

# Mobile web client for PSI Elog

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Dongguan Campus of IHEP**

**EPICS Collaboration Meeting 2023**

**Apr 24 – 28, 2023, hosted by the Fermilab**

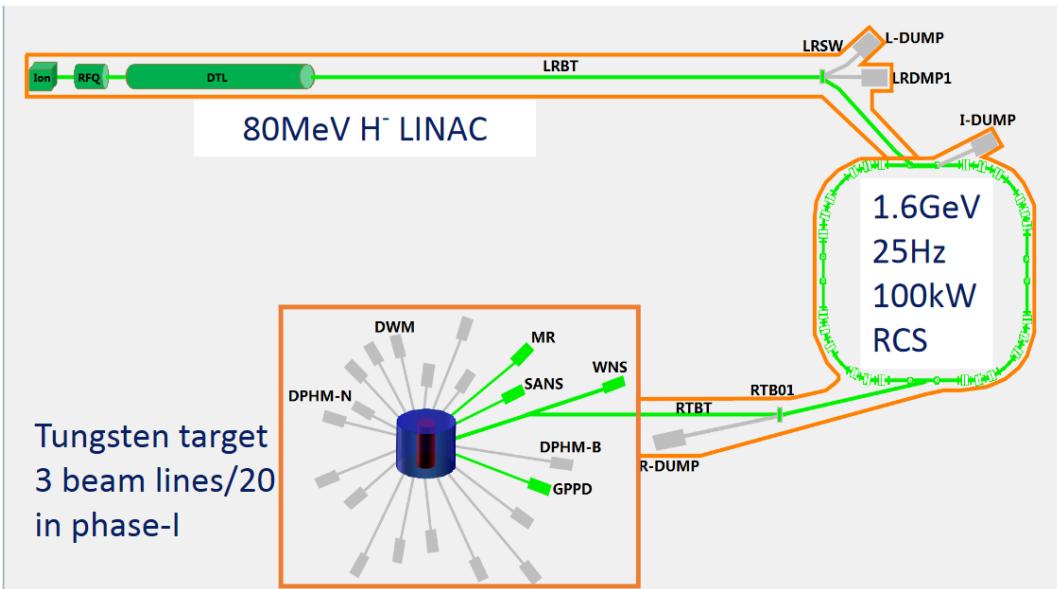


## Content

- (1) Scenario
- (2) Design
- (3) Read logs
- (4) User login
- (5) Write logs
- (6) Suggestion to PSI Elog

## Scenario

- CSNS passed the national inspection and acceptance on August 2018
  - Shifted from beam commissioning to reliable operation.



The composition of CSNS Phase 1



Bird's eye view of CSNS campus taken in 2022

## Scenario

- PSI Elog has been used at CSNS since 2016 and has stored more than 19000 logs.
- Links for PSI Elog
  - <https://elog.psi.ch/elog/>
  - [https://github.com/paulscherrerinstitute/py\\_elog](https://github.com/paulscherrerinstitute/py_elog)

Welcome to the CSNS Accelerator Electronic logbooks			
	Logbook	Entries	Last submission
<b>Accelerator</b>			
Shift	3296	2023.03.31 08:20 by [REDACTED]	
Accelerator Physics	56	2021.10.31 19:01 by [REDACTED]	
Control System	614	2023.03.31 12:13 by [REDACTED]	
Front End	1269	2022.11.27 01:41 by [REDACTED]	
Drift Tube Linac	1109	2023.03.13 09:59 by [REDACTED]	
Linac RF	520	2022.12.12 15:29 by [REDACTED]	
Ring RF	1827	2023.02.18 04:01 by [REDACTED]	
Power Supply	1047	2023.03.30 21:28 by [REDACTED]	
Magnet	0	-	
Vacuum	155	2023.02.07 11:49 by [REDACTED]	
Beam Instrumentation	2036	2023.03.31 12:29 by [REDACTED]	
Mechanical Engineering	0	-	
Survey Alignment	0	-	
Radiation Safety	204	2023.03.27 13:04 by [REDACTED]	
White Neutron Source	1090	2023.03.30 16:50 by [REDACTED]	
Associated Proton Experimental Platform	23	2023.03.30 12:31 by [REDACTED]	
<b>ShiftCheck</b>			
Accelerator Shift Check	4855	2023.03.31 12:17 by [REDACTED]	
White Neutron Source Shift Check	589	2020.01.21 18:50 by [REDACTED]	
Control System Shift Check	100	2021.12.13 15:04 by [REDACTED]	
Vacuum Shift Check	195	2020.04.22 14:21 by [REDACTED]	
<b>Wishlist</b>			
Wishlist	9	2016.11.29 19:22 by [REDACTED]	

# Scenario

Control System, Page 1 of 31 Not logged in 

Find | Login | Help

Full | Summary | Threaded       603 Entries

Goto page 1, 2, 3 ... 29, 30, 31 Next Goto

ID	Date	Author	Author Email	Category	Icon	System	Subject	Text	0
1089	2023.01.19 14:46	zhang yudong	zhangy@ihep.ac.cn	Maintenance		TMS	RCS重启动时由于EVE的OTP信号改变脉宽时先禁止输出，然后再使能输出，这样会导致中源控制器判断收到的定时信号丢失。为了解决这个问题，修改如下：	新	0
1088	2022.11.14 14:24	[REDACTED]	[REDACTED]	Maintenance		Network	因11月6日计算机中心反馈“收到一条控制网核心交换机的端口错误报错信息（端口可能无法访问）”可以尝试更换模块或更换光纤	2/6端口	0
1086	2022.10.17 15:01	[REDACTED]	[REDACTED]	Maintenance		PS	增加RCS重启动时的远程控制功能，完成RC5中源外（下而运行复位）完成了微波电源远程控制和故障信息显示功能的添加	厚层控制小功能	0
1085	2022.10.01 16:57	zhang yudong	zhangy@ihep.ac.cn	Manual		TMS	Edit: chopper定时信号说明	高频信号宽度约束：EVK2 OTP0, 用未约束实际束流宽度，也就是chopper允许的最大束流宽度。目前设置位550us。	0
1083	2022.09.19 14:46	zhang yudong	zhangy@ihep.ac.cn	Maintenance		TMS	主要针对后者线频率不同步	为了避免前面导致的脉冲丢失的原因，暂时将主定时器选择使用内部晶振参考事件触发	0
1082	2022.09.19 14:45	zhang yudong	413937830@renren	Fault		TMS	雷电天气去	主定时丢失一个25ns脉冲。作为对黑屏的工定期测试站（使用EVG内部晶振）没有发现脉冲丢失。	0
1080	2022.08.24 11:20	[REDACTED]	[REDACTED]	Report		MPS	定期检修信号重启后以上是禁用自动取消	定期检修信号重启后以上是禁用自动取消	0
1078	2022.07.29 18:28	向承权	xiangchengqiang@ihep.ac.cn	Report		DTL	Report DTL漂移首次出现DTL漂移报告并封锁	已在控制机柜上安装的温控系统的线缆接头松动。	0

## Scenario

Control System

Logged in as "王林" 

Submit Save Preview Delete

Fields marked with \* are required

Entry time: 2023.03.31 12:52

Author: 王林

Author Email: wanglin@ihep.ac.cn

Category\*: - please select -

Icon: 

System\*:  PS  TMS  IS  FE  DTL  Vacuum  MPS  FPS  Linac RF  Inj\_Ext  Collimator  Striping Foil  Server  Network  Utility  Back-n  Temperature  Inspection  
 BeamCommissioning

Subject\*:

Please enter your message here:



body p

Encoding:  HTML  ELCode  plain

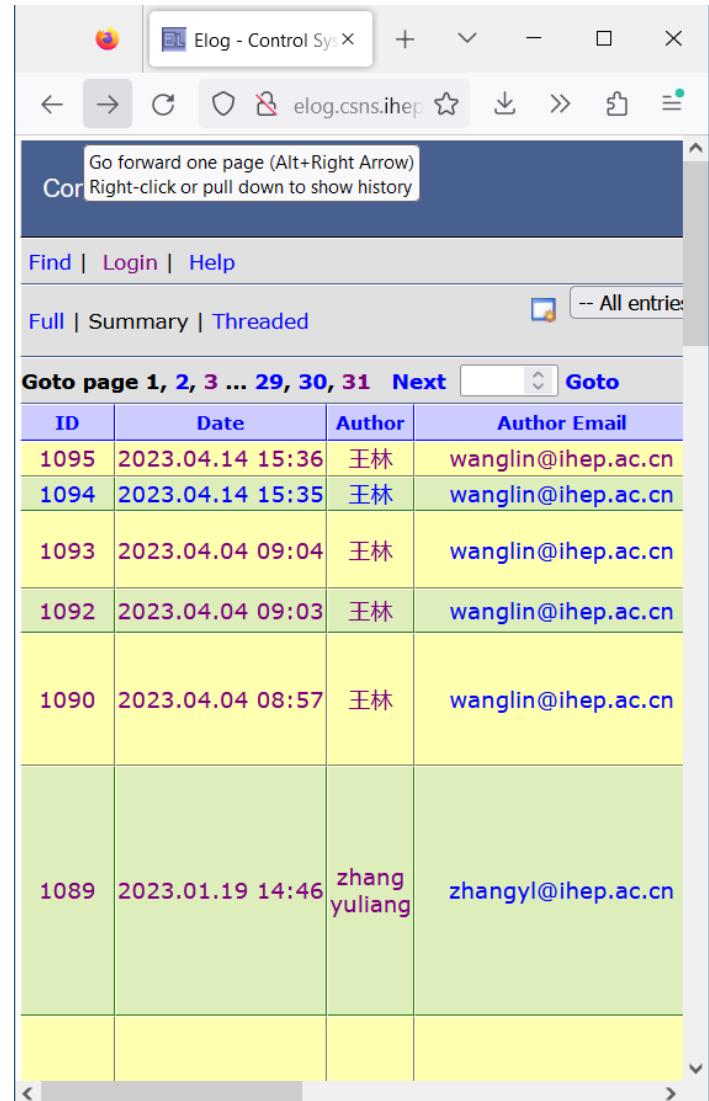
Suppress Email notification

Please upload your attachments here:

Attachment 1:  No file chosen

## Scenario

- Recent years, users at CSNS want to access Elog using smartphones.
- However, PSI Elog itself does not provide responsive or separate pages for small screen devices.
- Therefore, We decided to develop the mobile web client for PSI Elog.
- Note: different facilities may deploy PSI Elog with different customizations, so the mobile web pages developed at CSNS may not work for other facilities.
- This presentation is intended to describe the idea and implementation, which may be helpful to others.



