

# CS-Studio: Logging

Olog

# Requirements

- Basic functionality
  - Web service
    - Authentication
    - Multiple logbooks, tags
    - Create log entry
    - Edit log entry
    - Attach files
    - Search
  - Simple Web client

# Requirements

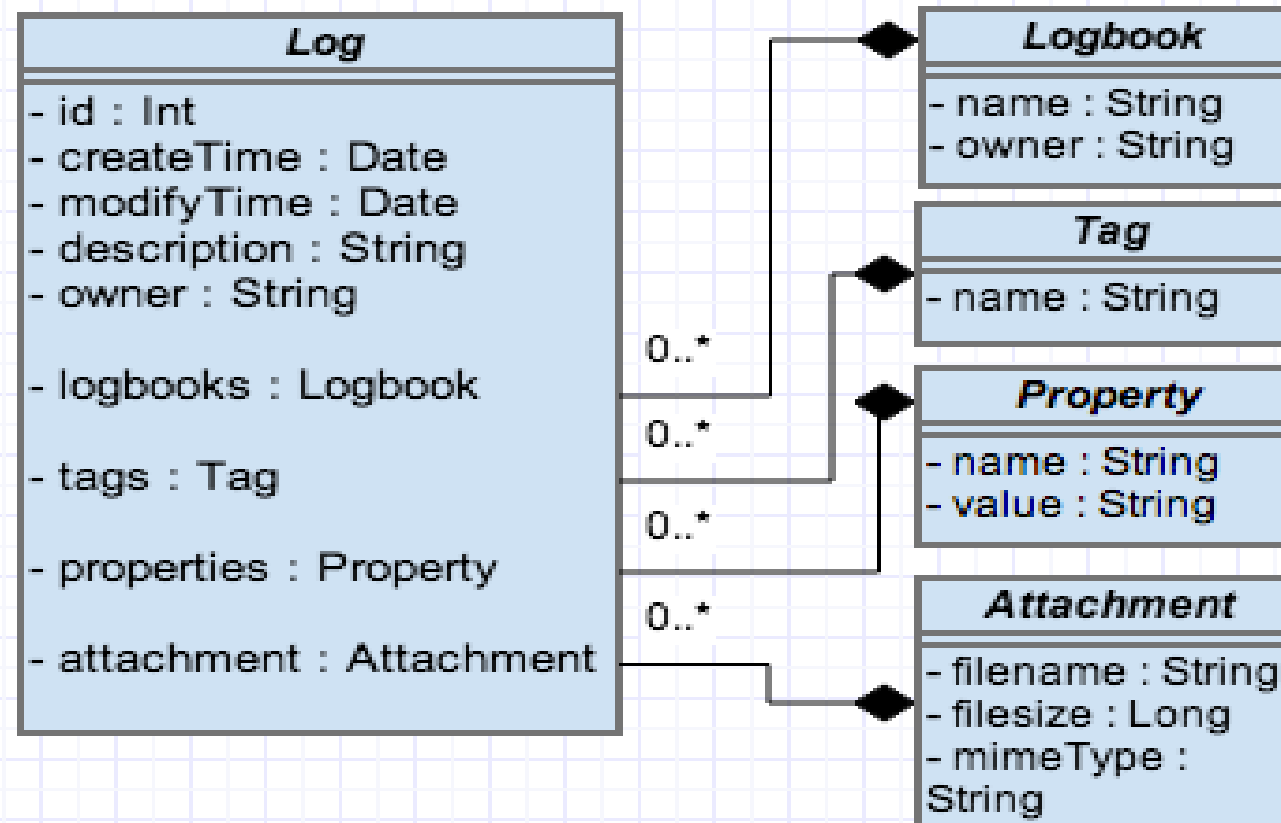
## ■ Integration

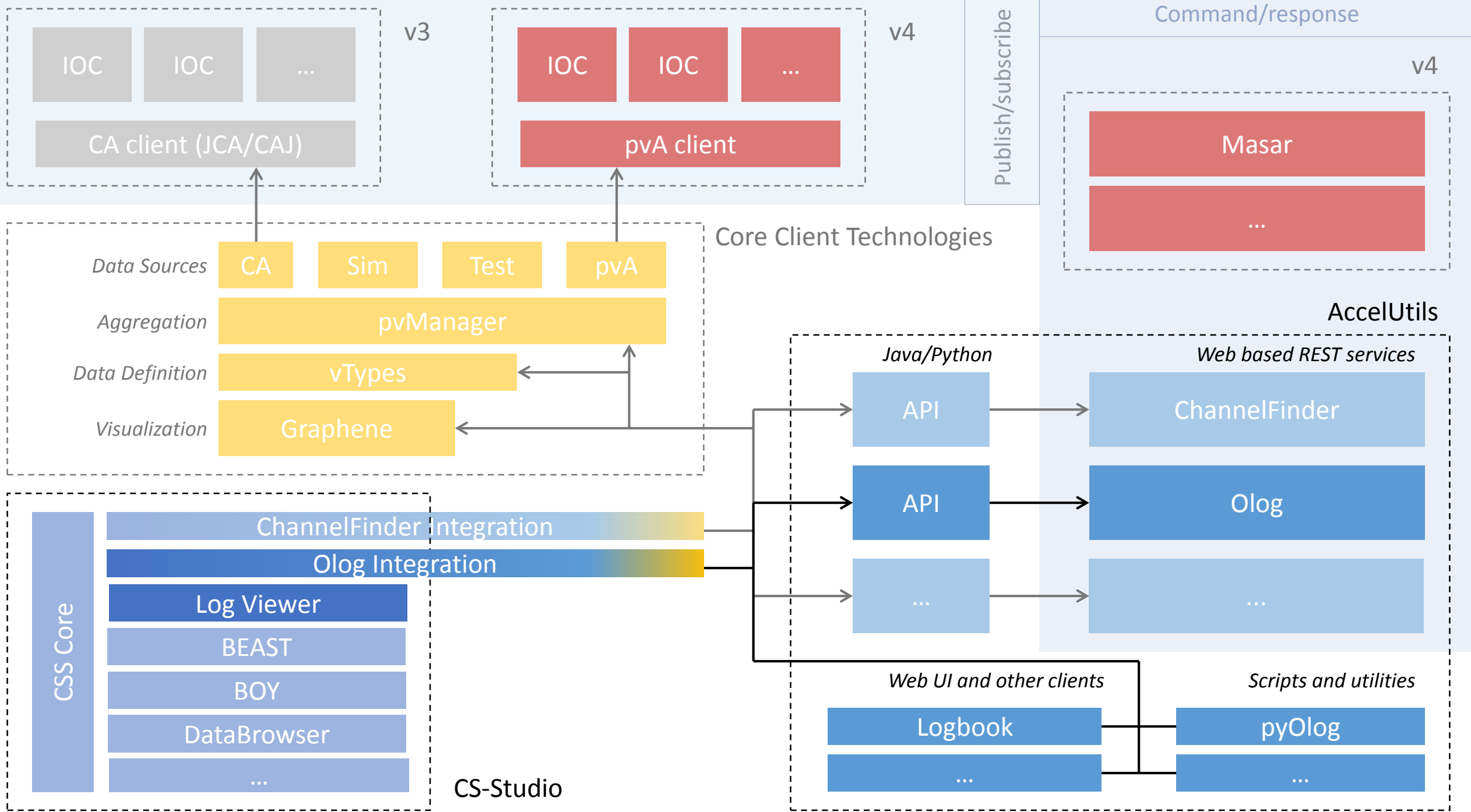
- IRMIS
  - » Component/Inventory
- Physics data
- Save/restore
- CSS plug-in
- Operations
  - » Beam statistics
  - » Down time/tuning time/beam on target
  - » Bypass records
  - » On shift records
  - » Trouble Reports
  - » Experiment records

