



University of Cyprus

**ΚΟΙΝΟΠΡΑΞΙΑ: ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ, ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ ΚΑΙ ΕΘΝΙΚΗΣ ΑΡΧΗΣ
ΗΛΕΚΤΡΟΝΙΚΗΣ ΥΓΕΙΑΣ**



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Περίληψη

Κύριος στόχος του έργου αυτού είναι η υλοποίηση κατάλληλων διασυνδέσεων και διαδικτυακών ηλεκτρονικών υπηρεσιών, οι οποίες θα κάνουν εφικτή την ανταλλαγή του Συνοπτικού Ιστορικού Υγείας (Patient Summary) και Ηλεκτρονικών Συνταγών Φαρμάκων (ePrescriptions), με σκοπό την επίτευξη των ακόλουθων επιμέρους στόχων:

1. Διασυνοριακή περίθαλψη και ασφαλής πρόσβαση στις πληροφορίες για την υγεία των ασθενών μεταξύ των ευρωπαϊκών συστημάτων υγειονομικής περίθαλψης, ιδίως όσον αφορά την ανταλλαγή του Συνοπτικού Ιστορικού Υγείας ασθενών (Patient Summary) και την Ηλεκτρονική Συνταγογράφηση (ePrescription).
2. Συμβολή στην ασφάλεια των ασθενών, μειώνοντας τη συχνότητα των ιατρικών σφαλμάτων και παρέχοντας γρήγορη πρόσβαση στις πληροφορίες για την υγεία τους.
3. Προσβασιμότητα στις συνταγές του ασθενούς, όταν αυτός βρίσκεται στο εξωτερικό.
4. Παροχή πληροφορίας ζωτικής σημασίας σε επείγουσες καταστάσεις στον επαγγελματία υγείας και
5. Μείωση των επαναλήψεων διαγνωστικών διαδικασιών.

Abstract:

The NCPeH CY Service Desk supporting the problem and incident management is based on the OpenSupports ticketing system. OpenSupports is an open source ticket system that provides better management of users inquiries. Users can send tickets through OpenSupports and the ICT service desk team can handle them appropriately. The software has tools to manage the tickets, staff members, the departments where staff members belong to, and custom responses, multi-language support. It also let administrator staff to write articles for known errors, root causes and workarounds to allow quicker diagnosis and resolution. The procedures in support of NCPeH Service Desk operations based in the OpenSupports tool are further documented in this annex

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ΣΥΝΤΟΜΟΓΡΑΦΙΕΣ

Σύντμηση	Πλήρης επεξήγηση
CBeHIS	Cross Border electronic Health Information System
CEF	Connecting Europe Facility (Συνδέοντας την Ευρώπη)
eD	eDispensation (ηλεκτρονική Εκτέλεση συνταγής)
eP	ePrescription (ηλεκτρονική Συνταγή)
INEA	Innovations & Networks Executive Agency
MTC	Master Terminology Catalogue
NCPeH	National Contact Point electronic Health
PS	Patient Summary (Συνοπτικό Ιστορικό Υγείας)
ΓΝΑ	Γενικό Νοσοκομείο Αμμοχώστου
ΙΥ	Ιατρικές Υπηρεσίες
ΚΕΠ	Κέντρο Εξυπηρέτησης Πολιτών
ΚΜ	Κράτος Μέλος
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ΠΙΣ	Παγκύπριος Ιατρικός Σύλλογος
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ΠΚ	Πανεπιστήμιο Κύπρου
ΤΑΕΠ	Τμήμα Ατυχημάτων & Επειγόντων Περιστατικών
ΥΥ	Υπουργείο Υγείας
ΦΥ	Φαρμακευτικές Υπηρεσίες
ΕΑΗΥ	Εθνική Αρχή Ηλεκτρονικής Υγείας

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1. Introduction

The operational services for cross border healthcare, within the participating countries, MS are expected to provide support to different actors involved in the usage of cross-border eHealth services.

In Cyprus, the National Electronic Health Authority and the MOH are in charge of providing a dedicated Service Desk for **problem and incident management** supporting the NCPeH CY. The Service Desk concentrates on restoring unexpectedly degraded or disrupted services to users as quickly as possible, in order to minimize business impact. In addition, the personnel of the Service Desk will perform root cause analysis to determine and resolve the underlying causes of incidents, and proactive activities to detect and prevent future problems/incidents. This also includes the creation of known error records, that document root causes and workarounds to allow quicker diagnosis and resolution. The new Service Desk is based on the OpenSupports ticketing system [1]. OpenSupports is an open source ticket system for giving support to clients of a company or to users of a platform. It provides better management of users inquiries. Users can send tickets through OpenSupports and the staff can handle them appropriately. The software has tools to manage the tickets, staff members, the departments where staff members belong to, custom responses, multi-language support. It also let administrator staff to write articles for known errors, root causes and workarounds to allow quicker diagnosis and resolution.

The Service Desk can differentiate tickets submitted by users as incidents or problems. This differentiation can be performed by a staff member by assigning a different tag (“incident” or “problem”) on the ticket when inspecting the submitted tickets.

The Service Desk incorporates a documented incident management procedure keeping records of all reported incidents with at least the following details:

1) types of incidents: The incidents are categorized on the basis of the department, and the staff can filter the incidents per department. Additionally, a set of tags can be created in advance, and can be assigned to the ticket at inspection time by the staff.

2) classification (urgency i.e timeframe and priority, impact level)? Each ticket is submitted with low priority and the staff can re-prioritize the ticket as low, medium or high priority.

3) updating: The status of a submitted ticket can be updated by the staff at any time in terms of changing department, modifying priority, assigning owner and closing or re-opening ticket. Owner is the staff member who is mainly responsible for the resolution of the ticket.

4) escalation: Initially a submitted ticket is not assigned to a specific staff member. At inspection time, a staff member can escalate the incident by assigning the ticket to a specific staff member.

5) resolution: Any staff member can respond to a ticket submitted under the department where the staff member is assigned.

6) closure: If an incident is resolved, then it can be closed (it can be re-opened later if needed).

7) transfer eventually to problem management:

8) historical timeline: The list of tickets is sorted by date. Also, within each ticket, responds are ordered by date as well.