A screenshot of a Firefox browser window titled "Elog - Control Sys". The address bar shows "elog.csns.ihep". The page displays a log entry table with columns: ID, Date, Author, and Author Email. The table contains several entries, all attributed to "wanglin@ihep.ac.cn". The table has alternating row colors (light blue, light green, yellow). The bottom of the table shows a navigation bar with buttons for "Goto page 1, 2, 3 ... 29, 30, 31 Next" and "Goto".

ID	Date	Author	Author Email
1095	2023.04.14 15:36	王林	wanglin@ihep.ac.cn
1094	2023.04.14 15:35	王林	wanglin@ihep.ac.cn
1093	2023.04.04 09:04	王林	wanglin@ihep.ac.cn
1092	2023.04.04 09:03	王林	wanglin@ihep.ac.cn
1090	2023.04.04 08:57	王林	wanglin@ihep.ac.cn
1089	2023.01.19 14:46	zhang yuliang	zhangyl@ihep.ac.cn

Elog display in small browser window

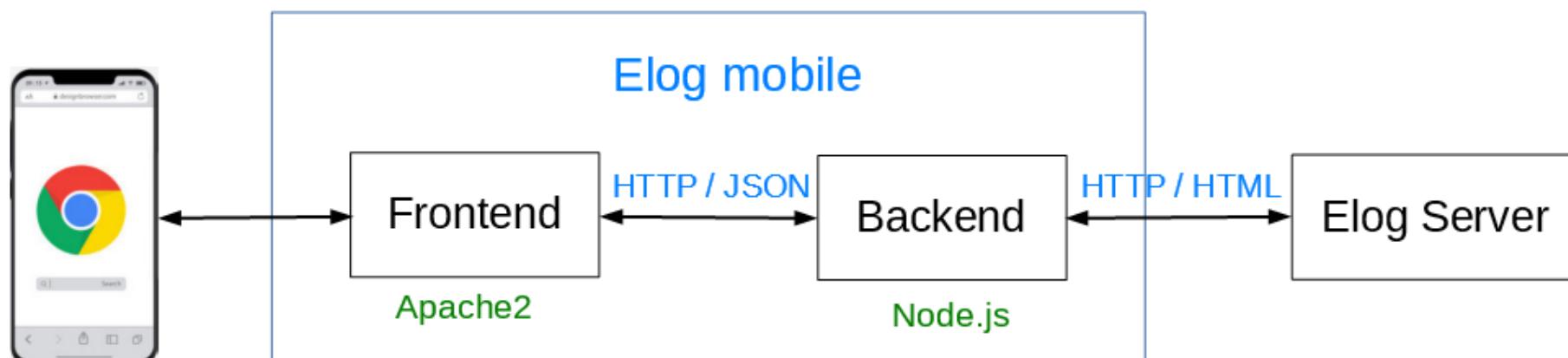
# Design

- **Architecture**

- Frontend: provides mobile web pages using Vue.js framework and PrimeVue component library.
  - Backend: accesses Elog server, parses and posts HTML data and provides a REST API using Node.js.

- **Why not just frontend**

- Browsers' CORS (Cross-Origin Resource Sharing) mechanism prevents the frontend JavaScript from retrieving data from the Elog server.
  - Parsing HTML data within mobile backend can get better performance than within mobile frontend.

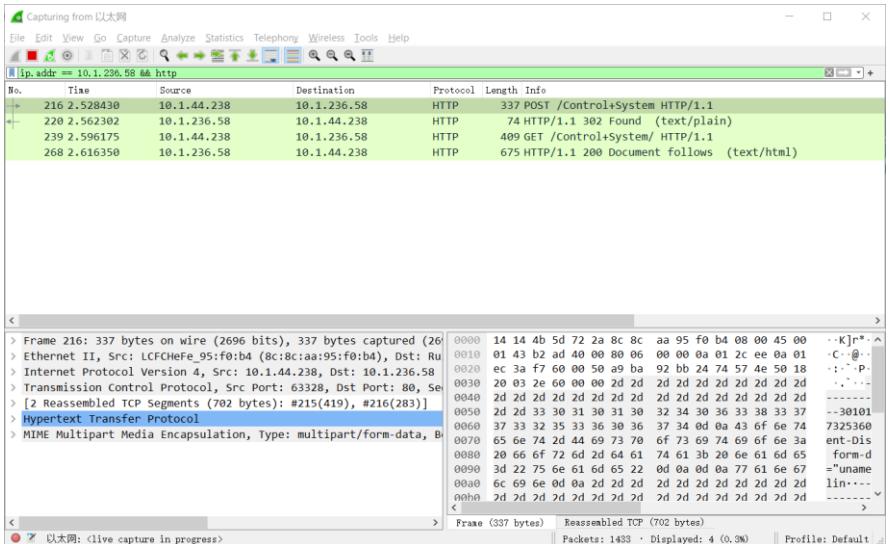


Architecture

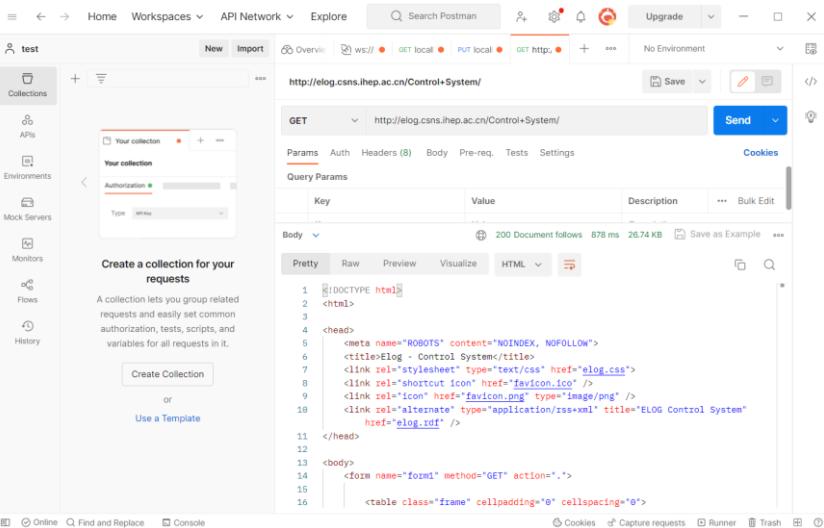


Vue.js

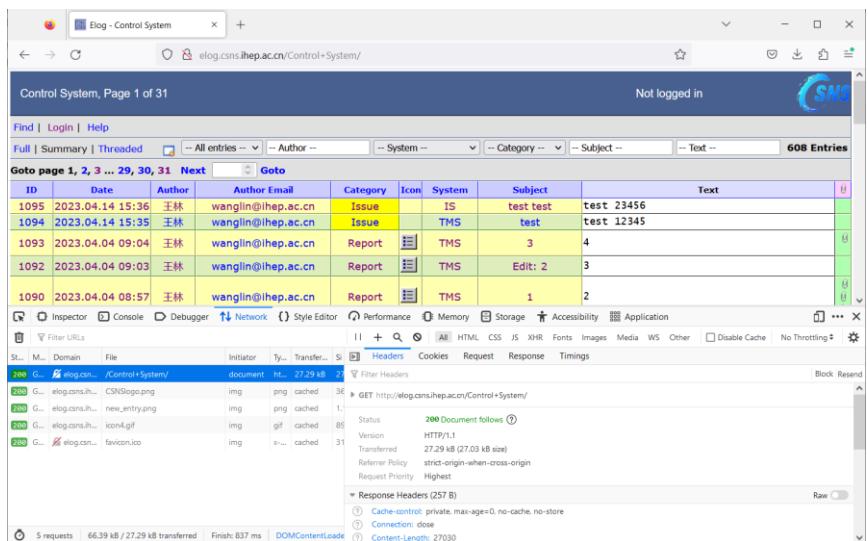
# The HTTP communication mechanism of PSI Elog server is analysed using Wireshark, Postman, browser's F12 development tool and Elog python API.



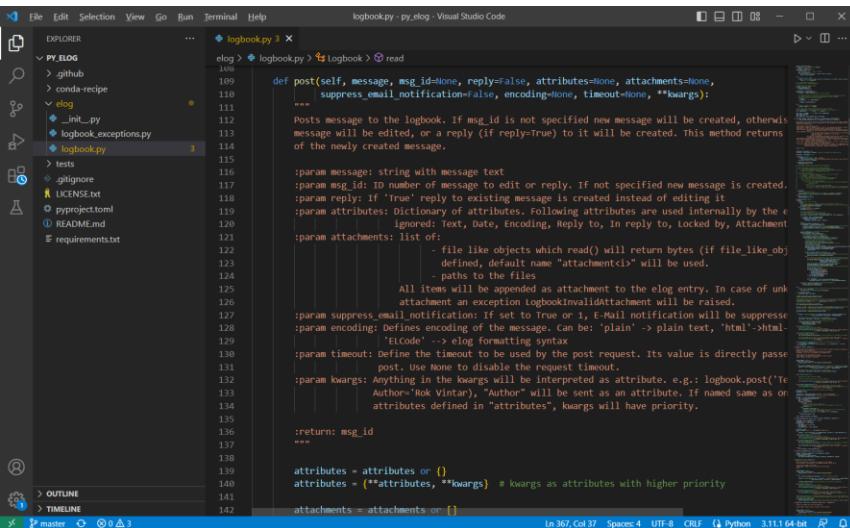
## Wireshark



## Postman



## Browser dev tool



## py\_elog

## Read logs

- Home page, logbook page and log page for mobile web client

Welcome to the CSNS Accelerator Electronic logbooks			
	Logbook	Entries	Last submission
<b>Accelerator</b>			
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Linac RF		520	2022.12.12 15:29 by [REDACTED]
Ring RF		1827	2023.02.18 04:01 by [REDACTED]
Power Supply		1047	2023.03.30 21:28 by [REDACTED]
Magnet		0	-
Vacuum		155	2023.02.07 11:49 by [REDACTED]
Beam Instrumentation		2036	2023.03.31 12:29 by [REDACTED]
Mechanical Engineering		0	-
Survey Alignment		0	-
Radiation Safety		204	2023.03.27 13:04 by [REDACTED]
White Neutron Source		1090	2023.03.30 16:50 by [REDACTED]
Associated Proton Experimental Platform		23	2023.03.30 12:31 by [REDACTED]
<b>ShiftCheck</b>			
Accelerator Shift Check		4855	2023.03.31 12:17 by [REDACTED]
White Neutron Source Shift Check		589	2020.01.21 18:50 by [REDACTED]
Control System Shift Check		100	2021.12.13 15:04 by [REDACTED]
Vacuum Shift Check		195	2020.04.22 14:21 by [REDACTED]
<b>Wishlist</b>			
Wishlist		9	2016.11.29 19:22 by [REDACTED]