# Log Entry

- Time
- Owner
- Text
- Attachments
- Logbooks
- Tags
- Properties

# Log Entry





# Olog Web service

- Create and modify log entries
- Search
- Organize entries using multiple logbooks, tags and properties.
- Integration with other tools/service
  - Control System (epics v3, v4)
  - CS-Studio
  - Physics Data
  - Save Restore
  - .....



# Olog Client Libraries

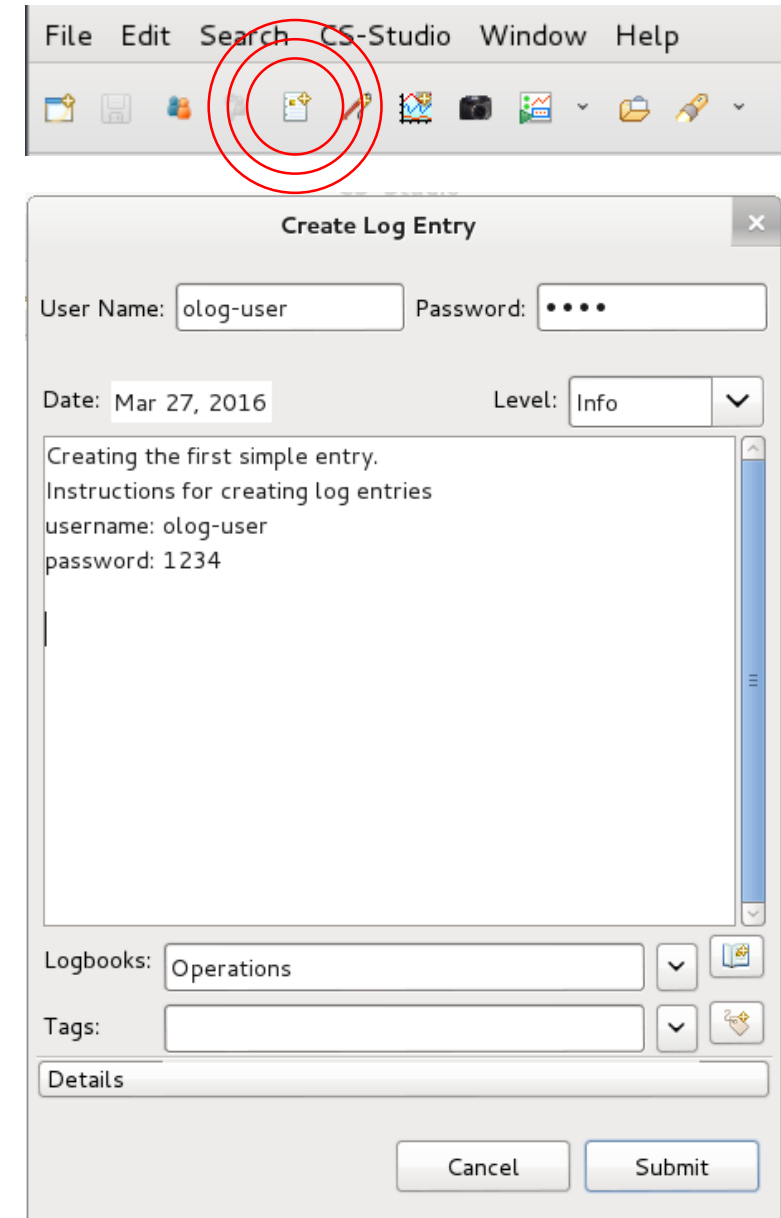
- Currently there is support for 2 languages
  - Python
  - Java
- Manage network communication
  - Creating HTTP request
  - Setting up connection and Authorization
- Parsing json/XML into java or python objects
- Provide Utility Methods

