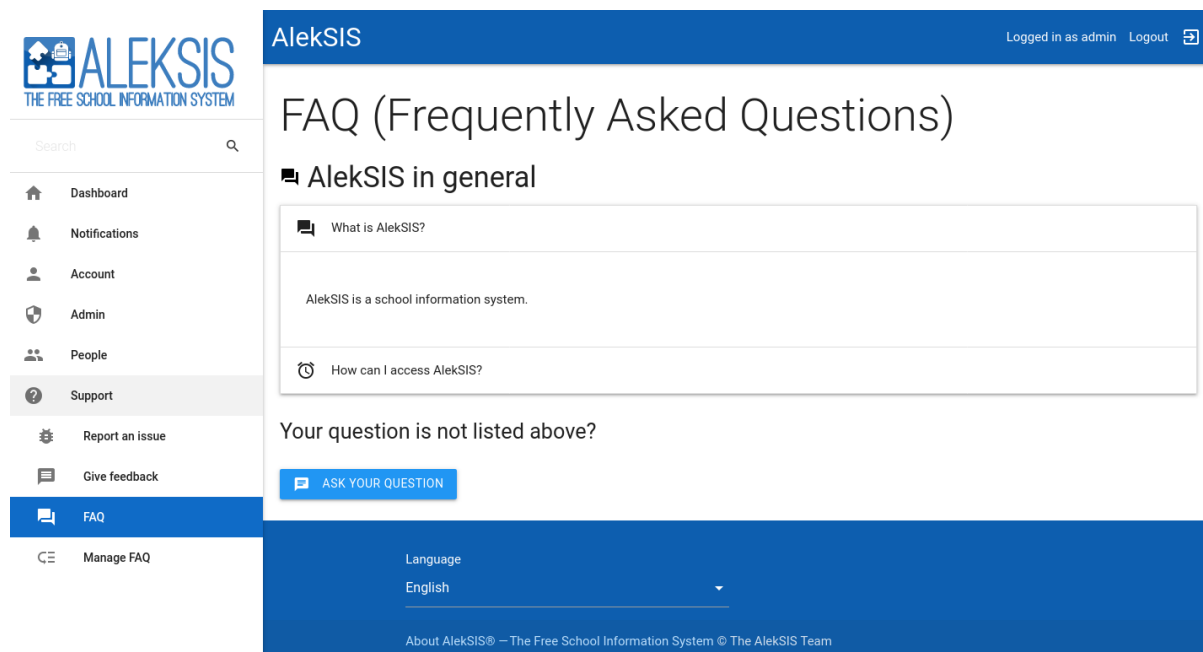


After uploading, AleksIS will deliver the uploaded file during the week selected in the form.

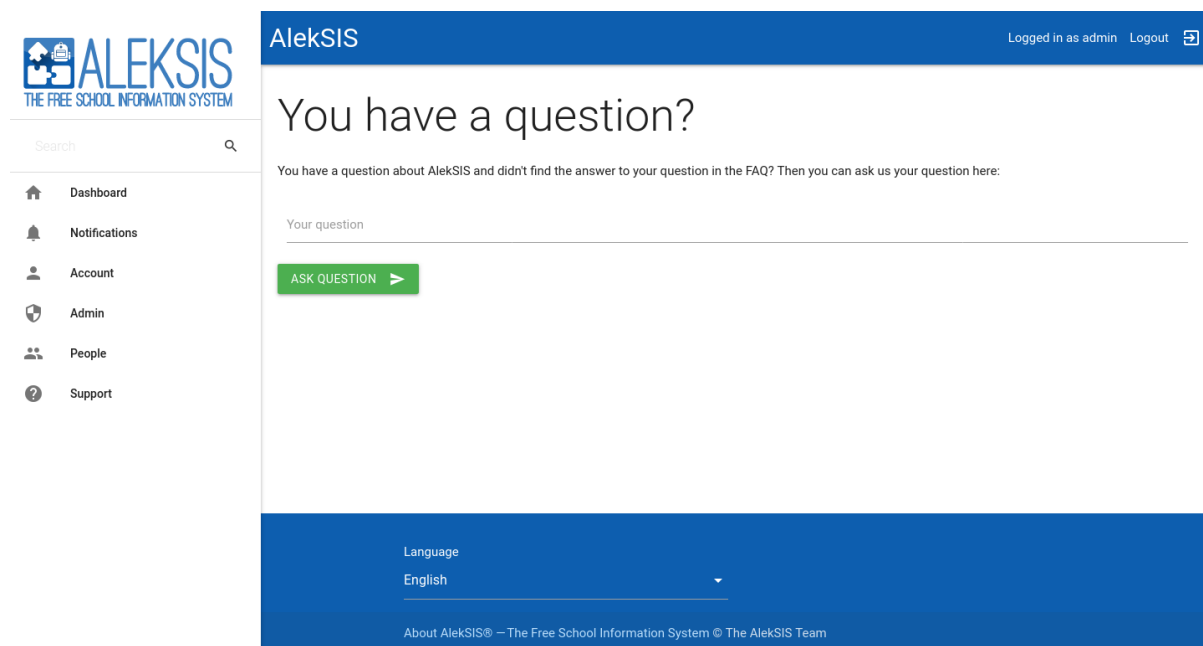
## 2.6 Get support via Hjelp

### 2.6.1 Reading Frequently Asked Questions

In the *Support* menu, administrators can add Frequently Asked Questions concerning the AleksIS instance, the local network, or something completely different. These questions and their answers are accessible to all users under the *Support* → *FAQ*. If the system administrator enabled it, that might be also possible without login.



If the question is not answered, users have the possibility to ask a question using a dedicated form.



## 2.6.2 Reporting issues

Using *Support* → *Report an issue*, users can report issues e. g. with AleksIS or the school network. To allow operators to fastly narrow down the issue, there is a three-level category system filled individually for each AleksIS instance. In addition to the category, the form asks for a one-line description and then a detailed description with additional information. When reporting issues, please try to be as specific as possible – it will help your administrators. On top of the entered information, the system will send your username together with the data.

## 2.6.3 Giving feedback for AleksIS

On the page *Support* → *Feedback*, we provided a feedback form helping us to improve AleksIS. If you fill out the form, it will be send to your system administrator which can review it and forward it to us, if necessary.

We ask you for the following information:

- **Ratings:** The following categories can be rated with one to five stars
  - Design of the user interface
  - Speed
  - User friendliness
  - AleksIS in general
- **Free text fields:** In the following fields, you can enter additional information
  - What do you like? What would you change?
  - What else do you want to tell us?
  - What do you think should be added to AleksIS?



Search

- [Dashboard](#)
- [Notifications](#)
- [Account](#)
- [Admin](#)
- [People](#)
- [Support](#)
- [Report an issue](#)
- [Give feedback](#)
- [FAQ](#)
- [Manage FAQ](#)

## Feedback

Please give us detailed and honest feedback so that we can make AleksIS even better!

Design of the user interface *	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed *	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
User friendliness *	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
AleksIS in general *	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
What do you think should be added to AleksIS?					
<input type="text"/>					
What do you like? What would you change?					
<input type="text"/>					
What else do you want to tell us?					
<input type="text"/>					

[SEND FEEDBACK >](#)

## **ADMINISTRATION HANDBOOK**

### **3.1 Setup of the AleksIS instance and the AleksIS core**

#### **3.1.1 Concepts of the AleksIS core**

The AleksIS core provides functionality and data models as a base for all apps.

##### **The concept of school terms**

In AleksIS, mostly everything is based on school terms. A school term is a defined time range which can be used to link data to it. Typically, such data are learning groups, timetables or class register records. Although their name suggests it, school terms don't have to be a half or a full year. They should depend on the way how you organise data in your institution.

For example, if you issue reports at the end of every half year, a half year would be a good time range for your school terms because the class register statistics are evaluated for school terms.

Anyway, you should create a school term before you start to import or create other data entries like persons or groups.

##### **Manage school terms**

You can manage the school terms if you login with your admin account and open the menu entry Admin → School terms. There you can find a list of all school terms and buttons to create, edit or delete school terms. Please be aware that there can be only one school term at time and each school term needs a unique name.

##### **The concept of persons**

The person model is designed to save all the data of students, teachers, guardians and any other persons of the school society. It tracks information like the following:

- Full name
- Short name
- Sex
- Date of birth
- Contact details (phone numbers, email)

- Address details
- Photo
- Relation to guardians
- Primary group (e. g. a class or a tutor group, cf. [The concept of groups](#) (page 38))

Except for the name, all data points are optional, so you can decide on your own (and based on your local data protection laws) which data should be included in AleksIS.

There are two important things you should know about persons:

- **Persons are not automatically users:** That means that persons can be linked to a user account including things like a password and the ability to login, but they don't have to be. For example, your AleksIS instance could save the data about parents, but you don't want them to login: In this scenario, the guardians are available as persons **without** user accounts.
- **Persons are not linked to school terms:** As persons like students are not only at the school for one school term, persons are not linked to school terms.

### Manage persons

The main method to manage persons is the view under People → Persons. To add person to groups, you have to open the respective group and set the person as a member or an owner.

### The concept of groups

The AleksIS groups are a universal way to organise persons in collections like classes, courses, tutor groups, clubs, or any other division you could imagine. They track the following data:

- Group name and short name
- Owners (e. g. class or course teacher(s))
- Members (e. g. students)
- Parent groups (e. g. a class could be a parent group for a course)
- Group type (e. g. class, course, club, etc.)

In contrast to persons, groups are supposed to be **linked to school terms** (but they don't have to be). For example, the composition of a class or a course varies from school term to school term. In order to archive historical data according to local laws, these groups have to be separated which is solved by linking them to a school term.

### Manage groups

Groups are managed on the page People → Groups. There you can search, view, create, change and delete groups.

## Manage group types

You can manage your local group types by opening the menu entry `People → Group types` as an admin user.

## Import school terms, persons and groups from other data sources

When AleksIS is not your single data source, all these data can be imported from other sources. You can find further information in the respective integration apps.

### 3.1.2 Install AleksIS

#### From PyPI

In this section we will install AleksIS with *uWSGI* and *nGINX* on Debian bullseye.

#### Filesystem locations

AleksIS will need and use the following paths:

- `/etc/aleksis` for configuration files
- `/var/lib/aleksis/media` for file storage (Django media)
- `/var/backups/aleksis` for backups of database and media files
- `/usr/local/share/aleksis/static` for static files
- `/var/cache/aleksis` for building frontend assets etc.

You can change any of the paths as you like.

#### Prerequisites

For an installation on a dedicated server, the following prerequisites are needed:

- Debian 12 or newer, or comparable distribution
- PostgreSQL
- Redis
- uWSGI
- nginx
- Python 3.9 or newer
- Node.js 18 or newer
- Some system dependencies to build Python modules and manage frontend files
- System locales for all supported languages
- The aforementioned paths

### Install system packages

Install some packages from the Debian package system.

```
apt install uwsgi \  
    uwsgi-plugin-python3 \  
    nginx-full \  
    python3 \  
    python3-dev \  
    python3-pip \  
    libpq-dev \  
    yarnpkg \  
    python3-virtualenv \  
    chromium \  
    chromium-driver \  
    redis-server \  
    postgresql \  
    locales-all \  
    celery
```

### Create PostgreSQL user and database

Generate a secure password for the database, then create the user and database.

```
sudo -u postgres createuser -D -P -R -S aleksis  
sudo -u postgres createdb -E UTF-8 -O aleksis -T template0 -l C.UTF-8_  
→aleksis
```

When asked, use the password generated above.

### Create the directories for storage

```
mkdir -p /etc/aleksis \  
    /usr/share/aleksis/static \  
    /var/cache/aleksis \  
    /var/lib/aleksis/media \  
    /var/backups/aleksis
```

### Create AleksIS configuration file

AleksIS is configured in files in `/etc/aleksis`. Create a basic configuration file for the environment defined above by opening `/etc/aleksis/aleksis.toml` with your favourite text editor and adding the following configuration.

```
static = { root = "/usr/local/share/aleksis/static", url = "/static/" }  
media = { root = "/var/lib/aleksis/media", url = "/media/" }  
caching = { dir = "/var/cache/aleksis" }
```

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```
secret_key = "SomeRandomValue"

[http]
allowed_hosts = ["aleksis.example.com"]

[database]
host = "localhost"
name = "aleksis"
username = "aleksis"
password = "password_generated_above"

[backup]
location = "/var/backups/aleksis"

[auth.superuser]
username = "admin"
password = "admin"
email = "root@localhost"
```

Make sure you specify the correct *allowed\_hosts*. It is used for things like the OpenID Connect issuer and the standard mail domain.

### Generate OpenID Connect certificate

OpenID Connect needs a certificate, which you need to generate and assign required permissions.