# Read logs

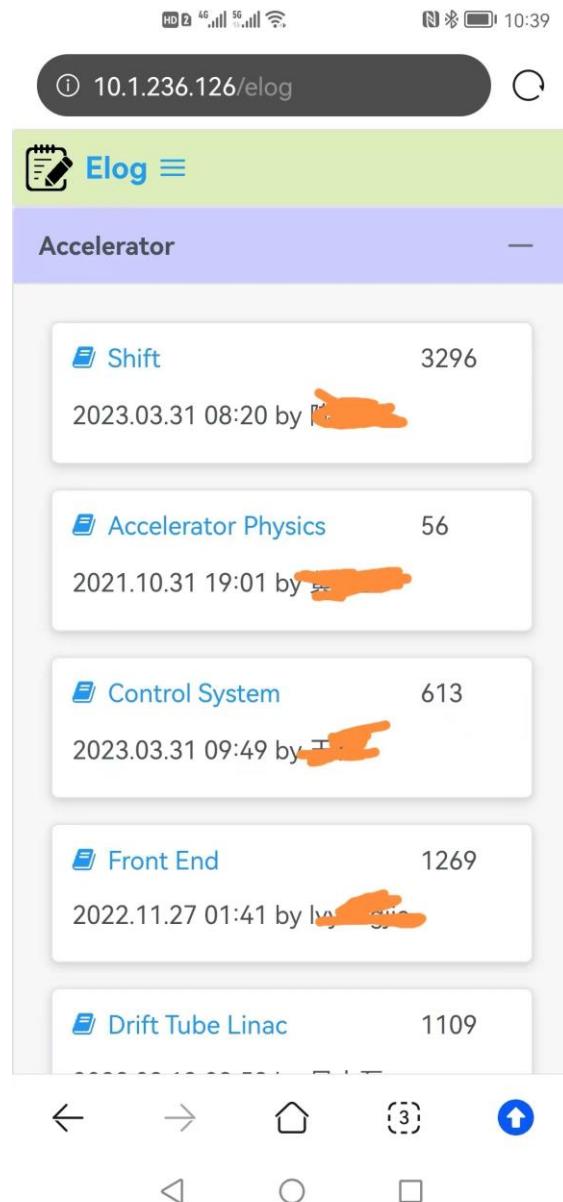
- Extract logbook info according to CSS class
- Logbook info
  - Logbook group
  - Logbook name
  - Count of entries
  - Last submission
- CSS class
  - .selgroup
  - .sellogbook
  - .selentries
- Server URL example
  - <http://elog.csns.ihep.ac.cn>

```

<body>
    <table class="selfframe" cellspacing=0 align=center>
        <tr>
            <td colspan=13 class="dlgttitle">
                <table border="0" cellpadding="0" width="100%">
                    <tr>
                        <td width="6%" bgcolor="#9DFF9D"></td>
                        <td width="94%" valign="middle" bgcolor="#9DFF9D">
                            <center>
                                <font size=6><b>Welcome to the CSNS Accelerator Electronic logbooks</b></font>
                            </center>
                        </td>
                    </tr>
                </table>
            </td>
        </tr>
        <tr>
            <th colspan=10 class="seltitle">Logbook</th>
            <th class="seltitle">Entries</th>
            <th class="seltitle">Last submission</th>
        </tr>
        <tr>
            <td colspan=13 class="selgroup">Accelerator</td>
        </tr>
        <tr>
            <td class="selspace">&ampnbsp</td>
            <td colspan=9 class="sellogbook"><a href="Shift">Shift</a><br>
                <span class="selcomment"></span></td>
            <td nowrap class="selentries">3266</td>
            <td nowrap class="selentries">2023.03.16 08:18 by [REDACTED]</td>
        </tr>
        <tr>
            <td class="selspace">&ampnbsp</td>
            <td colspan=9 class="sellogbook"><a href="Accelerator+Physics">Accelerator Physics</a><br>
                <span class="selcomment"></span></td>
            <td nowrap class="selentries">56</td>
            <td nowrap class="selentries">2021.10.31 19:01 by [REDACTED]</td>
        </tr>
        <tr>
            <td class="selspace">&ampnbsp</td>
            <td colspan=9 class="sellogbook"><a href="Control+System">Control System</a><br>

```

## Read logs



Mobile home page

# Read logs

Control System, Page 1 of 31      Logged in as "王林"      

New | Find | List | Last day | Config | Change password | Logout | Help

Full | Summary | Threaded            **619 Entries**

Goto page 1, 2, 3 ... 29, 30, 31 Next

ID	Date	Author	Author Email	Category	Icon	System	Subject	Text		
1118	2023.03.31 12:50	王林	wanglin@ihep.ac.cn	Reply		TMS	111111111111	222222222222		
1117	2023.03.31 12:50	王林	wanglin@ihep.ac.cn	Reply		TMS	777777777777	888888888888		
1116	2023.03.31 12:50	王林	wanglin@ihep.ac.cn	Report		TMS	55555555555555	66666666666666666666		
1115	2023.03.31 12:49	王林	wanglin@ihep.ac.cn	Report		TMS	333333333333	4444444444444444		
1114	2023.03.31 12:49	王林	wanglin@ihep.ac.cn	Report		TMS	111111111111	2222222222222222		
1113	2023.03.31 12:13	王林	wanglin@ihep.ac.cn	Report		DTL	Elog mobile web client test	test 1234567890		
1112	2023.03.31 09:49	王林	wanglin@ihep.ac.cn	Reply		IS	e	f		
1111	2023.03.31 09:47	王林	wanglin@ihep.ac.cn	Reply		IS	qqq	www		 
1110	2023.03.31 09:44	王林	wanglin@ihep.ac.cn	Parameter		IS	1234567	67890		
1109	2023.03.31 07:17	王林	wanglin@ihep.ac.cn	Report		TMS	11	22		
1106	2023.03.28 15:02	王林	wanglin@ihep.ac.cn	Reply		TMS	111	222		
1104	2023.03.28 14:35	王林	wanglin@ihep.ac.cn	Report		TMS	111	222		
1103	2023.03.28 12:33	王林	wanglin@ihep.ac.cn	Report		TMS	Edit: attachment	attachment test		
1099	2023.03.26 06:19	王林	wanglin@ihep.ac.cn	Parameter		TMS	Edit: Edit: 附件测试	123		
1098	2023.03.18 01:05	王林	wanglin@ihep.ac.cn	Parameter		TMS	Edit: Edit: 附件测试 2	222		
1093	2023.03.18 00:40	王林	wanglin@ihep.ac.cn	Manual		PS	Edit: 测试112233	11223344		