CS-Studio & Olog



# Creating simple log entries

- Create log entry
  - Toolbar
  - Context Menu
- Create log entry dialog
  - Required
    - Authentication/Authorization info
    - Log description
    - Logbook
    - Level
  - Optional
    - Tags
    - Attachments
    - Properties



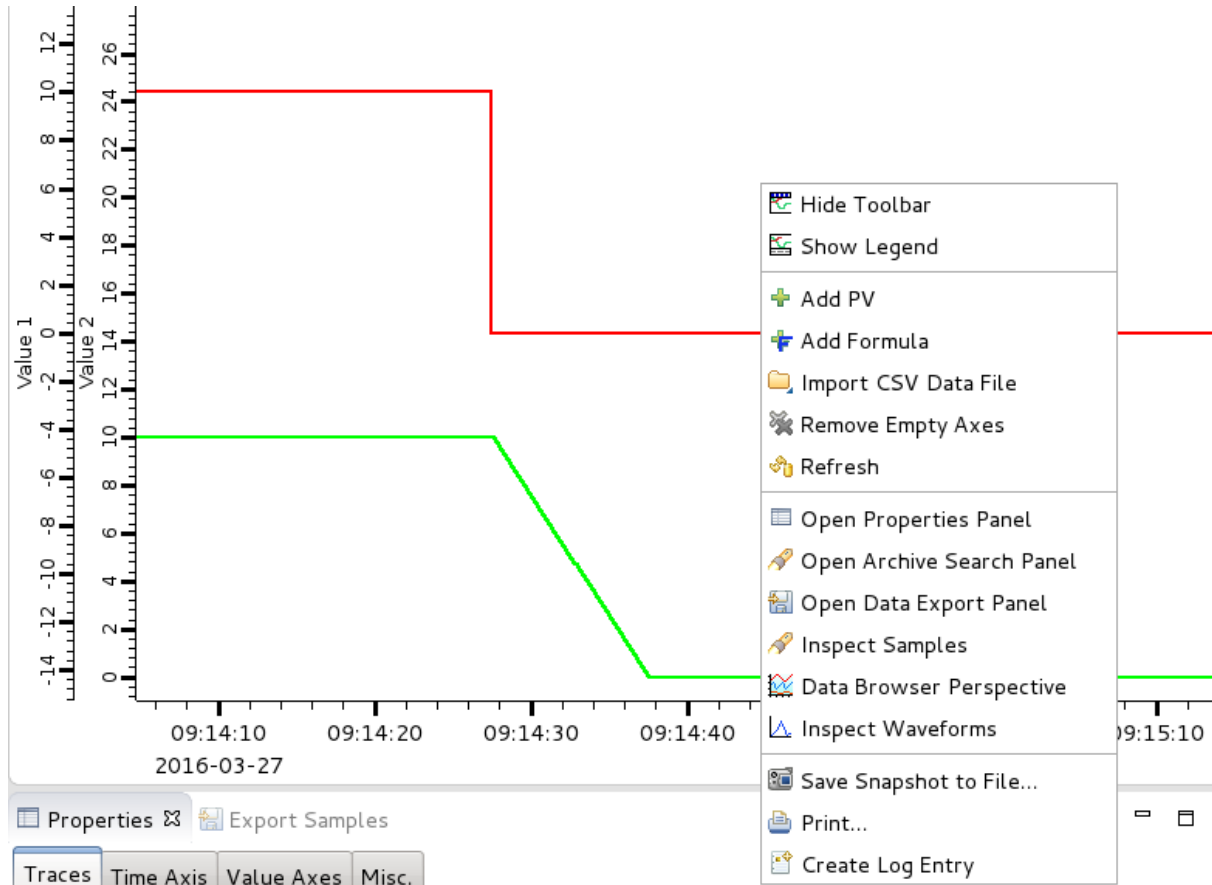
The screenshot shows the CS-Studio application window. The menu bar includes File, Edit, Search, CS-Studio, Window, and Help. The toolbar contains various icons, with the 'Create Log Entry' icon (a document with a plus sign) circled in red. Below the toolbar, the 'Create Log Entry' dialog box is open. It features a close button (X) in the top right corner. The dialog contains the following fields and controls:

- User Name:** A text box containing 'olog-user'.
- Password:** A text box with masked characters '....'.
- Date:** A text box containing 'Mar 27, 2016'.
- Level:** A dropdown menu currently set to 'Info'.
- Description:** A large text area containing the text: 'Creating the first simple entry. Instructions for creating log entries username: olog-user password: 1234'.
- Logbooks:** A dropdown menu currently set to 'Operations'.
- Tags:** A text box for entering tags.
- Details:** A section at the bottom of the dialog.
- Buttons:** 'Cancel' and 'Submit' buttons at the bottom right.

# Olog Clients – CS-Studio

- CS-Studio is an eclipse based framework for developing controls and physics applications
- Seamless integration with applications
  - Log Entries initialized with application specific information

# Creating log entries from applications (Databrowser)



The screenshot shows the 'Create Log Entry' dialog box. It contains fields for 'User Name' and 'Password', a 'Date' field set to 'Mar 27, 2016', and a 'Level' dropdown menu set to 'Info'. There is a text area for 'Data Browser Plot' with the text 'See attached Data Browser plot'. Below this are 'Logbooks' and 'Tags' dropdown menus, both set to 'Operations'. A 'Hide details' button is present. The dialog has tabs for 'Images', 'Files', 'Properties', and 'Ticket'. The 'Images' tab is active, showing a small thumbnail of the plot from the previous screenshot. There is a 'Remove' button next to the thumbnail. At the bottom, there are buttons for 'Add Image', 'Screenshot', 'CSS Window', 'Clipboard Image', 'Cancel', and 'Submit'.