The same procedure is followed for problem management:

- 1) recording: Problems are recorded to the system as tickets and are assigned a “problem” tag.
- 2) classification (urgency i.e timeframe and priority, impact level): as incidents
- 3) updating: as incidents
- 4) escalation: as incidents
- 5) resolution: as incidents
- 6) closure: as incidents

2. Involved Actors

Based on the eHDSI Country Service Desk Guideline V1.1.1 2018/08/01 document [2] the Service Desks on national level need to provide support for different groups of actors. Our system provides support for all recommended actors:

- **Patient:** Patient, residing in Cyprus, who aims to use cross-border eHealth services. These patients may have questions related to the cross-border services provision and its possibilities.
 - *Note:* Patient does not have access to the NCPeH CY Service Desk to ask questions. Patient’s questions are supported by phone calling to 22604100. More information can be found in Annex OP 1 Service Operation Plan in Section 3.
- **Health professional:** Health professional, acting within Cyprus, as end-user of the system.
- **Third party vendors / Software integrators:** Companies integrating communication with national eHDSI services (e.g. NCPeH) into their primary software.
- **Foreign country Service Desk:** Contacting or being contacted by Service Desk from another country operating within eHDSI, for resolving issues arising from cross-border exchange.
 - *Note:* Other countries contact by email to ncphelpdesk@cs.ucy.ac.cy and the related officer is responsible to register the issue to OpenSupports. As the issue will be fixed, the officer will reply by email to the foreign country contact point to reference the progress. More information can be found in Annex OP 1 Service Operation Plan in Section 3.

These actors were incorporated to the system as groups of users. During user sign up process, the user must be assigned to one of these groups.

3. Staff and Departments

The staff who is going to be responsible for answering to tickets issued by the involved actors is categorized into 6 departments. The 6 categories obtained from the aforementioned pdf file [2] are:

- Organizational
- Legal
- Operation Services
- Information Security
- Technical
- Semantic

4. Procedures

4.1 Admin Log In and Statistics

4.1.1 Log in into Admin panel

To login in the admin panel, you have to go to the path / admin

For example <http://yourwebsite.com/support/admin>

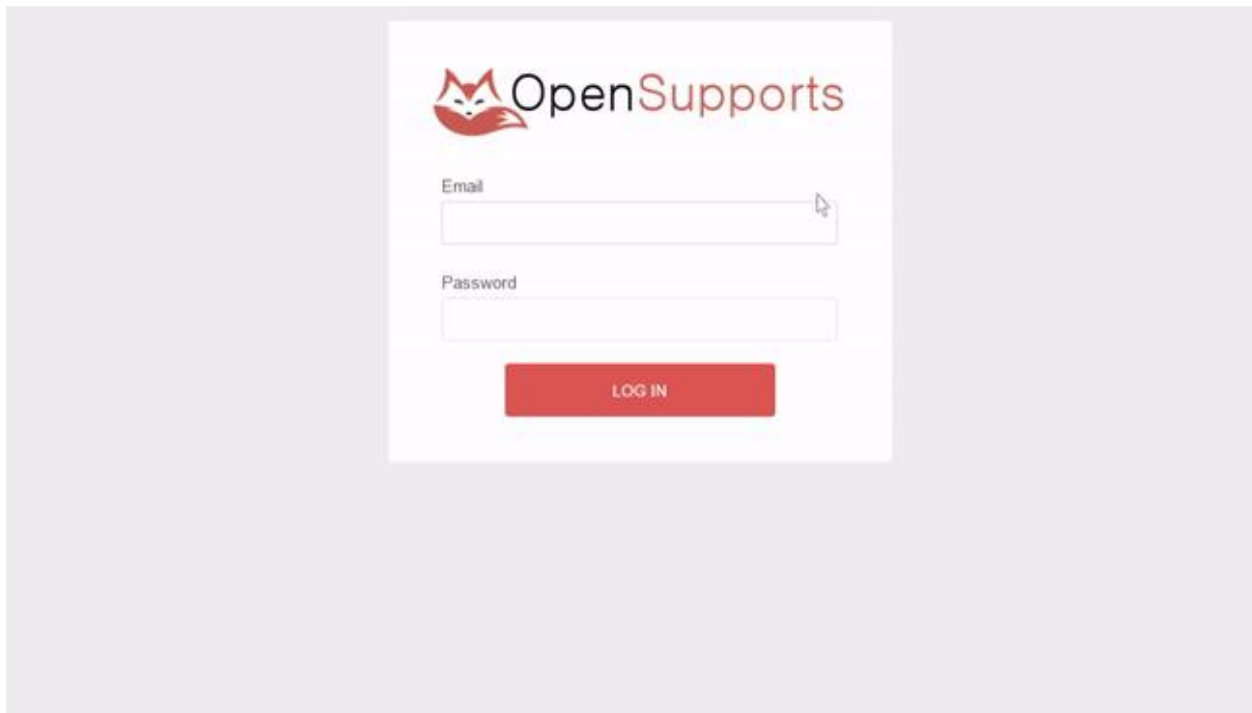


Figure 1: Admin panel.

1. Go to /admin.

2. Input your staff user credentials.
3. You will have access to the admin panel.

4.1.2 Metrics and trends (Statistics)

When you first enter the dashboard, you will see metrics and trends about system activity.

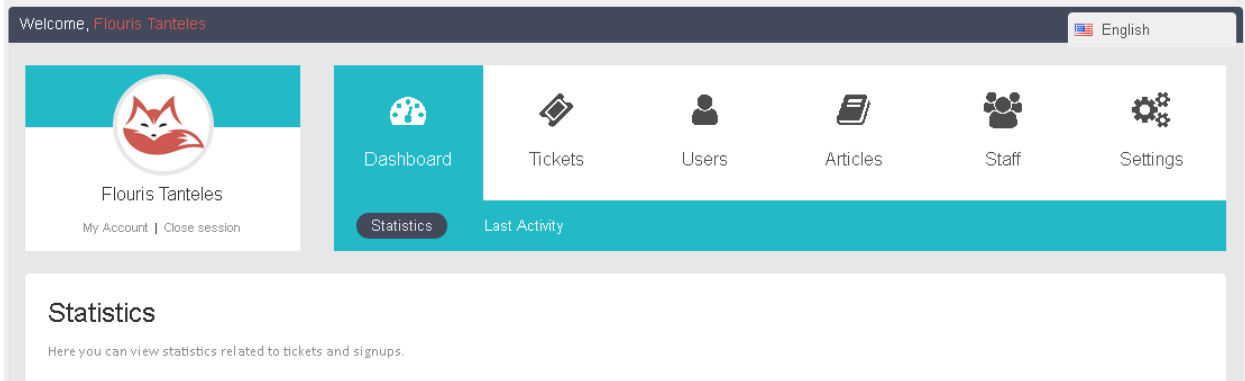


Figure 2: Admin dashboard – statistics section.

The statistics section keeps track of all ticket system metrics and provide visually appealing trends of the metrics.