## Read logs

- Extract all log IDs in a logbook according to CSS class
- Download logs one by one
- CSS class
  - .list1
  - .list2
  - .listdraft
- Server URL example
  - <http://elog.csns.ihep.ac.cn/Control+System>

```
<td class="list2">
    <a href="../Control+System/1095">&ampnbsp&ampnbsp1095&ampnbsp&ampnbsp</a>
</td>

<td class="list2" nowrap><a href="../Control+System/1095">2023.04.14 15:36</a></td>
<td class="list2"><a href="../Control+System/1095">王林</a></td>
<td class="list2"><a href="../Control+System/1095">wanglin@ihep.ac.cn</a></td>
<td class="list2" style="background-color:yellow"><a href="../Control+System/1095">Issue</a>
</td>
<td class="list2">&ampnbsp</td>
<td class="list2"><a href="../Control+System/1095">IS</a></td>
<td class="list2"><a href="../Control+System/1095">test test</a></td>
<td class="summary">test&ampnbsp23456</td>
<td class="listatt">&ampnbsp&ampnbsp</td>
<tr>
<td class="list1">
    <a href="../Control+System/1094">&ampnbsp&ampnbsp1094&ampnbsp&ampnbsp</a>
</td>

<td class="list1" nowrap><a href="../Control+System/1094">2023.04.14 15:35</a></td>
<td class="list1"><a href="../Control+System/1094">王林</a></td>
<td class="list1"><a href="../Control+System/1094">wanglin@ihep.ac.cn</a></td>
<td class="list1" style="background-color:yellow"><a href="../Control+System/1094">Issue</a>
</td>
<td class="list1">&ampnbsp</td>
<td class="list1"><a href="../Control+System/1094">TMS</a></td>
<td class="list1"><a href="../Control+System/1094">test</a></td>
<td class="summary">test&ampnbsp12345</td>
<td class="listatt">&ampnbsp&ampnbsp</td>
<tr>
<td class="list2">
    <a href="../Control+System/1093">&ampnbsp&ampnbsp1093&ampnbsp&ampnbsp</a>
</td>

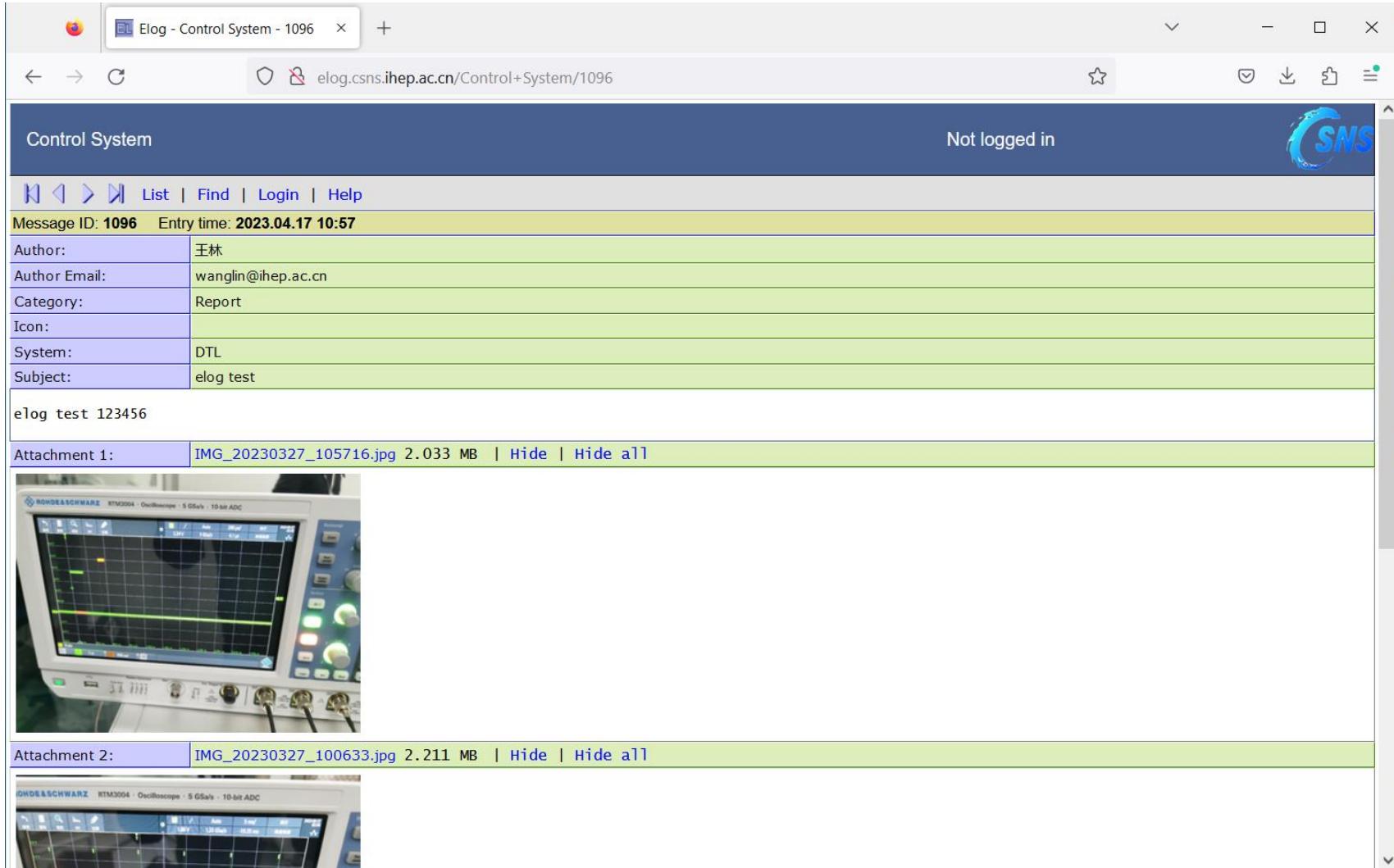
<td class="list2" nowrap><a href="../Control+System/1093">2023.04.04 09:04</a></td>
<td class="list2"><a href="../Control+System/1093">王林</a></td>
<td class="list2"><a href="../Control+System/1093"><a href="mailto:wanglin@ihep.ac.cn">wanglin@ihep.ac.cn</a></a></td>
<td class="list2"><a href="../Control+System/1093">Report</a></td>
<td class="list2">
```

## Read logs



Mobile logbook page

## Read logs



Elog - Control System - 1096

eLOG.csns.ihep.ac.cn/Control+System/1096

Control System Not logged in SNS

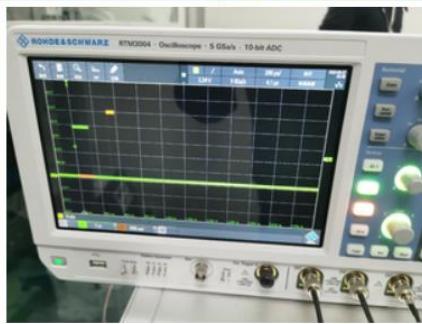
List | Find | Login | Help

Message ID: 1096 Entry time: 2023.04.17 10:57

Author:	王林
Author Email:	wanglin@ihep.ac.cn
Category:	Report
Icon:	
System:	DTL
Subject:	eLOG test

eLOG test 123456

Attachment 1: [IMG\\_20230327\\_105716.jpg](#) 2.033 MB | Hide | Hide all



Attachment 2: [IMG\\_20230327\\_100633.jpg](#) 2.211 MB | Hide | Hide all



# Read logs

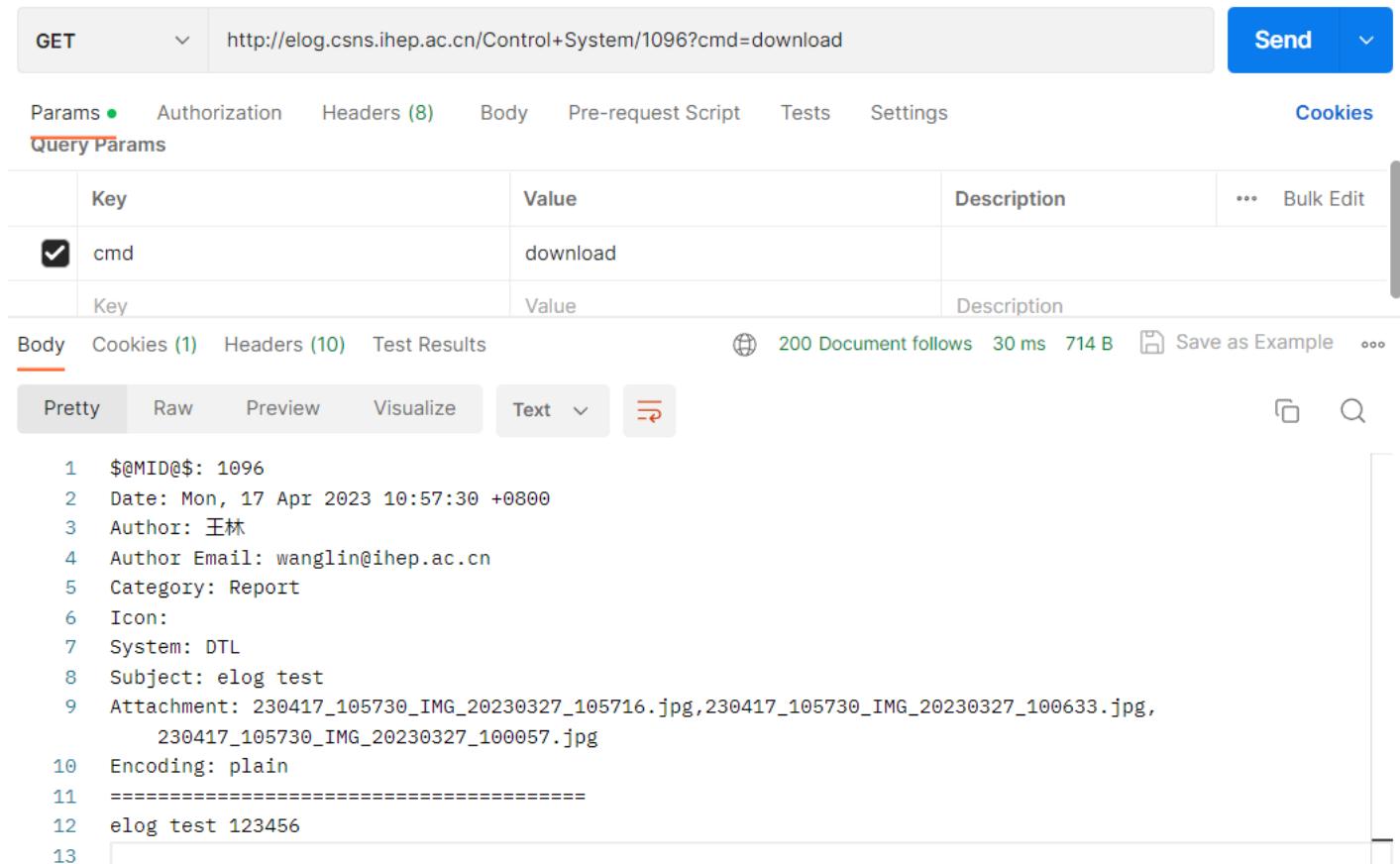
- Extract log info from log text

- Log info

- MID
- Date
- Author
- Author Email
- Category
- System
- Subject
- Content
- Attachments

- Server URL example

- [http://elog.csns.ihep.ac.cn/Control+System/  
1096?cmd=download](http://elog.csns.ihep.ac.cn/Control+System/1096?cmd=download)
- [http://elog.csns.ihep.ac.cn/Control+System/  
221001\\_165651/chopper.PNG](http://elog.csns.ihep.ac.cn/Control+System/221001_165651/chopper.PNG)



GET http://elog.csns.ihep.ac.cn/Control+System/1096?cmd=download

Params • Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

**Query Params**

	Key	Value	Description	...	Bulk Edit
<input checked="" type="checkbox"/>	cmd	download			
	Key	Value	Description		

Body Cookies (1) Headers (10) Test Results

Pretty Raw Preview Visualize Text ⌂

```

1  $@MID@: 1096
2  Date: Mon, 17 Apr 2023 10:57:30 +0800
3  Author: 王林
4  Author Email: wanglin@ihep.ac.cn
5  Category: Report
6  Icon:
7  System: DTL
8  Subject: elog test
9  Attachment: 230417_105730_IMG_20230327_105716.jpg,230417_105730_IMG_20230327_100633.jpg,
               230417_105730_IMG_20230327_100057.jpg
10 Encoding: plain
11 =====
12 elog test 123456
13

```

Log text

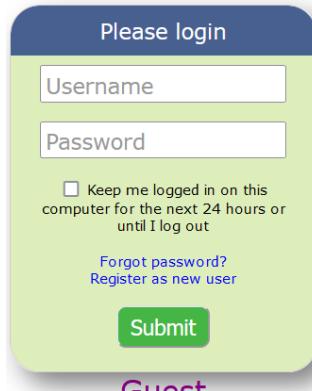
# Read logs



# User login

- **Purposes**
  - Authenticate user
  - Login from Node.js using session ID
  - Extract log field options
    - Category\*
    - System\*
  - Extract user info
    - Username
    - PasswordHash
    - Email
    - DisplayName