# Creating log entries from applications (Alarm)

The screenshot displays the Control System Studio (HLSII) interface. The Alarm Tree on the left shows a hierarchy of alarms, including 'Area: Common environment', 'Area: Linac (MAJOR/STATE\_ALARM)', 'System: Vacuum (MINOR/STATE\_ALARM)', 'System: RF', 'System: Magnet power supplies (invalid-ack'd/Disc)', 'System: Diagnostics (invalid-ack'd/Disconnected)', 'System: Radiation Monitoring (MAJOR/STATE\_ALARM)', 'Area: Booster (MAJOR/STATE\_ALARM)', 'System: Vacuum (MAJOR/STATE\_ALARM)', 'System: Diagnostics (invalid-ack'd)', 'System: RF (MAJOR/HIHI\_ALARM)', 'System: Magnet Systems (MAJOR/STATE\_ALARM)', 'System: Water Skids', 'System: Radiation Monitoring (MAJOR/STATE\_ALARM)', and 'Area: Storage ring (invalid-ack'd/UDF)'. The Alarm Perspective view on the right shows a table of alarms with columns for Description, Alarm Time, Current Sevi, Current Stat, Alarm Se, Alarm Statu, and Alarm Value. The table lists several alarms, including 'MINOR alarm: Linac/LTB Vacuum Summary Fault', 'MAJOR alarm: Booster Radiation Monitoring', 'MAJOR alarm: Booster CFC inhibited the RF', 'MAJOR alarm: Booster BTS Vacuum Summary Fault', 'MAJOR alarm: BTS Bend Magnet 1 Summary Alarm', and 'MAJOR alarm: LN-AM(RadMon)Alrm:Sum-Sts'. The 'Create Log Entry' option is highlighted in the context menu.

Description	Alarm Time	Current Sevi	Current Stat	Alarm Se	Alarm Statu	Alarm Value
MINOR alarm: Linac/LTB Vacuum Summary Fault	2013/09/25 16:14:00	MINOR	STATE_ALARM	MINOR	STATE_ALARM	Minor Alarm
MAJOR alarm: Booster Radiation Monitoring	2013/09/18 10:43:00	OK	OK	MAJOR	STATE_ALARM	Alarm
MAJOR alarm: Booster CFC inhibited the RF	2013/09/24 09:50:00	MAJOR	HIHI_ALARM	MAJOR	HIHI_ALARM	1
MAJOR alarm: Booster BTS Vacuum Summary Fault	2013/09/25 16:16:00	MAJOR	STATE_ALARM	MAJOR	STATE_ALARM	Major Alarm
MAJOR alarm: BTS Bend Magnet 1 Summary Alarm	2013/09/16 15:20:00	MAJOR	STATE_ALARM	MAJOR	STATE_ALARM	HI
MAJOR alarm: LN-AM(RadMon)Alrm:Sum-Sts	2013/09/18 13:31:00	OK	OK	MAJOR	STATE_ALARM	Alarm

PV	Description	Alarm Time	Current Sevi	Current Stat	Alarm Se	Alarm Statu	Alarm Value
BR-BI()Op-Sts	invalid-ack'd alarm: Booster diagnostic fault	2013/03/18 15:18:00	INVALID	LINK_ALARM	invalid-ack'e	LINK_ALARM	OK
BR-MG(PS)FaultSum	invalid-ack'd alarm: Booster power supply sum	2013/04/02 08:19:00	INVALID	No Connecti	invalid-ack'e	No Connecti	
LTB-BI(ICT:1)Interlock	invalid-ack'd alarm: ICT interlock test	2013/09/06 11:37:00	INVALID	Disconnect	invalid-ack'e	Disconnect	
LTB-MG(PS)FaultSum	invalid-ack'd alarm: Linac to booster power su	2013/04/25 17:03:00	INVALID	No Connecti	invalid-ack'e	Disconnect	
SR-MG(PS)FaultSum	invalid-ack'd alarm: Power supply failure in st	2013/04/02 08:17:00	INVALID	UDF_ALARM	invalid-ack'e	UDF_ALARM	GOOD

# Creating log entries from applications (Alarm)

- Alarm server
  - PV name
  - Alarm status
  - Alarm time

The screenshot shows a 'Create Log Entry' dialog box with the following fields and sections:

- User Name:** [Text input field]
- Password:** [Text input field]
- Date:** Sep 26, 2013
- Level:** [Dropdown menu]
- Current Alarms:**
  - LN-AM{RadMon}Alrm:Sum-Sts
  - PV : LN-AM{RadMon}Alrm:Sum-Sts
  - Alarm Time : 2013/09/18 13:31:00 (Time since event: 194:06:02)
  - Alarm Severity/Message : MAJOR/STATE\_ALARM
  - Alarm Value : Alarm
  - Current Severity/Message: OK/OK
- Logbooks:** Operations
- Tags:** [Text input field]
- Hide details** button
- Images** tab (selected) showing a preview of a screenshot and a CSS window.
- Files** tab
- Properties** tab
- Ticket** tab
- Context** tab
- Remove** button (with a red X icon)
- Add Image** button
- Screenshot** button
- CSS Window** button
- Cancel** button
- Submit** button

