

Phoebus Olog

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cs|studio

Phoebus?

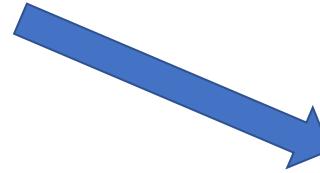
- Quoting from phoebus.org (=controlsystemstudio.org):
 - **Control System Studio** is a collection of tools and applications to monitor and operate large scale control systems, such as the ones in the accelerator community.
 - The original implementation of **CS-Studio** is based on the Eclipse RCP framework.
 - **Phoebus** is a pure java/javafx based implementation.
- Non-exhaustive list of sites:



BROOKHAVEN
NATIONAL LABORATORY



Olog?



Log Entry Table X	
Query:	start=70 days&end=now
georgweiss	2021-06-29 15:00:26
Markup demo	168
Operations	Shift Start
Markup Demo	
georgweiss	2021-06-29 14:51:11
Markup Demo	168
Operations	Shift Start
Markup Demo	
georgweiss	2021-06-29 14:21:47
Markup demo	166
Operations	Shift Start
Markup demo	
georgweiss	2021-06-29 14:11:47
markup	165
Operations	Shift Start
Markup demo	
georgweiss	2021-06-16 08:28:19
Test log group	155
Operations	Shift Start
Markup demo	
Contrary to popular belief, Lorem ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. The primary source is an anonymous treatise about Cicero's oratory, some pages 1234567890	
georgweiss	2021-06-16 08:09:16
Test log group	154
Operations	Shift Start
* (attachment/1d8e9e07-cb69-4f33-990-8b4d7f94a4db)	
susanmrengell	2021-06-02 12:38:34
Testing 508	163
Operations	Shift Start
Services	
Testing some more.	
susanmrengell	2021-06-01 16:42:35
Testing again	162
Operations	Shift Start
Services	
New test entry	

James Bond

Olog?

- Digital logbook
- Create log entries
 - Meta-data
 - Attachments
- Search
- Authentication
- Integrated in CS Studio (Phoebus)
- Different clients for different users and workflows
- Creating log entries programmatically



The screenshot displays a digital logbook interface with the following data:

User	Entry Type	Date	Time	Shift Start
georgweiss	Markup demo	2021-06-29	15:06:26	168
georgweiss	Markup Demo	2021-06-29	14:51:11	173
georgweiss	Markup Demo	2021-06-29	14:21:03	166
georgweiss	Markup demo	2021-06-29	14:11:47	165
georgweiss	Markup demo	2021-06-29	14:08:19	155
georgweiss	Text log group	2021-06-29	14:08:19	154
susanmiregnell	Testing 508	2021-06-02	12:38:34	163
susanmiregnell	Services	2021-06-01	16:42:15	153
susanmiregnell	Testing some more.	2021-06-01	16:42:15	153
susanmiregnell	Testing again	2021-06-01	16:42:15	153
susanmiregnell	New test entry	2021-06-01	16:42:15	153

Driving factors

- “Legacy” Olog in production at NSLS2 (Brookhaven) for about 10 years
 - Integrated in “legacy” CS Studio (Eclipse)
 - Used in the control room and beamlines
 - Client in CS Studio and stand-alone web client
 - **Difficult to maintain, does not scale well**
- Elog used at ESS ~5 years
 - Feature rich
 - **Difficult to customize and maintain**
 - **Very difficult to integrate with CS Studio**
- Joint effort to create up-to-date logbook: Phoebus Olog
 - NSLS2, ESS, Argonne