```
openssl genrsa -out /etc/aleksis/oidc.pem
chown www-data:www-data /etc/aleksis/oidc.pem
```

### Install AleksIS itself

To install AleksIS now, and run all post-install tasks, run the following commands. They will pull the AleksIS standard distribution from [PyPI](https://pypi.org)<sup>4</sup> and install it to the system-wide *dist-packages* of Python. Afterwards, it will download frontend dependencies from *yarnpkg*, collect static files, and migrate the database to the final schema.

*aleksis* is a meta-package which will install the [Concepts of the AleksIS core](#) (page 37) and all official apps. If you want to install only the AleksIS Core and your own set of apps, you can install *aleksis-core* instead of *aleksis*.

You only need to install these additional dependencies if installing the meta-package:

After that, you can install the *aleksis* meta-package, or only *aleksis-core*:

---

<sup>4</sup> <https://pypi.org>

## Make dynamic content writable for webserver

To make AleksIS® able to write dynamic content, you need to assign permissions to the webserver user.

## Configure uWSGI

uWSGI is an application server that will manage the server processes and requests. It will also run the Celery broker and scheduler for you.

Configure a uWSGI app by opening `/etc/uwsgi/apps-available/aleksis.ini` in an editor and inserting:

```
[uwsgi]
vhost = true
plugins = python3
master = true
enable-threads = true
processes = 20
wsgi-file = /usr/local/lib/python3.11/dist-packages/aleksis/core/wsgi.py
chdir = /var/lib/aleksis
lazy = true
lazy-apps = true
attach-daemon = celery -A aleksis.core worker --concurrency=4
attach-daemon = celery -A aleksis.core beat
```

Afterwards, enable the app using:

```
ln -s /etc/uwsgi/apps-available/aleksis.ini /etc/uwsgi/apps-enabled/
↪aleksis.ini
service uwsgi restart
```

## Configure the nginx webserver

First, you should get a TLS certificate, e.g. by using [Let's Encrypt](#)<sup>5</sup>.

Then, create a virtual host in nginx, by editing `/etc/nginx/sites-available/aleksis.example.com`.

```
upstream aleksis {
    server unix:///run/uwsgi/app/aleksis/socket;
}

server {
    listen 80;
    listen [::]:80;

    server_name aleksis.example.com;

    return 301 https://$server_name$request_uri;
}
```

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---

<sup>5</sup> <https://certbot.eff.org/instructions>

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```
server {
    listen 443 ssl http2;
    listen [::]:443 ssl http2;

    ssl_certificate /etc/letsencrypt/certs/aleksis.example.com/fullchain.pem;
    ssl_certificate_key /etc/letsencrypt/certs/aleksis.example.com/privkey.
    →pem;
    ssl_trusted_certificate /etc/letsencrypt/certs/aleksis.example.com/chain.
    →pem;

    server_name aleksis.example.com;

    access_log /var/log/nginx/access.log;

    location /static {
        alias /usr/local/share/aleksis/static;
    }

    location / {
        uwsgi_pass aleksis;
        include uwsgi_params;
        proxy_redirect off;
        proxy_pass_header Authorization;
    }
}
```

Enable the virtual host:

```
ln -s /etc/nginx/sites-available/aleksis.example.com /etc/nginx/sites-
    →enabled/aleksis.example.com
service nginx restart
```

## Finalisation

Your AleksIS installation should now be reachable and you can login with the administration account configured above.

## With Docker

AleksIS can also be installed using Docker, either only AleksIS itself, or the full stack, including Redis, using docker-compose

### Full stack using docker-compose

First, install Docker and docker-compose on your system. Also install git to get the docker-compose file and image definition.

```
apt install docker.io docker-compose git
```

Now, clone the distribution repository, which contains the docker-compose file.

```
git clone https://edugit.org/AleksIS/official/AleksIS
```

You should review the file *docker-compose.yaml* for any environment variables you want to change.

Finally, bring the stack up using:

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

AleksIS will be reachable on port 80 if you forgot to configure the environment. You are responsible for adding a reverse proxy like nginx providing TLS, etc.

## 3.1.3 Configuration files and format

### File locations and order

AleksIS is configured through text files in the directory */etc/aleksis/*. You can place any file types there that are supported by the [Dynaconf](https://dynaconf.readthedocs.io/en/latest/)<sup>6</sup> configuration system (INI, YAML and TOML).

Files are evaluated in alphabetical order, with later definitions overwriting earlier ones. Normally, there will be only one configuration file, but you can make up any structure you like. If you use multiple files, it might be a good idea to number them, e.g. *00\_main.toml*, *01\_myschool.toml*, *99\_temporary.toml*.

The TOML format is recommended and is the only format described in detail in AleksIS' documentation. For all other formats, refer to the [Dynaconf](https://dynaconf.readthedocs.io/en/latest/)<sup>7</sup> documentation.

---

<sup>6</sup> <https://dynaconf.readthedocs.io/en/latest/>

<sup>7</sup> <https://dynaconf.readthedocs.io/en/latest/>

### Configuration file format (TOML)

TOML file are simple text files that define variables, much like in Python (i.e. there are scalars, lists and dictionaries). AleksIS structures its configuration by topic.

A configuration file might look like this:

```
secret_key = "VerySecretKeyForSessionSecurity"

[http]
allowed_hosts = [ "aleksis.myschool.example.com", "localhost" ]

[database]
name = "aleksis"
user = "aleksis"
password = "SuperSecretPassword"

[キャッシング]
redis = { enabled = true, address = "redis://127.0.0.1" }
```

The `secret_key` setting above defines a single value. The following `http` section defines a table (cf. a dictionary) in one way, and you can see the second form of such a table in the `redis` setting (we could as well have defined another section and placed `enabled` and `address` below it as scalars).

This can be a bit confusing, so this documentation will explain how to configure AleksIS on a per-feature basis.

### 3.1.4 Configuration options

AleksIS provides lots of options to configure your instance.

#### Configuration file

All settings which are required for running an AleksIS instance are stored in your configuration file `/etc/aleksis/aleksis.toml`.

Example configuration file:

```
# General config for static, media and secret key, required
static = { root = "/srv/www/aleksis/data/static", url = "/static/" }
media = { root = "/srv/www/aleksis/data/media", url = "/media/" }
secret_key = "Xoc8eiwah3neehid2Xi3oomoh4laem"

# Localization
[Localization]
lang = "en"
tz = "Europe/Berlin"
phone_number_country = "DE"

# Admin contact, optional
[contact]
```

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```
admins = [{"AleksIS - Admins", "root@example.com"}]
from = 'aleksis@example.com'

# Allowed hosts, required
[http]
allowed_hosts = ["localhost"]

# Database for whole AleksIS data, required
[database]
host = "localhost"
name = "aleksis"
username = "aleksis"
password = "aleksis"

# Maintenance mode and debug, optional
[maintenance]
debug = true

# Authentication via LDAP, optional
[ldap]
uri = "ldaps://ldap.myschool.edu"
bind = { dn = "cn=reader,dc=myschool,dc=edu", password = "secret" }
map = { first_name = "givenName", last_name = "sn", email = "mail" }

[ldap.users]
search = { base = "ou=people,dc=myschool,dc=edu", filter = "(uid=%(user)s)
→" }

[ldap.groups]
search = { base = "ou=groups,dc=myschool,dc=edu" }
type = "groupOfNames"
# Users in group "admins" are superusers
flags = { is_superuser = "cn=admins,ou=groups,dc=myschool,dc=edu" }

# Search index, optional
[search]
backend = "whoosh"
index = "/srv/www/aleksis/data/whoosh_index"
```

## Configuration in frontend

Everything that does not have to be configured before the AleksIS instance fully starts can be configured in frontend, such as site title and logo.

You can find the configuration options in your AleksIS instance under Admin → Configuration.

### 3.1.5 Storage

AleksIS needs a writable storage, both for media files (pictures, generated PDF files, and the like), and to store generated frontend assets like the themed CSS stylesheet.

---

**Note:** Everything except this media storage can be mounted and used entirely read-only, i.e. to keep the AleksIS installation immutable.

---

#### Local filesystem storage

By default, the media storage resides in the local filesystem, in the location defined in the `static.root` configuration key.

**Warning:** Do not expose the media storage directly through a webserver. AleksIS uses a specially protected storage framework that employs cryptographic tokens to protect user data from URL guessing.

#### Amazon S3 (or other S#-compatible storage)

AleksIS allows you to configure an Amazon S3 endpoint for media files. This is useful e.g. for loadbalancing with multiple AleksIS instances.

---

**Note:** For some background jobs, AleksIS stores HTML snippets in the media storage for later use. You must ensure your S3 endpoint is part of your Access-Control-Allow-Origin CORS header, so HTML loaded from there can load resources from the AleksIS instance.

---

#### Configure an S3 endpoint

If you want to use an S3 endpoint to store files you have to configure the endpoint in your configuration file (`/etc/aleksis/aleksis.toml`):

```
# Default values
[storage.s3]
enabled = true
endpoint_url = "https://minio.example.com"
bucket_name = "aleksis-test"
access_key_id = "XXXXXXXXXXXXXXXXXX"
secret_key = "XXXXXXXXXXXXXXXXXXXXXXXXXX"
```

### 3.1.6 Mail

AleksIS needs to send mails e.g. for account confirmations, feedback or error reports.

#### Configure mailing

The mailserver can be configured via the configuration file

```
[mail.server]
host = "mail.example.com"
tls = False
ssl = True
port = 25
user = "mailuser"
password = "password"
```

Name and address for mails sent by AleksIS can be configured in the webinterface. To configure, visit *Admin* → *Configuration* and click on the *Mail* tab.

#### Configure mail recipients

You can configure admin contacts in your configuration file, located at `/etc/aleksis/`.

```
[contact]
admins = [{"AleksIS - Admins", "root@example.com"}, {"AleksIS - Admins2",
→ "root2@example.com"}]
from = 'aleksis@example.com'
```

### 3.1.7 Authenticating against LDAP

AleksIS can authenticate users against an LDAP directory (like OpenLDAP or Active Directory). The AleksIS core can only authenticate and synchronise authenticated users to AleksIS' database. There are apps that help with tasks like mass-importing accounts and linking accounts to persons in the AleksIS system (see below).

#### Installing packages for LDAP support

Installing the necessary libraries for LDAP support unfortunately is not very straightforward under all circumstances. On Debian, install these packages:

```
sudo apt install python3-ldap libldap2-dev libssl-dev libsasl2-dev python3-
→dev
```



## Configuration of LDAP support

Configuration is done under the `ldap` section in AleksIS' configuration file. For example, add something like the following to your configuration (normally in `/etc/aleksis`; you can either append to an existing file or add a new one):

```
[ldap]
uri = "ldaps://ldap.myschool.edu"
bind = { dn = "cn=reader,dc=myschool,dc=edu", password = "secret" }

[ldap.users]
search = { base = "ou=people,dc=myschool,dc=edu", filter = "(uid=%(user)s)
→" }
map = { first_name = "givenName", last_name = "sn", email = "mail" }

[ldap.groups]
search = { base = "ou=groups,dc=myschool,dc=edu" }
type = "groupOfNames"
# Users in group "admins" are superusers
flags = { is_superuser = "cn=admins,ou=groups,dc=myschool,dc=edu" }
```

### 3.1.8 Registration and user invitations

In addition to central management of user accounts, AleksIS allows self-registration by users. Registration can be either fully open, or based on personal invitations.

In a system handling critical data, access control should be as tight as possible. However, there are scenarios where central account creation is not feasible, e.g. for optional guardian accounts. In such a scenario, the invitation system allows for processes like handing out invitation codes as a letter or through e-mail campaigns.

#### Configuration

##### Registration

Registration can be enabled via the configuration interface in frontend.

In the Authentication tab, click the checkbox `Enable signup` to enable signup for everyone. A menu item will be added for public registration.

**Warning:** Do not enable this feature unless you intend to run a public AleksIS instance.

Before enabling registration, you should consider restricting allowed usernames. By default, all ASCII characters are allowed in usernames. Often, it is advisable to not allow special characters. This often depends on the systems that will be linked to AleksIS.

To restrict usernames to a certain format, a regular expression can be defined in the Regular expression for allowed usernames preference. For example, to restrict the username to lower case letters and numbers, and beginning with a number, the regex can be set to `^[a-z][a-z0-9]+$``.

## User invitations

In the same location as public registration, the invitation system can be enabled.

- Authentication
  - Enable invitations: Click to enable invitations.
  - Length of invite code: Length of invitation code packets, defaults to 5.
  - Size of packets: Configure how many packets are generated, defaults to 3.

By default, an invitation code looks like the following: abcde-abcde-abcde.

A menu item will become available for users to enter their invitation code.

## Usage

### Invite by email or code

To invite a new user, visit the invitation page located at People → Invite person

Here you are able to invite the user by email address or generate an invitation code.

E-Mail address	Sent	Inviter	Key	Accepted
-	01/22/2022	Teichler, Tom	c2shg-y50bf-st4gj	✘

This mechanism allows for registration of entirely new persons that do not exist in the system, e.g. if personal details are not known in advance.

### Invite existing person

To invite an existing person, open the person in AleksIS and click Invite user.

The invitation will be sent to the person's email address, and can only be used by this person. Upon registration, the new account will automatically be linked to the existing person.



**Note:** Before using this feature, make sure to read and understand [The concept of persons](#) (page 37).

### 3.1.9 Social accounts

AleksIS can authenticate users against third party applications using OAuth2 or OpenID.

This can be used to grant access to persons whose credentials shall not be managed in AleksIS itself, for example because another authentication provider is already used throughout the school, or for guardians that can or should for some reason not get an LDAP account, or similar situations.

**Warning:** Social accounts are **not** working with two factor authentication! If a user authenticates with a social account, the two factor authentication is ignored on login (but enforced for views that require two factor authentication later).

#### Configuring social account provider

For available providers, see documentation of [django-allauth](#)<sup>8</sup>.

A new social account provider can be configured in your configuration file (located in `/etc/aleksis/`).

Configuration example:

```
[auth.providers.gitlab]
GITLAB_URL = "https://gitlab.exmaple.com"
```

After configuring a new auth provider, you have to restart AleksIS and configure client id and secret in the Backend Admin interface. Click "Social applications" and add a new application. Choose your provider and enter client id and secret from your application and choose your site:

<sup>8</sup> <https://django-allauth.readthedocs.io/en/latest/providers.html>

Add social application

Provider:

Name:

Client id:   
App ID, or consumer key

Secret key:   
API secret, client secret, or consumer secret

Key:

Key

Sites:

Available sites

Chosen sites

Choose all

### 3.1.10 Monitoring and health checks

#### Configuration

#### Thresholds

Thresholds for health checks can be configured via config file (/etc/aleksis).