User authentication page



Please login

Username

Password

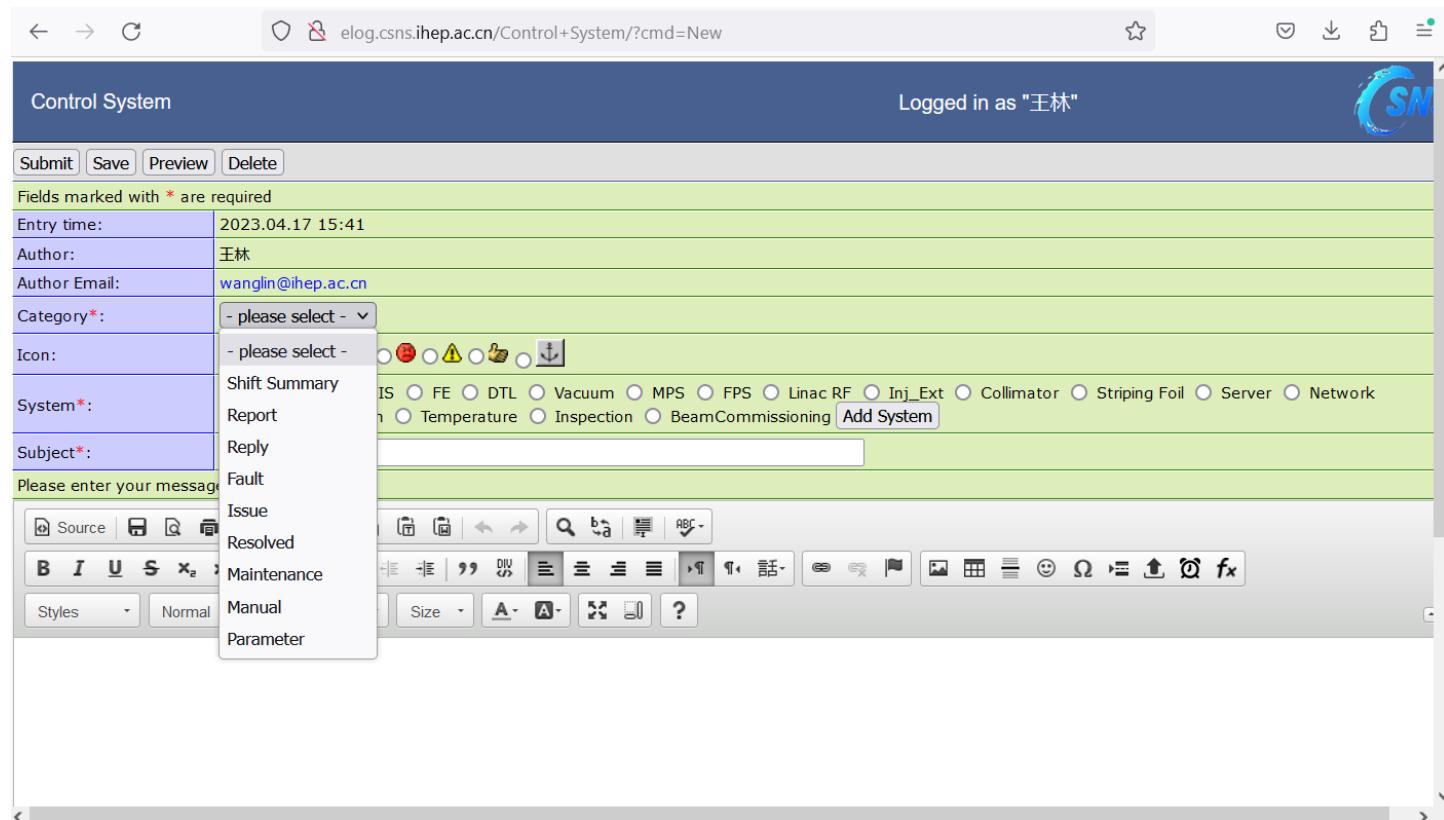
Keep me logged in on this computer for the next 24 hours or until I log out

[Forgot password?](#)

[Register as new user](#)

Submit

Guest



Control System

Logged in as "王林"

elog.csns.ihep.ac.cn/Control+System/?cmd=New

Fields marked with \* are required

Entry time:	2023.04.17 15:41
Author:	王林
Author Email:	wanglin@ihep.ac.cn
Category*:	- please select -
Icon:	- please select -
System*:	IS <input type="radio"/> FE <input type="radio"/> DTL <input type="radio"/> Vacuum <input type="radio"/> MPS <input type="radio"/> FPS <input type="radio"/> Linac RF <input type="radio"/> Inj_Ext <input type="radio"/> Collimator <input type="radio"/> Striping Foil <input type="radio"/> Server <input type="radio"/> Network <input type="radio"/> Temperature <input type="radio"/> Inspection <input type="radio"/> BeamCommissioning <input type="radio"/> <a href="#">Add System</a>
Subject*:	

Please enter your message:

Source

B I U S

Styles  Normal

Font toolbar: Size, A, A, etc.

Message area: Shift Summary, Report, Reply, Fault, Issue, Resolved, Maintenance, Manual, Parameter.

Field options

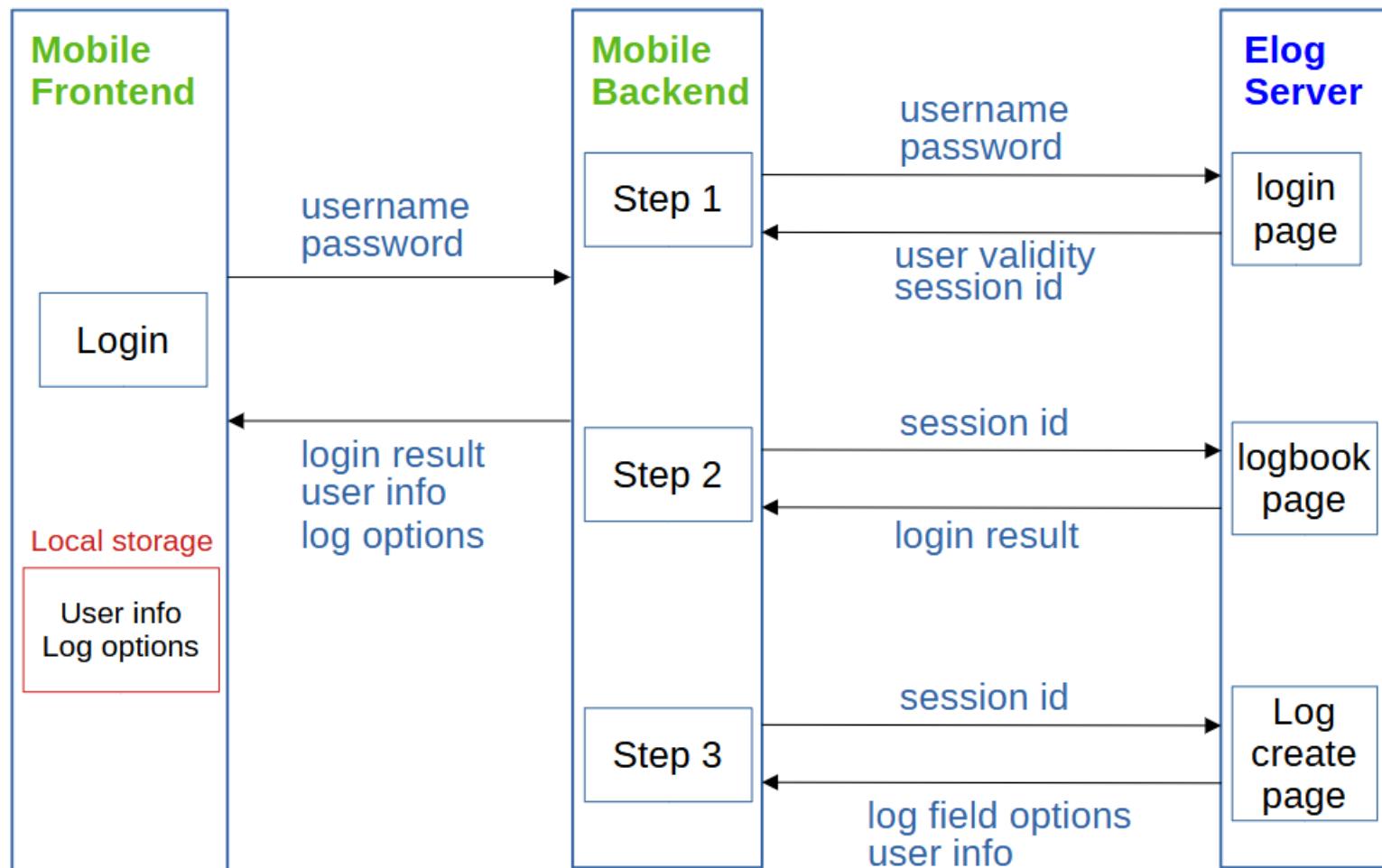
# User login

- **Login steps in backend**

- Step1: Authenticate user and return session id
- Step2: Use the session id to double check login status
- Step3: Use the session id to open log creating page and extract log field options and user info
- **On success, log field options and user info are stored in browser local storage**

- **Server URL example**

- <http://elog.csns.ihep.ac.cn/Control+System>



**Login steps**

# User login

- **Login status**

- Elog server returns “Invalid user name or password!” HTTP 200 on failure
- Elog server returns “redir” HTTP 302 on success

POST http://elog.csns.ihep.ac.cn/Control+System Send

Params Authorization Headers (10) Body **Pre-request Script** Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL

Key	Value	Description	Bulk Edit
<input checked="" type="checkbox"/> uname	wanglin		
<input checked="" type="checkbox"/> upassword	secret		

Body Cookies (4) Headers (8) Test Results 200 Document follows 29 ms 1.94 KB Save as Example