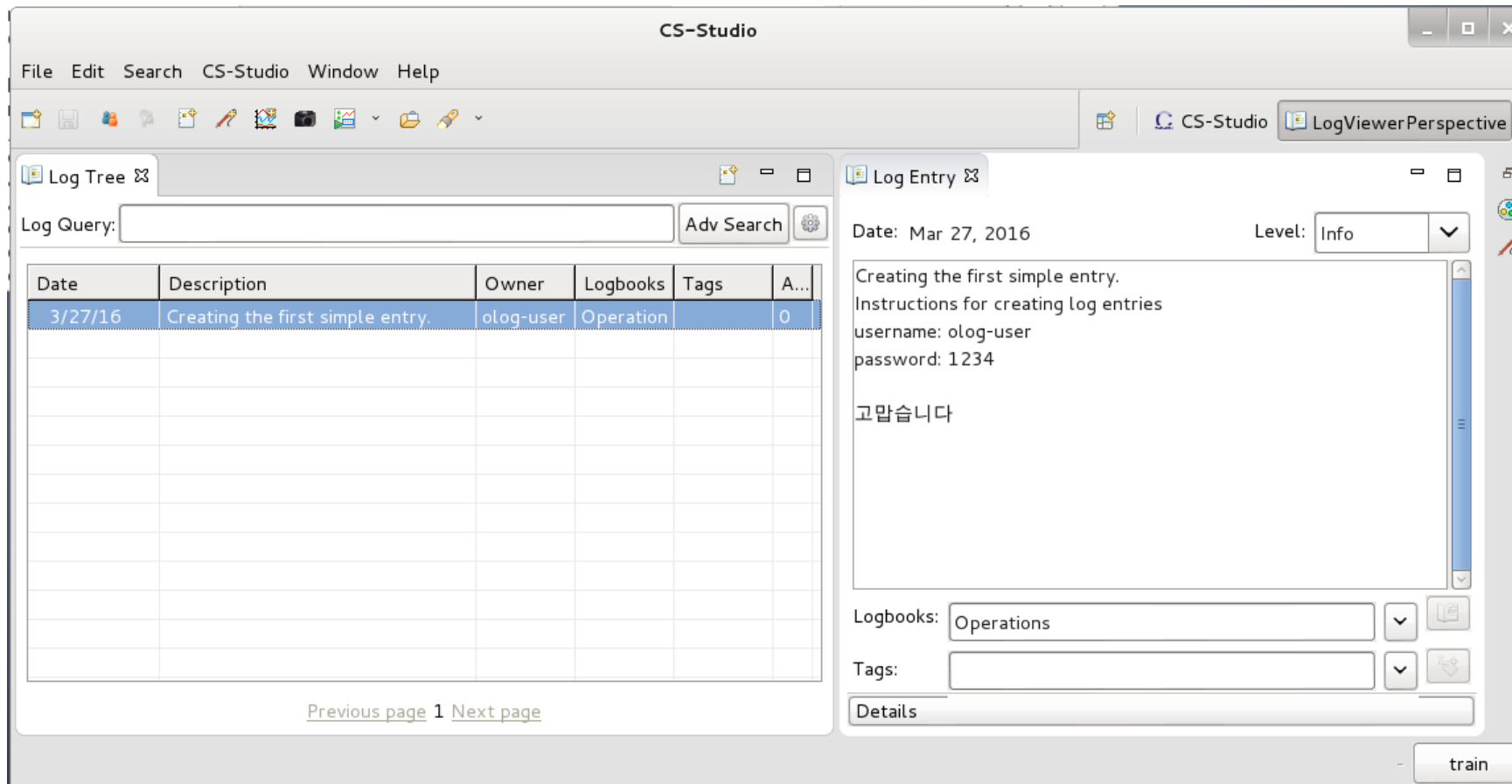


# Logviewer

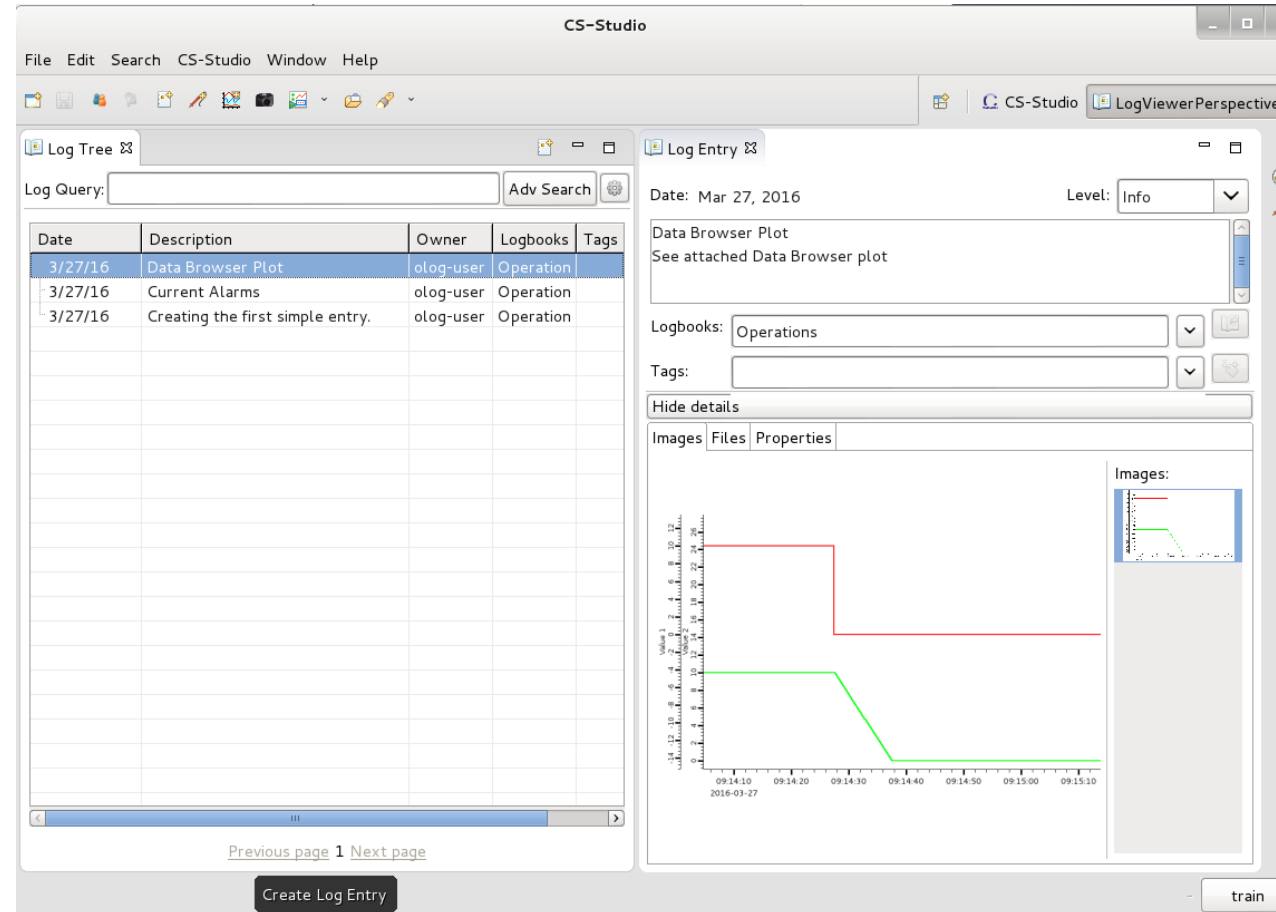
- Search and view log entries from the Olog server

