

# **Lanifex HelpDesk Documentation**

**V. 1.5**

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## How to Use this Guide

According to how you use this system, you need to read different parts of this document. If you are:

- A requestor (e.g. you will be using the HelpDesk to get support), just read up to 'Processes and Atoms'
- A Support Agent (HelpDesk or 2<sup>nd</sup> Level) then read everything up to 'The Admin Menu'
- An Admin, then please read the whole guide!

## Introduction to HelpDesk

Welcome to the HelpDesk System! This is a modern tool which lets the requestors create and track requests, and it helps resolvers communicate, resolve, and share knowledge about these requests.

We hope you will find this system easy to use—it was specially tailored to answer to the needs of your organization.

## Terminology

### Requestor/Resolver

Requestors are all the persons who will use this system to insert new processes; they are the persons expecting a service to be realized for them.

Resolvers are the persons fulfilling the tasks inserted by the Requestors.

### Projects

When you enter the HelpDesk system, you must choose a project. The subsequent actions you take in the system apply only to that project. You can always change your project by clicking the project name in the menu bar.

If only one project is available, or if you only have access to one project, then this project will be automatically chosen for you.

### Project Admin

This user controls all the aspects of a project.

### Hyperadmin

This user has complete access over the system.

**Processes/Requests**

Requestors create Processes. A Process consists of multiple Requests, each of these requests will be resolved by Resolvers.

**Blueprints/Atoms**

Blueprints are the 'skeleton' on which Processes are created. Blueprints contain Atoms. Atoms are the 'skeletons' for requests.

**Forms**

The system handles forms which are linked to Atoms. When Processes are created, the Requestors and Resolvers must fill out the forms.

**Escalation**

Escalations help you define deadlines for Requests.

# 1. HelpDesk Quick Guide for Requestor

## 1.1 Logging in for the first time

### **Requestor Login (Users without password, or Cookie Users)**

To access the HelpDesk system, you need a computer where you have an account; this computer must have a web browser and an e-mail client. Here are the steps to log on to the HelpDesk system:

1. Log on to your own computer, under your account. This is important because later on, the system will 'remember' who you are based on the computer you log on from.

**IMPORTANT:** Your browser must accept 'cookies'. If you're not sure about how to configure cookies, please ask your system administrator to help you with this.

2. Use your web browser to go to the web address of the HelpDesk;
3. The system will ask you for your email; please enter it there. (You don't need to enter a password.)
4. You will receive an email from the system. Click on the first link in that email, and you should now have access to the system. Depending on whether you have access to more than one project, you can select your project.

### Items on The Menu

- Project link: click here to view/create processes
- Project name—the current project you are in
- Your Email. You can click on the email to enter more info about yourself or change your email address.

### **Password Login**

If a username and password was provided for you, then just go to the URL and login. After you login, please click your email link in the menu on the top bar, you will be taken to a page where you can change your password. This is very advisable.

## 1.2 Creating a process

This section describes the steps that take place from the creation of a new process, and until its resolution. We will follow an imaginary process.

1. To create a process, choose the process you want from the drop-down at the bottom of the process list page, or click New Process on the top bar;
2. Next, you will see a description of the process. Read it, if this is what you want and you have all the data, then give you process a name and click on the 'Create Process' button. The name you provide here will help you and HelpDesk to track your process easier;
3. Fill out the form. If you don't have all data, click on 'Save Form.' You can come back later to this form.
4. When finished filling out, click 'Submit Form'.

## 1.3 Process development

1. Once you have submitted your data, you will be taken back to the Process List, where you will see the process you just created. You can see the most important data at a glance:
  - **The Ticket Number.** In our case this is #1. This is the number you need to keep track of your process and to request service from the HelpDesk, should the need for that arise
  - **Name.** This is simply the name of the process.
  - **% Completed.** This is an indicative of the overall progress of the process.
  - **Status.** This tells you the current status of the process. It can be one out of the following:
    - a. *Pending\_manager.* This means that the process is awaiting approval from a manager you specified in the form.
    - b. *Pending\_data.* This happens if you start filling a form but do not finish it, and you just save the form. To go back to the form and continue filling out, just click on the process in the process list.
    - c. *Open.* The process is approved and the HelpDesk team are actively working on fulfilling your process.
    - d. *Stopped.* Your process cannot be fulfilled. You will be notified why this happened.

- e. *Pending\_satisfaction*. The HelpDesk team has completed their job, and you should now give feedback as to how satisfied you are with the job they have done.
- f. *Closed*. The process has been completed and you have acknowledged that you are satisfied with the results.

- **Date**. The date when the process was created.

**NOTE:** you can use the filter to sort between multiple processes! Simply select a value in the drop down from the 'Status' column and the system will only show the processes matching your selection. Also, use the arrows to order according to the values in the columns.

2. Observe that the status is now *pending\_manager*. Once the manager approves the process, its status will change to *open*, and then finally to *pending\_satisfaction*. When a process' status is *pending\_satisfaction* (you will receive a notification email) you can click directly on the process name and go to a screen where you can rate the satisfaction. You now have two possibilities:
  - **Positive satisfaction**. If you rate your satisfaction level between 3 and 5, this means that you are satisfied and the process will close;
  - **Negative satisfaction**. A rating of 1 or 2 shows that you are not satisfied. You must enter some information in the text box describing the problem. The process' state will be *open* again, and the HelpDesk staff will respond to your problem.
3. Once you rate your satisfaction as positive, the process is closed.

#### Additional information

- **Changing your computer / Deleting cookies**. If you change your computer, or delete your cookies, you will need to enter your email address again in the system. You will get an e-mail notification asking you to click a link again.
- Adding/Removing columns from the process view. If you see a link on the menu named "Customize View", then you can click



it to access the page where you can add or remove columns for the process list.

## **1.4 Processes and Atoms**

Everything in the HelpDesk is based around processes. Requestors start processes, and the HelpDesk team and 2<sup>nd</sup> Level Support teams provide the services necessary to fulfil and close this processes.

A process starts by first being modelled on paper, or drawn in a computer drawing application (e.g. Microsoft Visio). Essentially, a large task, like 'Ordering and installing a new computer' is broken down into smaller steps, which we call atoms. Then, these 'atoms' are input in the HelpDesk system. Atoms can then have different owners, deadlines for completion (Service Level Agreements), and so on.

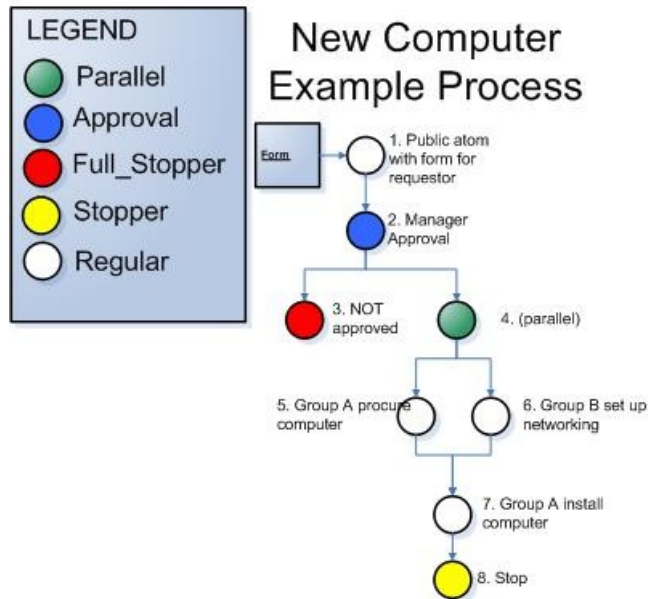
In order to familiarise you with the HelpDesk process concept, let us model an example process, which could take place in any organisation. In this fictive process, a requestor will ask for a new computer. We will assume the following users:

### USERS

- **Requestor.** This is the person requesting the service;
- **Manager.** The manager will approve/disapprove the process;
- **Group A.** We will assume this group will procure and install the equipment;
- **Group B.** This is another group, which is in charge of networking.

Here is how the process blueprint might look like, after we draw it in Microsoft Visio:

### PROCESS BLUEPRINT



### STEPS (ATOMS)

1. The requestor fills out a form to initiate this process;
2. The manager will see the form and decide to approve/disapprove this process;
3. If the manager does not approve the process, the process is stopped;
4. Otherwise, the process splits, and the following steps (5 & 6) happen simultaneously:
5. Group A will procure the equipment, while
6. Group B makes arrangements for networking;
7. After these two steps are completed, Group A will install the computer;
8. Finally, the requestor should be asked to give feedback regarding his/her satisfaction with the way his/her process was resolved.

Once we have drawn the process and broken it up into individual steps, we are closer to translating this schema from an image to concrete tasks within the HelpDesk system. Generally, it is the task of the HelpDesk administrators to create the processes and input them into the HelpDesk system, using the Admin interface.