Pretty Raw Preview Visualize HTML

```

11 <body OnLoad="document.form1.uname.focus();">
12   <form name=form1 method="POST" action="./" enctype="multipart/form-data">
13
14     <input type=hidden name=redir value="">
15     <table class="login_frame" cellspacing=0 align=center>
16       <tr>
17         | <td class="login_title">Please login</td>
18       </tr>
19       <tr>
20         | <td class="dlgerror">Invalid user name or password!</td>
21       </tr>
22       <tr>
23         | <td class="login_form">
24           |   <span class="overlay_wrapper">
25             |     <label for="uname" id="uname" class="overlabel">Username</label>
26   <label for="uname" id="uname" class="overlabel">Username</label>

```

Login failure

POST http://elog.csns.ihep.ac.cn/Control+System Send

Params Authorization Headers (10) Body **Pre-request Script** Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL

Key	Value	Description	Bulk Edit
<input checked="" type="checkbox"/> uname	wanglin		
<input checked="" type="checkbox"/> upassword	secret		

Body Cookies (4) Headers (10) Test Results 302 Found 131 ms 512 B Save as Example

Pretty Raw Preview Visualize Text

```

1  <html>redir</html>
2

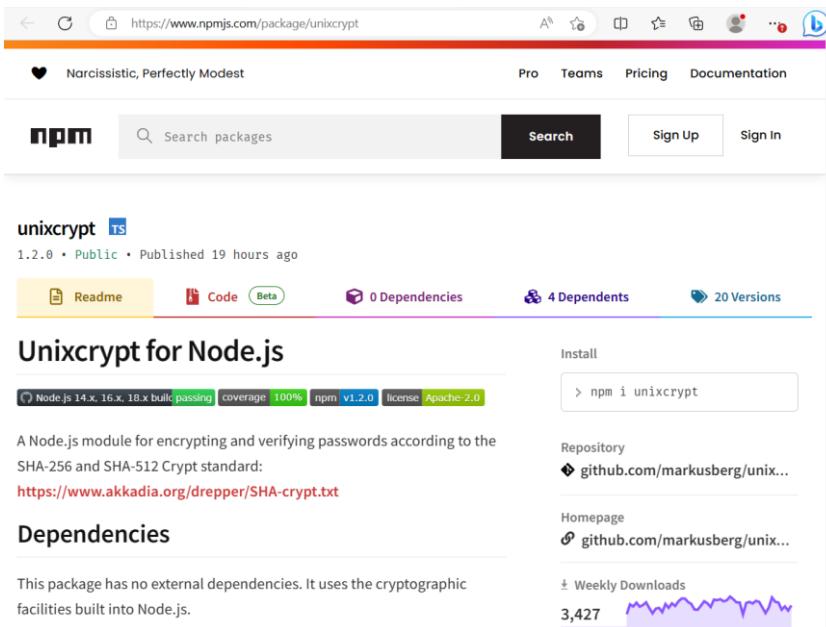
```

Login success

# User login

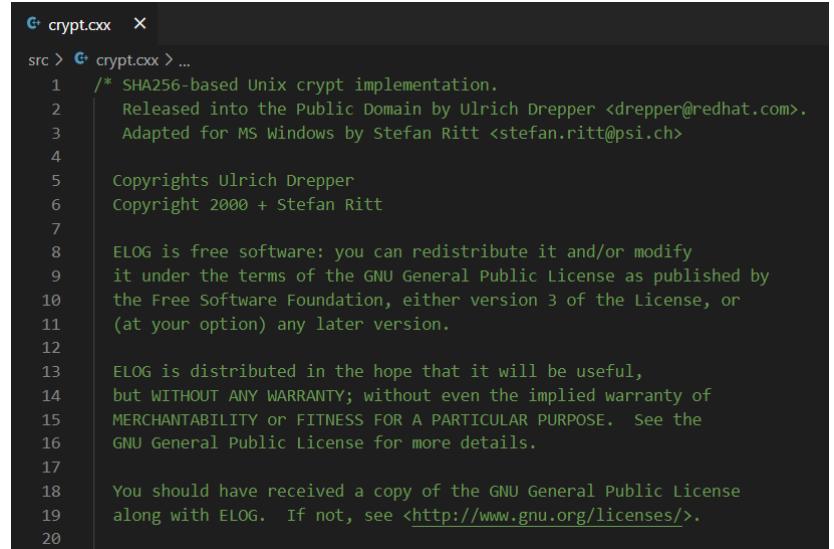
- **Password hash**

- Elog server uses “SHA256-based Unix crypt implementation”
- Python passlib library can generate the same result
- Elog mobile client uses unixcrypt package which perfectly works
- **PasswordHash will be stored in browser local storage and send to Elog server for log write operations in future.**



The screenshot shows the npmjs.com website with the URL <https://www.npmjs.com/package/unixcrypt>. The page displays information about the unixcrypt package, version 1.2.0, published 19 hours ago. It includes links for Readme, Code (Beta), 0 Dependencies, 4 Dependents, and 20 Versions. The package description states it's a Node.js module for encrypting and verifying passwords according to the SHA-256 and SHA-512 Crypt standard. It lists dependencies and weekly downloads (3,427). The page also shows how to install it via npm and provides links to its GitHub repository and homepage.

**unixcrypt package**

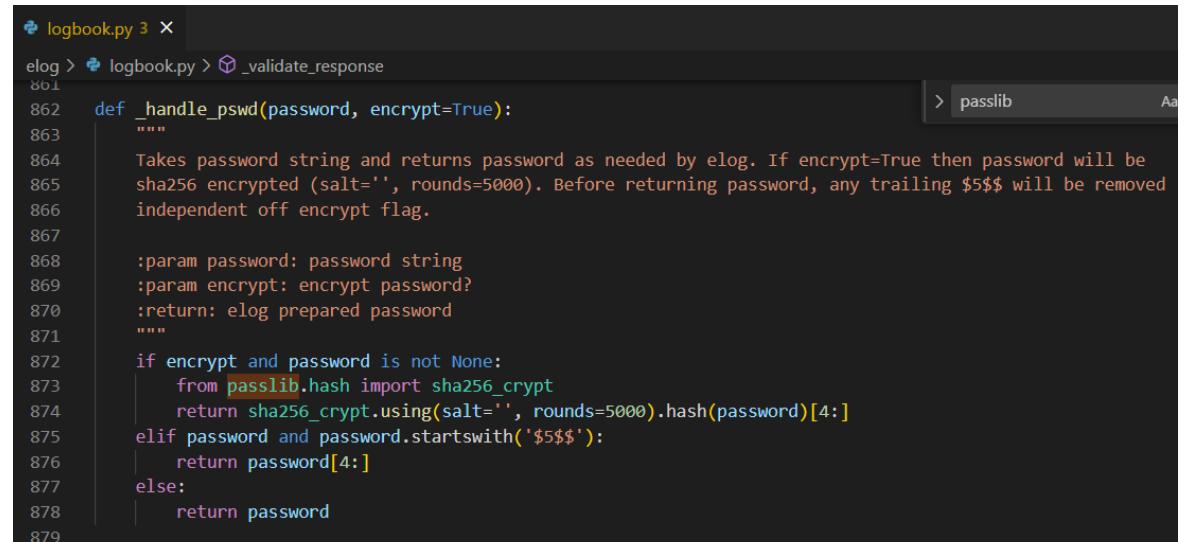


```

crypt.cxx  X
src > crypt.cxx > ...
1  /* SHA256-based Unix crypt implementation.
2   Released into the Public Domain by Ulrich Drepper <drepper@redhat.com>.
3   Adapted for MS Windows by Stefan Ritt <stefan.ritt@psi.ch>
4
5   Copyrights Ulrich Drepper
6   Copyright 2000 + Stefan Ritt
7
8   ELOG is free software: you can redistribute it and/or modify
9   it under the terms of the GNU General Public License as published by
10  the Free Software Foundation, either version 3 of the License, or
11  (at your option) any later version.
12
13  ELOG is distributed in the hope that it will be useful,
14  but WITHOUT ANY WARRANTY; without even the implied warranty of
15  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
16  GNU General Public License for more details.
17
18  You should have received a copy of the GNU General Public License
19  along with ELOG. If not, see <http://www.gnu.org/licenses/>.
20

```

**Elog crypt**



```

logbook.py 3  X
elog > logbook.py > _validate_response
861
862 def _handle_pswd(password, encrypt=True):
863     """
864     Takes password string and returns password as needed by elog. If encrypt=True then password will be
865     sha256 encrypted (salt='', rounds=5000). Before returning password, any trailing $$$ will be removed
866     independent off encrypt flag.
867
868     :param password: password string
869     :param encrypt: encrypt password?
870     :return: elog prepared password
871     """
872
873     if encrypt and password is not None:
874         from passlib.hash import sha256_crypt
875         return sha256_crypt.using(salt='', rounds=5000).hash(password)[4:]
876     elif password and password.startswith('$$$'):
877         return password[4:]
878     else:
879         return password

```

**py\_elog crypt**

# User login

HD 2G 4G 5G WiFi  
NBT 11:56

① 10.1.236.126/elog/logbook/Control

**Elog** Login

**Login**

Username:

Password:

X Cancel ✓ OK

# 1111 2023-03-31 09:47

88

1 2 3 4 5 6 7 8 9 0  
q w e r t y u i o p  
! @ # \$ % & \* ( )  
a s d f g h j k l  
z x c v b n m   
?123 英中 .  ?  前往

▽ ○ □

HD 2G 4G 5G WiFi  
NBT 11:56

① 10.1.236.126/elog/logbook/Control

**Elog** Success  
Logged in Control System

1 2 3 >

# 1112	2023-03-31 09:49
王林	wanglin@ihep.ac.cn
e <input type="checkbox"/> 2	
f	

# 1111	2023-03-31 09:47
王林	wanglin@ihep.ac.cn
qqq <input type="checkbox"/> 3	
www	

# 1110	2023-03-31 09:44
王林	wanglin@ihep.ac.cn

← → ⌂ ::

HD 2G 4G 5G WiFi  
NBT 11:56

① 10.1.236.126/elog/logbook/Control

**Elog** User info

Control System

Logout

1 2 3 >

# 1112	2023-03-31 09:49
王林	wanglin@ihep.ac.cn
e <input type="checkbox"/> 2	
f	

# 1111	2023-03-31 09:47
王林	wanglin@ihep.ac.cn
qqq <input type="checkbox"/> 3	
www	

# 1110	2023-03-31 09:44
王林	wanglin@ihep.ac.cn

← → ⌂ ::