# LogViewer

- Menu: Window → New Perspective → LogViewer Perspective



# LogViewer



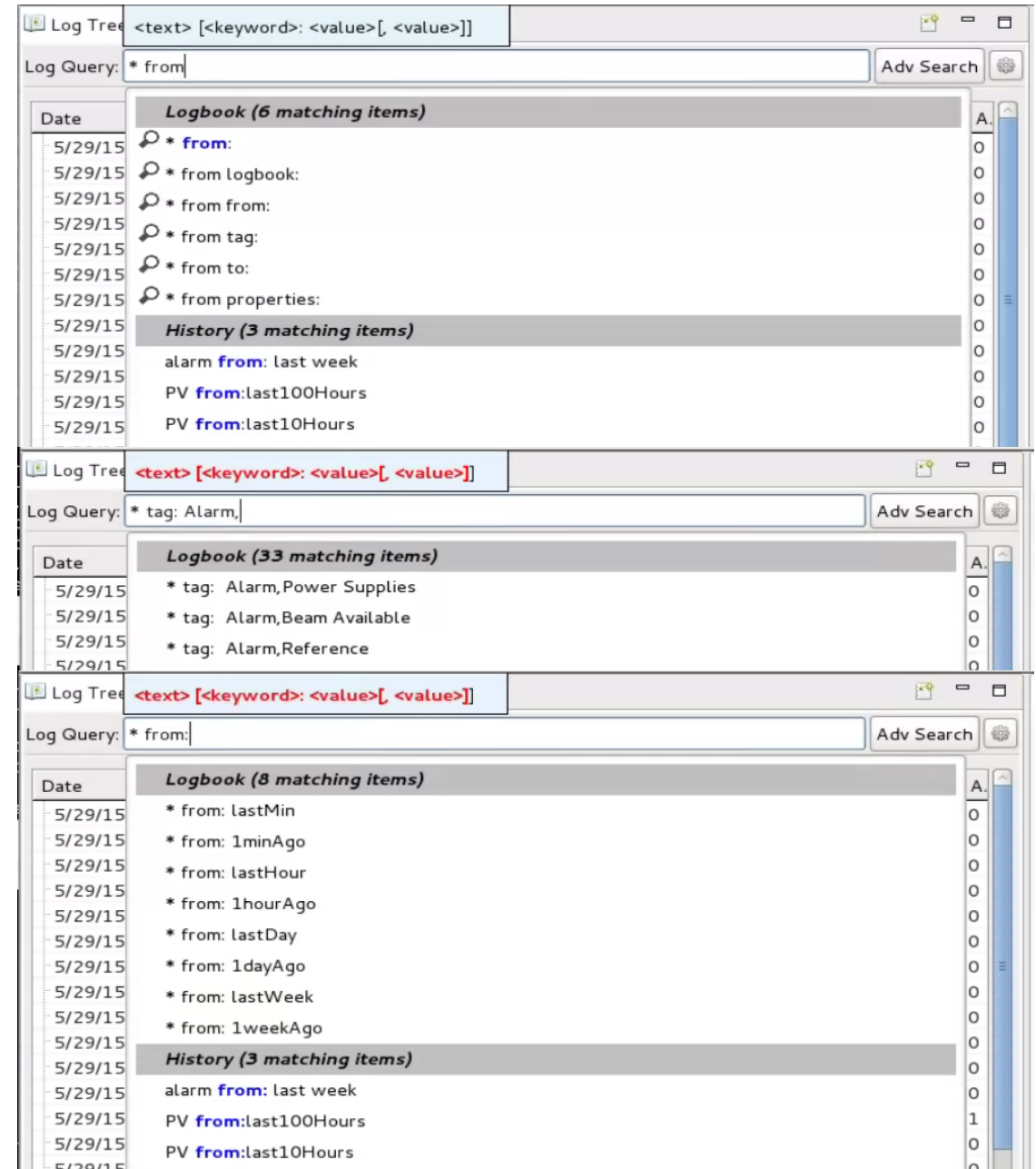
# LogViewer: Search

- Text search from the description or any text file attachments by simply typing the words
- Keywords
  - logbook, tag, to and from
- History
- Wildcards
  - \* and ?

e.g.