```
[health]
disk_usage_max_percent = 90
memory_min_mb = 500

[backup.database]
check_seconds = 7200

[backup.media]
check_seconds = 7200
```

## Status page

AleksIS' status page shows information about the health of your AleksIS instance. You can visit it via the left navigation bar (Admin → Status).

The page shows information about debug and maintenance mode, a summary of your health checks and the last exit status of your celery tasks. This page can not be used as a health check, it will always return HTTP 200 if the site is reachable.

## Health check

The health check can be used to verify the health of your AleksIS instance. You can access it via the browser (<https://aleksis.example.com/health/>) and it will show you a summary of your health checks. If something is wrong it will return HTTP 500.

It is also possible to get a JSON response from the health check, for example via `curl`. You only have to pass a valid `Accept: application/json` header to your request.

The health check can also be executed via `aleksis-admin`:

```
$ aleksis-admin health_check
```

## Monitoring with Icinga2

As already mentioned, there is a JSON endpoint at <https://aleksis.example.com/health/>. You can use an `json check` plugin to check separate health checks or just use a `HTTP check` to check if the site returns HTTP 200.

## Performance monitoring with Prometheus

AleksIS provides a Prometheus exporter. The exporter provides metrics about responses and requests, e.g. about response codes, request latency and requests per view. It also provides data about database operations.

The metrics endpoint can be found at <https://aleksis.example.com/metrics>. In the default configuration it can be scraped from everywhere. You might want to add some webserver configuration to restrict access to this url.

To get metrics of your AleksIS instance, just add the following to `prometheus.yml`

```
- job_name: aleksis
  static_configs:
    - targets: ['aleksis.example.com']
  metrics_path: /metrics
```

## Rules for prometheus alertmanager

If you are using the prometheus alertmanager, it is possible to create some alerting rules so that an alert is fired when your AleksIS instance is slow or something.