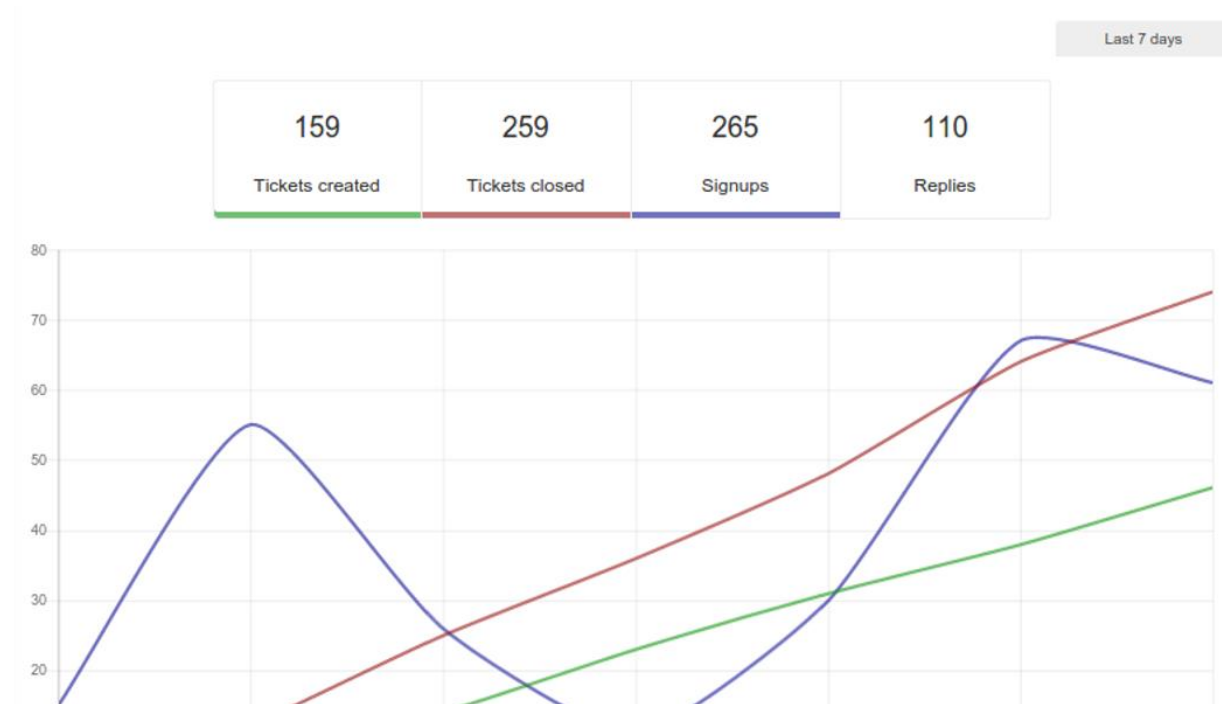


Figure 3: Admin dashboard – statistics section (trends).

In the figure, 4 metrics are illustrated:

- **Tickets Created** indicates the number of tickets that have been created during the last days.
- **Ticket Closed** indicates the number of tickets that have been closed during the last days.
- **Signups** indicates the number of user registrations that have been done during the last days.
- **Replies** indicates the number of tickets that have been answered during the last days.

Below metrics, the trends of the metrics are illustrated.

Also you can see choose to see the information above for the last 7 days or the last 30 days.

4.1.3 Last Activity

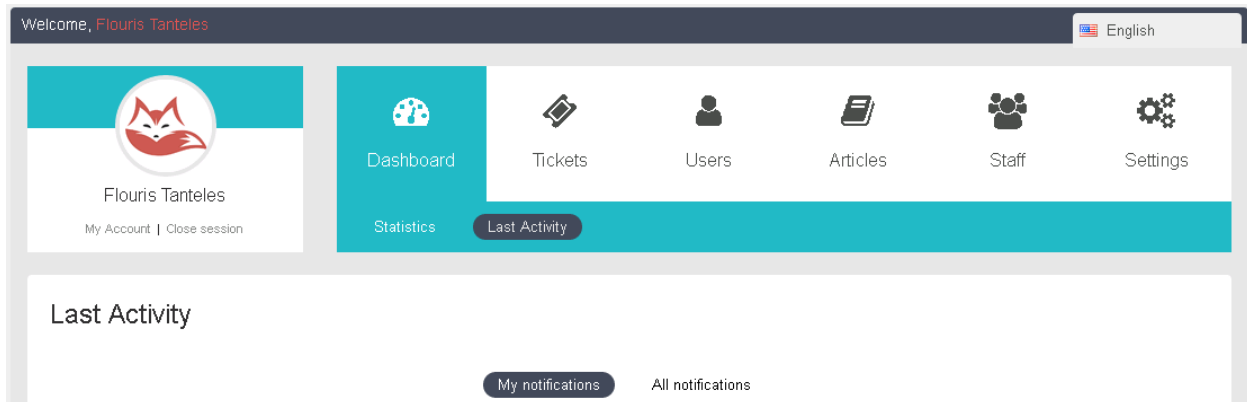


Figure 4: Admin dashboard – Last activity section.

- **My notifications** will show you the last activity regarding the tickets you have assigned.
- **All notifications** will show you all the last activities of the whole system.

4.2 Configure OpenSupports settings

4.2.1 Email Settings

Email server address: Indicates the email address that will be on the from and replyTo parts of the email. Image header URL: Indicates the url of the header image to be shown in the sent emails. By default it's OpenSupports' logo.

4.2.2 Configure SMTP

1. Configure Email server address
2. SMTP Server: Indicate the server with it's port in this format {HOST}:{PORT}, for example `tls://smtp.gmail.com:586`
3. SMTP User/SMTP Password: Indicate the SMTP credentials.
4. Make sure to hit TEST button to check the connection is working
5. Click Save when you're ready

4.2.3 Configure IMAP

For creating tickets from emails, we connect to an IMAP server folder, check the messages, create tickets based on those and then delete the emails.

1. Configure Email server address. Do not use a noreply address.
2. IMAP Server: Indicate host with folder to check emails, for example {imap.gmail.com:993/imap/ssl}INBOX
3. IMAP User/IMAP Password: Indicate the IMAP credentials.
4. Generate a IMAP Token. This serves as password for polling the emails.
5. Make sure to hit TEST button to check the connection is working.
6. Click Save when you're ready.

Remember to take a look to the infobox below. To parse emails and create tickets, you have to make a POST request to the indicated url and provide the IMAP Token. It's recommended to make it frequently, for example you can use a hook that calls it every time an email is received.

Here is a [configuration video tutorial](#) if you need more explanation.