## ***1.5 How the HelpDesk System Works***

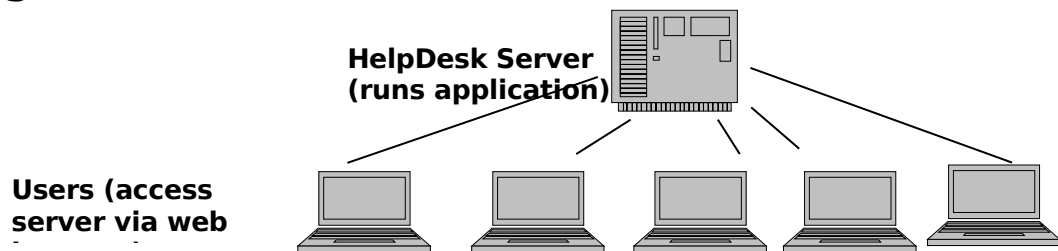
The HelpDesk system is a typical client/server application, where all users use their computers to access the application which is running on a server.

Typically:

- **Admins** create Process Blueprints and administer the whole system;
- **Requestors** start processes based on these blueprints;
- **Managers** might be involved, to give approvals;
- **HD Staff** are the people working within the HelpDesk department, they resolve some of the tasks and also coordinate and delegate tasks to:
- **2<sup>nd</sup> Level Support.** This groups resolve the tasks assigned to them.

This is best understood by looking at the ‘jobs’ of every group:

## 1.6 Access Control List - The jobs of the HelpDesk Users



ACL Quick Overview	Requestors	Managers	HD Staff	2 <sup>nd</sup> Level Support	Admins
Can start processes	Y	Y	Y	Y	Y
Can resolve requests	N	Y, only those which they own	Y, all	Y, only those which they own	Y, all
Can see processes in which they were involved	N	Y, only own atoms	Y	Y	Y
Can edit forms	N	N	Y	Y	Y
Can create blueprints	N	N	N	N	Y
Can create forms	N	N	N	N	Y








Can administer users	N	N	N	N	Y
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## 2. Using the HelpDesk System as a HD Staff or 2<sup>nd</sup> Level User

### NOTES

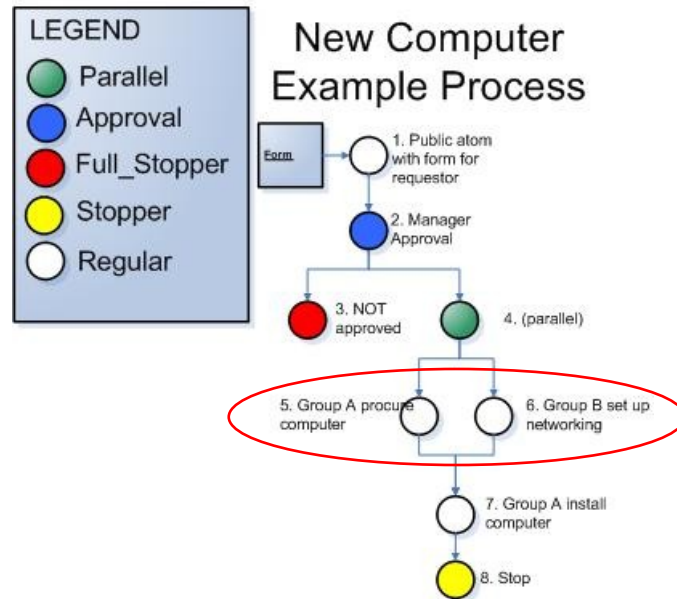
- Everything here also applies to the Administrator group, although we discourage using this account to resolve requests;
- If you would like to start a process in your own name (e.g. you are the requestor) you will then find this process by setting the filter in the process view to 'Processes I Started' (see Filters in Process List View)

Here is a list of the icons used throughout the system, and their meaning:

	Browse details of respective item.
 or 	Add if you are in a list, Copy if you are looking at user details.
	Link
	Edit
	Lock (deactivate). Locked items cannot be used and do not appear in most lists.
	Delete

For the purpose of this demo, we will assume:

- You are an user belonging to 2<sup>nd</sup> Level Group A;
- A requestor has started a 'New Computer' process (based on the same blueprint we discussed above)
- The process has been approved, and Groups A and B are now responsible for resolving a request within this process. The two open requests are circled with red in the image below:



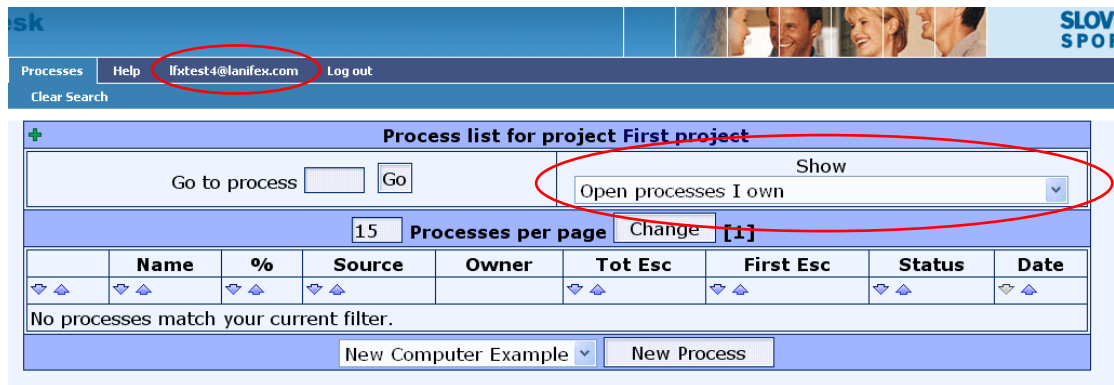
- Whenever a request opens for your group, you receive e-mail notification, so we can suppose that your group has just received a notification about this request.

## 2.1 Logging on to the system

1. You will need a username and a password. These are provided to you by the administrators.

**IMPORTANT:** do not enter your email address, because the system will create a 'regular' (cookie) requestor account for you.

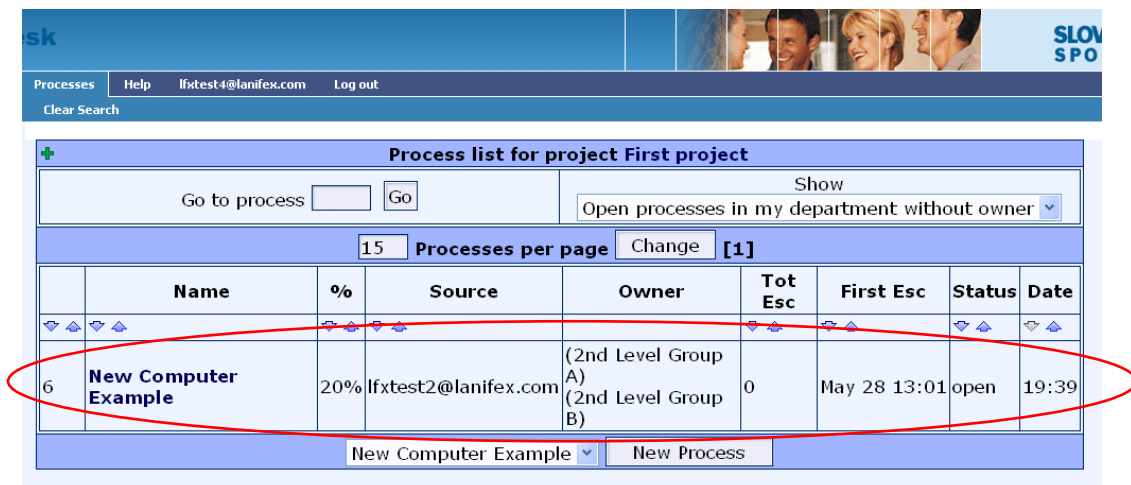
2. Use your web browser to go to the web address of the HelpDesk, or click on the link you receive in the e-mail notification. Enter your username. Click on the message 'The HelpDesk staff and support...' Another box will appear, enter your password there and press the Login Now button.
3. You should now be logged on the system. You can choose your project from the available projects, and your screen should look like this:



4. IMPORTANT: You should now click your email link on the top bar (circled with red, on the left, in the above image) to change your password.

## 2.2 Resolving a request

1. In the above image, please observe the drop-down in the right red circle. This is called a filter. The list does not currently show any processes because the filter is set to 'Open processes I own', and there are no such processes yet.
2. Change the filter to 'Open processes in my department without owner', like in the image below:



3. Now the list will show one open process, and you can see the following data about it:
  - a. The **Ticket Number** (process number) is 6;
  - b. The **Process Name** is 'New Computer Example'. This is actually the type of the process;

- c. (Not shown here) **Process Title**. This is assigned by the requestor when he creates the process, to avoid confusion between several processes with the same name;
  - d. The **% completed** shows that this process is 20% complete;
  - e. The **Source** or the requestor's email is [lfxtest2@lanifex.com](mailto:lfxtest2@lanifex.com);
  - f. The current **Owners** are 2<sup>nd</sup> Level Group A (in which you are a member) and Second Level Group B;
  - g. **Tot. Esc.** (total escalation) shows how many requests have been escalated in this process;
  - h. **First Escalation** shows the date when the next request will escalate;
  - i. **Status** shows the current status of the process (see the next paragraph for a description of possible process statuses);
  - j. **Date** shows when the process was opened.
4. You, as a resolver, member in 2<sup>nd</sup> Level Group A, will want to look at this process and resolve the open request. Continue by clicking on the Process Name;
5. You are now in the Process Details view:

**6 New Computer Example**

Status: open (20%) | Stop | Opened: 19:39 | Requestor: lfxtest2@lanifex.com | Blueprint: New Computer Example

**Forms**

Form: 'New Computer Form' for atom  
Please fill out form'. Complete

Manager name	Andrei Tinca
Manager email	andrei@lanifex.com
Work address	Schuttastrasse 45/15
Room number	271

**Prior (closed) requests**

- No users. No groups. | 19:40 | Please fill out form
- Andrei Tinca** | 19:40 | Please approve request | Resolution: YES, I approve this process | Comment: It's OK.