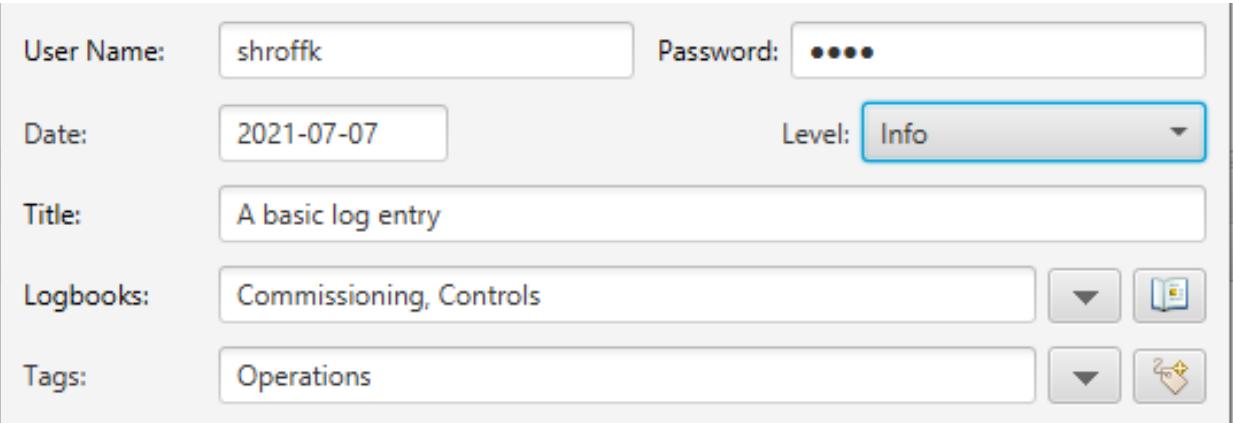


Creating a Log Entry

Creating a Log Entry

- Basic components
 - Authentication Info
 - Title
 - Level
 - Logbooks
 - Tags

User Name:	shroffk	Password:	*****
Date:	2021-07-07	Level:	Info
Title:	A basic log entry		
Logbooks:	Commissioning, Controls		
Tags:	Operations		



Creating a Log Entry

- Phoebus Olog supports markup
- Commonmark (<https://commonmark.org/>)
 - Well defined and maintained spec
 - Basic text styling (heading, bold, italic)
 - Lists
 - URLs
 - Images
 - Block quotes
 - Extensions: image resize and tables
 - Widely used (GitHub)
 - Implementation available for various languages
 - java
 - js
 - python

The screenshot shows the Phoebus Olog log entry creation interface. At the top right are buttons for 'Commissioning' (dropdown), 'Tags' (dropdown), and 'Text'. The 'Text' dropdown contains the following content:

```
## An example log entry

You can create a log entry with **CommonMark** to support
- text styling
- lists
- links
```

Below the text area are sections for 'Attachments' and 'Properties'. At the bottom right are 'Cancel' and 'Submit' buttons.

The screenshot shows the Phoebus Olog log entry list and a detailed view of a log entry. The list on the right shows a single entry:

A common mark test	2021-07-07 10:49:07
Commissioning	1
Info	

The detailed view on the left shows the log entry content:

An example log entry

You can create a log entry with **CommonMark** to support

- text styling
- lists
- links

Creating a Log Entry

- Embedded Images in the log entry body

User Name: shroffk Password: *****

Date: 2021-07-07 Level: Urgent

Title: Display Screenshot for : Image Widget

Logbooks: Commissioning

Tags:

Text: Display Screenshot for the resource :
examples:/plots_image.bob?EXAMPLE_MACRO=Value+from+Preferences&TEST=true

The above is the embedded image

Attachments

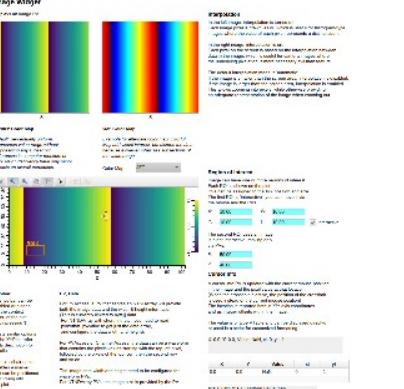
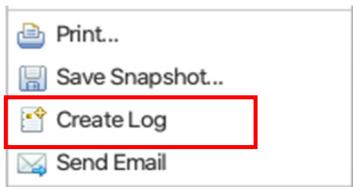


image14973839702208705059.png
e8d98e2e-8e8f-4003-af20-69b235cd6e9d.png

Add Files Clipboard CSS Window Embed New Embed Selected Remove Properties Cancel Submit

