Installation Guide for the OpenLabFramework Label Printing Service

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Introduction

The OpenLabFramework is a web application software based on GRAILS that allows for easy management of everyday lab work. In order to incorporate all levels of lab work into the program, it is necessary to keep track of physical probes. Therefore, OpenLabFramework supports the management (including reading and creation) of barcodes.

In order to make use of created barcodes they need to be printed in the first place. We have decided that with respect of separation of concerns this functionality should be provided by a web service that is easily addressed by the OpenLabFramework. The contents of this document include the installation of this web service, as well as the configuration of the connection between the web service and the original web application.

Installation of Dymo Label Sofware

Currently, the version 8.2 of the Dymo Label Printing Software is supported. If you are going to install the Dymo driver for testing purposes, consider this hint: Only installing the driver on a LPT port will be successful, as installing a USB driver depends on a connected printer at all times.

Structure of the web service

Due to simplicity, the web service accessing the label printer has been created in form of a windows service. Under the hood the web service is based on both, a REST as well as a SOAP interface. This was easily achieved using given templates provided by Microsoft. Another advantage of using Microsoft technology in this place was the capability to access Dymo Label Printers through a library offered by Dymo. Currently, only one dymo label printer is supported. Installing concurrent label printers is likely to fail, as as a consequence an arbitrary printer will be used.

Installation of the Web Service

The windows service is delivered as “SelfHostingService.exe” along with some resource files. All files should be unpacked into one folder that will now w.l.o.g. be called “C:\LabelPrinterService”. To register the service with windows under the arbitrary name “LabelPrinterService” open a console window and enter the command:

“sc create LabelPrinterService binpath= C:\LabelPrinterService\SelfHostingService”

Note the space between binpath and =. You should get a SUCCESS message. In the next step make sure that the windows service is configured properly, usually meaning to switch auto-start on and to attach it to the local system account to grant sufficient rights.

Testing the Service

To test the service simply open a browser and call:

“http://localhost:8282/BarcodeREST/ping?name=testuser”

You should receive an XML file containing a string “Hi testuser. Welcome to the simplest REST Service.” If you cannot connect you should check if the service is up and running and whether the firewall is configured properly. The same approach can be used later on to check the connection to the web service from remote computers by replacing localhost with the corresponding IP address of the computer hosting the label printer service.

Configure OpenLabFramework to use that Service

Log into OpenLabFramework with an administrator account (by default: 'admin' with password 'password'). To configure the URL used to establish communication between the Webservice and the OpenLabFramework go to “Barcode → Printer Settings” in the top menubar. The site will tell you the current URL in use, which is by default: “http://localhost:8282/BarcodeREST/”

In order to change that URL you probably should be fine with exchanging localhost with an appropriate IP address. Note however, that the URL is saved by pressing the “Save URL” button. Also note that entering the final '/' is a neccessity. You can check if a connection can be established by pressing “Test connection”. The web service should respond which results in a blue i-box telling greeting you with the words “Printer Webservice says: HI, admin. Welcome to the simplest REST Service.” You will also see an i-box if something goes wrong, for example if a connection has been refused at the target URL.

Again, I want to emphasize that one should take care of interacting via the buttons. If you happen to press the enter key whilst editing the URL, the browser will simply reload the website currently displayed in the browser's address bar (usually OpenLabFramework's Dashboard) and you have to start all over again.

If you receive an i-box that tells you that the connection could not be established you should try performing the connection test manually on the machine that hosts OpenLabFramework. This is done according to the last chapter. If this check fails, too, please perform the same test on the machine hosting the printer web service, in order to make sure, that this end of the connection is ready for response. If the local test works however, the problems are most likely due to firewall issues. As far as the author knows, communication only happens on ports 8080 and 8282, but you should consider opening all ports at least for a short period of time while you are look for the solution of the problem.

Nothing works

If problems persist or if you receive a code 500 web application error, please send the log files created by Apache Tomcat.