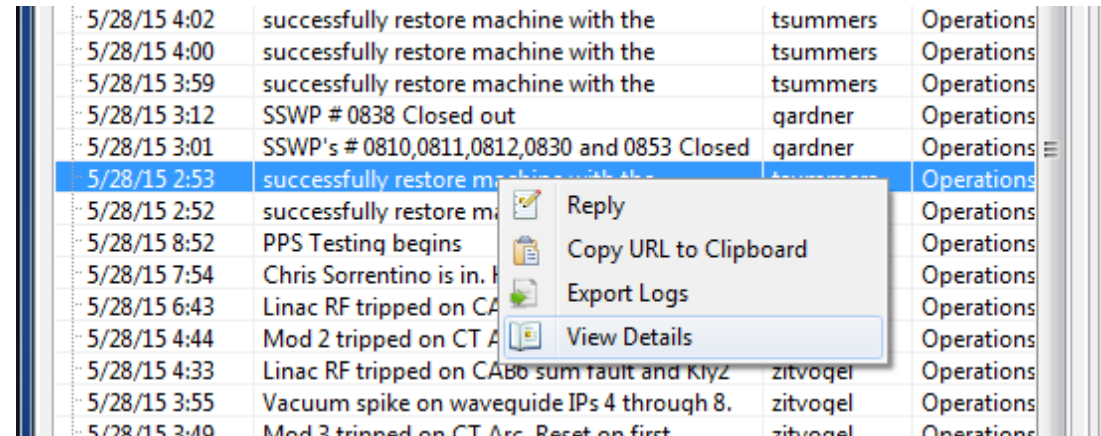
“Alarm from:last8Hours”

- Adv Search dialog



# Log Entry context menu

- Reply:
  - Open a dialog allowing you to edit a log entry
- Copy URL to clipboard:
  - Provides the externally visible URL to access this specific log entry
- Export Logs:
  - Export parts of the log entry to a .csv file
- View Details:
  - Opens the log entry in the log entry details view (same as double click)

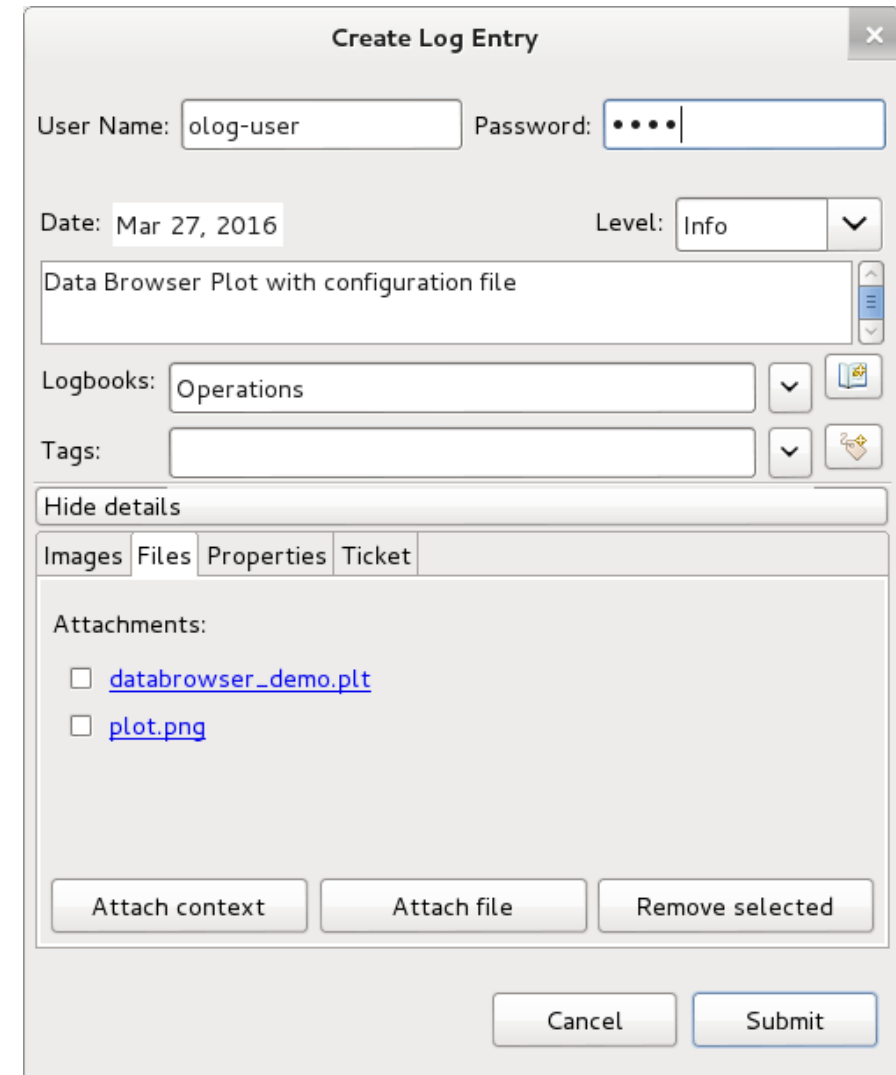


The screenshot shows a table of log entries. The row for '5/28/15 2:53' is selected. A context menu is open over this row, showing four options: 'Reply', 'Copy URL to Clipboard', 'Export Logs', and 'View Details'. The 'View Details' option is highlighted.

5/28/15 4:02	successfully restore machine with the	tsummers	Operations
5/28/15 4:00	successfully restore machine with the	tsummers	Operations
5/28/15 3:59	successfully restore machine with the	tsummers	Operations
5/28/15 3:12	SSWP # 0838 Closed out	gardner	Operations
5/28/15 3:01	SSWP's # 0810,0811,0812,0830 and 0853 Closed	gardner	Operations
5/28/15 2:53	successfully restore machine with the	tsummers	Operations
5/28/15 2:52	successfully restore machine with the	tsummers	Operations
5/28/15 8:52	PPS Testing begins		Operations
5/28/15 7:54	Chris Sorrentino is in. k		Operations
5/28/15 6:43	Linac RF tripped on CA		Operations
5/28/15 4:44	Mod 2 tripped on CT A		Operations
5/28/15 4:33	Linac RF tripped on CABO sum fault and KiyZ	zitvoqel	Operations
5/28/15 3:55	Vacuum spike on waveguide IPs 4 through 8.	zitvoqel	Operations
5/28/15 3:40	Mod 3 tripped on CT Arc. Reset on first	zitvoqel	Operations