**Open requests**

**Group A procure computer** | Date Opened: 19:40 | First Escalation: May 28 13:01

Please procure a computer as specified in the form.

Current owners:	No users.
Groups:	2nd Level Group A
Take Ownership	
Change status:	Open

**Group B get network data** | Date Opened: 19:40 | First Escalation: May 28 13:01

Group B get network data for new computer

Current owners:	No users.
Groups:	2nd Level Group B
Take Ownership	
Current status:	Pending data

**NOTE:** this screenshot shows two open requests. You, as a member of 2<sup>nd</sup> Level Group A, will only see the open request which has to be completed by your group (circled with red above). **HelpDesk**



members will see and be able to interact with every request in a process.

6. In the screen above, you can see the request assigned to you circled with red. You can click 'Take Ownership', to mark that you are assuming responsibility for this request. After you click 'Take Ownership', you can start working on the request.

**Why take ownership?** Because colleagues from your group will know that you are working on this request. Otherwise, they might duplicate work within your group.

**Forms.** If the request has a form attached to it, you have to fill out the form before you can close the request. In this case, the request's status is 'pending data'. Click on this status and you will be taken to the form.

7. When you have finished working on the request, enter a reason or a final comment in the text box, and then change the request's status from 'Open' to 'Closed'. That's all! Depending on the system setup, your group might receive a confirmation notification that your task was closed. If you need this confirmation, please contact the HelpDesk administrator.

## ***2.3 Stalling (pausing) a Request***

Sometimes you might find out that you cannot complete a request with the current data or resources you have. Therefore, you might want to "pause" the request and ask for additional information/resources. To do this, just follow the same steps as you would do when closing a request, but set the status to "stalled". You must enter some information as to why you have stalled the request; this information will be forwarded to the process owner, who will in turn assist you. When the process owner has provided the resources you need, he/she will un-pause the request.

**IMPORTANT:** A paused request will NOT escalate. Also, when reporting on the time it took to close the request, the system will not include the time when the request was stalled.

## 2.4 Assigning a Custom ID to a Request

If you need to assign another ID to a request, go to the process details and enter a string in a request's 'Custom ID' text input, and then press enter. Duplicates are not currently allowed in the system.

To search for a request by the ID you assigned to it, just enter this ID in the process view, and if the ID exists, you will be taken to the process details.

## 2.5 The Process Details view

We should take a closer look at the process details view:

Title Area	<ul style="list-style-type: none"><li>• The ticket number (6) and</li><li>• Blueprint title (New computer example)</li></ul>
Header Area	<ul style="list-style-type: none"><li>• Status. See below for a detailed description.</li><li>• % complete. Gives indication of the status.</li><li>• Stop button—For HelpDesk staff only, see below how this works</li><li>• Opened date. This is the date when the process was opened.</li><li>• Requestor. The email address of the requestor.</li><li>• Blueprint. Which blueprint this process is based on.</li></ul>
Forms	This contains all the forms in the process. Use them to gather information about how you should proceed with completing your request.
Print Icon on Forms header	Click this to print the forms.
Prior (closed) Request List	Shows which requests within this process have been closed, and relevant message like reasons why certain approvals/decisions were made.
History Icon on Closed Request List	Click this to see a more complete history of the process.
Open Requests	This shows all open currently open requests in the process.
Associated Files	This area contains files associated to the process. See the section below.

## Process Statuses

- *Pending\_manager*. This means that the process is awaiting approval from a manager the requestor specified in the form.
- *Pending\_data*. This happens if the requestor starts filling a form but does not finish it, and he just saves the form.
- *Open*. The process is approved and the HelpDesk team are actively working on fulfilling your process.
- *Stopped*. The process cannot be fulfilled, and the requestor will be notified why this happened.
- *Pending\_satisfaction*. The HelpDesk team has completed their job, and the requestor should now give feedback.
- *Closed*. The process has been completed and you have acknowledged that you are satisfied with the results.

## 2.6 HelpDesk group only—Stopping a Process

The HelpDesk can stop a process at any time, if that process cannot be completed for any reason. To do so click on the 'Stop' link in the Process View header area. You will be taken to a screen where the system will require you to enter an explanation for stopping the process. This explanation will then be sent to the requestor.

## 2.7 HelpDesk group only—Changing Escalation

If necessary, you can change a request's escalation date. If the new date falls outside business hours, it will be wrapped to the last business hour closest to the initial date. Example: if you set the new escalation on Saturday, and the week finishes Friday at 16:00 pm, then the new escalation will be set Friday 16:00 pm.

Escalation changes are recorded in process history.

## 2.8 Process view—File Uploads

Under this section you can upload files. The file size can be up to 20 MB, depending on how the Administrator configures the system.

To **upload**, simply type a significant title for the file, and click the 'Browse' button to look for the file you want to upload, and then click the 'Upload' button to finish.

**IMPORTANT:** please choose the persons or groups you want to be notified in email about your action. Otherwise, they will not know that you have added a new file. To choose multiple groups/users, hold down the left 'CTRL' button on your keyboard while selecting.

If you are **uploading a newer version** of an existing file, then check the 'Obsolete' radio button next to the old file.

To **download** a file, click the title of that file.

## ***2.9 Process view—Forum***

This area helps all resolvers (but not managers) share information.

**IMPORTANT:** please choose the persons or groups you want to be notified in email about your post. Otherwise, they will not know that you have added new information. To choose multiple groups/users, hold down the left 'CTRL' button on your keyboard while selecting.

To **post a new topic**, enter the topic's subject in the 'Subject' line, and then type the message in the text area, and click submit.

To **reply to an existing topic**, click that topic and enter your text in the text area.

## ***2.10 Searching—Simple and Advanced***

Both simple and advanced search let you find processes based on some criteria you define. The search terms you put in act afterwards like a "filter", e.g. in the process list, only the processes matching your search terms are shown. You can then use the normal controls in the process list, to order the items or filter them further.

### **Simple Search**

The simple search is 'additive', all conditions you put in are evaluated with the logical 'AND' operator. For example: if you filter

on a certain process and a certain requestor, the processes with that requestor will be shown.

## Advanced Search

In the advanced search, you also have the flexibility of using 'OR' statements. For example, you could look for a process with requestor A or requestor B, which was finished before a certain date or after a certain date.

## 2.11 System Notifications

Following is a list showing when the system sends notifications:

Nr	Event	Receiver	Explanation
1	New process created and manager must approve it	Manager	It's how we notify the manager on the managers about their task.
3	Full Stopper is encountered	Requestor	The requestor is announced that his/her process cannot be continued. If a reason exists in a previous approval atom, then this reason is sent.
2	Process enters 'open' state (manager approves it, or a process with no initial manager approval is created)	Requestor	The requestor is informed that his process was opened, and is given the ticket number
3	Ibid	Process Owner	The process owner is announced that a process he's 'watching' got started.
4	New request created	Request Owner	The owner is announced about the request he/she must solve; ticket number is also specified.
5	Request closed	Request Owner	If the owner's group is member in the 'self_notify' group, then the Request Owner group also receives a notification email.

6	Hook request closed	Process Owner	If the global 'hooked_notify_process_owners' is set to 1, then the process owners are notified when hook requests are closed.
7	Process enters pending satisfaction	Requestor	The requestor is announced that they should rate the satisfaction for a process
8	Negative satisfaction	Process Owner	The process owner is informed if a process closes unsatisfactorily.
9	New cookie user creation	Cookie User	When they create an account, they receive a notification mail which contains an authentication link.
10	Cookie user loses cookie	Cookie User	If a cookie is lost or computer changed, another authentication email is sent.
11	New manager user	Manager	If an atom is assigned to a user who does not exist in the system, then a cookie user is created for that account and a notification is sent to that user announcing them that they have a request assigned.

## 3. The Admin Menu

Use this section to create forms, processes, escalation chains, and to administer users, groups, the escalation calendar, languages, and global system settings.

### 3.1. Creating and Administering Processes Blueprints

Quick overview of a process blueprint's elements:

<b>Name</b>	Short name for this blueprint
<b>Blueprint owner</b>	This person or group is responsible for all processes based on this blueprint. The owner(s) will receive notifications in the following situations: <ul style="list-style-type: none"><li>• Whenever a process is started</li><li>• Whenever a negative satisfaction is given. The system automatically creates an atom and assigns it to the process owner, copying the text of the negative satisfaction in the body of the request.</li></ul>
<b>Description</b>	This description will appear on the New Process List for the requestors. You should keep this about one or two lines long.
<b>Long description</b>	This should be the detailed description of the process. This field also accepts HTML so you can copy/paste from your favourite HTML editor (although no images are supported here.)
<b>Version</b>	This is a system-only field.