Creating a Log Entry

- Display Builder Context Menu



- Includes
 - screenshot
 - complete resource URI (with macros)

User Name: user Password: ●●●●●●●●

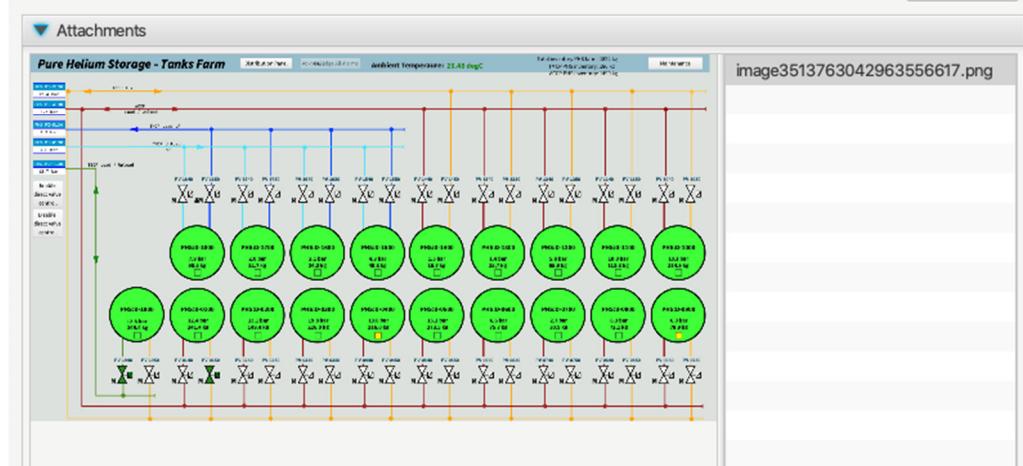
Date: 2021-06-29 Level: Shift Start

Title: Display Screenshot for : Overview PHS

Logbooks: Operations

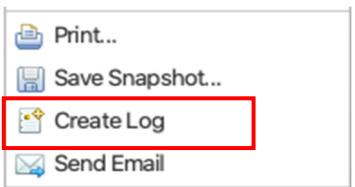
Tags:

Text: Display Screenshot for the resource :
file:/Users/georgweiss/projects/ess-opis/NON-APPROVED/Cryo/PHS/PureHeliumStorage_TankFarmOverview_ESS-0049858.bob?ShowValveCtrl=true