HD 2G 4G 5G WiFi  
NBT 11:56

① 10.1.236.126/elog/logbook/Control

**Elog** wanglin

Control System + New

<< < 1 2 3 > >>

**User info**

username: wanglin  
displayName: 王林  
email: wanglin@ihep.ac.cn

X Close

qqq <input type="checkbox"/> 3	www
# 1110	2023-03-31 09:44
王林	wanglin@ihep.ac.cn

< → ⌂ ⌂ ::

## Write logs

- **Write operations**
  - Creating logs, editing logs, deleting logs
- **All write operations are submitted using HTTP POST method**
  - Content-Type: multipart/form-data
- **User credential**
  - Password hash is stored in local storage of the browser
  - Username and password hash will be included in the submitting form
- **Attachments**
  - Attachments are submitted in “attfile{N}” field
  - Existing attachments can be adjusted using “attachment{N}” field when editing a log
- **Server URL example**
  - <http://elog.csns.ihep.ac.cn/Control+System>

# Write logs

- Create logs

Request Headers (481 B)

Raw

```

Accept: application/json, text/plain, */*
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.5
Connection: keep-alive
Content-Length: 1160
Content-Type: multipart/form-data; boundary=-----39796814994047387929310199605
Host: 10.1.236.126:3001
Origin: http://10.1.236.126
Referer: http://10.1.236.126/
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/111.0

```

## Request headers

Request payload	
1	-----39796814994047387929310199605
2	Content-Disposition: form-data; name="Author"
3	
4	王林
5	-----39796814994047387929310199605
6	Content-Disposition: form-data; name="Author_Email"
7	
8	wanglin@ihep.ac.cn
9	-----39796814994047387929310199605
10	Content-Disposition: form-data; name="Category"
11	
12	Maintenance
13	-----39796814994047387929310199605
14	Content-Disposition: form-data; name="System"
15	
16	FPS
17	-----39796814994047387929310199605
18	Content-Disposition: form-data; name="Subject"
19	
20	111
21	-----39796814994047387929310199605
22	Content-Disposition: form-data; name="Text"
23	
24	222
25	-----39796814994047387929310199605
26	Content-Disposition: form-data; name="cmd"
27	
28	Submit
29	-----39796814994047387929310199605
30	Content-Disposition: form-data; name="unn"
31	
32	wanglin
33	-----39796814994047387929310199605
34	Content-Disposition: form-data; name="upwd"
35	
36	/RSGMJXl/t9D0IEfwL0X.8rM/bgw3qOFYNBH6xv8zJ1
37	-----39796814994047387929310199605--
38	

## Request payload

# Write logs

- **Edit logs**

▼ Request Headers (479 B)

Raw

```

Accept: application/json, text/plain, */*
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.5
Connection: keep-alive
Content-Length: 1262
Content-Type: multipart/form-data; boundary=-----170541488180934393973744550
Host: 10.1.236.126:3001
Origin: http://10.1.236.126
Referer: http://10.1.236.126/
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/111.0
    
```

## Request headers

Request payload	
1	-----170541488180934393973744550
2	Content-Disposition: form-data; name="edit_id"
3	
4	1098
5	-----170541488180934393973744550
6	Content-Disposition: form-data; name="Author"
7	
8	王林
9	-----170541488180934393973744550
10	Content-Disposition: form-data; name="Author_Email"
11	
12	wanglin@ihep.ac.cn
13	-----170541488180934393973744550
14	Content-Disposition: form-data; name="Category"
15	
16	Maintenance
17	-----170541488180934393973744550
18	Content-Disposition: form-data; name="System"
19	
20	FPS
21	-----170541488180934393973744550
22	Content-Disposition: form-data; name="Subject"
23	
24	111222
25	-----170541488180934393973744550
26	Content-Disposition: form-data; name="Text"
27	
28	222333
29	-----170541488180934393973744550
30	Content-Disposition: form-data; name="cmd"
31	
32	Submit
33	-----170541488180934393973744550
34	Content-Disposition: form-data; name="unm"
35	
36	wanglin
37	-----170541488180934393973744550
38	Content-Disposition: form-data; name="upwd"
39	
40	/RSGMJXl/t9D0IEfwL0X.8rM/bgw3qOFYNBH6xv8zJ1
41	-----170541488180934393973744550--
42	
43	

## Request payload

# Write logs

- **Delete logs**

Request Headers (479 B)

Raw

```
Accept: application/json, text/plain, */*
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.5
Connection: keep-alive
Content-Length: 669
Content-Type: multipart/form-data; boundary=-----1712797333417412423630142642
Host: 10.1.236.126:3001
Origin: http://10.1.236.126
Referer: http://10.1.236.126/
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/111.0
```

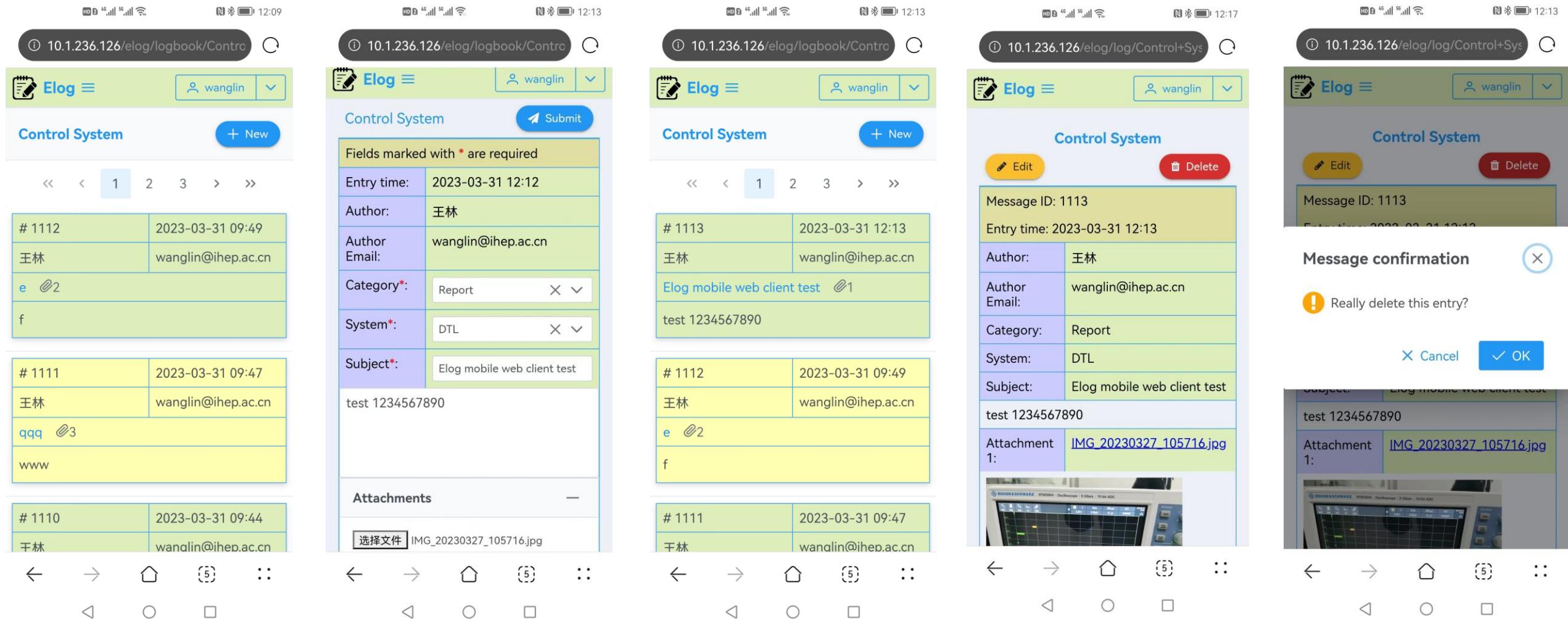
**Request headers**

Request payload

```
1 -----1712797333417412423630142642
2 Content-Disposition: form-data; name="edit_id"
3
4 1098
5 -----1712797333417412423630142642
6 Content-Disposition: form-data; name="jcmd"
7
8 XDelete
9 -----1712797333417412423630142642
10 Content-Disposition: form-data; name="cmd"
11
12 Delete
13 -----1712797333417412423630142642
14 Content-Disposition: form-data; name="unm"
15
16 wanglin
17 -----1712797333417412423630142642
18 Content-Disposition: form-data; name="upwd"
19
20 /RSGMJXl/t9D0IEfwL0X.8rM/bgw3qOFYNBH6xv8zJ1
21 -----1712797333417412423630142642--
22
```

**Request payload**

# Write logs



The screenshots illustrate the process of creating and managing logs in the Elog mobile web client:

- Before creating:** Shows a list of existing logs (e.g., #1112, #1111, #1110) and a "New" button.
- Creating new log:** A form for entering log details. Required fields are marked with asterisks (\*). Fields include Entry time (2023-03-31 12:12), Author (王林), Author Email (wanglin@ihep.ac.cn), Category (Report), System (DTL), and Subject (Elog mobile web client test). An attachment file "IMG\_20230327\_105716.jpg" is selected.
- Log #1113 created:** Confirmation message indicating the log has been successfully created.
- Reading Log #1113:** Detailed view of the newly created log, showing all entered information and the attached image.
- Deleting Log #1113:** Confirmation dialog asking if the user wants to delete the entry. The dialog includes "Cancel" and "OK" buttons.