<b>Status</b>	<p><b>Hidden / Unhidden.</b> A hidden process does not appear to the requestors, so they cannot start new processes based on this blueprint.</p> <p><b>Complete / Incomplete.</b> A complete blueprint is a valid blueprint (see the 'Linking atoms' section). Only a complete atom can be made 'Unhidden'.</p> <p><b>Used / Not used.</b> Once there are processes based on a blueprint, it means that that blueprint is used. An 'Used' blueprint cannot be edited any more, because active processes based on that blueprint would lose consistency.</p>
<b>Default escalation</b>	This will be applied to all atoms. Refer to the Escalation chapter for more.
<b>Blueprint schema</b>	A bitmap representation of your process, currently accepted format is .jpg. This helps you understand the process visually when creating the atoms.
Satisfaction Delay	The number of hours counted from the time the process entered in pending satisfaction until it is closed by the system.
Requestor group can see these processes	If checked, the users in the same group as the requestor can see the process
Requestor group can rate these processes	If checked, the users in the same group as the requestor can rate satisfaction for this process
Use process escalation	If this is checked, the process escalation can be used for atoms in this blueprint. Please only check this box if you know what you're doing (it's typically only for processes which are created automatically by the software, and they need to be configured as such.)

Before we proceed, you must understand the different atom types available to build a blueprint. First, a general description of an atom's fields:

### 3.1.2. Atom Fields



<b>Local ID</b>	This is the ID of the atom in the blueprint's context, atom's are ordered within the blueprint according to this ID.
<b>Title</b>	This is the short name of the atom
<b>Type</b>	Can be regular, parallel etc.
<b>Request</b>	This is a text area where you enter the actual description of the request.
<b>Percent complete</b>	This value is copied onto the processes' own % complete when the atom is resolved
<b>Escalation preset</b>	Escalation preset for this atom
<b>Owners</b>	You can assign multiple groups/users (from the atom edit screen or directly from the atom list)
<b>Forms</b>	You can assign multiple groups/users (from the atom edit screen)

**Other atom properties:**

- All atoms send notifications to they owners when they are created;
- When atoms are closed, the next atoms are created, according to the blueprint.

**3.1.3. Atom types**

**Regular**

This is the normal process atom. The owner is notified upon its creation, and when the owner closes it, the process continues.

**Parallel**

This is a 'system' atom, meaning that nobody has to compete it, so you don't need to assign any owner to it. You use it to split the process on two or more simultaneous branches. This atom is auto-completed (or closed) at the moment it is created, and then the system proceeds to creating the atoms linked 'below' the parallel atom.

## **Approval**

Like the parallel atom, this links to multiple atoms 'below' it. But it has an owner, and that owner must make a decision (approval) as to which way the process should go. Therefore, only one of the possible atoms 'below' are created—this is the atom for which the owner voted, or approved.

## **Manager Approval**

Actually, this is the same as the approval, but with 'dynamic' owner, coming from an email string entered in a form attached to the process. (That form field must be of type 'manager email') This, in effect, lets you soft-code the owner of this atom. In this case, we call this a Manager Atom, because the typical use would be for a requestor to fill out a form and include his/her manager's email. Then, the manager is notified about the task, and they are granted access to the system via a link sent to them in a notification. Their access level allows them to resolve the atom assigned to them.

## **Full Stopper**

The full stopper is used to 'abruptly' end a process, without asking the requestor for feedback. It should be used for situations when a process cannot be successfully completed, for example when a manager doesn't approve a request, or when no resources are available etc. When a Full Stopper atom is created in a process, then the process' status is set to Stopped and all open requests are marked as closed.

## **Stopper**

This is the normal process end, and it signifies that the HelpDesk teams have completed their tasks. When such an atom is created, a notification is sent to the requestor, asking him/her to rate satisfaction. If satisfaction is positive, the process status will be set to 'closed', otherwise a new request is created and assigned to the blueprint owner.

### **3.1.4. Steps to create a process blueprint**

**IMPORTANT:** To spare unnecessary work later, it's advisable that you plan ahead your process on paper. Use the 'blueprint elements' table below to see what data is required. Then draw your blueprint with a computer tool like Microsoft Visio and output a .jpg image of your process (you will need this later.)

Here are the steps to create a new process blueprint:

1. Go to Admin | Processes. You will see a list—this is the Process Blueprint List;
2. Click on the **+** symbol on the top-left corner of the Process Blueprint List to add a new blueprint;
3. You should now enter the data in the form, look in the “process blueprint element table” for details;
4. Click ‘Create blueprint’. Your screen will look like this:

The screenshot shows the 'Process Example Process 2' configuration page. The top navigation bar includes 'Admin', 'andrei@lanifex.com', and 'Log out'. Below it are tabs for 'Forms', 'Escalation', 'Help', and 'LFXlib'. The main form area is titled 'Process Example Process 2' and contains several sections:

- Edit Owners**: A button circled in red.
- Description**: A text field containing 'This is another sample process.'
- Long description**: A text area containing 'We are demonstrating how to create a process. Please press 'Submit Form' to continue.'
- Version**: A text field containing '1'.
- Status**: A text field containing 'Hidden, Incomplete, Not used'.
- Default escalation**: A text field containing 'Example Escalation'.
- Schema**: A text field with a 'Browse...' button (circled in red) and an 'Update' button.

Below the form is an **Atom list** section with a '+' icon circled in red. The table below it has the following data:

From	ID	To	Title	Type	Links	Forms	Owners
	0		Example Process 2	process	n/a		n/a

At the bottom, there is a **Link controls** section with a 'Comment' field and 'Make link' and 'Drop link' buttons.

5. Now click ‘Edit Owners’ (first red circle) , to assign an owner to this blueprint;
6. Use the Schema input (second circle) to upload your process image;
7. You are now ready to add atoms to the blueprint! Click the **+** symbol (third red circle) to do so. After you have created an atom, you need to:
  - a. Add owners. Do so by clicking on the atom’s Owners column;

- b. (Optionally) add forms. Click on the atom's Title to see the details of that atom. Then click the edit symbol in the Request Forms table to add/delete forms.

**NOTE:** adding more than one form to an atom will have the requestor/resolver fill out every one of them.

### 3.1.5 Linking atoms

8. You are now ready to create links between the atoms. To do so, simply click the 'From' field of the atom from which you want to link to the 'To' field of the atom to which you want to link, like in the image below:

Atom list					
From	ID	To	Title	Type	
<input type="radio"/>	0		New Computer Example	process	[1] Please
<input type="radio"/>	1	<input type="radio"/>	Please fill out form	regular	[2] Please (Single link, allowed)

After you have clicked the 'source' and 'destination' atoms, click the 'Make Link' button at the bottom of the page.

Here are the guidelines for creating links:

- a. **First link.** First link has to be always from the process itself (with ID of 0) to the first atom (just like in the image above);
- b. **Parallel atoms.** You can split a process in two or more parallel tasks by using a 'Parallel' atom. Then create multiple links from the parallel atom to the 'target' atoms. Since you can only create one link at a time, do so for every 'target' atom;
- c. **Approval atoms.** Create links from approval atoms to 'targets' just like with parallel atoms, but **also enter text in the comment field.** This text will be displayed to the resolvers as links, when they have to make a decision. Example: if you are linking from an approval atom to a full stopper (therefore interrupting the process), the text you are entering could be 'My decision is to stop this process.'
- d. **Process ending.** All atoms must end with a 'Stopper' or a 'Full Stopper' atom.

9. You are done! If your blueprint is correctly constructed, according to the rules outlined in the 'atom links', your blueprint status should be 'Hidden, Complete, Not used'. You can now click this link to unhide the process. The process will now appear in the process list and will be available for requestors.

### **3.1.6 Editing process blueprints**

#### **Copying a process / Creating a new version**

To make a copy of a blueprint, simply go to that blueprint's details and click the **+** symbol on the top-left header. You have two options:

- Create a new version of the process. This copies the old process into a new process, incrementing the version of the new process, and marking it as belonging in the same 'thread' as the old process. When you unhide the new process, you have the option of hiding the other processes in the same thread.
- Creating a copy. This copies the old process into a new process. The Version number of the new process will be 1.

#### **Exporting a Process**

In the process list, you can mark processes for export, and then choose from the upper-right drop-down a method for export:

- XML: this will export the process to a XML file
- Export to other project: this will export the process to another project. For Chained Dropdowns and Trees, you have the choice of
  - o Making a copy in the project where you are copying
  - o Using a reference to the object in the source project

#### **Editing blueprints 'Not in Use'**

You can easily edit blueprints which are not in use. Just click the title from the blueprint list (Admin | Processes) and then click the blueprint's edit icon or click the atoms to modify them.

You can freely modify the blueprint's data or the data of its atoms, including deleting or adding new atoms, and modifying the links between them.

## Editing blueprints 'In Use'

Once a process is public and in use, it's impossible to make changes to it. This is because there are processes based on it, and changing the underlying blueprint would break the consistency. Therefore, to edit a blueprint which is in use, you need to do the following:

1. Click the blueprint's name from the blueprint list;
2. Click the 'copy' icon on the top-left header of the blueprint's details (in this case it is the + symbol );
3. You can now make changes to the new blueprint;
4. You now need to hide the old blueprint. For this, go to the blueprint list, click the old blueprint, click its status, and then click the 'Hide blueprint' button. This will take it out of the 'public' list, so requestors will not be able to start processes based on it anymore;
5. Now make the new process public. Click its status and then click 'Unhide'.

