Virtual Coffee Room

https://cafe.elixir.ut.ee

Ivan Kuzmin, Hedi Peterson

Contents

1 Motivation

Large virtual organisations acting in international space need convenient technological platforms to ease communication among its members located in various countries. Communication that in local organisations might happen during specialised meetings or as ad hoc get togethers cannot take place the same way when members of the community meet face to face only a few times per year. Therefore, convenient virtual environments are needed to enhance knowledge exchange and seemingless sharing of best practices. StackOverflow and Biostars are Question & Answer platforms well received and used among the life science and bioinformatics community. However, these platforms are meant for more general questions about programming and bioinformatics. So these existing platforms would not suit as a platform to discuss more specific topics about European Life Science Infrastructure ELIXIR. Thus, we decided to dedicate part of the ELIXIR-Excelerate project to provide a communication platform to enhance knowledge exchange among the hundreds of people working for ELIXIR across its 23 member countries.

2 Choice of technical platform

There are several technological platforms developed by companies or open software enthusiasts that had the key features that we were looking for. Namingly, we considered the following features as relevant:

- Authentication system integration — to make use of ELIXIR AAI that is inherently used across ELIXIR services
- Member groups — to make groups and posts public or private according to the desired confidentiality level of their subject matter
- Email notifications — to enable users to have notifications if new content relevant to their interests is posted
- Voting system — to highlight answers and questions that might be relevant for larger audience
- Integration with modern chat applications, such as Slack or Fleep, to ease content reading and submitting from technological platforms widely used among the ELIXIR community

In 2015 when the work started we chose Askbot technological platform as suitable for including and providing the features listed above. More technological details are provided below.

2.1 Technology stack

Askbot is an open-source software built on top of Django framework written in Python. PostgreSQL is used as a database.

The following technologies were needed for the chatbox to work:

- Django Channels and Redis as its backing store
- ASGI and Daphne (HTTP and WebSocket server for ASGI)

These technologies were also reused as a basis for the Fleep and Slack bots.

2.2 ELIXIR AAI integration

- ELIXIR AAI integration is SAML2 based.
- Files containing groups and its members in SCIM format are pushed to the dedicated VM and then synchronised with the VCR.

2.3 Groups, privacy levels

There are three privacy levels designed to facilitate the management of published materials: public, protected and private. Public posts are visible to everyone without any restrictions. Protected posts are visible to registered users only. Private posts are visible to the members of the group where the post was published. Both groups and posts can be assigned a privacy level. By default posts inherit the level of the group they belong to, but this can be overridden by the author (or by the group's moderator later). A post can be published in multiple groups simultaneously in which case the most permissive level is applied when the alternative was not specified explicitly.

3 Use cases

Below we describe three use cases that should cover the majority of needs for service users and providers.

3.1 Basic usage by an ELIXIR member at cafe.elixir.ut.ee

ELIXIR members can log into the main instance of the Virtual Coffee Room at cafe.elixir.ut.ee using their ELIXIR AAI account. They can authenticate themselves either using their institutional email, Google, ORCID or LinkedIn account. These are default authentication options provided by ELIXIR AAI system.

Once logged in, the user will see questions visible for all logged in members (group of Everyone) and the ones related to their groups (such as for particular work package or implementation study). Right away the author of the question, keywords attached to the question and number of votes, answers and views are present. This enables the user to have a fast overview of the latest posts on the website. Questions can be searched and sorted by several options.

In order to make the VCR more personalised, one can add keywords they want to follow or ignore on the right side of the page. On the settings page one can adjust email notification settings, add data about themselves etc.

Asking a new question is easiest by selecting "Ask Your Question" button at the top of the page. On the following page, user can specify their question, select appropriate groups for the question, specify privacy level, add keyword tags. The main form allows standard mark-up formatting.

If the user is not an ELIXIR associated person, then they can create a local user account but will only see posts open to all the platform users but not specific group posts, unless they have beed added to such groups. All the rest of the features of the VCR are the same.

3.2 VCR as a Node support service

ELIXIR has both large and small member states. While larger Nodes might have their own Node communication platform in place, smaller Nodes could make use of the VCR to enhance the knowledge exchange among the Node members and other Node related communications. This can be done by creating a group at PERUN group management service of ELIXIR AAI and then create new groups visible to the Node members only.

3.3 VCR as a bioinformatics service support

In a similar manner as to Node support, the VCR can be also used as a communication platform supporting a training course or technical service. Using the VCR would allow people to post questions related to the service or course and other people to be able to respond to and view the results. In this manner the VCR would help the

local service providers to serve their users via a platform dedicated for Questions and Answers, rather than set up their own service for it.

Node or service support can also be done by having a local instance of the Virtual Coffee Room. The application was containerised using Docker. We also use Docker Compose to orchestrate containers. Please contact us for detailed information.

4 Shortcomings and future directions

The latest version of Django supported by Askbot is 1.8, but the current one is 2.2. This pulls the entire stack down, for example, the current version of Channels is 2.2.0, but we got stuck with 1.0.3, because it is compatible with Django 1.8 (Channels 1.1 is compatible with Django 1.8 as well, but there were other issues with it). With Django Channels and Daphne we got disconnected from the Askbot main code base. Django Channels and Daphne raised the application complexity and made the deployment procedure more complicated. The markup and styles are not really mobile ready.

Discourse is a modern discussion forum. It is easy to install and frequently updated. We've set up a Discourse-based community help desk at https://help.elixir.ut.ee.

References

[1] Linden M, Procházka M, Lappalainen I et al. Common ELIXIR Service for Researcher Authentication and Authorisation [version 1; peer review: 3 approved, 1 approved with reservations]. F1000Research 2018, 7(ELIXIR):1199 (https://doi.org/10.12688/f1000research.15161.1)