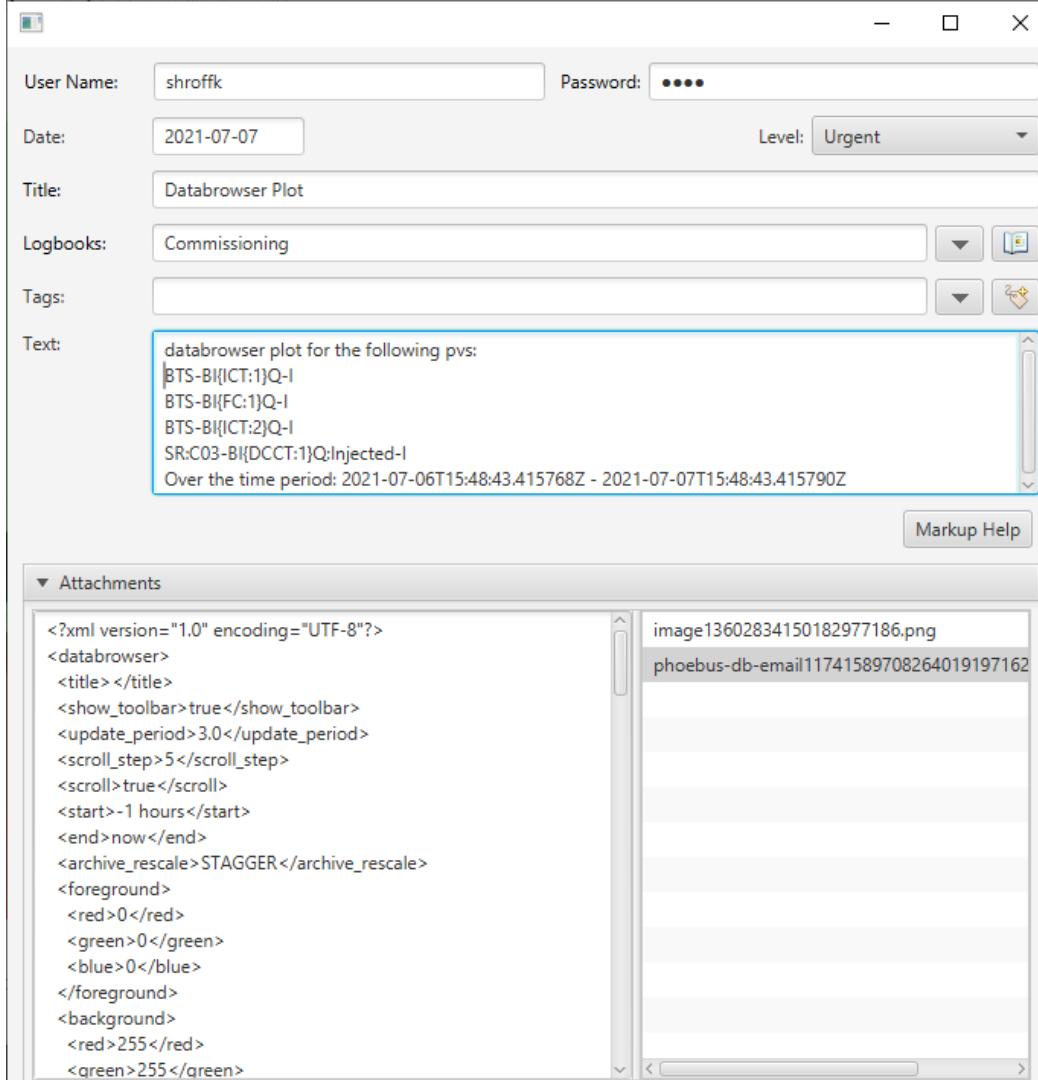


Creating a Log Entry

- Databrowser Context Menu



- Includes
 - screenshot
 - databrowser plot properties
 - List of pv's
 - Time span
 - .plt file



User Name: shroffk Password:

Date: 2021-07-07 Level: Urgent

Title: Databrowser Plot

Logbooks: Commissioning

Tags:

Text:

databrowser plot for the following pvs:
BTS-BI[ICT:1]Q-I
BTS-BI[FC:1]Q-I
BTS-BI[ICT:2]Q-I
SR:CO3-BI[DCCT:1]Q:Injected-I
Over the time period: 2021-07-06T15:48:43.415768Z - 2021-07-07T15:48:43.415790Z

Markup Help

Attachments

```
<?xml version="1.0" encoding="UTF-8"?>
<databrowser>
<title></title>
<show_toolbar>true</show_toolbar>
<update_period>3.0</update_period>
<scroll_step>5</scroll_step>
<scroll>true</scroll>
<start>-1 hours</start>
<end>now</end>
<archive_rescale>STAGGER</archive_rescale>
<foreground>
<red>0</red>
<green>0</green>
<blue>0</blue>
</foreground>
<background>
<red>255</red>
<green>255</green>
```