## Deleting blueprints

In our system, we are not deleting blueprints per se from the database, because this would break consistency with old processes which were based on these blueprints. Instead, we just hide them from the blueprint list—that means that neither the admin nor the other users can see those processes any more.

## Phone blueprint

The HelpDesk group can create 'phone' requests or processes (see the corresponding section—"HelpDesk: creating Phone Processes / Requests). The administrator can define which blueprint will be the basis for the phone process, by clicking on the 'Phone Process' link in the blueprint list.

We suggest that the phone blueprint will be as follows:

1	(fake regular atom)	No owner, no forms. This is auto-completed by the system.
2	HelpDesk Atom	Regular atom assigned to HelpDesk. Description should be: "Please create additional hook request to resolve this process".
3	Stopper	

## 3.2 Escalation

This is a mechanism which check on request deadlines and alerts the assigned persons when the requests are not completed in time. Therefore, we need to define two elements: whom to alert, and when.

WHO	WHEN
Chain	Preset
-----	
Supervisor	4 hours
Middle Mgr.	6 hours
Manager	10 hours

**Chains (people):** These are the 'chains' of people, they describe a hierarchy of whom to alert. Only members in HD\_Resolvers or 2<sup>nd</sup> level members will be available for assignation.

**Presets (times):** Theses are the the escalation periods.

In the above example, if a request is not resolved in 4 hours, the Supervisor is alerted. Then, if it's still not resolved in 6 hours, the Middle Manager is alerted, and after 10 hours, the Manager. We can have different 'Presets' mapped on the same chain, for different types of requests; more urgent requests might have 'faster' deadlines than less urgent requests.

In HelpDesk, when you create a process, you assign a 'default esclation' to it. This escalation is then assigned to every request in that blueprint, but you can change it when creating atoms.

To create chains and presets, just use the regular controls, the process is straightforward.

## 3.3 Forms

You can create forms and assign them to Atoms, when you design Process Blueprints. Then, when processes are created, the requestors/resolvers must always fill the forms before they can close the requests. To access the Forms menu, please click on Admin -> Forms.

### 3.3.1 Creating a Form

To create a form, click the + sign on the top-left of the form list. First, enter a name and a description for the form. Click Submit, and you will be taken to a screen where you can add fields to the form. Current field types include:

Field Type	Description/Possible Values
Boolean	True/False
Date	YYYYMMDD
Email	
Dynamic Email	The owner of the next atom will be set to the email entered in this field
Float	Floating-point number, e.g. 3.67
Integer	Integer number
Large Text	Can accommodate data of a very large size
Short String	Up to 265 characters
String	Up to 265 characters
Manager e-mail	A request for approval will be sent at the specified email. A cookie user will be created using this email.
Dropdown	You can choose from the dropdowns you create in the system
File	Displays a file upload dialogue
Chained Dropdown	You can choose from the dropdowns you create in the system
Form Tree	You can choose from the Form Trees you create in the system (see below)

Click on the + sign on the upper-left corner of the field list to add fields. For every field, please specify:

- Name
- Optional
- Type
- Description

Click Save after you specify the data for each field. When you are ready, click the magnifier on the upper-right corner to go back to the form. Click the 'unhide' link to make the form available for showing in processes.



### 3.3.2 Chained Dropdowns / Form Trees

The creation and editing of these two object types is very similar. They are pre-defined trees, from which the user can choose items when completing the forms.

To create a Chained Dropdown / Form Tree, navigate to the respective page, click + on the upper-right corner to add an item, enter its name and description, and then add elements.

For every element you can specify a parent. Additionally, you can edit elements and change their display order by clicking the arrows on the left.

### 3.4 Projects

Projects are separate “entities of the Help Desk software”, which share users, groups, and other objects. Projects can be maintained only by the Hyperadmin (a user member in the Hyperadmin group).

By default, the system contains a “HelpDesk Default Project”. You can add more projects by clicking on the + in the upper-left corner. You can set the following properties for a project:

- Name
- Description
- Active. If this is not checked, the project is only visible to the Hyperadmin
- Allow cookie user. If this is checked, Cookie Users are allowed to create new processes here
- Create Project Admin Role. If checked, this creates a Role in the new project, named ‘Project\_Admin’. Members in this group will have complete privileges over the project.

The usual workflow for a Hyperadmin would be:

- Create new, hidden projet
- Create/migrate process blueprints
- Create/migrate groups/hypergroups
- Make project public

If you want to assign a user in a project, you would do it using the Access Manager.

Users become members in projects by:

- Being members in groups which belong to a project,

- Being members in functions directly in a project.

### ***3.5 Changing the content of static pages***

This action is not formalized in the application. It is recommended that the static pages stay in a directory on the same level with LFXlib and helpdesk.

Also, an instruction can be put in the index.html file 'above' LFXlib, helpdesk and static pages, to direct the user to these static pages.

## 4. LFXlib – The Lanifex Shared Library

LFXlib is the module which controls administrative aspects of the system. It is a generic library, required in most on-line, client-server applications, containing such functions like:

- Login
- Access management
- Logging of actions
- Reporting
- Translations

### 4.1 LFXlib—Access Management

#### QuickInfo

- Groups with prefix HD\_ALL are for HelpDesk agents
- Groups with prefix HD\_OWN are for 2<sup>nd</sup> level groups
- Groups with prefix HD\_MGR are for managers
- Groups with prefix HD\_CRE are for requestors (creators of processes)

Access management throughout the HelpDesk system is controlled by a network of Access Groups, which have pre-defined names. The Admin can then create as many extra groups as necessary, and parent them with these pre-defined groups to obtain different levels of access.

- The system will automatically assign cookie users to HD\_Requestors
- The system will automatically assign managers to HD\_Managers

Following is a description of the pre-defined (or 'system') HelpDesk groups:

**IMPORTANT: DELETING ANY OF THESE GROUPS WILL CAUSE THE APPLICATION TO FUNCTION IMPROPERLY OR STOP FUNCTIONING!**

In case you delete a 'system' group, you have the following options:

- Re-create the group with the same name and re-create the links (if you still have access to the application), or
- Restore from backups

For a list of the LFXLib groups please see Appendix A.

For a list of the HelpDesk groups please see Appendix B.

Actions available in the Access Management module:

- You can create new users and assign them to HelpDesk, 2<sup>nd</sup> Level, or SuperUser
- You can create any number of second level groups and assign them to the HD\_Can\_Resolve group;
- You can assign any of these groups to the self\_notification\_group;
- Any other actions might result in unpredictable behaviour or system instability


### **Creating a Group**

In the Access main screen, click on the Sphere symbol situated in the left part of the 'Groups' table header. You are then taken to the groups creation screen, please make sure to enter a proper description for the group you are creating.

### **Creating a User**

In the Access main screen, click on the Plus symbol situated in the left part of the 'Groups' table header. You will be taken to the 'New User' screen. Please fill out as many details as you can; username and password are mandatory.

### **Assigning / Un-assigning a Group to Other Groups**

In the 'Group Details' or 'User Details' view, click on the chain symbol () on the table header. A list of the possible group parents will be displayed. Click on any of these groups to make your group a member in that group. You can also enter some comments, to document why you assigned this group there.

### **Locking (deactivating) users/groups**

Click the lock icon when you are in a user/group details view to deactivate the respective item. A locked group is inactive and doesn't play any role, a locked user will not be able to log in.

### 4.1.3 Hypergroup administration (Hyperadmin only)

In the LFXlib menu, please click on Projects Management. You get two screens:

#### **Group/Project List**

In this list, you can see in which projects the groups are assigned. Furthermore, you can:

- **Assign a group to multiple projects (make hypergroup)**  
If you do so, the group will not be editable by the local admin any more. Hypergroups have the same users and functions across all projects. Hypergroups cannot be inserted in local groups. Local groups inserted in Hypergroups become Hypergroups as well, and are present in all the projects where the hypergroup is present.
- **Copy groups.** This allows you to create a copy of a group in another project. You have different options: copy with functions, users, and child groups.

#### **User/Project List**

This list shows the projects where users are present.

## 4.2 LFXlib—Globals Management

The Globals Management Module stores system variable in table 'globals' within the LFX database, and allows easy user access to these variables, to modify system behaviour.

- Globals which have the same value for all projects are called "Hyperglobals", and can only be edited by the Hyperadmin
- Globals which are local to projects can be edited by local admins

They are categorized on a per-module basis, and every module will have its own globals.

For a list of the LFXLib globals please see Appendix C

For a list of the HelpDesk globals please see Appendix D

## 4.3 LFXlib—Translation Manager

This module uses the Linux gettext() function library to support translations and encoding. The translations are stored on the filesystem, in the LFX data directory, as defined per the 'dataDir' global.

**IMPORTANT:** You need to set the storeReference global to 1. Also, your system must have installed support for the languages you are planning to use.