4.3 Handle topics and articles

You can Create articles to solve your user's frequently asked questions (FAQs), known errors, root causes and workarounds to allow quicker diagnosis and resolution and to provide them with How-To Guides about the offered service as shown below:

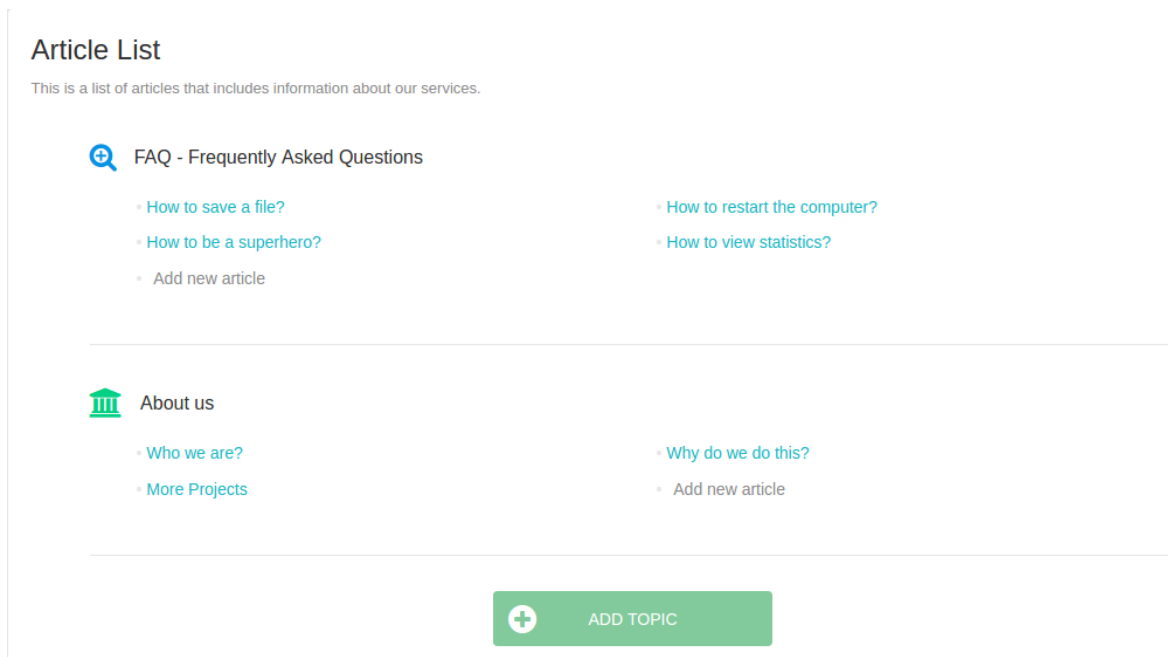


Figure 5: Admin dashboard – Article list.

4.3.1 Create a topic

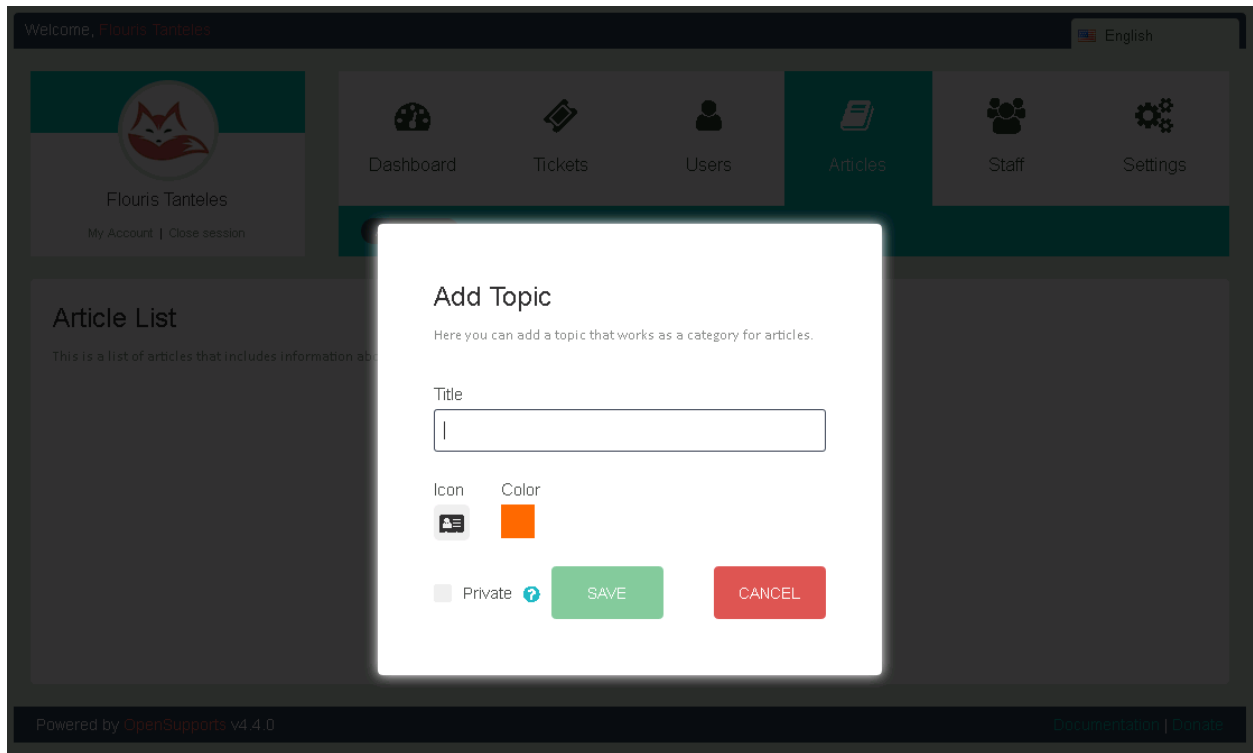


Figure 6: Admin dashboard – Add topic.

In order to create a topic follow the steps below:

1. Go to "Articles"
2. Go to "Article list"
3. Click on "ADD TOPIC" button
4. Input some Title
5. Choose an Icon
6. Choose a Color
7. Click on "SAVE" button

4.3.2 Create a new article

Under any topic, you can add articles as shown below.