Before creating

Creating new log

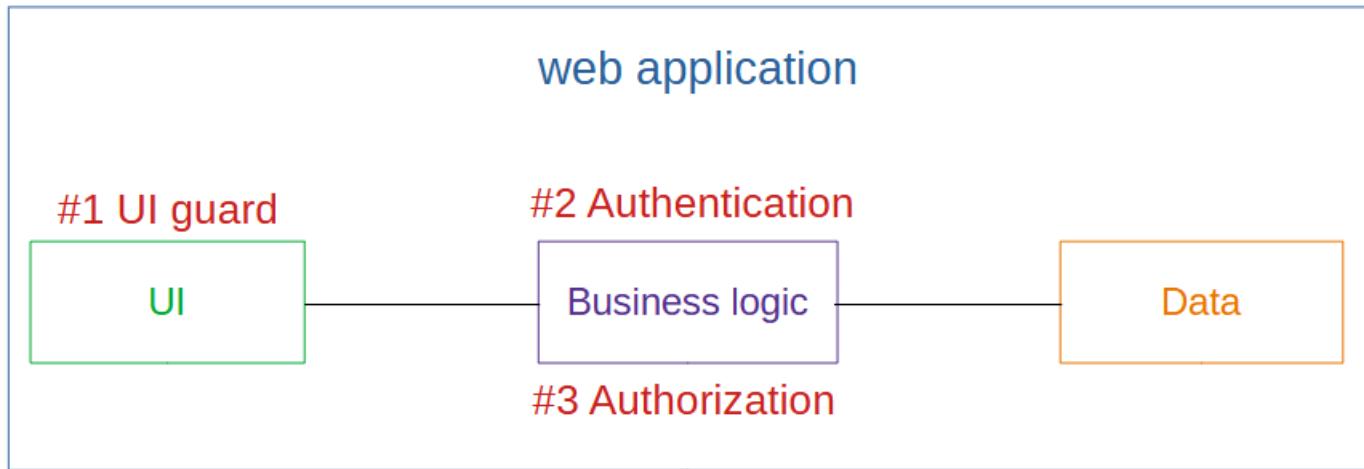
Log #1113 created

Reading Log #1113

Deleting Log #1113

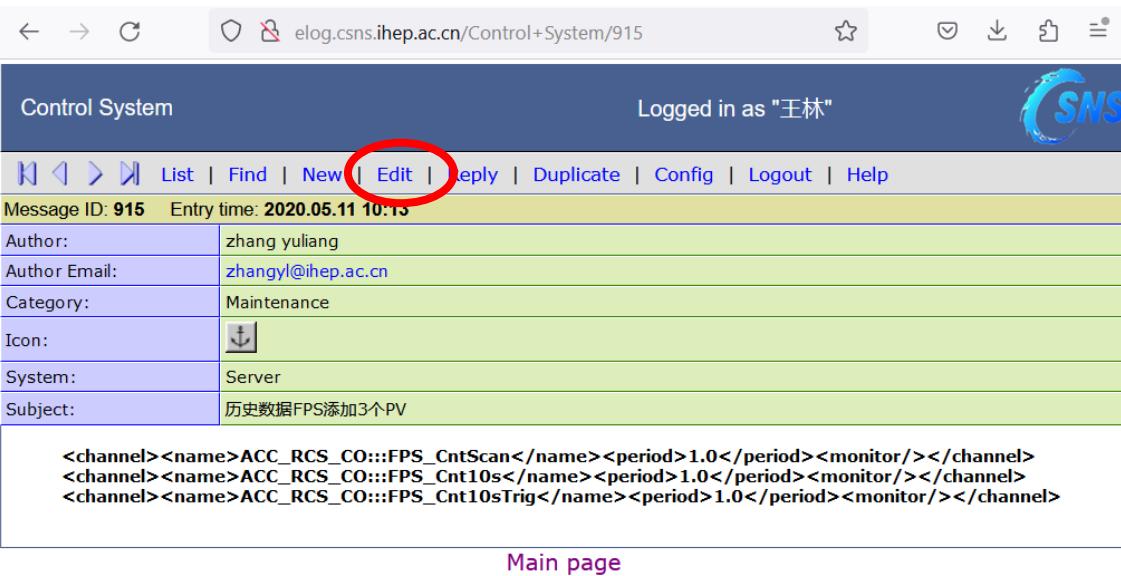
## Suggestion to PSI Elog

- **Access control**
  - Prevent unauthorized operations
- **#1 UI guard**
  - Does not display unauthorized content
- **#2 Authentication**
  - Verify user credential
- **#3 Authorization**
  - Verify user permission, e.g. one user should not modify or delete data created by others



Access control in a web application

# Suggestion to PSI Elog



Control System      Logged in as "王林"

List | Find | New | **Edit** | Reply | Duplicate | Config | Logout | Help

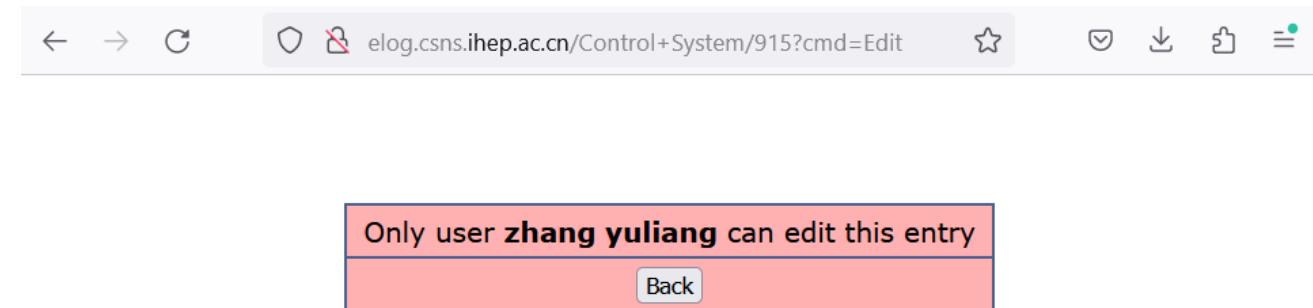
Message ID: 915 Entry time: 2020.05.11 10:13

Author:	zhang yuliang
Author Email:	zhangyl@ihep.ac.cn
Category:	Maintenance
Icon:	
System:	Server
Subject:	历史数据FPS添加3个PV

```
<channel><name>ACC_RCS_CO:::FPS_CntScan</name><period>1.0</period><monitor/></channel>
<channel><name>ACC_RCS_CO:::FPS_Cnt10s</name><period>1.0</period><monitor/></channel>
<channel><name>ACC_RCS_CO:::FPS_Cnt10sTrig</name><period>1.0</period><monitor/></channel>
```

Main page

Trying to edit a log written by others



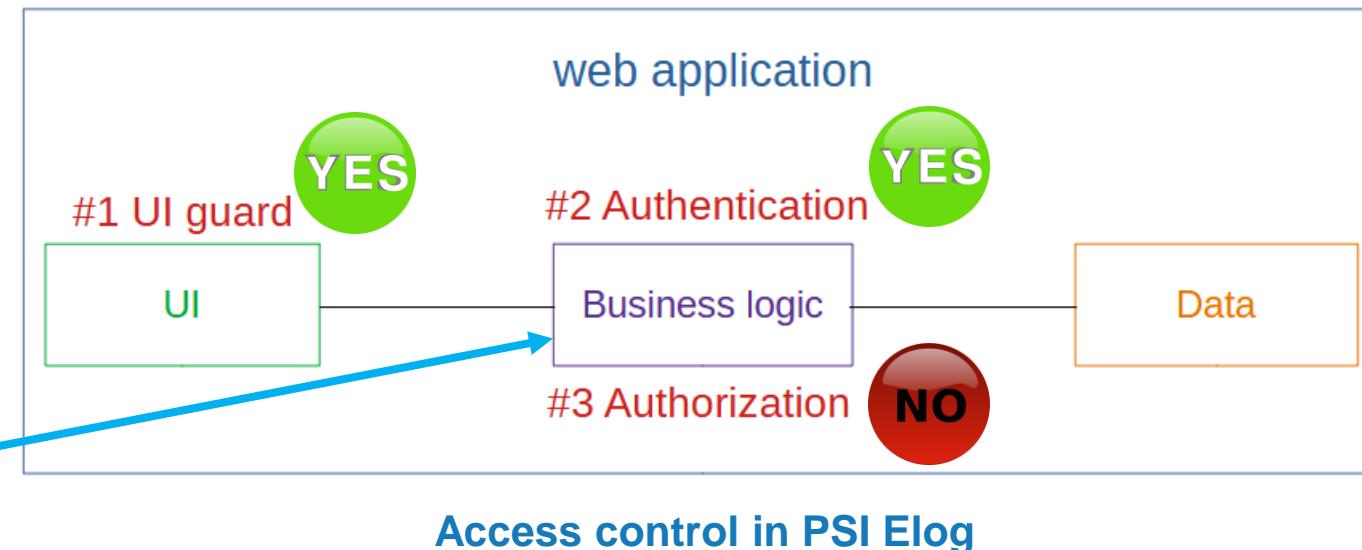
Only user **zhang yuliang** can edit this entry

Back

PSI Elog prohibit this operation from the web page

## Suggestion to PSI Elog

- PSI Elog provides UI guard.
- PSI Elog also provides authentication.
- However, PSI Elog does not provide authorization in business logic.
- I can send an HTTP POST request to delete logs written by other people using my user credential.  
**This behavior was discovered when I was developing the mobile web client.**
- Version at CSNS
  - elog-3.1.3-1



## Suggestion to PSI Elog

- **Example**

- The following HTTP request can use my credential to delete the log with 1111 msgId written by another user
- Content-Type multipart/form-data; boundary=-----1483453350606257598207898396

```
-----1483453350606257598207898396
Content-Disposition: form-data; name="edit_id"
1111
-----1483453350606257598207898396
Content-Disposition: form-data; name="jcmd"
XDelete
-----1483453350606257598207898396
Content-Disposition: form-data; name="cmd"
Delete
-----1483453350606257598207898396
Content-Disposition: form-data; name="unm"
wanglin
-----1483453350606257598207898396
Content-Disposition: form-data; name="upwd"
/RSGMJK1/t9D0IEfwL0X.8rM/bgw3q0FYNBH6xv8zJ1
-----1483453350606257598207898396--
```

- **Suggestion: Provide authorization for POST operations in business logic in Elog future versions.**

## Summary

- The mobile web client is developed and deployed for the PSI Elog deployed at CSNS.
- It is implemented by parsing and submitting HTML format data.
- It may not work for PSI Elog deployed at other sites.
- The idea and implementation may be helpful to other sites.
- Link for mobile web client at CSNS
  - <https://github.com/wanglin86769/elog-mobile>
- Development team
  - Design & Implementation: Lin Wang [wanglin@ihep.ac.cn](mailto:wanglin@ihep.ac.cn)
  - Line Manager: Yuliang Zhang [zhangyl@ihep.ac.cn](mailto:zhangyl@ihep.ac.cn)

Thanks for your attention!