```
groups:
- name: aleksis
  rules:
  - alert: HighRequestLatency
    expr: histogram_quantile(0.999, sum(rate(django_http_requests_latency_
    →seconds_by_view_method_bucket{instance="YOUR-INSTANCE",view!~"prometheus-
    →django-metrics|healthcheck"}[15m])) by (job, le)) < 30
    for: 15m
    labels:
      severity: page
    annotations:
      summary: High request latency for 15 minutes
```

## Grafana dashboard

There is a Grafana dashboard available to visualise the metrics.

The dashboard is available at <https://grafana.com/grafana/dashboards/9528>.

### 3.1.11 Background tasks

Operations that are expected to take a long time are run as background tasks. For this, at least one [Celery](#)<sup>9</sup> worker has to be running, e.g. by coupling it with uWSGI as laid out in [Configure uWSGI](#) (page 42).

If a task is triggered from the AleksIS frontend, for example by starting an import job, a progress page is displayed, and the result of the job is waited for.

#### Periodic tasks

Some tasks are also run on a schedule. For example, the backup job is run on a regular basis.

All tasks in AleksIS that are expected to run have a default schedule, which is registered when migrating the database. Changing this default schedule is currently only possible through the Django Admin backend, under *Admin* → *Backend Admin*.

Under the *Periodic Tasks* app, you can define schedules and tasks. The names of tasks you can add manually are documented in the respective sections of the manual.

---

<sup>9</sup> <https://celeryproject.org/>

### 3.1.12 Data checks

Data checks are AleksIS' mechanism for highlighting issues with the contents of the database. These checks are not of a technical nature, but strictly concern the contextual integrity of the data stored.

#### Verify data checks

In the menu under Admin → Data checks, the status of all known checks can be verified.

The first card shows the current global check state. If any data checks reported issues, they will be listed here. In that case, administrators can choose between options provided by the data checks to resolve the issues.

**Note:** Details about the checks and solve options are described in the respective chapters of the manual.

#### Configure notifications

In the General tab of the configuration interface, you can configure email notifications for problems detected by the data checks.

- General
  - Send emails if data checks detect problems: Enable email notifications
  - Email recipients for data checks problem emails: Choose recipient persons
  - Email recipient groups for data checks problem emails: Choose recipient groups

Data checks normally run once per hour, and if notifications are enabled, results will be mailed to the selected recipients if problems are detected.

### 3.1.13 Providing important information to users using the dashboard

The dashboard is a central place for providing important information to users. This is done by so-called dashboard widgets provided by the Core and apps.

#### Built-in dashboard widgets

##### External link widget

The external link widget will show a link to an external site on the dashboard, optionally with an icon or picture next to it. It therefore provides the following additional attributes:

- **URL:** The URL of the external site.
- **Icon URL:** The URL of the icon or picture shown next to the link.

As link title, the widget title will be used.

##### Static content widget

The static content widget allows to display custom static information on the dashboard, It therefore provides the following additional attribute:

- **Content:** The content of the widget. HTML can be used for formatting.

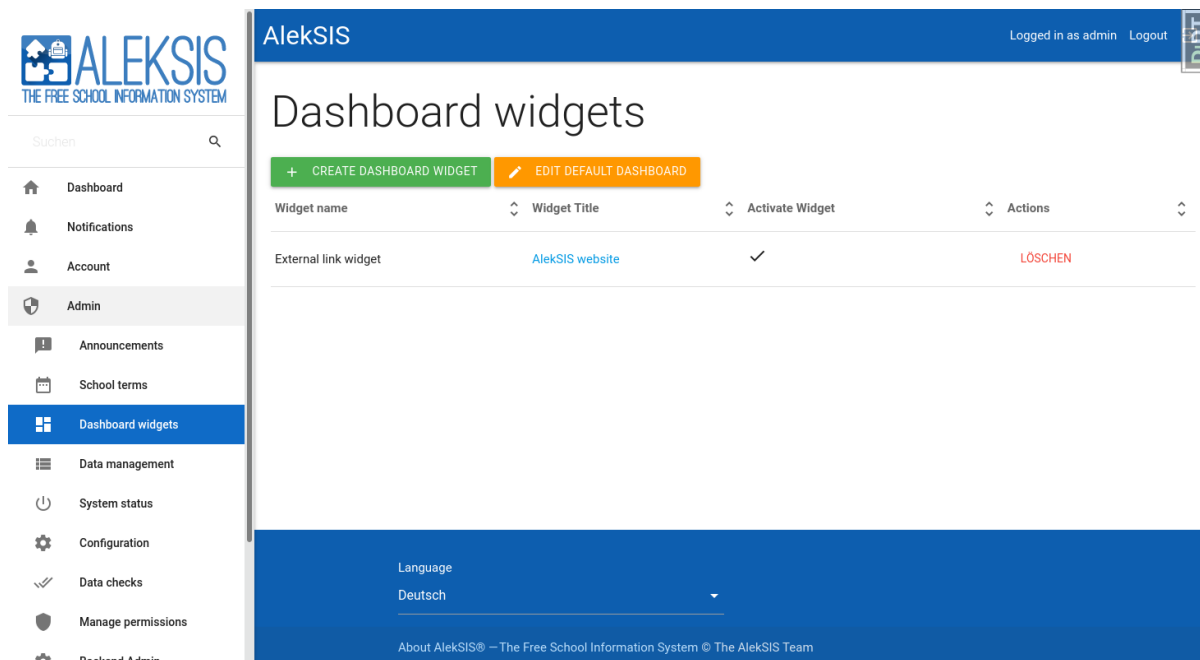
#### More dashboard widgets from apps

In addition to the built-in widgets, apps can provide their own dashboard widgets. Best examples for such apps are currently *AleksIS-App-DashboardFeeds* and *AleksIS-App-Chronos*.



## Add and configure dashboard widgets

If you want to add a new dashboard widget, you can do so by adding the dashboard widget at *Admin* → *Dashboard widgets*. There you will see all currently configured dashboard widgets and can add new ones using the *Create dashboard widget* button which will ask you for the widget type.



Each dashboard widget has at least the following attributes

- **Widget Title:** The title of the widget (will be shown in some widgets).
- **Activate Widget:** If this isn't checked, the widget will not be shown.
- **Widget is broken:** If this is checked, the widget will be shown but the user will get a message that this widget is currently out of order because of an error. This shouldn't be checked by yourself, but might be activated automatically by a widget if it encounters an error. If this case enters, you should check for the cause of the error and fix it. After that, you can unmark the widget as broken.
- **Size on different screens:** The size of the widget on different screens. We work with a grid system containing a maximum of 12 columns. So, one column is 1/12 of the screen width. The width in the following fields has to be entered as number of columns (1 to 12).
  - **Size on mobile devices:** The size of the widget on mobile devices (600px and less).
  - **Size on tablet devices:** The size of the widget on desktop devices (600px - 992px).
  - **Size on desktop devices:** The size of the widget on desktop devices (992px - 1200px).
  - **Size on large desktop devices:** The size of the widget on large desktop devices (1200px and above).

All other attributes are specific to the widget type and are explained in the documentation of the widget.

The screenshot shows the 'Create External Link Widget' page in the AleksIS admin interface. The page has a blue header with the AleksIS logo and 'Logged in as admin Logout'. A left sidebar contains navigation links: Dashboard, Notifications, Account, Admin, and People. The main content area is titled 'Create External Link Widget' and contains the following configuration options:

- Widget Title: AleksIS website
- Activate Widget
- Widget is broken
- Size on mobile devices: 12
- <= 600 px, 12 columns: Size on tablet devices: 12
- > 600 px, 12 columns: Size on desktop devices: 6
- > 992 px, 12 columns: Size on large desktop devices: 4
- > 1200 px, 12 columns: Adresse (URL): https://aleksis.org

### Setup a default dashboard

To make the configured dashboard widgets accessible to all users, we recommend to configure the default dashboard. If you don't do so, the dashboard widgets will only be available to users if they customise their dashboard.

The default dashboard can be configured via *Admin* → *Dashboard widgets* → *Edit default dashboard*. The edit page works exactly as the page described in [Customising the dashboard](#) (page 11).

The screenshot shows the 'Edit default dashboard' page in the AleksIS admin interface. The page has a blue header with the AleksIS logo and 'Logged in as admin Logout'. A left sidebar contains navigation links: Dashboard, Notifications, Account, Admin, and People. The main content area is titled 'Edit default dashboard' and contains the following elements:

- An information icon and text: "On this page you can arrange the default dashboard which is shown when a user doesn't arrange his own dashboard. You can drag any items from 'Available widgets' to 'Default Dashboard' or change the order by moving the widgets. After you have finished, please don't forget to click on 'Save'."
- A green 'SICHERN' button.
- A section titled 'Available widgets' with a grey bar below it.
- A section titled 'Default dashboard' with a grey bar containing a widget titled 'AleksIS website'.
- A blue footer bar with the text 'Language'.

## Preferences

The behavior of the dashboard can be configured via *Admin* → *Configuration* → *General*. The following settings are available:

- **Show dashboard to users without login:** If this is checked, the dashboard will be also shown to users who are not logged in.

**Warning:** That won't work with all dashboard widgets. Some widgets, like the timetable widgets, require a logged in user.

- **Allow users to edit their dashboard:** With this preference, system administrators can decide whether users can edit their own dashboard as described in [Customising the dashboard](#) (page 11).
- **Automatically update the dashboard and its widgets sitewide:** If enabled, the dashboard will be updated automatically every 15 seconds.

## 3.2 Managing timetable data and substitution plans in Chronos

### 3.2.1 Managing timetable and substitution data

Currently, Chronos does not provide an interface for interactively managing timetable data.

Instead, data is imported from an external source. The official distribution handbook contains documentation about the existing integration apps.

While there is basic support for editing substitutions, the interface should not be used when substitution data is imported from an external source.

### 3.2.2 Setup notifications about current changes

Users can get notifications about current changes to their personal timetables. To activate this behavior, the system administrator has to ensure multiple things:

- The data come from a compatible source, for example, AleksIS-App-Untis.
- The notifications have been activated in the preferences (see below).
- There is at least one notification channel available to your users (cf. `core-admin-notifications`).

## Preferences

You can customize the way how and when notifications are sent at the configuration page at **Admin** → **Configuration** → **Timetables**:

- **Send notifications for current timetable changes:** With this checkbox, the whole feature can be activated or deactivated.
- **How many days in advance users should be notified about timetable changes?** Here the number of days can be configured notifications will be sent before the actual affected day. A common value is one or two days.

- **Time for sending notifications about timetable changes:** At this time, the notifications for the next days will be sent. This is only used if the changes are created before the period configured with the above mentioned option. If they affect a day in this period, the notification will be sent immediately.

### 3.2.3 System-wide settings for timetable and substitution display

The display of timetables and substitution plans can be customised under *Admin* → *Configuration* → *Timetables*. The section contains the following preferences:

- **Use parent groups in timetable views:** If a lesson or substitution has only one group and this group has parent groups, these groups will be shown.
- **Limit of groups for shortening of groups:** If a user has activated the preference for shortening too long group lists, this limit will be used to determine at what number of groups shortening will happen.
- **Number of days shown on substitutions print view:** Here you can set the number of days that will be shown on the substitutions print view (PDF file).