image13602834150182977186.png
phoebeus-db-email11741589708264019197162

Log entry properties

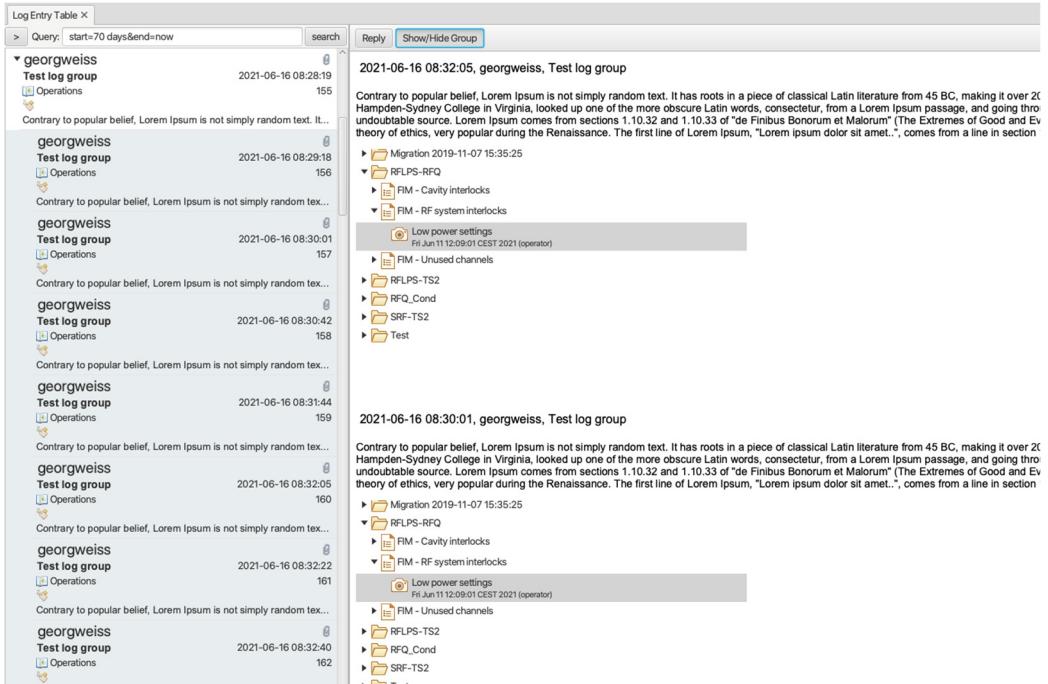
- A property is a named list of key value pairs
 - E.g. Experimental Scan Parameters
 - Useful for integration with other services
 - e.g. Shift Service, Issue Tracking, Component Directory...
- LogPropertyProvider
 - Programmatically include properties when creating log entries using java SPI

Properties	
▼ Shift	
id	1234
URL	http://trac.phoebeus.gov/issue/1234
▼ Experiment	
id	34556
type	generator
scan-id	116926

Available Pro...
Track
Add Selected...

Grouping Log Entries

- Users may create a group of log entries (a “thread”).
 - Explicitly by selecting a number of entries.
 - Implicitly by “replying” to an entry.



Viewing Log Entries

Searching

- Basic Search
 - Time
 - Owner (=user account)
 - Logbooks, Tags, and Properties
 - e.g. ***desc=*&logbooks=Operations&start=7 days&end=now***
- Natural Language Searching: handles typos & spelling mistakes
- <https://olog.readthedocs.io/en/latest/#searching-for-log-entries>

Web client

Olog ES [New Log Entry](#) [Sign In](#)

Filter Log Entries

- Logbooks
 - Beam Commissioning
 - Facility
 - Faults
 - Operations
 - TS1
 - TS2
 - TS3
- Tags
- Created since
- Created from - to
- Other search fields

Search results

Search string [?](#)

start=70 days&end=now [Search](#)

[Today](#)

georgweiss [Edit](#) 15:06

Markup demo
Markup Demo Body rendered as HTML attachment/2a867a17-4cab-4aac-b479-5af96a...

georgweiss [Edit](#) 14:51

Markup Demo
Markup Demo Body text rendered as HTML attachment/f9f21dda-8e71-4052-bcd6-2...

georgweiss [Edit](#) 14:21

Markup demo
Markup demo *Commonmark features + few extensions (image size, tables)attac...

georgweiss [Edit](#) 14:11

Demo
Markup demo Commonmark features + a few extensions (table and image size) a...