### Adding a language

Just enter the required information in the 'Add New Language' form. For Slovak, the name is 'Slovak', the encoding is 'ISO-8859-2', and the code is 'sk\_SK'.

### Editing a language

Select a language from the drop-down menu, edit the settings and click 'Save Language'.

### Setting a language as the Default Language

Create the global 'system\_language' in module LFX and set its value to the language code.

### Translating

After setting the 'storeReferene' global to 1, browse through the system a little bit to get the new strings. Then, click 'Translate' on the left menu, and choose the module and the language you want, and click 'Get Texts'. In the next screen, you need to enter the correct content type (for Slovak: 'text/html') and the encoding (for Slovak: 'ISO-8859-2'). Then, select the text from the drop-down and translate them. You do not need to submit after each translation, you can do many strings at a time, and submit afterwards.

However, make sure that your browser's session doesn't expire before you submit!

*Variables in strings.* Some strings contain variables, such as item counts, system-generated information, and so on. Variables appear in the original strings as "%s". You need to put the exact string in the translation, to have the variable appear correctly.

## **4.4 LFXlib—Calendar**

The calendar defines the 'working time'. Requests are not escalated outside business hours, and when the system reports on how long it took a request to be resolved, only 'business hours' time is counted.

To define the hourly schedule, simply enter the relevant hours in the left table, check the free days, and click 'Submit'. In the right table you can enter holidays. Recurring holidays are effective for all years, while non-recurring are effective only once.

If you change entries the calendar, the requests' deadlines will be changed accordingly.

**NOTE:** To have the week displayed with the first day as Monday, create the global 'week\_starts\_monday' in module LFX and set it to 1.

You can choose to define holidays in your calendar, or you can check "Use global holidays". In this case, the calendar will use holidays defined in the "Global Calendar". This calendar is normally maintained by the HyperAdmin.

### **Global Calendar**

Use the same mechanism described above to enter holidays in the Global Calendar. The Hyperadmin is the one who should normally perform these actions.

## **4.5 LFXlib—Audit Log**

The Audit Log displays all the actions which take place in the system.

**IMPORTANT:** To have the system log everything, please set the global 'full\_audit\_log' in module LFX to 1.

### **Introduction**

The Audit Log is an extensive record of all operations performed in the system using the LFXlib API, which includes all operations performed via the web interface in all HelpDesk modules, along

with all the changes performed by the automated scripts. It does not include all changes performed via direct database queries.

## **The Interface**

The audit log is accessible from the HelpDesk interface by clicking on „Admin“, „LFXlib“ and „Audit Log“.

The second and third column are self-explanatory, they show the object type and object ID the respective log entry is referring to. The first column identifies the log entry itself, you shouldn't need to use that. The fourth column, „Action“, shows what that log entry is about: inserting, editing or deleting that object. The „Person“ column shows who performed the action and the „Date“ column shows when it was performed. So basically these three document „What, Who and When“, while the previous ones document „On What“. The last column documents the state of the object before and after the event. The values which have changed are shown in red, while the ones which have not are shown in black. For the ones which have changed, the original value before the event is shown in brackets.

## **The Interaction**

As a complete record of all operations, this log is understandably very large, and growing very fast. Here are a few tricks on how to use it:

Select a class from the „Object type“ dropdown. This will filter only the log entries pertaining to that class. If you want to clear this filter at any time, click on any of the „no filter“ links along that column. Type in an ID in the „Object ID“ text box and hit „Enter“. Only entries pertaining to objects with that ID will be shown. If you ever want to clear this filter, click on any of the „no filter“ links along that column.

You can combine the two filters above at any time. That's what the „filter“ link on the first column does: it automatically locks both the object type and the object id corresponding to the horizontal entry you click on. Regardless of whether you created the dual filter this way or by successively performing the two steps above, you can then clear both filters by clicking on any of the „no filter“ links on the first column.

If you ever end up with a filter which produces no results, you will not have access to the „no filter“ links documented above. In that case you can reset any of the two filters by selecting „All objects“ in the dropdown and/or clearing the content of the text box and hitting „Enter“.



## **Specific Tasks**

When using the Audit Log to check on the history of HelpDesk objects, one of the common tasks is to check on the changes related to a specific process, including its requests, forms and so on. This is almost impossible to accomplish with only the controls described above and the data available from the HelpDesk web interface.

The Audit Log features a „smart“ operation mode, where it tries to determine all objects related to a certain one. In order to switch to this mode you have to first use the controls as described in the previous section to filter on a specific object type and a specific object ID. Make sure you choose the object which logically encompasses all objects you want to check on. For instance, if you want to check on requests and you only know the process ID, choose the process which contains the request, and it will yield the proper results. The reverse will not work however: if you choose to filter a specific request then you won't be able to see the changes for the associated process.

After filtering on a specific object as described above, you will notice a new control just below the page controls, namely a checkbox labeled „Show Descendants“. Clicking on that checkbox will show the history of the selected object along with the history of all its descendants, which is exactly what you need in most cases.

Please note that in this display mode, the „filter“ and „no filter“ links in the first three columns are not available in order to avoid confusion (a specific filter is in place, but several object types with several ID's are shown).

## **4.6 LFXlib—Subscribing to Reports**

Subscribing to reports in LFXlib requires rights to the subscription subsystem in LFXlib, please make sure that the users who need this access level are members in group LFX\_Subscription, which in turn must be a member in LFX\_Basic\_Access. If these groups do not exist in your system, please create them.

In order to subscribe to reports, please first check your application documentation for a direct link to this subsystem. If none exists, log in to the LFXlib module and click on „Subscription Manager“, then select interface preset „report“ at the bottom of the resulting page.

You are now presented with the list of subscriptions related to presets. You can either choose to subscribe yourself to one of the reports, or you can create a new subscription and subscribe to it.

Subscribing to and unsubscribing from existing subscriptions is easy: click on the respective link on the last column of the table.

If you need to create a new subscription, use the green „plus“ sign in the top-left corner of the table. Make sure to type in a representative name for the subscription (e.g. „Daily subscription for HelpDesk overview report“), choose the report type you want to subscribe to from the first dropdown and select the report interval on the next dropdown. After this you have to decide how often you want to receive the report. The typical choice is „Per Event“, which delivers the report whenever it is generated (depends on the interval you previously selected: the daily report will be delivered daily, the monthly report will be delivered monthly and so on). You can choose however to receive reports in other intervals: for example you may want to receive weekly updates of the yearly report. In that case you can select the „GUI“ option, which allows you to build a custom delivery interval by selecting one or more of the options you need. Please be warned that if you choose both a week day and a month day (e.g. week day Friday and day 20) then the report will only be delivered when the month day happens to be that week day (e.g. when the 20th is a Friday).

## 5. Time-Based processes in HelpDesk

This section describes the scripts which run via schedule set in the crontab.

### 5.1 Backup

**Path:** /etc/cron.daily/helpdesk\_backup  
**Frequency:** daily

The following data is backed up:

- The databases hdesk and lfxlib\_hdesk;
- /var/LFX\_data. This contains HelpDesk user data files;
- /var/www/html/hdesk/ (or your path to the web code) This contains the we code.

These are all compressed into an archive conveniently named “hdbak-machine\_name-date.tgz”. The machine name is determined with the `host` command, and the date is the current date. This

files are then copied locally to the '/var/hd\_bak' directory, and optionally also copied to another (remote) machine.

## **5.2 Archiving**

**Path:** /etc/cron.daily/helpdesk\_archiver  
**Frequency:** daily

This moves 'closed' processes older than a specific period into archive tables and directories. This age is set with the global 'archive\_process\_age' in the OPT module.

Processes, together with their associated forms, forums and files are moved to archive tables.

## **5.3 Report Generation**

**Path:** /etc/cron.hourly/update\_reports  
**Frequency:** hourly

This process updates the reports. It looks for reports defined in the LFXlib::reports table. For the HelpDesk system, there should be three entries in this table.

## **5.4 Closing of 'overdue' processes in pending\_satisfaction status**

**Path:** /etc/cron.5min/close\_pend\_satisf  
**Frequency:** every 5 minutes

If a requestor fails to rate satisfaction within a period, the process is automatically marked as 'closed'. This period is determined by the global 'allowed\_pending\_satisfaction\_hours', in module OPT.

## **5.5 (Temporary Script) Changing Rights**

**Path:** /etc/cron.5min/rights.sh  
**Frequency:** every 5 minutes

This script changes the rights in HelpDesk's data directories, as to allow the user running Apache to write there. This script will be disabled in the future, when related features are implemented.

## ***5.6 Updating the Graphs***

THIS SCRIPT HAS BEEN DEPRECATED

**Path:** /etc/cron.5min/run\_cacti  
**Frequency:** every 5 minutes

This script updates the Cacti graphs in the system.

## ***5.7 Escalating requests***

**Path:** /etc/cron.5min/run\_escalation  
**Frequency:** every 5 minutes

This script escalates the requests which are due for escalation.

## ***5.8 Send Queued Mail***

**Path:** /etc/cron.5min/run\_lfx\_5min  
**Frequency:** every 5 minutes

This script sends the mail, if the system is set up to queue mail instead of sending it directly when necessary.