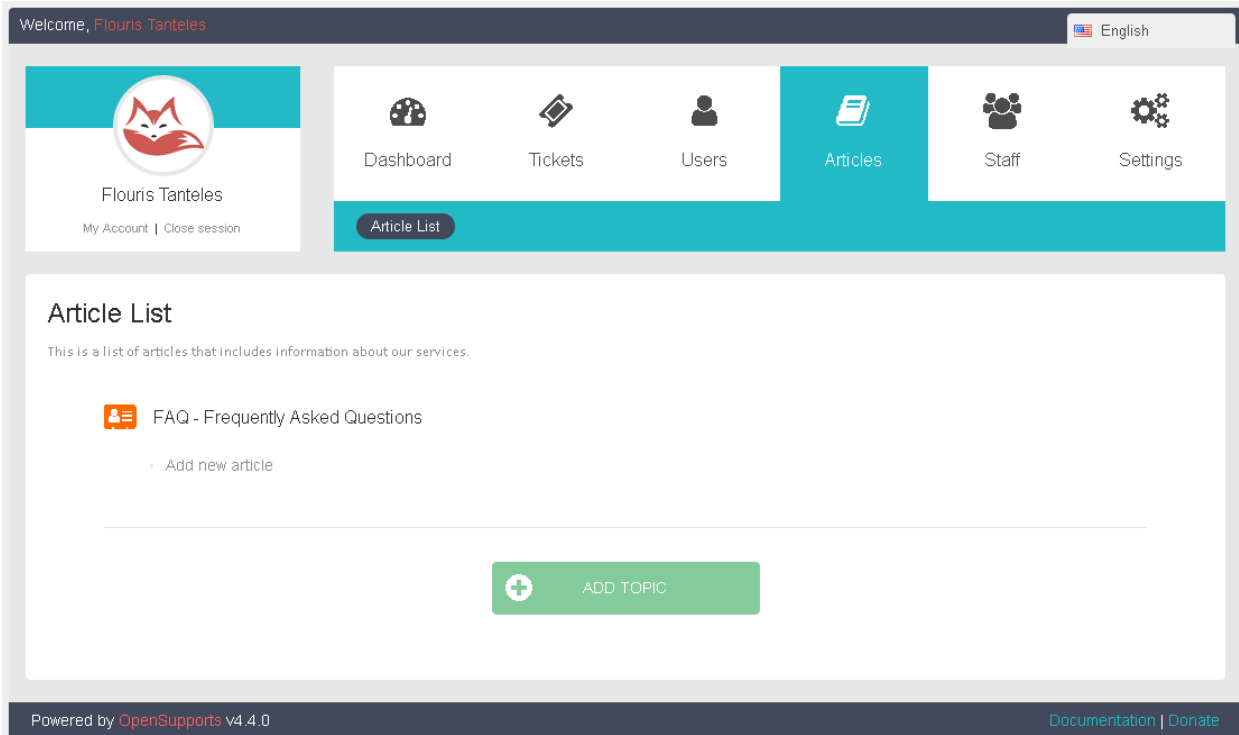


Figure 7: Admin dashboard – Add article under a topic.

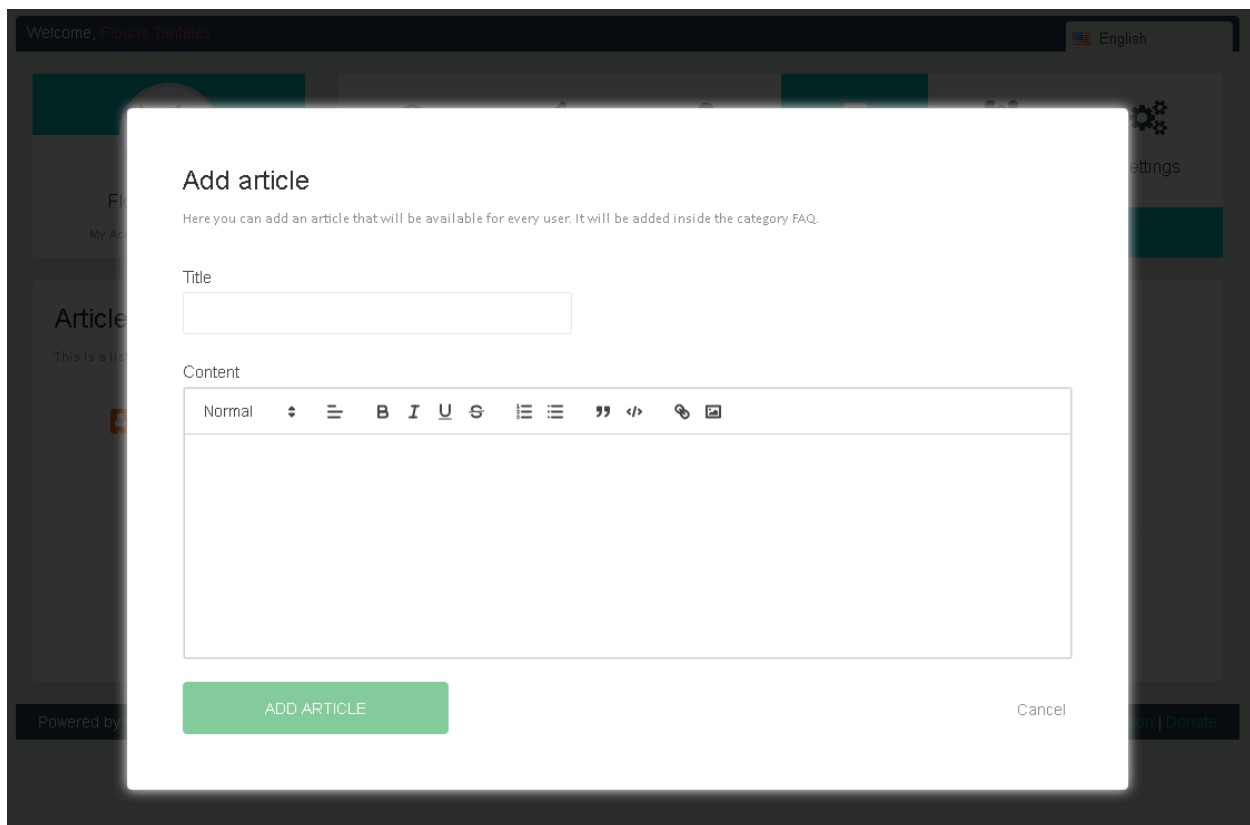


Figure 8: Admin dashboard – Add article editor.

Follow the steps below to create an article:

1. Go to "Articles"
2. Go to "Article list"
3. Under a topic of your interest, click on "Add new article" button
4. Input some title
5. Input some Content
6. Click on "ADD ARTICLE" button

4.4 Handle staffs and departments

You can add as many staff members as you want and assign each of them the set of departments they will respond. Every ticket belongs to one department. You can assign each staff member a set of departments he will be in charge.