[2021-06-16](#)

georgweiss [Edit](#) 08:33

Test log group
Contrary to popular belief, Lorem Ipsum is not simply random text. It has r...

georgweiss [Edit](#) 08:33

Test log group

Markup demo

Author **georgweiss**
Created **2021-06-29 15:06:26**
Logbooks **Operations**
Tags
Entry **Shift Start**
Type

Markup Demo

Body rendered as HTML



[Attachments](#)

Properties:

[LCR Shift Info](#)

React-based JavaScript client: <https://github.com/Olog/phoebus-olog-web-client>

Phoebus client

- Similar Look and Feel
- Work in progress:
 - Launch attached .plt, .opi, .bob files

Log Entry Table X

> Query: start=70 days&end=now search

User	Entry Type	Date	Operations	Shift Start
georgweiss	Markup demo	2021-06-29 15:06:26	Operations	168
georgweiss	Markup Demo	2021-06-29 14:51:11	Operations	167
georgweiss	Markup demo	2021-06-29 14:21:22	Operations	166
georgweiss	Demo	2021-06-29 14:11:47	Operations	165
georgweiss	Test log group	2021-06-16 08:28:19	Operations	155
georgweiss	Test log group	2021-06-16 08:09:16	Operations	154
susannereggnell	Testing 508	2021-06-02 12:38:34	Operations	153
susannereggnell	Testing again	2021-06-01 16:43:15	Operations	152
	New test entry			

Reply Show/Hide Group

georgweiss

Markup demo

Operations

Markup Demo

Body rendered as HTML



Contrary to popular belief, Lorem Ipsum is not simply random text. It...

Attachments

Properties

LCR Shift Info

Shift ID	1234567
Operator	James Bond
Shift Lead	
Operator Phone	
Shift Lead Phone	
Shift Lead Email	

Notifiers

LogEntryNotifier

```
public interface LogEntryNotifier {  
    void notify(Log logEntry);  
}
```

- Interface for notifying when a new log record has been created.
- Implementations should register through the regular Java SPI.
- Example: Kafka Integration (at ESS)
 - Consists of a Kafka producer which publishes a message when a new log entry is created.
- <https://github.com/Olog/phoebus-olog-modules>

The screenshot shows a mobile application interface with a dark theme. At the top, there are icons for battery level (65%), signal strength, and connectivity. Below the header, there are three log entries listed under 'Logbook OP'.

- Joe Christie: ShiftID20210629B** (2021-06-29 15:10:06)
RF systems on. Conditioning commencing.
Joe Christie wrote:
- Alejandro Garcia Sosa: Shift Start** (2021-06-29 14:57:32)
Shift started after open access in the tunnel all morning. Right now settings are 15 us, 14 Hz and 10 kW.
- Joe Christie: ShiftID20210629B** (2021-06-29 14:34:54)
PSS1 controlled area is now searched and locked. Filaments heating on RFQ klystron.
- Joe Christie: ShiftID20210629B** (2021-06-29 14:18:31)
Shift started.
ShiftLeader: Joe Christie
- Benjamin Bolling: Shift End** (2021-06-29 14:15:29)

At the bottom of the screen, there are navigation icons for 'Home' (with a speech bubble icon) and 'Settings' (with a gear icon).

ESS Notify clients

IOS

<https://gitlab.esss.lu.se/ics-software/ess-notify>

App not approved by Apple for distribution in app store, must be provisioned over device management.



ESS Notify (beta)

European Spallation Source Verktyg

3 PEGI 3

💡 Härligt! Du är betatestare för den här appen.

💡 Appen är tillgänglig för några av dina enheter

Du kan dela detta med familjen. [Läs mer om Familjens bibliotek](#)