## ***5.9 Send Subscriptions***

**Path:** /etc/cron.hourly/deliver\_subscriptions  
**Frequency:** hourly

This delivers the subscriptions; for example the report subscriptions.

## Appendix A—LFXlib Access Management Functions

LFX_Access	Access to Access Manager
LFX_AuditLog	This grants access to the respective LFX tool.
LFX_Backup	This grants access to the Backup tool.
LFX_Basic_Access	This is access to the LFX module
LFX_Calendar	Gives access to calendar
LFX_ConsistencyChecker	This grants access to the Class Consistency Checking tool.
LFX_DebugLevel	This grants access to the Debug Level tool.
LFX_Demonstrations	This grants access to the respective LFX tool.
LFX_DocTypes	Grants access to Document Types.
LFX_Dump	This grants access to the Dump tool.
LFX_Globals	Gives access to globals, (R) to read, (W) to modify its name, module, value, and (D) to modify its default value.
LFX_Global_Calendar	Gives access to edit the Global Calendar.
LFX_MessageLog	This grants access to the respective LFX tool.
LFX_Module_Admin	Simple membership in this function allows complete access in all functions related to module LFX
LFX_Package	This grants access to the respective LFX tool.
LFX_PHPInfo	This grants access to the respective LFX tool.
LFX_Reporting	Access to the reporting module
LFX_ShowSource	This grants access to the respective LFX tool.
LFX_SQL_Diff	This grants access to the SQL diff tool, used to upgrade the database.
LFX_SQL_Dump	This grants access to the SQL Dump tool.
LFX_SQL_Ops	This grants access to the respective LFX tool.
LFX_Subscription	Access to report subscriptions
LFX_Synchronization	This grants access to the Group and Global and DocTypes Synch tool.
LFX_Translation	This grants access to the translation module
LFX_UpgradeManager	This grants access to the respective LFX Upgrade Manager tool.
OPT_Request_Inactive	Members of this group can see the inactive requests – weird function.
Super Users	This is the superusers (administrators) group.

## Appendix B—HelpDesk Access Management Functions

HD_Admin	Membership in this group allows users full access throughout the HelpDesk system
HD_Admin_Access	Members in this function can see the 'Admin' menu entry.
HD_Advanced_Search	Members in this function have access (A) to advanced search.
HD_ALL_Own_Forms	Members in this function can see (R) or edit (W) forms attached to requests they own (either normally or as managers) in all processes.
HD_ALL_Own_Requests	Members of this function can see (V) and resolve (S) the requests they own (either normally or as managers) in all processes.
HD_ALL_Proc	Members in this function have the ability to see all processes in the list (A), their brief info (B), their full info (V), they can solve requests (S), add hook requests (H), view the escalation data (E) and/or stop processes (T).
HD_All_Processes	Members of this group can see all processes
HD_ALL_Proc_Files	Members in this function can read (R), write (W), update (U) and delete (D) files attached to all the processes.
HD_ALL_Proc_Forms	Members in this function can read (R) or edit (W) forms attached to all the processes.
HD_ALL_Proc_Forums	Members in this function can read the forums (R), write into forums (W) of all the processes.
HD_ALL_Proc_History	Members in this function can view (R) the history of all the processes.
HD_ALL_Proc_Satisf	Members of this function can view (R) or set (W) satisfaction ratings on all the processes.
HD_ALL_Public_Atom_Forms	Members in this function can see (R) or edit (W) forms attached to the the public atom in all processes.
HD_All_Requests	Members of this group can see all requests
HD_Archiver	Grants access to the page.
HD_Basic_Access	All users who need to use the HelpDesk application need 'R' rights in this function.
HD_Can_Own_Hook	Members of this group can be assigned hook requests in HelpDesk
HD_Chained_Dropdown	Grants access to the page.
HD_Cookie_Login	Grants access to the page where you can switch cookie users to login users and vice-versa.
HD_Create_Proc	Members in this function with 'A' access can create processes in the HelpDesk system
HD_Create_Proc_For_Others	Members in this group can create procs for others, they get the magnifying glass and can search users.

HD_CRE_Own_Forms	Members in this function can see (R) or edit (W) forms attached to requests they own (either normally or as managers) in processes they created.
HD_CRE_Own_Requests	Members of this function can see (V) and resolve (S) the requests they own (either normally or as managers) in processes they created.
HD_CRE_Proc	Members in this function have the ability to see processes they created in the list (A), their brief info (B), their full info (V), they can solve requests (S), add hook requests (H), view the escalation data (E) and/or stop processes (T).
HD_CRE_Proc_Files	Members in this function can read (R), write (W), update (U) and delete (D) files attached to the processes they created.
HD_CRE_Proc_Forms	Members in this function can read (R) or edit (W) forms attached to the processes they created
HD_CRE_Proc_Forums	Members in this function can read the forums (R), write into forums (W) of the processes they created.
HD_CRE_Proc_History	Members in this function can view (R) the history of the processes they created.
HD_CRE_Proc_Satisf	Members of this function can view (R) or set (W) satisfaction ratings on the processes they created.
HD_CRE_Public_Atom_Forms	Members in this function can see (R) or edit (W) forms attached to the the public atom in processes they created.
HD_Customize_View	Membership with "A" in this function will give access to the "Customize View" menu.
HD_Escalation_Chains	Members of this function can see (R) or edit (W) escalation chains
HD_Escalation_Presets	Members of this function can read (R) or edit (W) escalation presets
HD_Forms	Members can see (R) and edit (W) the form blueprints
HD_Form_Tree	Grants access to the page.
HD_MGR_Own_Forms	Members in this function can see (R) or edit (W) forms attached to requests they own (either normally or as managers) in processes they own as managers.
HD_MGR_Own_Requests	Members of this function can see (V) and resolve (S) the requests they own (either normally or as managers) in processes they own as managers.
HD_MGR_Proc	Members in this function have the ability to see processes in which they own requests as managers in the list (A), their brief info (B), their full info (V), they can solve requests (S), add hook requests (H), view the escalation data (E) and/or stop processes (T).
HD_MGR_Proc_Files	Members in this function can read (R), write (W), update (U) and delete (D) files attached to the processes in which they own requests as managers.

HD_MGR_Proc_Forms	Members in this function can read (R) or edit (W) forms in which they own requests as managers.
HD_MGR_Proc_Forums	Members in this function can read the forums (R), write into forums (W) of the processes in which they own requests as managers.
HD_MGR_Proc_History	Members in this function can view (R) the history of the processes in which they own requests as managers.
HD_MGR_Proc_Satisf	Members of this function can view (R) or set (W) satisfaction ratings on the processes in which they own requests as managers.
HD_MGR_Public_Atom_Forms	Members in this function can see (R) or edit (W) forms attached to the the public atom in processes they own as managers.
HD_Module_Admin	Simple membership in this function allows complete access in all functions related to module HD
HD_OWN_Own_Forms	Members in this function can see (R) or edit (W) forms attached to requests they own (either normally or as managers) in processes they own.
HD_OWN_Own_Requests	Members of this function can see (V) and resolve (S) the requests they own (either normally or as managers) in processes they own.
HD_OWN_Proc	Members in this function have the ability to see processes in which they own requests in the list (A), their brief info (B), their full info (V), they can solve requests (S), add hook requests (H), view the escalation data (E) and/or stop processes (T).
HD_Own_Processes	Membership in this group allows users to see/edit their own processes
HD_OWN_Proc_Files	Members in this function can read (R), write (W), update (U) and delete (D) files attached to processes they own.
HD_OWN_Proc_Forms	Members in this function can read (R) or edit (W) forms attached to the processes they own.
HD_OWN_Proc_Forums	Members in this function can read the forums (R), write into the forums (W) of the processes they own.
HD_OWN_Proc_History	Members in this function can view the history (R) of the processes they own.
HD_OWN_Proc_Satisf	Members in this function can view (R) or set (W) satisfaction ratings on the processes they own.
HD_OWN_Public_Atom_Forms	Members in this function can see (R) or edit (W) forms attached to the the public atom in processes they own.
HD_Own_Requests	Membership in this group allows users to see/edit their own requests
HD_Phone_Request	This grants access to the respective HD tool.
HD_phpMyAdmin	Grants access to the page.
HD_Process_Blueprints	Members in this function can read (R) or edit (W) process blueprints
HD_Request_Custom_ID	With 'R' you can see the Custom ID field in the request, with 'U' you can update it.