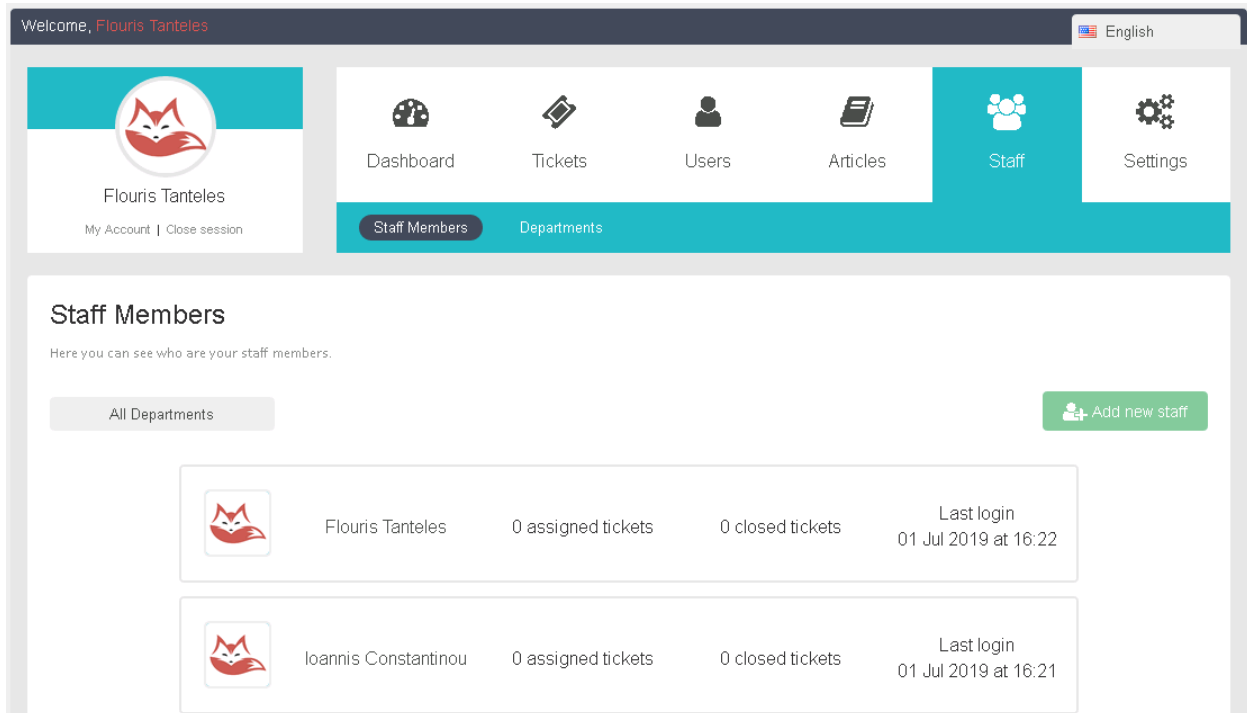


Figure 9: Admin dashboard – Staff and Department section.

4.4.1 Add a new staff member

1. Go to "Staff"
2. Go to "Staff Members"
3. Click on "Add new staff" button
4. Input some Name
5. Input some Email
6. Input some Password

7. Choose one Level
8. Choose one or more Departments
9. Click on "SAVE" button

4.4.2 Edit a staff member

1. Go to "Staff"
2. Go to "Staff Members"
3. Click on a staff's name
4. Input some New password and repeat it
5. Click on "Update password" button
6. Select a new Level
7. Click on "Update Level" button
8. Select some different department
9. Click on "Update departments" button
10. Click on "DELETE STAFF MEMBER" button
11. Click on "YES" button on "Confirm Action" box

4.4.3 Create a new department

1. Go to "Staff"
2. Go to "Departments"
3. Input some Name
4. Click or not on "Private" checkbox
5. Click on "Add department" button

4.4.4 Filter by Department

1. Go to "Staff"
2. Go to "Departments"
3. Click on department list.
4. Choose the department you want to filter from.

4.4.5 Delete a department

1. Go to "Staff"
2. Go to "Departments"
3. Click on department's name you want to delete
4. Click on "Delete" button

4.5 Handle tickets

Simple users can view previous submitted tickets or create new tickets using the dedicated menu item as shown below.

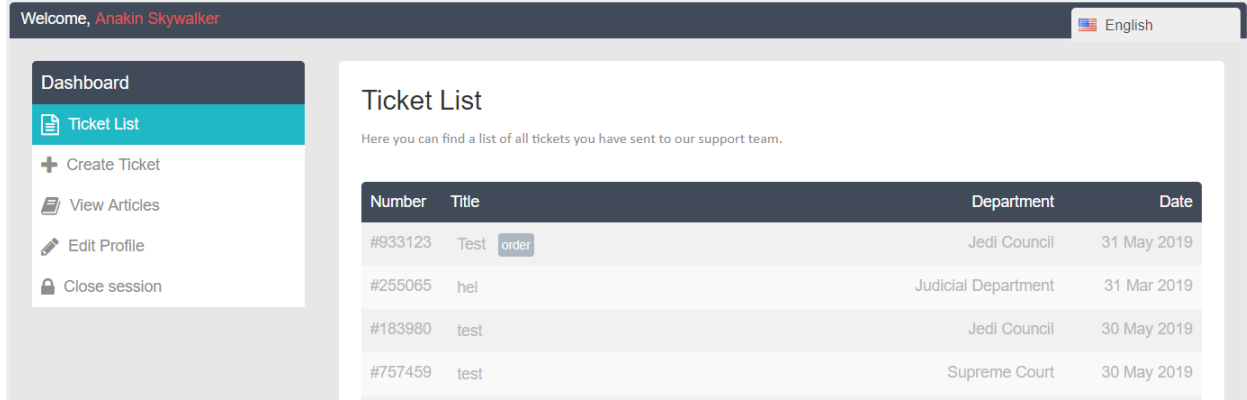


Figure 10: User dashboard – Tickets section.

Staff member users can submit, view and manage tickets from the dedicated section of the system as shown below. Staff member can modify ticket status in terms of changing department, assigning owner, close or re-open ticket and provide response to the issuer.

The section “My Tickets” includes all tickets submitted by the logged in staff member user.

The section “New Tickets” includes new tickets that were not assigned to anyone.

The section “All Tickets” includes tickets of the departments that the logged in staff member user is assigned.