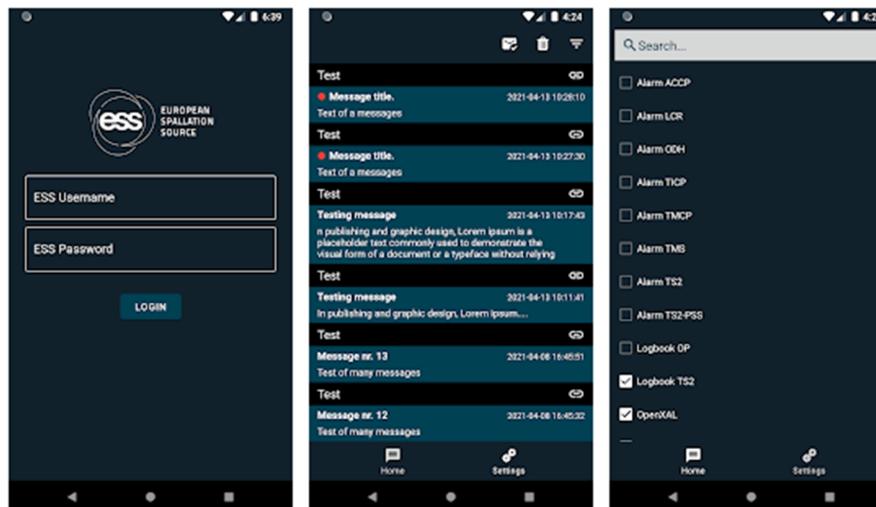
Installerad

Android

<https://gitlab.esss.lu.se/ics-software/ess-notify-android>

App available on Google Play.

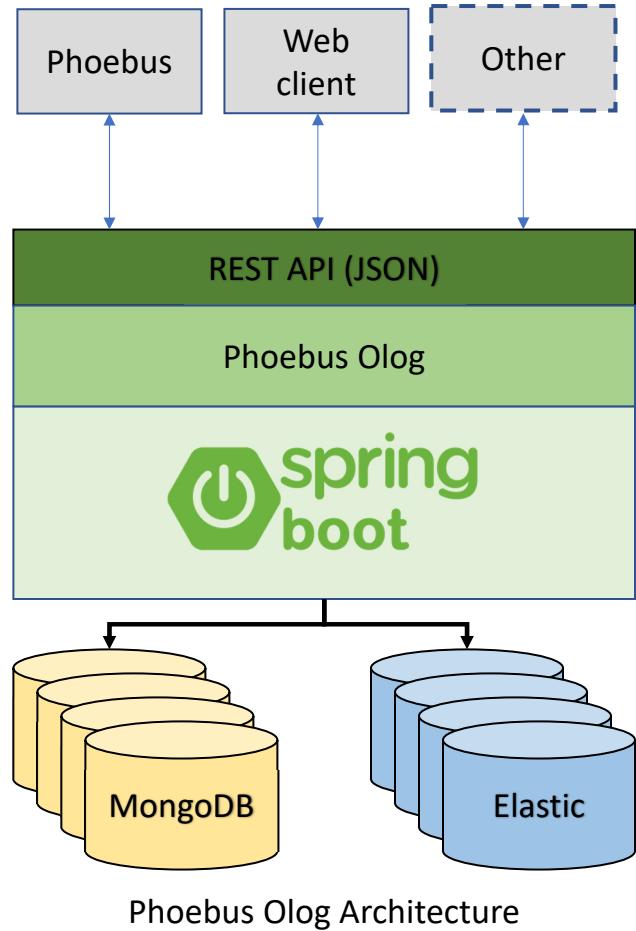
See also paper “Notifications with Native Mobile Applications” (THPV011).



Under the hood

Phoebus Olog Architecture

- NoSQL backend
 - Simple
 - NoSQL backend are easy to maintain
 - Flexible schema
 - Scalability & Reliability
 - Horizontal scaling
 - Easy to set up clusters
 - Easy to set up replication in Elastic
- Spring Boot
 - Open source Java-based framework used to create a Micro Service
- Phoebus Olog service is generic
 - Can be used in any type of electronic logbook context
 - Markup not mandated



Containerization

- For Development and Integration testing
<https://github.com/Olog/phoebus-olog/blob/master/src/test/resources/docker/docker-compose.yml>
 - Elastic
 - MongoDB
- [WIP] A Complete Deployment solution for Phoebus Olog
<https://github.com/willrogers/olog-es-docker>
 - Elastic
 - MongoDB
 - Phoebus Olog Service

Links and References

- Documentation and API description

<https://olog.readthedocs.io/en/latest/>

- Fork us on GitHub

<https://github.com/Olog/phoebus-olog>

<https://github.com/Olog>