HD_Request_Escalation_Date	Membership with 'U' in this function lets you change the escalation date for a request.
HD_Simple_Search	Allows members to perform simple searches
HD_User_History	Grants access to the page.
HyperUsers	This is the Hyper Users group. Members have access to modifying projects

## Appendix C—LFXlib Globals

<b>Name</b>	<b>HyperGlobal</b>	<b>Module</b>	<b>Description</b>
cache_access_valid	Yes	LFX	System global
dataDir	Yes	LFX	The directory for storing data
forums_always_expanded	No	LFX	
full_audit_log	Yes!	LFX	
full_dates	No	LFX	Whether dates should be shown fully, with hours and minutes
full_URL	Yes	LFX	The URL of the application
last_name_first	No	LFX	
nativeTranslations	Yes	LFX	System global
override_email	Yes	LFX	Send all email to the specified email address
Redirect_active	Yes	LFX	
Redirect_exceptions	Yes	LFX	If redirect is active, which IP's have access to the system
Redirect_location	Yes	LFX	Which page to show to users who are redirected
session_timeout_seconds	Yes	LFX	
storeReference	Yes	LFX	If enabled, the system is looking for strings to translate and stores them in the store_reference table in the LFXlib database
subscription_email	No	LFX	This overwrites the 'from' field for email sent by LFXlib
system_language	Yes	LFX	Default system language
week_starts_monday	No	LFX	Whether in the calendar, the week starts Monday

## Appendix D—HelpDesk Globals

Name	HyperGlobal	Module	Description
allowed_pending_satisfaction_hours	No	HD	Processes will stay in status "pending_satisfaction" for the number of hours defined here. After that, they will be rated with satisfaction 0 by the close_pending_satisfaction script
archive_delay	No	HD	Numbers of hours for processes in status closed or stopped before they are archived by the archiver
archive_directory	Yes	HD	The directory where the process archives are actually stored.
contactEmail	No	HD	Shown in the login form
dataDir	Yes	HD	Where HelpDesk data is stored
default_table_width	Yes	HD	The default table width for the application
full_URL	Yes	HD	The URL of the HelpDesk application
hd_overview_report_graph_1	Yes	HD	[deprecated]
HelpDesk_temp_user		HD	System global; used for temporary users (which are not yet in the system and should sign up later)
hooked_notify_process_owners	No	HD	If set to 1, hook requests will notify process owners when resolved
login_extra_data	Yes	HD	Shown in the login form
Phone_process_ID	No	HD	[deprecated]
satisfaction_best	No	HD	A numerical value representing the lowest satisfaction to be shown in the display
satisfaction_worst	No	HD	A numerical value representing the highest satisfaction to be shown in the display
self_notification_group	No	HD	The name of the group where you need to have membership to be notified when hook requests close

storeReference	Yes	HD	If enabled, the system is looking for strings to translate and stores them in the store_reference table in the LFXlib database
subscription_email	Yes	HD	This overwrites the 'from' field for email sent by LFXlib

# Appendix E—HelpDesk Installation Guide

## Operating System Install

Notation: user input in the console is shown below as "[input here]".

You need the first three Fedora CD's, available for download from the internet.

1.1. Install Fedora with the 'server' preset

1.2. Set the host name to "your.hostname"

1.3. Make sure you select the following components for installation:

- KDE or Gnome
- From 'Web Server', check php-mysql
- From 'SQL Database Server', check 'mysql-server'
- Mozilla to be able to browse
- Nice to have: from 'Text-based internet', choose lynx

1.4. After the server has successfully installed, we need to make the web server (httpd) and the database server (mysqld) start automatically if the machine resets. For this, type the following commands:

```
[chkconfig --level 345 httpd on]
[chkconfig --level 345 mysqld on]
```

Now we need to start these manually:

```
[service mysqld start]
[service httpd start]
```

1.5. We need to add the following to apache's config file, in our webroot:

```
Options MultiViews
AllowOverride All
```

1.6. We might need to modify the configuration script for the network interface, see example;

1.7. We might have to change /etc/php.ini to [register\_globals = On]

1.8. Depending on whether DNS services are available to the server, we need to edit the /etc/hosts file and to manually add some entries there, see example;

1.9. For backup, we need to generate public ssh keys and copy those onto the machine where we want to send the backups. Let's assume our server is machine A, and that the machine to which we send the files is machine B (both linux). Follow these steps:

1. On machine A, run [ssh-keygen -t dsa]
2. This will generate two files, id\_dsa, and id\_dsa.pub
3. Copy id\_dsa.pub on machine B, in directory /home/your\_user/.ssh/machine\_A\_pub\_key
4. On machine B, in folder /home/your\_user/.ssh/, create file authorized\_keys, if not existing
5. In this file, put the contents of machine\_A\_pub\_key
6. Change permissions on the authorized\_keys file with chmod go-rw authorized\_keys

Now, we have to copy the backup script (helpdesk\_backup.sh) into the /etc/cron/daily folder, so that backups are run daily.

## **Software Installation**

1. Create a temporary dir on the target machine and copy helpdesk-1.xxx.tar.gz in there. Change dir to that directory;
2. Decompress the archive ([tar zxvf helpdesk-1.xxx.tar.gz]);
3. Create directory for helpdesk in the document root and configure the server;
4. Move dev-hdesk.tar.gz to the newly created directory in the document root; uncompress there; remove archive;
5. Create database for LFXlib and HelpDesk ([CREATE DATABASE lfxlib\_hdesk]; [CREATE DATABASE hdesk]);
6. Create database user for HelpDesk and allow full privileges on the two databases ([GRANT ALL ON lfxlib\_hdesk.\* TO hdesk IDENTIFIED BY 'password here']; [GRANT ALL ON hdesk.\* TO hdesk]; [use mysql]; [UPDATE user SET Host='localhost' WHERE User='Hdesk']; [FLUSH PRIVILEGES]; make sure to remember the password you set in the first step, you'll need it later on);
7. Import SQL from lfxlib\_hdesk.sql into database for LFXlib ([mysql lfxlib\_hdesk < lfxlib\_hdesk.sql]);

8. Same with hdesk.sql for database hdesk ([mysql hdesk < hdesk.sql]);

9. Now you'll need to create the files which store the database credentials. You'll need to be a superuser now. Extract LFX\_hdesk.tar.gz and move the resulting LFX\_hdesk directory to /etc. Change ownership of /etc/LFX\_hdesk and all files to apache.apache (or whatever the Apache user is), and permissions to 750 to all:

```
[chmod -R 750 /etc/LFX_hdesk]
[chown -R apache.apache /etc/LFX_hdesk]
```

10. Edit /etc/LFX\_hdesk/LFX\_dbData.php and synchronize the data in there with the database names/user names/credentials you have defined in steps 5-6 above.

11. Edit /etc/LFX\_hdesk/LFXlink.php and change the directory for the HelpDesk as defined at step 3 above (you need to provide the absolute filesystem path to that dir). See appended file.

12. Change dir to document root and edit .htaccess—make sure the path is right there as well. See appended file.

Try accessing the document root via browser--only one user is created, username 'andrei', same password as Andrei's password on EH-Master. After logging in you should see the test page. If that works, try accessing the two directories in the document root--one will provide you with the LFXlib controls (document root/LFXlib) and the other is the actual HelpDesk system (document root/helpdesk).

### 13. MIME Types and directories

You will find a separate archive attached to this e-mail called "mimes.zip". Download it to your local computer (Windows) and extract it. Go to the LFXlib control panel and click on "Document Types Management". You will now have to create a few icons for proper system usage. More will be added at a later time for completeness. The fields you must fill in are shown below, separated by a vertical bar ("|"). In the "Browse for icon" field you will have to click on "Browse" and select the appropriate file specified below from the Windows folder you extracted the zip file to (I just know you'll love this phrase).

Default DocType | default | application/octet-stream | default.ico |

image/x-icon | Special

Directory Open ICON | dir\_open | | open\_folder.ico | image/x-icon | Special

Directory Closed ICON | dir\_closed | | closed\_folder.ico | image/x-icon | Special

Icon YES | yes | | yes.jpg | image/jpeg | Special

Icon NO | no | | no.jpg | images/jpeg | Special

#### 14. Translations

Attention: apache doesn't have the right to write in /var in a default Fedora installation. So for translations for example, we have to set the correct permissions:

```
[chown -R apache.apache /var/LFX_hdesk/]
```

### REQUIRED FILES AND FOLDERS FOR THE INSTALL CD

No	file/Folder	Description
.		
1	F: ~webroot/helpdesk/LFXlib	Core libraries
2	F: ~webroot/helpdesk/helpdesk	Helpdesk software
3	F: /etc/LFX_hdesk	Data used by the libraries, including paths, database passwords etc.
4	f: ~webroot/helpdesk/.htaccess	Same with /LFXlib/.htaccess, this ensures that only logged-in users have access here
5	f: /etc/php.ini	The php configuration file
6	f: /etc/hosts	If you don't have DNS, you need to add hosts here manually
7	f: /etc/httpd/conf/httpd.conf	This is the webserver configuration file, you need to have Options MultiViews and AllowOverride All in your webroot or virtual host.
8	f: /etc/sysconfig/network-scripts/ifcfg-eth0	The configuration file for the network interface



9	f: mimes.zip	This archive contains the mime types used by the application
---	--------------	--

## Settings and Data storage in HelpDesk

Settings are stored in:

- `/etc/LFXlib`. This contains database passwords to be used by the web code, as well as pointers to the correct locations of the includes and the web code;
- In the web web folders which are to be protected by password (currently `'hdesk'` and `'LFXlib'`), a `'.htaccess'` file has to be present, which prepends the php file which does the authentication.

Data are stored in:

- MySQL databases:
  - o `'hdesk'`—contains HelpDesk data such as processes, requests, escalation presets;
  - o `'lfxlib_hdesk'`—contains system data such as users, groups, translation settings;
- Filesystem:
  - o `'/var/LFX_data'` (definable via a global in module LFX)—contains binary data like translation files and images, which is better stored on the file system and retrieved faster.