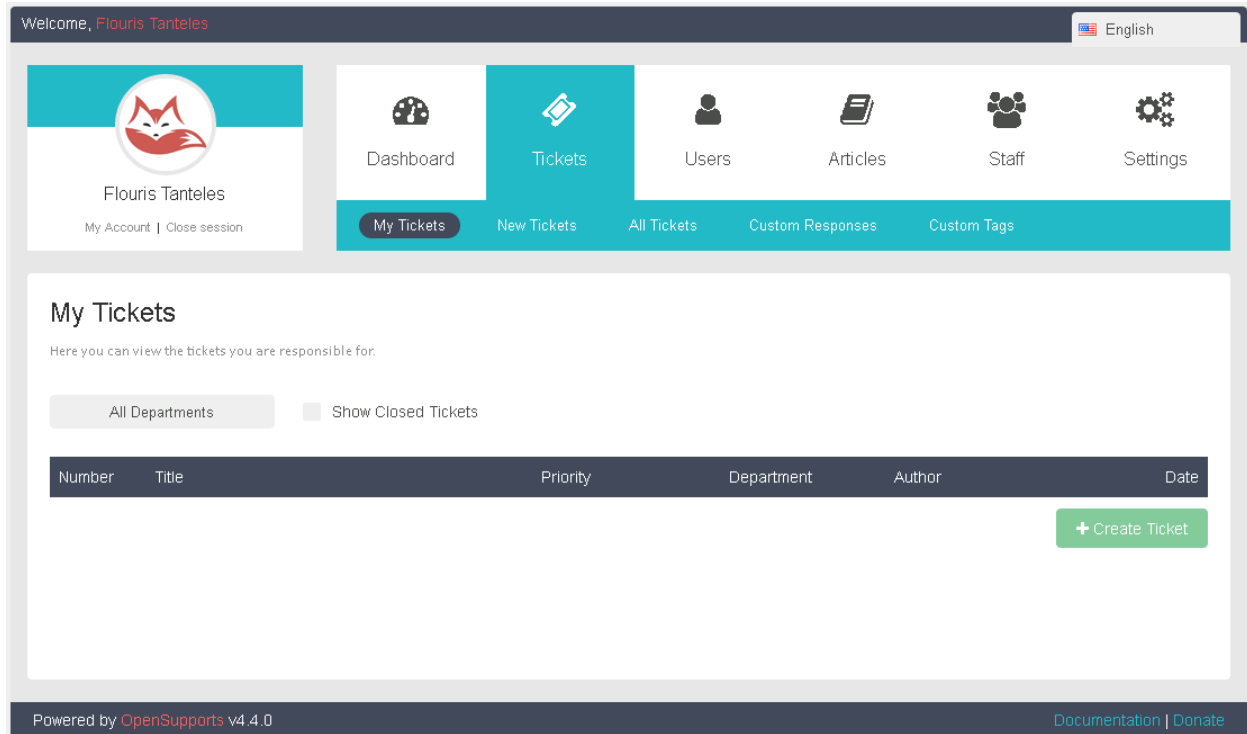


Figure 11: Admin dashboard – Tickets section.

4.5.1 Create a new ticket

1. Go to "Tickets"
2. Go to "My tickets"
3. Click on "Create Ticket" button
4. Input some Title
5. Select one Department
6. Select one Language
7. Input some Content
8. Click on "CREATE TICKET" button

4.5.2 Filter Tickets by Department

1. Go to "Tickets"
2. Go to "New Tickets"/"My Tickets"
3. Click on department list.
4. Choose the department you want to filter from.

4.5.3 Filter Tickets by Keyword

1. Go to "Tickets"
2. Go to "All Tickets"
3. Click on search box.
4. Type the text you want to filter from.

4.5.4 Show Closed Tickets

1. Go to "Tickets"
2. Go to "All tickets"/"My Tickets"
3. Click on "Show Closed Tickets" checkbox

4.6 Handle custom responses and tags on Tickets

Don't repeat yourself. With OpenSupports system you can customize your own templates to respond tickets. A custom response is a template used when you need to respond a frequently asked issues.

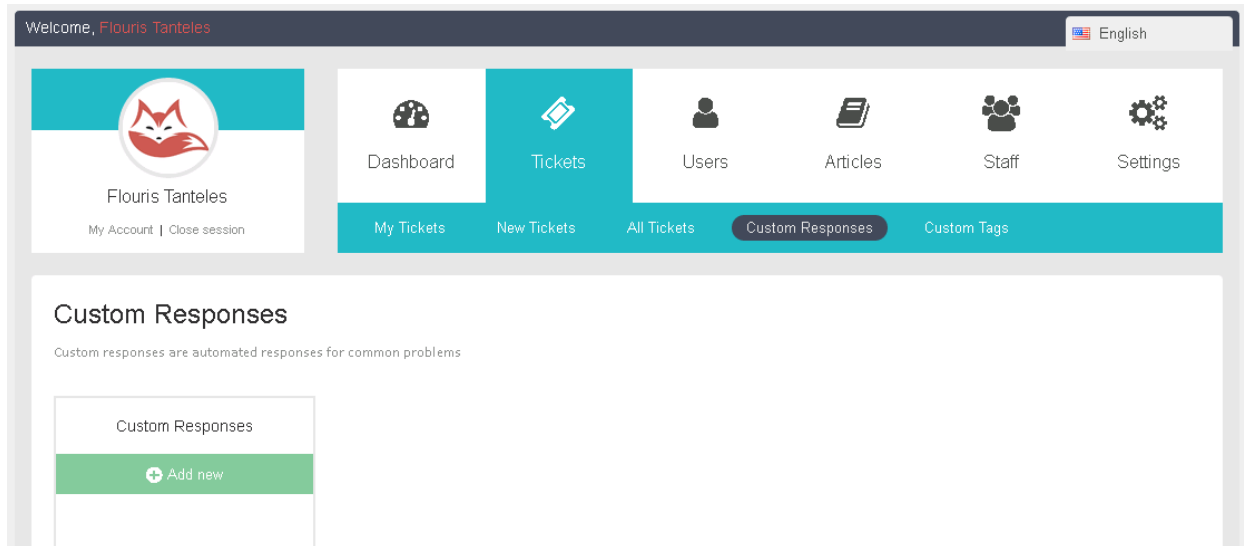


Figure 12: Admin dashboard – Tickets section – Custom Responses.

4.6.1 Create a new custom response

1. Go to "Tickets"
2. Go to "Custom Responses"
3. Input some Title.
4. Input some Content
5. Select the language
6. Click on "Save" button

4.6.2 Use a Custom response

7. Go to "Tickets"
1. Go to "My tickets"
2. Select a ticket.
3. Go to "Respond" box
4. Click on "Select custom response" search box.
5. Choose the custom response you are looking for.
6. Click on "RESPOND TICKET" button

4.6.3 Create a new Custom Tag

1. Go to "Tickets"
2. Go to "Custom Tags"
3. Click on "CREATE CUSTOM TAG"
4. Input some Name
5. Select one Color
6. Click on "SAVE" button

4.6.4 Delete a Custom Tag

1. Go to "Tickets"
2. Go to "Custom Tags"
3. Click on the cross of the tag you want to delete "CREATE CUSTOM TAG"
4. Click on "YES" button of the "Confirm action" box

4.7 Handle Users

Users can be added to the system in two ways. Firstly, a user can sign up on his/her own using the dedicated sign up form in the homepage of the OpenSupports System. The link to the sign up form is on the top left side of the main menu as shown below:

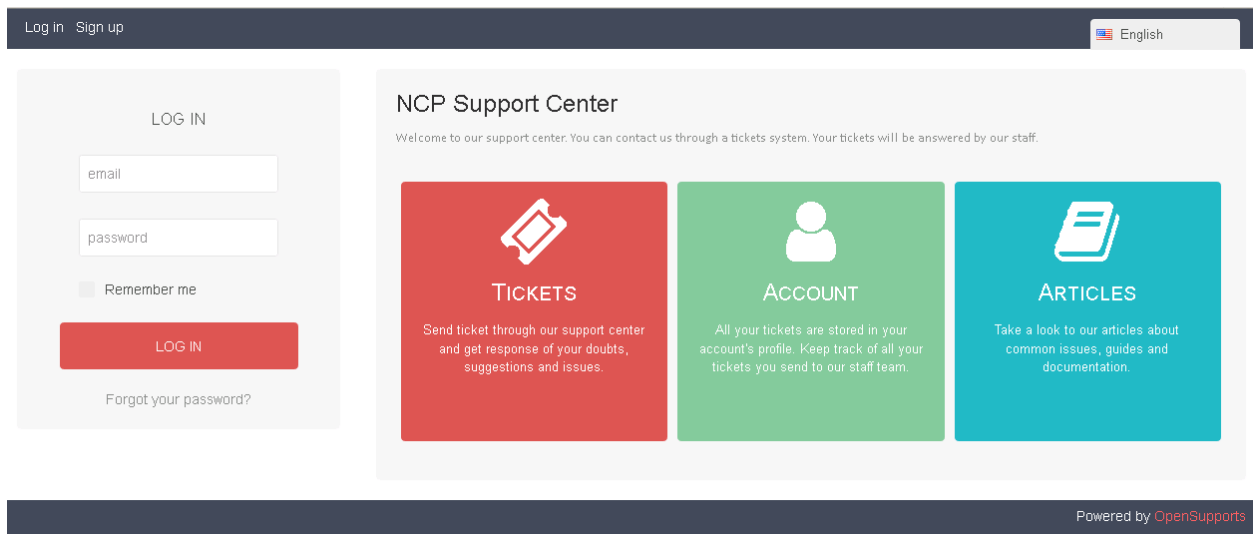


Figure 13: User login webpage.

The sign up form is illustrated below:

Sign up

Here you can create an account for our support center. It is required to send tickets and see documentation.

Full name

Email

Password

Repeat password


Group 

Figure 14: Sign up form.

Secondly, the administrator can add users to the system from the administration dashboards. The administration can add, delete users can search them by a keyword and can also ban or unban a user from accessing the system.

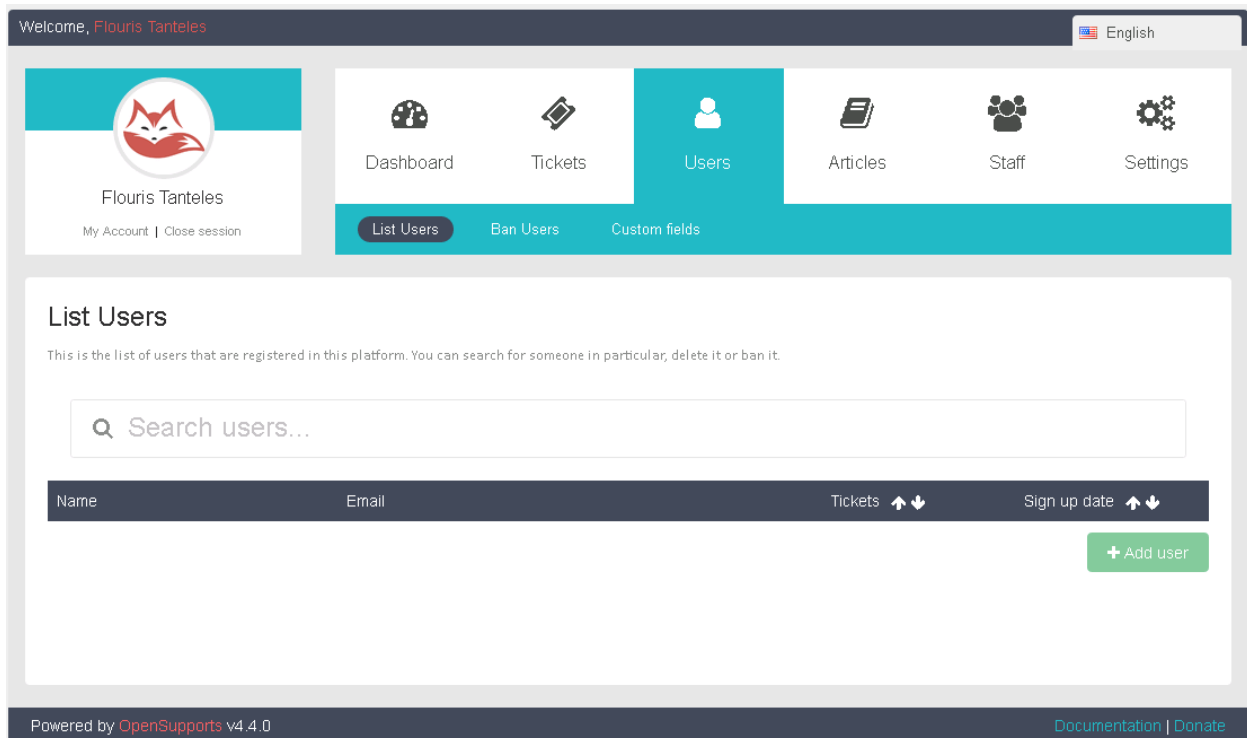


Figure 15: Admin dashboard – Users section.

4.7.1 Add a new user

1. Go to "Users"
2. Go to "List Users"
3. Click on "Add user" button
4. Input some name
5. Input some email
6. Input some password and repeat it
7. Click on "SIGN UP" button

4.7.2 How to find some user by keyword

1. Go to "Users"
2. Go to "List Users"
3. Click on search box.
4. Type the text you want to filter from.

4.7.3 How to ban and unban an user

Ban an user

1. Go to "Users"
2. Go to "List Users"

3. Select the user's name you want to ban.
4. Click on "Delete and ban" button
5. Click on "YES" button in the "Confirm Action" box

Unban an user

1. Go to "Users"
2. Go to "Ban Users"
3. Click on "Disable ban" button of the user 'email you want to unban.

4.7.4 How to handle Custom fields

Custom field is used when you need to identify users with some specify field as for example by the group he belongs to, or by the location etc.

Create a custom field

1. Go to "Users"
2. Go to "Custom fields"
3. Click on "NEW CUSTOM FIELD" button
4. Input some Name
5. Input o not some Field description
6. Choose one Type
7. Click on "SUBMIT" button

Delete a custom field

1. Go to "Users"
2. Go to "Custom fields"
3. Click on "REMOVE" button of the custom field you want to delete
4. Click on "YES" button of the "confirm action" box

Incident service management:

Phone (the number is +357 22604100) 24 by 7

email: ncphelpdesk@cs.ucy.ac.cy

Incident service management

A range of resources are available in order to manage the NCPeH related incidents (including specific / applicable information security incidents).

NCPeH has implemented the following:

- A set of people dedicated to incidents response with enough technical and communications skills to face any incident.
- Physical room or building where security incidents can be treated and tracked in a safe way.
- The response team NCPeH Service Desk have the appropriate hardware and software toolsets to handle a wide spectrum of incidents.
- Communication lines: the following communication lines are available – as a minimum - to report incidents, in this preferred order:
 - Phone (the number is 22604100) 24 by 7
 - eMail: ncphelpdesk@cs.ucy.ac.cy

All this operational components and channels are available on a 24x7 basis.

REFERENCES

- [1] OpenSupports Ticket System, <https://www.opensupports.com/>
- [2] [Country Service Desk Guideline, eHealth DSI –ePrescription and Patient Summary](#)