- **Show header box in substitution views:** The header box shows all affected/absent teachers/groups for the current day.
- **Show parent groups in header box in substitution views instead of original groups:** This setting determines the same setting as *Use parent groups in timetable views*, but for the printout.

## 3.3 Setting up a digital class register with AleksIS-App-Alsijil

### 3.3.1 Defining base data

With sufficient authorisation, two additional menu items appear in the class register menu.

## Excuse types

Additional types of excuse for an absence can be created here. This can be useful if you only want to count certain absences. For example, if a student is busy at a school event and misses lessons, this may not be counted as a normal absence.

## Extra marks

Some remarks are repeated over and over again, such as 'Forgot homework'. In order not to have to write this again and again in the remark field, additional marks can be set, which then only have to be clicked on in the class register.

AleksIS Logged in as admin Logout

### Extra marks

[+ CREATE EXTRA MARK](#)

Name	Short name	Edit	Delete
Homework Forgotten	Homework	<a href="#">EDIT</a>	<a href="#">DELETE</a>
Good Participation	Participation	<a href="#">EDIT</a>	<a href="#">DELETE</a>

Language  
English

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AleksIS Logged in as admin Logout

### Create extra mark

Short name  
Homework

Name  
Homework Forgotten

[SAVE](#)

Language  
English

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## Group roles

To track special roles in groups in the class register, group roles like class representatives or ventilation services can be defined here.

The screenshot shows the 'Group roles' management interface. On the left, a sidebar menu includes 'Class register' with a sub-menu 'Manage group roles' highlighted. The main content area has a blue header with 'AleksIS' and 'Logged in as admin Logout'. Below the header is the title 'Group roles' and a green '+ CREATE GROUP ROLE' button. A table lists the roles:

Name	Edit	Delete
Ventilation service	EDIT	DELETE

At the bottom, there is a language dropdown set to 'English' and a footer: 'About AleksIS® – The Free School Information System © The AleksIS Team'.

The screenshot shows the 'Edit group role' interface. The left sidebar has 'Class register' selected. The main content area has a blue header with 'AleksIS' and 'Logged in as admin Logout'. Below the header is the title 'Edit group role'. The form fields are:

- Name: Ventilation service
- Icon: today
- Colour: (with a color picker icon)

A green 'SAVE' button is located below the form. At the bottom, there is a language dropdown set to 'English' and a footer: 'About AleksIS® – The Free School Information System © The AleksIS Team'.

Group roles can be managed via menu entry "Manage group roles" located in the submenu "Class register".

### 3.3.2 System-wide settings for the digital class register

The behaviour of the digital class register can be customised under *Admin* → *Configuration* → *Class Register*. The section contains the following preferences:

- **Block adding personal notes for cancelled lessons:** If this option is activated, teachers will not be able to add personal notes for cancelled lessons.
- **Allow users to view their own personal notes:** With this option, the school management can control whether students should be able to view their own personal notes.
- **Allow primary group owners to register future absences for students in their groups:** This allows owners of the student's primary group (e. g. the class) to register future absences like doctor's appointments or family celebrations.
- **Grant the owner of a parent group the same privileges as the owners of the respective child groups:** The owner of a group can perform all operations on child groups and related objects an owner of the respected child groups is allowed to (e. g. editing the lesson documentation).
- **Allow original teachers to edit their lessons although they are substituted:** In the case of substitute teaching, absent teachers can be given write-in privileges for the lesson.
- **Carry over data from first lesson period to the following lesson periods in lessons over multiple periods:** For double (or even more adjacent) lessons, the lesson data from the first lesson period can be automatically carried over to the following lessons.
- **Carry over personal notes to all following lesson periods on the same day:** For double (or more adjacent) lessons, the personal notes from the first lesson period can be automatically carried over to the following lessons.
- **Allow teachers to open lesson periods on the same day and not just at the beginning of the period:** Teachers can open lessons earlier on the same day and not just at the beginning of the lesson.
- **Allow teachers to add data for lessons in holidays:** It is possible to allow entering content for lessons during the holidays.
- **Allow group owners to assign group roles to the parents of the group's members:** With this being activated, group roles like parent representatives can be managed by the class teacher.

## 3.4 Seating plan administration

### 3.4.1 Permissions

Group owners can always view, create, edit and delete seating plans for their groups. Also, they can view plans of parent groups.

The *Seating plans* menu entry is only displayed, when at least one seating plan can be viewed by a person.

To give persons who are not group owners permissions, use the following:

- **stoelindeling.view\_seatingplan:** Global or object permission to view all seating plans or a specific one
- **stoelindeling.add\_seatingplan:** Global permission to create seating plans



- **stoelindeling.change\_seatingplan**: Global or object permission to edit all seating plans or a specific one
- **stoelindeling.delete\_seatingplan**: Global or object permission to delete all seating plans or a specific one

Persons with the global permission **stoelindeling.add\_seatingplan** are also allowed to view the list of all seating plans.

## 3.5 Providing time-based documents with Resint

### 3.5.1 Uploadable posters for time-based documents

Posters are documents that can be manually supplied in a time-based manner. Example use cases are canteen menus, that are provided weekly by an external supplier, who will only get privileges to upload this poster as a PDF file.

Poster files can be uploaded for a defined time period, and AleksIS will then deliver the currently valid version under a stable menu item and URL.

#### Defining poster groups

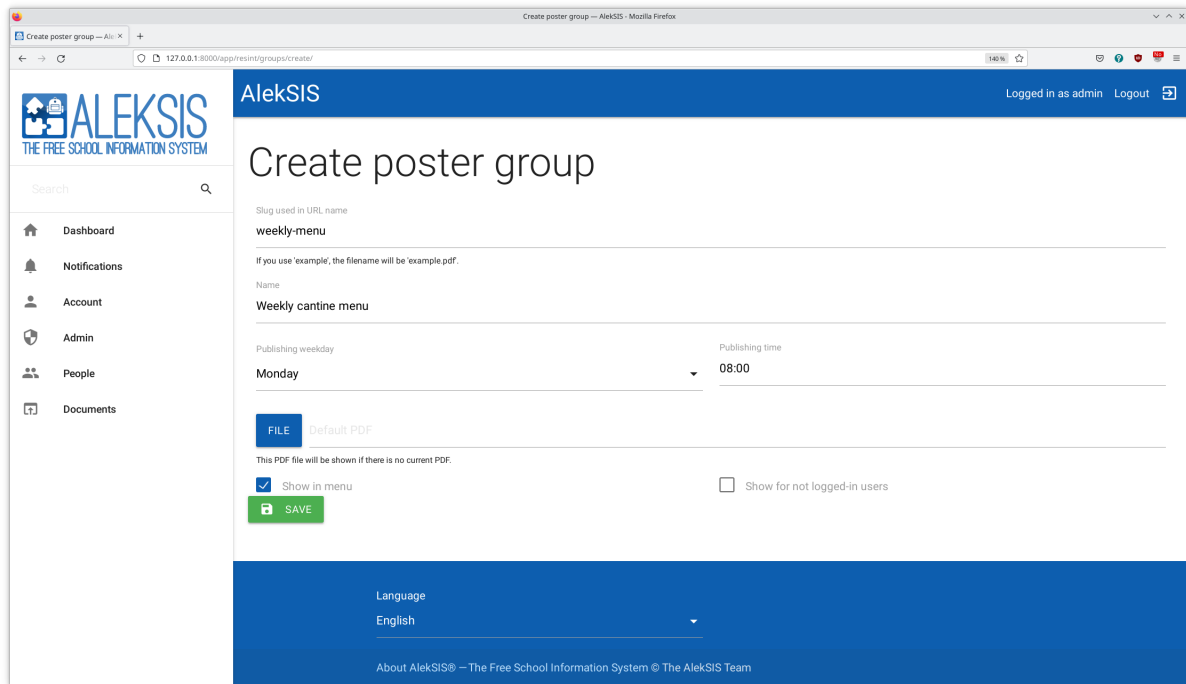
Uploadable posters are categorised into poster groups, with each poster group representing one time-based document that AleksIS will provide. Each poster group has:

- A name
- A URL slug making up the final, stable URL
- A schedule defining the cycle for providing the document
- A default PDF file for periods for which no document is uploaded

Permissions to upload documents are managed per poster group as well.

#### Creating poster groups

Poster groups are created from the menu under the *Documents* → *Poster groups* menu item. After clicking the *Create new poster group* button or the *Edit* action for any poster group, the following form allows editing the details of the poster group.



In addition to the properties explained above, the form provides two options to configure if and how the document will be presented to users. It is possible to include or exclude the document from the main menu, and to allow access by anonymous users. Documents that are hidden from the menu can be used if they should only be accessible through links from external sites, or loaded by a digital signage system.

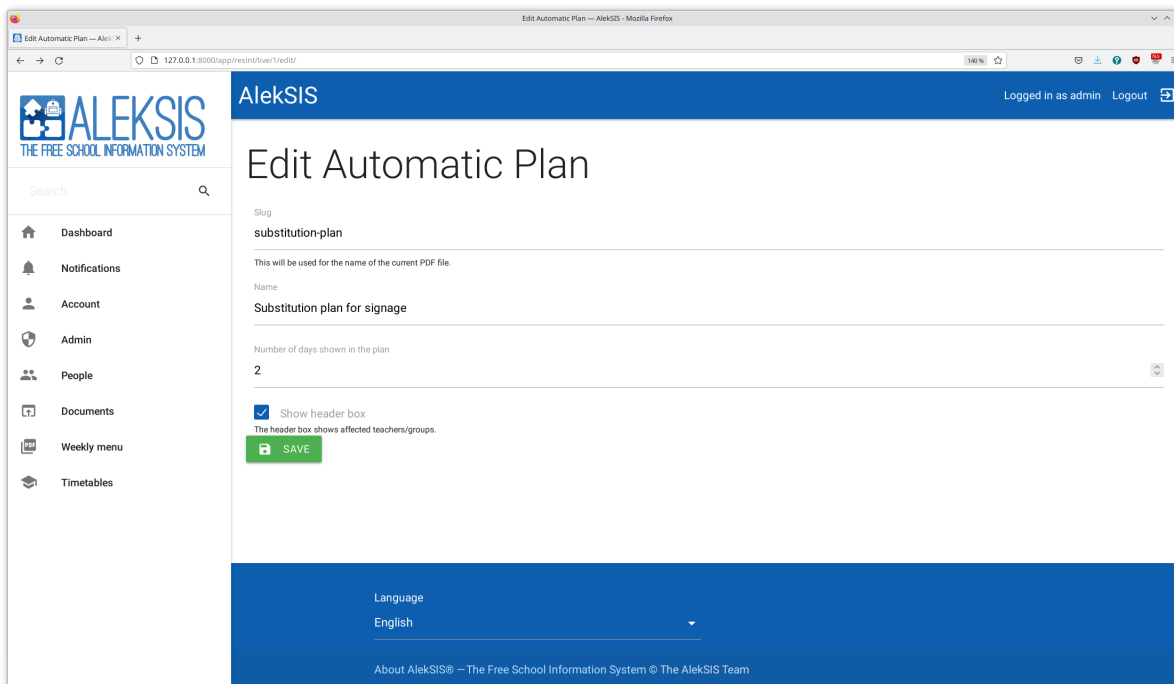
The stable URL for the poster group can be copied from the link in the *Filename* column of the *Poster groups* list.

### 3.5.2 Configuring live documents

Live documents are another type of time-based documents. In contrast to posters, they are not uploaded manually, but automatically updated by some trigger.

Types of live documents are provided by other AleksIS apps. All live document types provided by apps can then be configured from the *Documents* menu.

An example for a live document is an automatically generated substitution plan, which can be linked to from a website, or displayed on digital signage.



All fields except the slug are provided by the app. The slug again makes up the stable URL the live document will be provided under, which can be copied from the live document list.

The app providing a live document type will take care of updating the document. A live substitution plan might thus be re-generated whenever timetable or substitution data changes.

## 3.6 Importing timetables and substitutions from Untis

### 3.6.1 Untis data and their relation to AleksIS

Untis is a proprietary timetable management software which is popular in the German-speaking area, but used internationally. AleksIS provides functionality to automatically import data from Untis into data models of the core and *Chronos*, the timetable and substitution app of AleksIS.

Currently, we only support importing data from the MySQL database of [Untis MultiUser<sup>10</sup>](https://www.untis.at/produkte/untis-das-grundpaket/multiuser). This is done through configurable background tasks which are executed in a specific interval or at specific points in time.

#### Supported Untis features

Not all features of Untis are supported in AleksIS. The following information from Untis can be imported into AleksIS:

- Terms
- Holidays
- Classes, teachers, subjects
- Rooms, supervision areas (corridors in Untis)
- Lesson and break times

<sup>10</sup> <https://www.untis.at/produkte/untis-das-grundpaket/multiuser>

- Timetable data (lessons, supervisions)
- Absences, absence reasons
- Substitutions, extra lessons, cancellations
- Events
- Exams

The Untis integration supports the versioning features of Untis. By default, the most recent version of each object is imported.

Currently, the following features are known not to be supported:

- Students, student groups, student choices
- Prebookings
- Statistical data
- Special rooms (subject and group rooms)

AleksIS does not support so-called "day texts" from Untis. These are incompatible with AleksIS' announcement feature, which can be used as a replacement.

### 3.6.2 Setting up the Untis integration

#### Requirements

To use the importer, you must have a current Untis MultiUser license (version 2019 and above) and a MySQL database which is reachable by the AleksIS server. How to configure Untis to use this database is described in the [Untis MultiUser Manual](#)<sup>11</sup>.

In addition to the technical [Prerequisites](#) (page 39) of the AleksIS core itself, a few extra system packages are required:

```
apt install libmariadb-dev
```

The MySQL (or [MariaDB](#)<sup>12</sup>) server must be reachable from the AleksIS server, and a user account in the database is needed. It is sufficient to create this user with SELECT permissions. On the MySQL shell, you can create such a user with something like:

```
CREATE USER `aleksis`@`aleksisserver` IDENTIFIED BY 'securepassword' ;  
GRANT SELECT ON `untis`.* TO `aleksis`@`aleksisserver` ;  
FLUSH PRIVILEGES ;
```

<sup>11</sup> [https://help.Untis.at/hc/de/article\\_attachments/360004504079/Untis\\_MultiUser.pdf](https://help.Untis.at/hc/de/article_attachments/360004504079/Untis_MultiUser.pdf)

<sup>12</sup> <https://mariadb.org>

### Configure database connection

In the AleksIS configuration file (cf. [Configuration files and format](#) (page 44)), you have to set the following settings:

```
[untis.database]
enabled = true
name = "untis"
user = "aleksis"
password = "securepassword"
host = "mysqlserver"
port = 3306
```

### Preferences

The preferences for the import can be set from the menu under *Admin* → *Configuration* → *Untis*.

### Configure the school ID

The only required preference is the Untis school ID. You need to provide this in all cases, even if your Untis database hosts only one school.

**Warning:** If your Untis database hosts several schools, but you forget to configure the school ID, data corruption may occur!

### Customise how data are imported

The behaviour of the import can be customised in several ways. The following preferences are available:

- **Update values of existing subjects:** This will update the values of already existing subjects if Untis has different data.
- **Update short name of existing persons:** This will update the short name of already existing persons if Untis has different data.
- **Update name of existing persons:** This will update the name of already existing persons if Untis has different data.
- **Update short name of existing groups:** This will update the short name of already existing groups if Untis has different data.
- **Update name of existing groups:** This will update the name of already existing groups if Untis has different data.
- **Overwrite group owners:** This will update the group owners of already existing groups if Untis has different data.
- **Update name of existing rooms:** This will update the name of already existing rooms if Untis has different data.

- **Update existing supervision areas:** This will update the values of already existing supervision areas if Untis has different data.
- **Use course groups:** This will search course groups (groups for each subject in a class) instead of setting the classes as groups.
- **Create non-existing course groups:** In combination with `_Use course groups_` being enabled, this will create new course groups if no matching group was found.
- **Register a data problem if a course group has been not found:** When this is activated, the import will register a data problem if no matching course group was found, independent of whether a new course group was created or not.
- **Ignore incomplete substitutions:** If this is activated, Untis won't import any substitutions which are not cancelled or without a new room, new teacher or new subject .

### Scheduling import tasks

The integration provides different *Periodic tasks* (page 54) to import the data from Untis:

- `untis_import_mysql_current_term`: This will import all data from the **current** Untis term.
- `untis_import_mysql_future_terms`: This will import all data from all **future** Untis terms, but not from the current.
- `untis_import_mysql_all_terms`: This will import all data from **all** Untis terms which are in the database.
- `untis_import_mysql_current_next_term`: This will import all data from the **current and the directly following** Untis term.
- `untis_import_mysql_current_future_terms`: This will import all data from the **current and all future** Untis terms.

We suggest using `untis_import_mysql_current_next_term` as a task because this will ensure that all current data are up-to-date, but also that the next timetable version is also already imported when it becomes relevant.

In general, all tasks will do nothing if there is no matching Untis term.

To use these tasks, you have to add them as periodic tasks. By default, they will import the most recent plan version from Untis. To select a specific version (i.e. to import an older snapshot), you can pass the `version` argument in the tasks.

### How existing data is matched

If there are already existing data in AleksIS' database, the Untis import will always try to combine these data. The main data field used for this is the `short_name` field (cf. *The concept of groups* (page 38)). If the data were imported one time, each object in Chronos will save the respective ID from Untis to make sure that the data are properly updated at the next import.

The import is thus idempotent.

## 3.7 Importing data from CSV-like sources

### 3.7.1 Base concept of the generic importer

For importing comma-separated or, more generally, any sort of column-based data in text files, AleksIS provides a generic importer.

The importer works with so-called *import templates*. These templates set a field type for each column in a file. With this information, the importer will know how to interpret each cell.

#### Default templates

For import sources that have already been tested, AleksIS provides import templates that are readily available.

Right now, the following import sources are supported:

- [Pedasos<sup>13</sup>](#), a school management solution popular in Northern Germany
- [Schild-NRW<sup>14</sup>](#), the obligatory school management solution in North-Rhine Westphalia, Germany

These software products either provide hard-coded export mechanisms, or allow the creation of report/export templates to generate CSV-like output.

#### Custom templates

In addition to the integrated default templates, custom templates can be created by administrators. Creating custom import templates currently requires hand-crafting *YAML* files that can then be uploaded through the user interface.

However, this feature is currently deliberately undocumented.

### 3.7.2 Configuring the import

#### Setting preferences

There are some preferences that should be set before starting the first import to ensure that everything works correctly. Under *Admin* → *Configuration* → *CSV import*, all import templates can be configured.

- **Group type for department groups:** This group type will be set for department (i.e. subject) groups.
- **Prefix for long names of department groups:** This prefix will be added to the long name of all department group names.
- **Languages for date parsing:** Here you can set languages you want to use for parsing dates from the CSV file. Takes comma-separated data without spaces (e. g. *de,en\_US*).

In addition, you should set the **country code for phone number parsing** under the *Internationalisation* tab correctly.

---

<sup>13</sup> <https://ostertun.de/produkt.html>

<sup>14</sup> <https://www.svws.nrw.de/download/schild-nrw>

### 3.7.3 Exporting data from various systems

#### Pedagos

Pedagos is a school management software mainly used in the North of Germany (Schleswig-Holstein, Hamburg).

Please pay attention to the order of the imports: You should start with the classes and end with the guardians.

1. Pedagos: Classes
2. Pedagos: Courses
3. Pedagos: Teachers
4. Pedagos: Students
5. Pedagos: Guardians 1
6. Pedagos: Guardians 2

To use these templates, you have to configure so-called *lists* in Pedagos instance. AleksIS provides example list definitions to export CSV data matching the import templates.

### 3.7.4 Importing data

You can find the import form under *Admin* → *Data management* → *CSV import*. Please be sure to select a matching school term (especially when importing groups). Then select the file you want to import and a matching import template.

**Warning:** Please double-check if the combination of file, template, and school term is correct; otherwise, existing data may be corrupted!

To start the actual import, press the button *Import data*. Now you should see a progress bar with the current import status and all errors that may occur.

#### Importing multiple CSV files

Multiple CSV files can be uploaded in one batch by putting them in a ZIP archive.

---

**Note:** For this to work, the CSV files need to exactly follow the same pattern and be exactly homogeneous.

---



### Accompanying files (photos)

The import of photos is supported. To do this, a CSV with at least the unique import reference and a filename needs to be placed in a ZIP archive, together with the files to be imported.

## 3.8 Show data from external sources on dashboard

### 3.8.1 Introduction

AleksIS provides dashboard widgets for displaying feeds from external resources. The following widgets are normal dashboard widgets and can be added and configured like described in [Add and configure dashboard widgets](#) (page 57).

### 3.8.2 RSS feed widget

This widget, unlike the name suggests, allows RSS, Atom and JSONFeed feeds to be parsed and displayed on the dashboard. Only the most recent article is displayed, with a short caption and optionally an image. For this, the feed must contain a JPG image as an enclosure (this is not the case by default in every CMS, but most have plugins for this). In addition, the news source is linked on the dashboard.

- **RSS feed source URL:** The URL of the source feed
- **Base URL:** The home or base URL of the news provider
- **Text only:** With this being enabled, no images will be shown.

---

**Note:** The RSS widget provides a task to pull data. The task `get_feeds` updates all active RSS feeds inside AleksIS. We recommend to run the task every 5 to 10 minutes. The task is automatically scheduled every 10 minutes; this can be changed as described in [Periodic tasks](#) (page 54).

---



Search

- Dashboard
- Notifications
- Account
- Admin
- People

# Create Rss Widget

Widget Title

NASA

- Activate Widget
- Widget is broken

Size on mobile devices

12

<= 600 px, 12 columns

Size on tablet devices

12

> 600 px, 12 columns

Size on desktop devices

6

> 992 px, 12 columns

Size on large desktop devices

4

> 1200 px, 12 columns

RSS feed source URL

[https://www.nasa.gov/rss/dyn/breaking\\_news.rss](https://www.nasa.gov/rss/dyn/breaking_news.rss)

Base URL of related website

<https://www.nasa.gov/>

The widget will have a link to visit a related website to read more news

- Text only

Do not show an image to depict the news item

SAVE

Language

English

About AleksIS® – The Free School Information System © The AleksIS Team

NASA

## La NASA invita a los medios al lanzamiento del nuevo mega-cohete y nave espacial lunares

Ya está abierta la acreditación de medios de comunicación para las actividades de pre-lanzamiento y lanzamiento relacionadas con la misión Artemis I de la NASA, la primera misión desde Apolo de sistemas de exploración construidos para llevar tripulación a bordo que viajará alrededor de la Luna.

READ MORE

FURTHER ARTICLES →

### 3.8.3 iCalendar feed widget

This widget displays the upcoming events of an online calendar on the dashboard. The events are shown with their title and the exact date range. Calendar widgets that can't load or parse the calendar data will be marked as broken. How to handle broken widgets is explained in [Add and configure dashboard widgets](#) (page 57).

- **iCalendar feed source URL:** The URL of the iCalendar feed
- **Base URL:** The widget will have a link to visit a related website to see more events.
- **Number of displayed counts:** With this option, you can configure how many events should be shown in the widget.

**AleksIS** Logged in as admin Logout DIBT

## Create Icalendar Widget

Widget Title  
NASA Launch Schedule

Activate Widget  
 Widget is broken

Size on mobile devices  
12

<= 600 px, 12 columns  
Size on tablet devices  
12

> 600 px, 12 columns  
Size on desktop devices  
6

> 992 px, 12 columns  
Size on large desktop devices  
4

> 1200 px, 12 columns

Icalendar URL  
[http://www.nasa.gov/templateimages/redesign/calendar/iCal/nasa\\_calendar.ics](http://www.nasa.gov/templateimages/redesign/calendar/iCal/nasa_calendar.ics)

Base URL of related calendar  
<https://www.nasa.gov/>

The widget will have a link to visit a related website to see more events

Number of displayed events  
5

**SAVE**

Language  
English

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## 3.9 Advanced LDAP integration

### 3.9.1 Interfacing with an LDAP directory beyond authentication

In addition to authenticating against an LDAP directory (as laid out in *Authenticating against LDAP* (page 48)), AleksIS can import personal information from LDAP. This functionality is currently limited to the information about persons and groups (cf. *The concept of persons* (page 37) and *The concept of groups* (page 38)), and related information.

Data can only be synchronised one-way. That means that, if you wish to continue maintaining personal information in LDAP, you should ensure that all changes are made in LDAP first, and then imported to AleksIS.

### 3.9.2 Configuring LDAP synchronisation

Setting up the LDAP synchronisation consists of three parts, which together make up the process of updating persons and groups from LDAP information.

All preferences are set under *Admin* → *Configuration* → *LDAP*.

The synchronisation always starts from a user account. Therefore, LDAP authentication needs to be set up first.

#### Matching fields

The first step is to configure *matching fields*. This configuration defines how persons are found in AleksIS, based on fields in LDAP. The relevant settings are:

- **LDAP sync matching mode:** Setting this preference to *OR* means that at least one of the fields must match, whereas *AND* means all fields must match
- **LDAP sync fields:** This list defines which fields of the person in AleksIS are considered for matching persons to LDAP entries

#### Field matching and rewriting

For all fields (both matching fields and other imported fields), the behaviour of the fields needs to be considered.

For every available field of a Person, the following preferences are available:

- **LDAP field for...:** This defines which LDAP attribute the data for this field is pulled from
- **Regular expression to match LDAP value for...:** If set, defines a regular expression that is applied to the attribute data from LDAP. The regular expression can contain named groups (see the [Python Documentation on Named Groups](https://docs.python.org/3/howto/regex.html#non-capturing-and-named-groups)<sup>15</sup>)
- **Replacement template to apply to...:** This template is applied to the LDAP data, and it can reference the groups matched in the regular expression defined for this field using `g<name>`

Only fields that are configured here are honoured by the import, all other fields are ignored.

For synchronising groups, the same preferences are provided for the names and short names of the group.

#### Setting up what and when to synchronise

Finally, the LDAP import can be enabled by setting up the last preferences, which define when the LDAP import is run.

- **Create missing persons for LDAP users:** Defines whether persons which are not found by the matching fields are created
- **Sync LDAP user with person on login:** If this preference is enabled, persons are updated from LDAP on every login
- **Enable LDAP group sync:** If enabled, all groups the synchronised users are members of are also imported

<sup>15</sup> <https://docs.python.org/3/howto/regex.html#non-capturing-and-named-groups>

**Warning:** You should take special care to thoroughly test your LDAP configuration. If operating on production data with a faulty sync configuration, important data might be overridden and destroyed.

### 3.9.3 Managing user accounts in LDAP

While not allowing to synchronise full personal information back into LDAP, AleksIS has limited support for managing user accounts (i.e. limited to pure authentication information) in LDAP.

#### Changing passwords in LDAP

When users change their password in AleksIS, it can also be changed in LDAP. This requires one of two prerequisites:

- Users must be allowed to change their own passwords in LDAP, by setting appropriate ACLs
- In the AleksIS preferences, the credentials of an account with sufficient ACLs to change all users' passwords must be configured in the respective preferences

**Warning:** Providing admin credentials to AleksIS imposes obvious security risks. Thus, make sure to limit this account to changing passwords. Also, make sure that other, security-critical systems which authenticate against LDAP, and AleksIS itself, require a second factor for administration, so attackers who manage to hijack an administrator account by changing its password cannot use it for anything else.

If you want to enable automatic password resets, an administrator account has to be provided in all cases, because the user triggering the password reset is not the user themselves. For more information on password resets, see [core-password-resets](#).

#### Creating LDAP users upon registration

If user invitations or registration are enabled, AleksIS can create the respective account in LDAP. In addition to providing admin credentials, the RDN fields that shall make up the user DN need to be configured in preferences.

For details, see [Registration](#) (page 49).

## 3.10 Setting up Matrix synchronization

### 3.10.1 Matrix and Element

[Matrix](#)<sup>16</sup> is “an open network for secure, decentralized communication”. Being an open protocol, it allows independent implementations of servers and clients to communicate with each other. Users create their account on a server they choose and are then able to chat with everyone in the network, just like the e-mail system works.

---

<sup>16</sup> <https://www.matrix.org/>

The popular reference client [Element](#)<sup>17</sup> with its team communication friendly user interface is a good choice for schools. It is available as a mobile app for Android and iOS, and as a web client, that can be used in a web browser.

### 3.10.2 Concepts of rooms and spaces

In Matrix, every chat is organized as a room, where people can join to send and receive messages. Schools can map their real structure to Matrix rooms to provide each group or course a place to communicate.

A Space is an organizational layer, that contains multiple rooms and can even contain other spaces. This is useful for representing child and parent group relationships.

When the Spaces feature is enabled, AleksIS will create a space for e.g. class 5a that contains the rooms 5a English, 5a Maths etc..

### 3.10.3 Configuring Matrix connection

To connect AleksIS to Matrix, an Account on a Matrix homeserver is required. Most homeservers of schools will not have open registration, so the process of creating an account depends on the school's setup.

#### Extracting the access token from Element Web

Log in to the Matrix account intended to use for AleksIS synchronization and open the settings via Profile picture → All Settings. Go to the tab Help & About and expand Access Token in the Advanced section. The access token will be displayed and can be copied.

After that, do not log out of Element, because that would invalidate the access token. You might want to use a private tab in your browser or clear session data afterwards.

#### Creating a new user via open registration

To create rooms and spaces and manage their participants, AleksIS needs to have a Matrix user that can be created using curl:

```
curl -XPOST -d '{"username":"aleksis", "password":"randomlygenerated",
  →"auth": {"type":"m.login.dummy"}}' "https://example.org/_matrix/client/
  →r0/register"
```

When the registration succeeds, a Matrix ID (user\_id) and an access token will be returned:

```
{
  "access_token": "QGV4YW1wbGU6bG9jYWxob3N0.AqdSzFmFYrLrTmteXc",
  "home_server": "example.org",
  "user_id": "@aleksis:example.org"
}
```

<sup>17</sup> <https://https://element.io/>

### Connecting AleksIS to the Matrix user

In AleksIS, go to Admin → Configuration → Matrix. Fill in the URL of the Matrix homeserver and the previously extracted access token.

### Setting up auto-generated Matrix IDs for AleksIS users

For dedicated Matrix homeservers that use AleksIS as a SSO provider or use the same SSO provider or user database, e.g. LDAP, AleksIS can automatically generate Matrix IDs for its users based on the username.

To enable this feature, provide a value for Name of Matrix homeserver user for auto-generating Matrix IDs.

### Configuring synchronization

AleksIS' Matrix synchronization creates Matrix rooms for every group and invites the respective users. Details of the synchronization can be customized with the remaining config options:

- **Disambiguate room aliases:** Room aliases are built from the group's short name or name. To avoid name collisions, a suffix will be added when this option is enabled.
- **Use Spaces:** Matrix supports grouping of rooms in so-called spaces. In a school context that can be used to create a space for each class containing rooms for all their subjects, i.e. child groups in AleksIS.
- **Power level for owners:** Specifies the Matrix room power level for group owners.
- **Power level for members:** Specifies the Matrix room power level for group members.
- **Reduce existing power levels:** For existing Matrix rooms that are going to be managed by AleksIS, power levels can be overwritten by AleksIS to match the previously defined power levels.

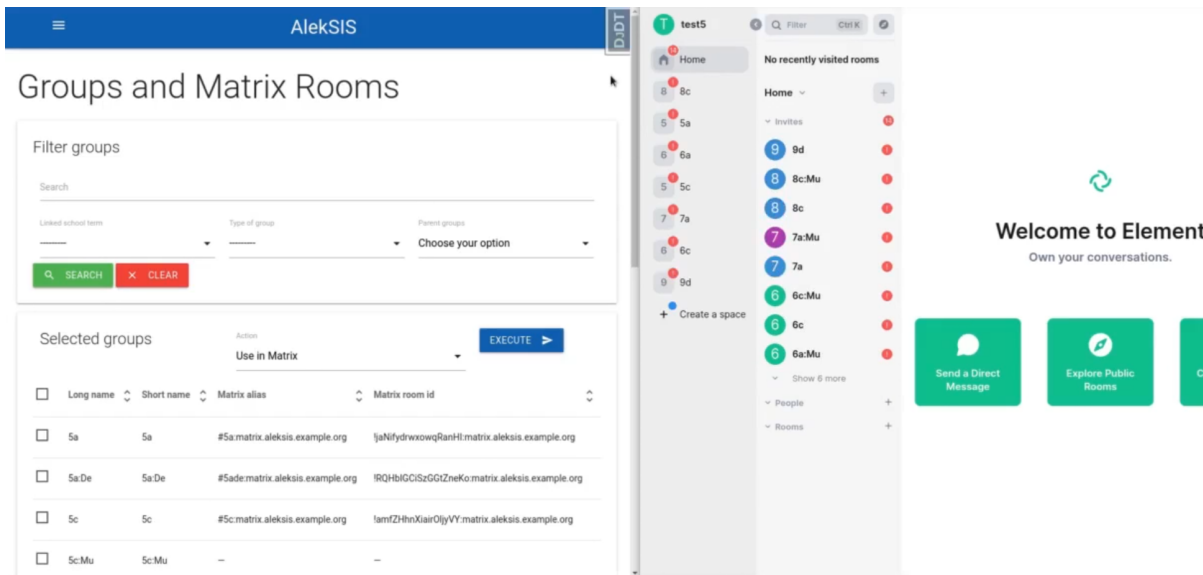
**Warning:** Do not change the **Use Spaces** preference after provisioning any rooms for groups with sub-groups. If you need to change the behaviour after the initial provisioning, first unlink the rooms and sketch out a manual migration plan!

### 3.10.4 Synchronizing with Matrix

To initially start the synchronization of groups in AleksIS to rooms, and optionally spaces, to Matrix, go to Matrix → Groups and Rooms.

Select the groups to be synchronized and click Execute. This process can take some time. All group members that have a Matrix profile in AleksIS, that may be automatically created when a Name of Matrix homeserver user for auto-generating Matrix IDs is set, get invited to the respective rooms.



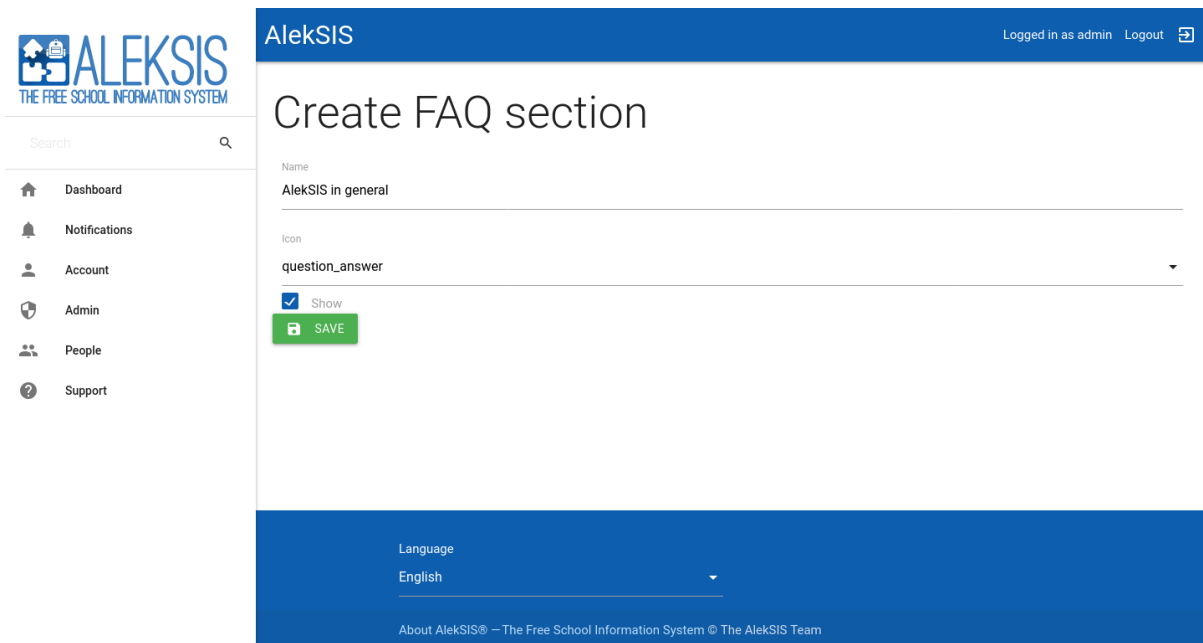


After this initial synchronization, every change in a Group, Matrix room or Matrix profile will be reflected in Matrix.

## 3.11 Support end users and get feedback with Hjelp

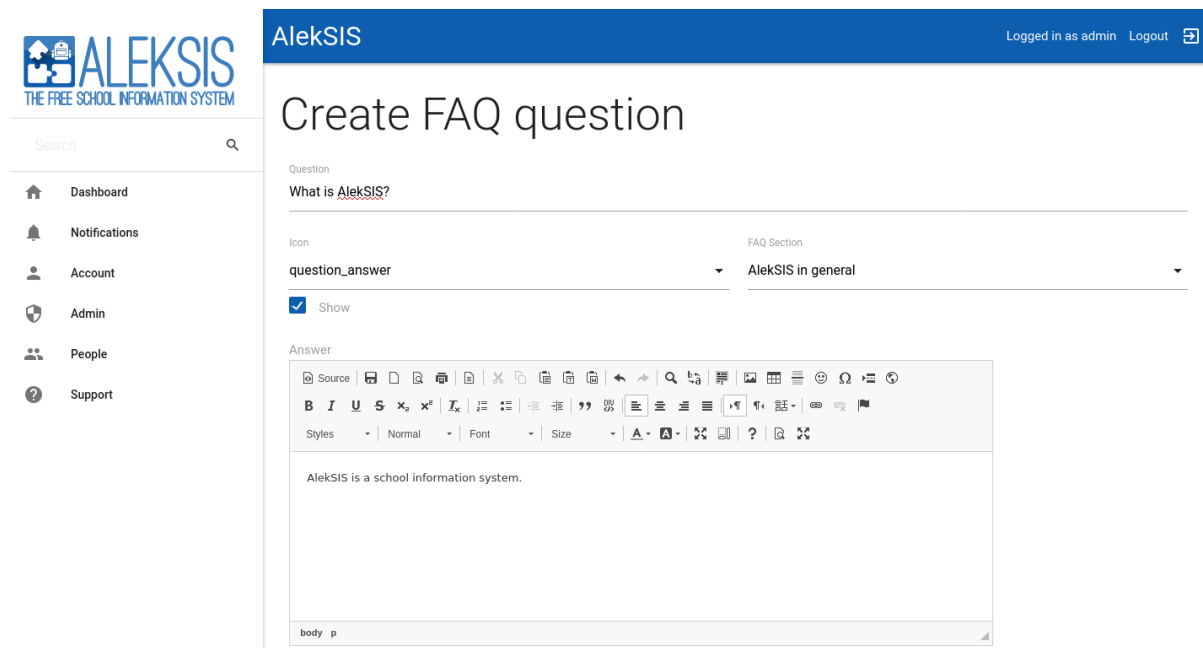
### 3.11.1 Managing FAQs

Each operator can and must write their FAQs on their own. This is done on the page *Support* → *Manage FAQ*. First of all, FAQ sections need to be created. The form for this is accessible at the top of the page. For the section to be displayed, the *Show* checkbox must be selected.

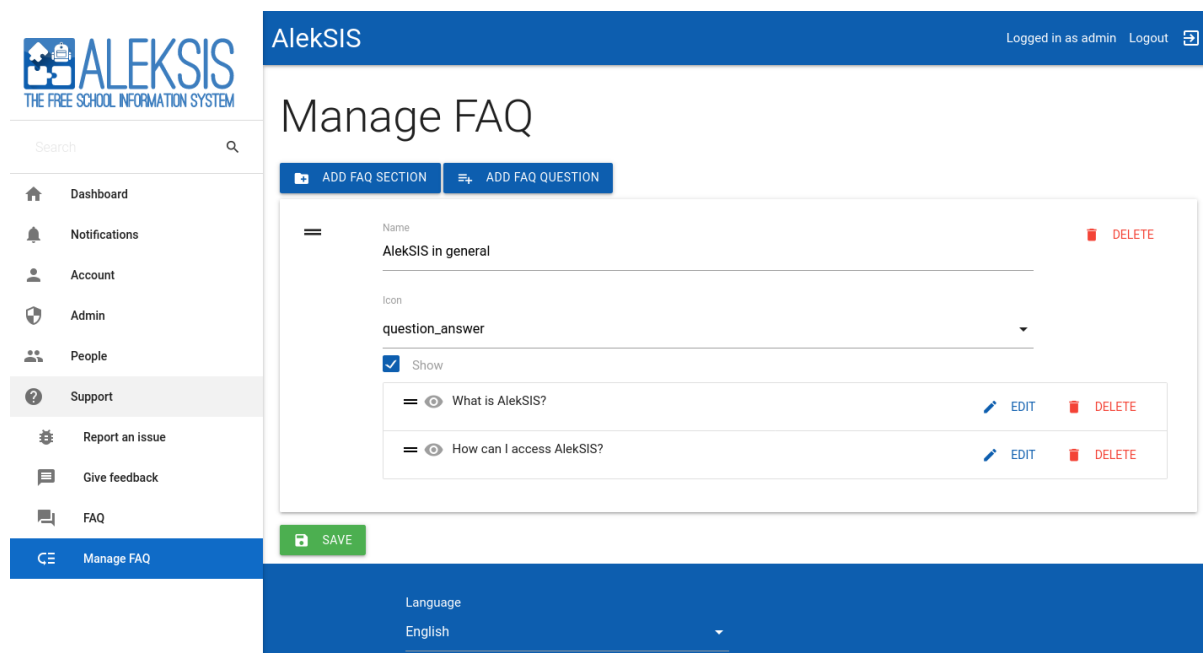


Afterwards, questions (including answers) can be created. The corresponding section must be selected. Here, too, the *Show* checkbox is important. The text in the answer field can be formatted using HTML. All icons that can be selected are located on [Material Icons](https://material.io/resources/icons/)<sup>18</sup>.

<sup>18</sup> <https://material.io/resources/icons/>



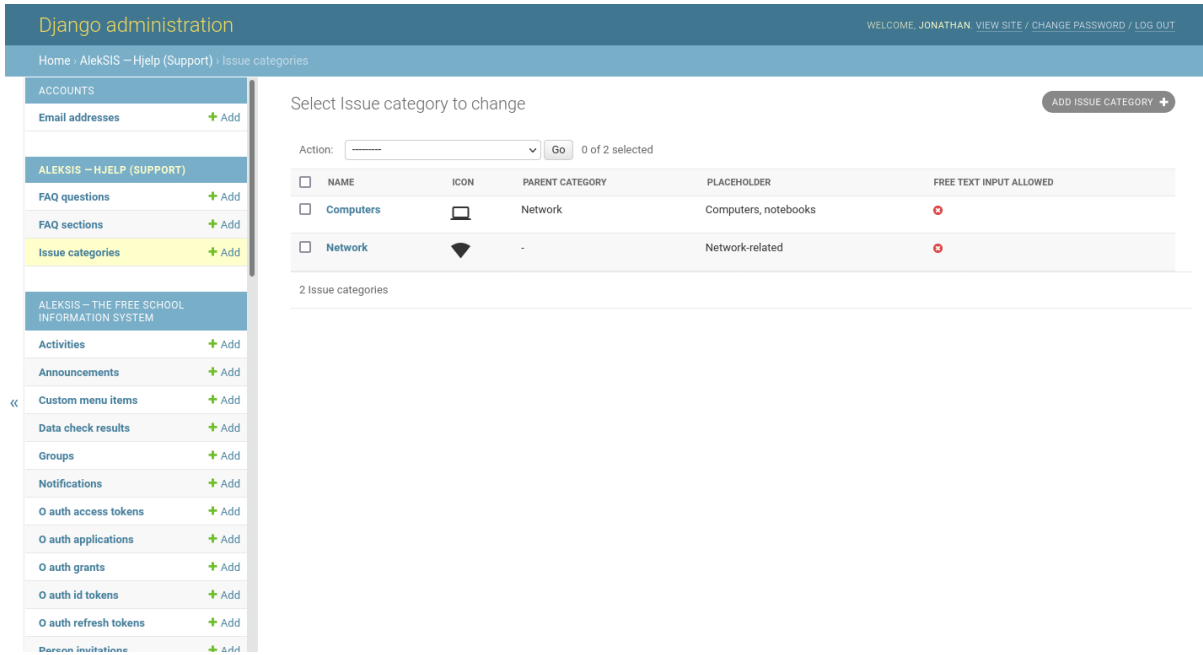
On the overview page, the order of the questions and answers can be changed. In addition, the sections can be edited here. Hidden sections and questions are displayed darker.



### 3.11.2 Managing issue report form

The Hjelp issue reporting system lets the operator categorize issues in a three-level model, whereby the used categories become more concrete from the first to the third level. Every category except the first-level ones that is created therefore has to refer to a so-called parent, of which it is a subcategory.

Creating and managing categories is done in the backend admin interface under *AleksIS – Hjelp (Support)* → *Issue categories*.

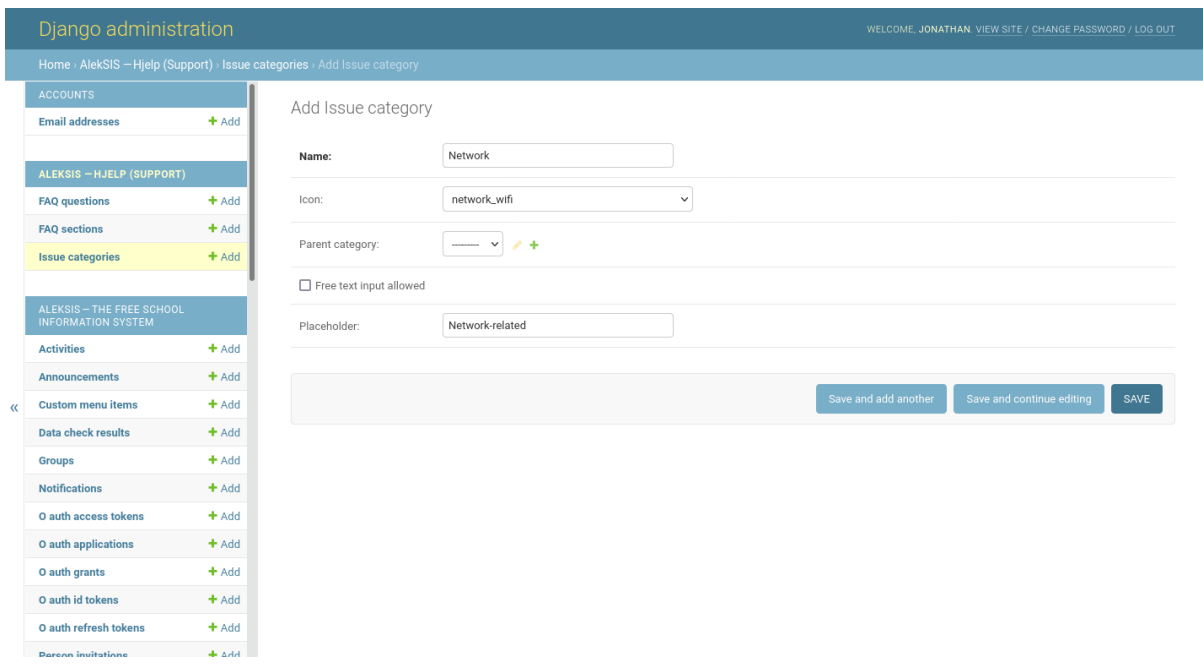


Upon using the *Add issue category* button, a form is displayed which contains all alterable attributes of the to-be category.

The *Name* textbox contains the text displayed when the given category is shown; and by means of the *Parent category* dropdown select list, a parent category can be selected. In case no parent category is specified, the created category is on first level.

If the *Free text input allowed* checkbox is selected, all possible children of the newly created category are ignored and instead, a free text input is displayed upon selection on the next level. One possible use case may be that the location of the selected issue has to be specified.

Special attention has to be paid to the *Icon* and *Placeholder* options as they refer to the category select dropdown/free text input of the next level. All icons that can be selected are again located on [Material Icons](#)<sup>19</sup>.



<sup>19</sup> <https://material.io/resources/icons/>

### 3.11.3 Settings and preferences

Hjelp requires mail delivery to be properly configured, as all three forms send their results via mail. To set the individual mail addresses the results are then sent to, one preference for each form exists:

- **Recipient e-mail address for FAQ questions**
- **Recipient e-mail address for issue reports**
- **Recipient e-mail address for feedback**

Additionally, using another preference, it can be configured whether it is possible for anonymous users to view the FAQ overview page:

- **Public visibility of FAQ**

## 4.1 Development of AlekSIS apps using the AlekSIS core

### 4.1.1 Setting up the development environment

AlekSIS and all official apps use [Poetry](https://poetry.eustace.io/)<sup>20</sup> to manage virtualenvs and dependencies. You should make yourself a bit comfortable with poetry by reading its documentation.

Poetry makes a lot of stuff very easy, especially managing a virtual environment that contains AlekSIS and everything you need to run the framework and selected apps. The minimum supported version of Poetry is 1.2.0.

Also, [Yarn](https://yarnpkg.com)<sup>21</sup> is needed to resolve JavaScript dependencies.

For repository management, *myrepos* is required.

#### Setup database and message broker

AlekSIS requires [PostgreSQL](https://www.postgresql.org/)<sup>22</sup> (version 13 or newer) as database backend. To provide a database names *aleksis* with a user named *aleksis* on Debian:

```
sudo apt install postgresql
sudo -u postgres createuser -P aleksis
sudo -u postgres createdb -O aleksis aleksis
```

Additionally, [Redis](https://redis.io/)<sup>23</sup> is used as message broker and for caching. The default configuration of the server in Debian is sufficient:

```
sudo apt install redis-server
```

<sup>20</sup> <https://poetry.eustace.io/>

<sup>21</sup> <https://yarnpkg.com>

<sup>22</sup> <https://www.postgresql.org/>

<sup>23</sup> <https://redis.io/>

### Get the source tree

To download AleksIS and all officially bundled apps in their development version, use Git like so:

```
git clone https://edugit.org/AleksIS/official/AleksIS
```

This first downloads a meta repository that contains a config file for mr. To clone the AleksIS-Core and all official (and onboarding) apps, run:

```
mr update
```

### Install native dependencies

Some system libraries are required to install AleksIS. On Debian, for example, this would be done with:

```
sudo apt install build-essential libpq-dev libpq5 libssl-dev python3-dev  
python3-pip python3-venv yarnpkg gettext chromium chromium-driver
```

### Get Poetry

Make sure to have Poetry installed like described in its documentation. Right now, we encourage using pip to install Poetry once system-wide (this will change once distributions pick up Poetry):

```
sudo pip3 install poetry
```

You can use any other of the [Poetry installation methods](#)<sup>24</sup>.

### Install AleksIS in its own virtual environment

Poetry will automatically manage virtual environments per project, so installing AleksIS is a matter of switching into the Core's directory and running the initial AleksIS installation:

```
cd apps/official/AleksIS-Core  
poetry install
```

Now it's recommended to run a shell that uses the newly created venv:

```
poetry shell
```

---

<sup>24</sup> <https://poetry.eustace.io/docs/#installation>

## Regular tasks

After making changes to the environment, e.g. installing apps or updates, some maintenance tasks need to be done:

1. Download and install JavaScript dependencies
2. Collect static files
3. Run database migrations

All three steps can be done with the `poetry shell` command and `aleksis-admin`:

```
ALEKSIS_maintenance__debug=true ALEKSIS_database__password=aleksis poetry_
→shell
poetry run aleksis-admin vite build
poetry run aleksis-admin collectstatic --clear
poetry run aleksis-admin compilemessages
poetry run aleksis-admin migrate
poetry run aleksis-admin createinitialrevisions
```

## Running the development server

The development server can be started using Django's `runserver` command. If you want to automatically start other necessary tools in development, like the [Celery](#)<sup>25</sup> worker and scheduler, use `runuwsgi` instead. You can either configure AleksIS like in a production environment, or pass basic settings in as environment variable. Here is an example that runs the development server against a local PostgreSQL database with password *aleksis* (all else remains default) and with the *debug* setting enabled:

```
ALEKSIS_maintenance__debug=true ALEKSIS_database__password=aleksis poetry_
→run aleksis-admin runuwsgi
```

### 4.1.2 Installing apps into development environment

#### Officially bundled apps

Officially bundled apps are available in the `apps/official/` sub-folder of the meta repository. If you followed the documentation, they will already be checked out in the version required for the bundle you are running.

---

<sup>25</sup> <https://celeryproject.org/>

### Installing a development environment for own apps

If you are developing your own app, you probably do not want to run a development environment from the *AleksIS-Core* repository.

Instead, simply install the environment using `poetry install` from your app repository – it will pull in *AleksIS-Core* as a dependency automatically, and everything will work as described beforehand.

---

**Note:** Take care not to mix up environments, especially if using `poetry shell`.

---

### Using one virtual environment for everything

---

**Note:** This method is not encouraged for most use cases.

---

Installing apps into the existing virtual environment of *AleksIS-Core* can be easily done after starting *poetry shell*:

```
poetry install
```

Do not forget to run the maintenance tasks described earlier after installing any app.

---

**Note:** This is not suitable for working on the core, because it will install the *AleksIS-Core* version used by the app using *pip* again.

---

## 4.1.3 Running tests and reports

### Running default test suite

The test suite can be run using the *tox* tool:

```
tox
```

### Enabling Selenium browser tests

The test suite contains tests that use Selenium to do browser based tests. They need to be enabled when running the test suite, which can be done by setting certain environment variables:



Variable	Meaning	Example
TEST_SELENIUM_BROWSERS	List of webdrivers to test against, comma-separated.	chrome,firefox
TEST_SELENIUM_HUB	Address of Selenium hub if using remote grid	<a href="http://127.0.0.1:4444/wd/hub">http://127.0.0.1:4444/wd/hub</a>
TEST_HOST	Hostname reachable from Selenium for live server	172.17.0.1
TEST_SCREENSHOT_PATH	Path to directory to create screenshots in	./screenshots

Selenium tests are enabled if `TEST_SELENIUM_BROWSERS` is non-empty.

To set variables, use `env` to wrap the `tox` command:

```
TEST_SELENIUM_BROWSERS=chrome,firefox tox
```

### Using a Selenium hub on local Docker host

One way to setup Selenium is to use the official images on the local machine.

First, get Selenium Hub and one or more browser nodes up and running:

```
docker run -d -p 4444:4444 --name selenium-hub selenium/hub
docker run -d --link selenium-hub:hub selenium/node-chrome
docker run -d --link selenium-hub:hub selenium/node-firefox
```

After that, you can run the test suite, setting the needed variables to use Docker Hub:

```
TEST_SELENIUM_BROWSERS=chrome,firefox \
TEST_SELENIUM_HUB=http://127.0.0.1:4444/wd/hub \
TEST_HOST=172.17.0.1 \
tox
```

The `TEST_HOST` variable is set to the Docker host's IP address, where the Selenium nodes can access Django's live server. Django automatically configures the live server to be reachable if a Selenium hub is used.

### Taking screenshots

The browser test suites automatically take screenshots at certain steps if enabled in the test run. This can be used to visually verify that views look like they should or for documentation purposes.

To enable screenshots, add the `TEST_SCREENSHOT_PATH` environment variable when running the tests.

If running multiple browsers, screenshots are placed in separate directories per browser.

#### 4.1.4 Materialize templates

The AleksIS frontend uses the [MaterializeCSS](#)<sup>26</sup> framework and the [django-material](#)<sup>27</sup> library.

##### Internationalisation

Load the `i18n` template tag and start translating strings in templates with the following template tags:

```
{% blocktrans %}String{% endblocktrans %}
{% trans "String" %}
```

`{% blocktrans %}` is mostly used for multiple words or multiline, while `{% trans %}` is used for single words.

##### Title and headlines

To add a main headline or browser title to your template, you can add the following blocks to your template:

```
{% block browser_title %}Title{% endblock %}
{% block page_title %}Headline{% endblock %}
```

To fully remove page or browser title, use these template tags:

```
{% block no_browser_title %}{% endblock %}
{% block no_page_title %}{% endblock %}
```

##### Extended navbar

The top navbar with the site title and the login status can be extended by an additional tab bar, for example.

To add normal Materialize tabs without icons, you can use a snippet like described in [Extended Navbar with Tabs](#)<sup>28</sup>:

```
{% block nav_content %}
  <ul class="tabs tabs-transparent">
    <li class="tab"><a href="#test1">Test 1</a></li>
    <li class="tab"><a class="active" href="#test2">Test 2</a></li>
    <li class="tab disabled"><a href="#test3">Disabled Tab</a></li>
    <li class="tab"><a href="#test4">Test 4</a></li>
  </ul>
{% endblock %}
```

Furthermore, you can use tabs with integrated icons that are higher, but more compact in width:

---

<sup>26</sup> <https://materializecss.com/>

<sup>27</sup> <https://pypi.org/project/django-material/>

<sup>28</sup> <https://materializecss.com/navbar.html#navbar-tabs>

```
{% block nav_content %}
  <ul class="tabs tabs-transparent tabs-icons tabs-fixed-width">
    <li class="tab">
      <a href="#test1">
        <i class="material-icons iconify" data-icon="mdi:speaker_
↳notes"></i>
        Test 1
      </a>
    </li>
    <li class="tab">
      <a href="#test2">
        <i class="material-icons iconify" data-icon="mdi:people"></
↳i>
        Test 2
      </a>
    </li>
  </ul>
{% endblock %}
```

**Warning:** Don't define the `nav_content` block within the content block – that won't work.

### Forms in templates

The django MaterializeCSS integrations provides support for forms in template.

You just have to load the `material_form` templatetag in the `{% load %}` block.

The following snippet generates the form:

```
<form method="post" enctype="multipart/form-data">
  {% csrf_token %}
  {% form form=edit_person_form %}{% endform %}
  {% include "core/partials/save_button.html" %}
</form>
```

`edit_person_form` is the variable name of the form in your context.

`{% include "core/partials/save_button.html" %}` includes a template snippet from AleksIS core. You can modify the buttons icon and translatable caption like this:

```
{% trans "Edit" as caption %}
{% include "core/partials/save_button.html" with caption=caption, icon=
↳"person" %}
```

In your `forms.py` you can configure the layout of the fields like in the `EditPersonForm`:

```
class EditPersonForm(ExtensibleForm):
    """Form to edit an existing person object in the frontend."""

    layout = Layout(
```

(continues on next page)

(continued from previous page)

```

Fieldset(
    _("Base data"),
    "short_name",
    Row("user", "primary_group"),
    Row("first_name", "additional_name", "last_name"),
),
Fieldset(_("Address"), Row("street", "houenumber"), Row("postal_code",
→ "place")),
Fieldset(_("Contact data"), "email", Row("phone_number", "mobile_number
→")),
Fieldset(
    _("Advanced personal data"), Row("sex", "date_of_birth"), Row(
→ "photo"), "guardians",
),
)

```

### Tables in templates

To display tables generated by `django-tables2` in your template, you have to load the `render_table` template tag from `django_tables2`:

```
{% load render_table from django_tables2 %}
```

After you've loaded the template tag, you can simply generate the table like this:

```
{% render_table persons_table %}
```

`persons_table` is the variable name of the table in your context.

### 4.1.5 Extensible models

In AleksIS you can use `ExtensibleModels` to add model fields to other apps models.

If you want to make your apps models extensible, use the `ExtensibleModel` class as parent class of your models.

### 4.1.6 Merging of app settings

AleksIS provides features to merge app settings into `main settings.py`.

Third-party apps can only add values to some select existing settings. Official apps (those under the `aleksis.apps.namespace`) can mark any setting for overriding.

### Currently mergable settings

The following settings can be amended by any app:

- INSTALLED\_APPS
- DATABASES
- YARN\_INSTALLED\_APPS
- ANY\_JS

If you want to add another database for your AleksIS app, you have to add the following into your `settings.py`:

```
DATABASES = {
    "database": {
        "ENGINE": "django.db.backends.postgresql",
        "NAME": "database",
        "USER": "database",
        "PASSWORD": "Y0urV3ryR4nd0mP4ssw0rd",
        "HOST": "127.0.0.1",
        "PORT": 5432,
    }
}
```

### Overriding any setting

Official apps only (currently) can override any setting, but need to explicitly mark it by listing it in a list called `overrides` in their `settings.py`:

```
PAYMENT_MODEL = "tezor.Invoice"

overrides = ["PAYMENT_MODEL"]
```

#### 4.1.7 Registering dashboard widgets

Apps can register their own dashboard widgets which are automatically registered in the corresponding frontend for configuring them.

To implement a widget, add a model that subclasses `DashboardWidget`, set the template and implement the `get_context` method to return a dictionary to be passed as context to the template. The template system works as in every Django view and allows you to use the normal Django template language.

If your widget does not add any custom database fields, you should mark it as a proxy model.

You can provide a `Media` meta class with custom JS and CSS files which will be added to the HTML head on the dashboard if the dashboard widget is shown. For further information on media definition, see [Django Media](#)<sup>29</sup>.

Example:

<sup>29</sup> <https://docs.djangoproject.com/en/3.0/topics/forms/media/>

```
from django.forms.widgets import Media

from aleksis.core.models import DashboardWidget

class MyWidget(DashboardWidget):
    template = "myapp/widget.html"

    def get_context(self, request):
        context = {"some_content": "foo"}
        return context

    class Meta:
        proxy = True

media = Media(css={
    'all': ('pretty.css',)
},
js=('animations.js', 'actions.js')
)
```

## 4.2 Providing auto-generated documents from apps

### 4.2.1 Providing live document types from other apps

AleksIS apps can provide live document types that are then managed by Resint. Live document types are Django models sub-classing the LiveDocument model, and providing fields and some methods that define how the live document is generated.

The following stripped-down example shows how to provide a live document type.

```
from aleksis.apps.resint.models import LiveDocument

class AutomaticPlan(LiveDocument):
    # Template name to render
    template = "my_app/pdf_template.html"

    # A field to be rendered in the edit form
    number_of_days = models.PositiveIntegerField(
        default=1,
    )

    def get_context_data(self) -> Dict[str, Any]:
        """Get context data to pass to the PDF template."""
        context = {}
        # Do something ehre to construct the context data
        return context
```

This basic example generates a PDF by defining an HTML template and overriding the `get_context_data` method. This method has to return a context dictionary, which will then

be passed to the template.

If you need more control over how the PDF is generated, you can instead override the update method:

```
class AutomaticPlan(LiveDocument):
    def update(self, triggered_manually: bool = True):
        """Re-generate PDF for this live document."""

        # Do whatever is necessary to get file contents

        self.current_file.save(self.filename, content)
```

You need to ensure that `update()` is called whenever you need to provide a new version of your document. One possibility is to listen to some relevant Django signal, then call `update()` if necessary.





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