# Rich Log Entries

- Save Context
  - Configuration files for cs-studio applications (.plt)
  - Controls system data (List of process variables)
  - Information related to other services (Trac tickets , ChannelFinder queries)



The screenshot shows a 'Create Log Entry' dialog box with the following fields and controls:

- User Name:** olog-user
- Password:** masked with four dots
- Date:** Mar 27, 2016
- Level:** Info (dropdown menu)
- Data Browser Plot with configuration file:** A text area containing the text 'Data Browser Plot with configuration file'.
- Logbooks:** Operations (dropdown menu)
- Tags:** (empty dropdown menu)
- Hide details:** A button to toggle the details section.
- Attachments:** A list of attachments with checkboxes:
  - ☐ [databrowser\\_demo.plt](#)
  - ☐ [plot.png](#)
- Buttons:** Attach context, Attach file, Remove selected, Cancel, Submit.

# Olog Clients – CS-Studio

CS-Studio

File Edit Search CS-Studio Window Help

Log Tree

Log Query: \* Adv Search

Date	Description	Owner	Logbooks	Tags
3/27/16	Data Browser Plot with	olog-user	Operation	
3/27/16	Data Browser Plot	olog-user	Operation	
3/27/16	Current Alarms	olog-user	Operation	
3/27/16	Creating the first simple entry.	olog-user	Operation	

Log Entry

Date: Mar 27, 2016 Level: Info

Data Browser Plot with configuration file

Logbooks: Operations

Tags:

Hide details

Images Files Properties

Images:

Position (Degrees)

2016-03-27

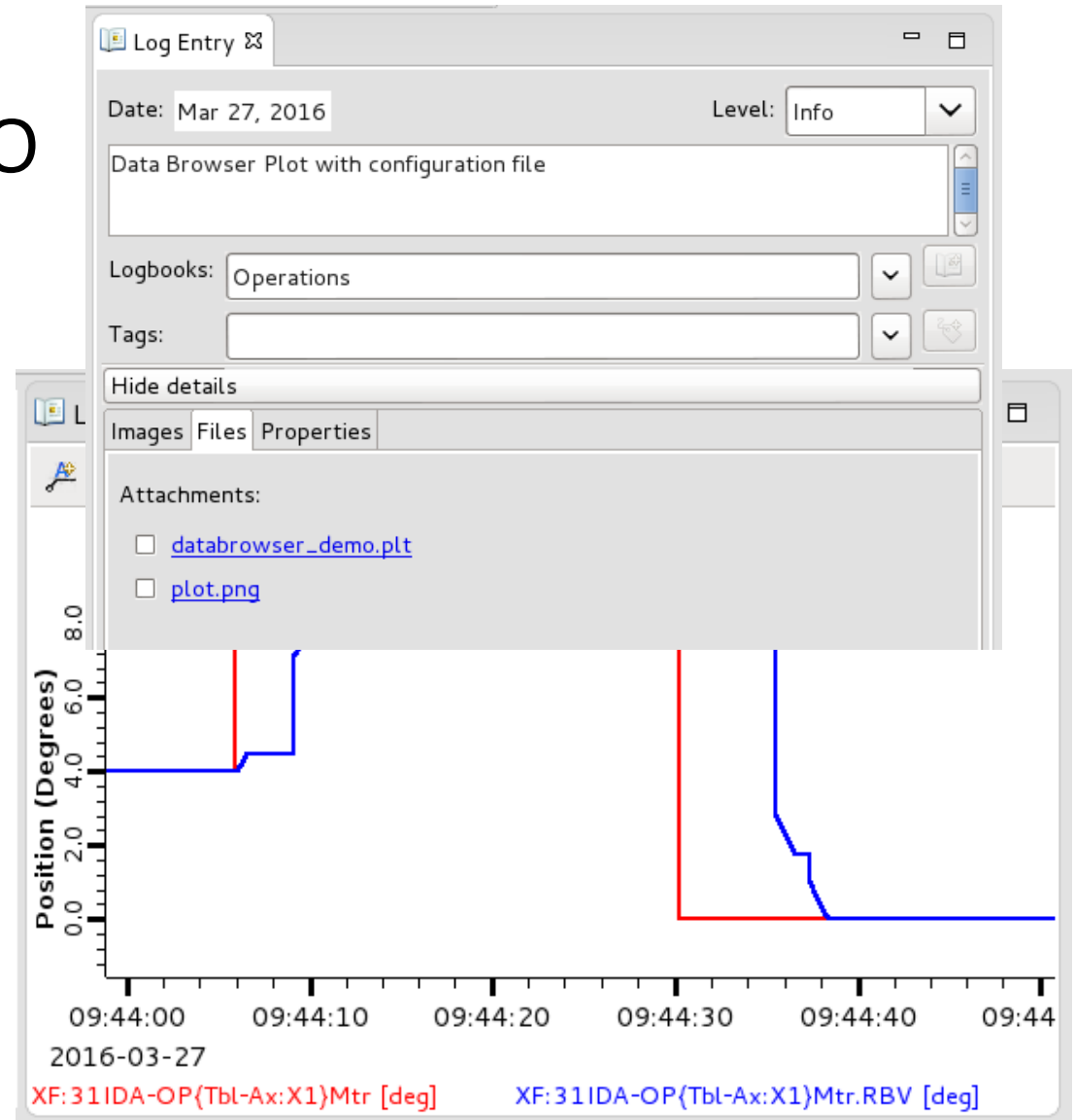
XP 31IDA-OP(T6i-Au-X3)Mtr [deg] XP 31IDA-OP(T6i-Au-X3)Mtr RBV [deg]

Previous page 1 Next page

train

# Olog Clients – CS-Studio

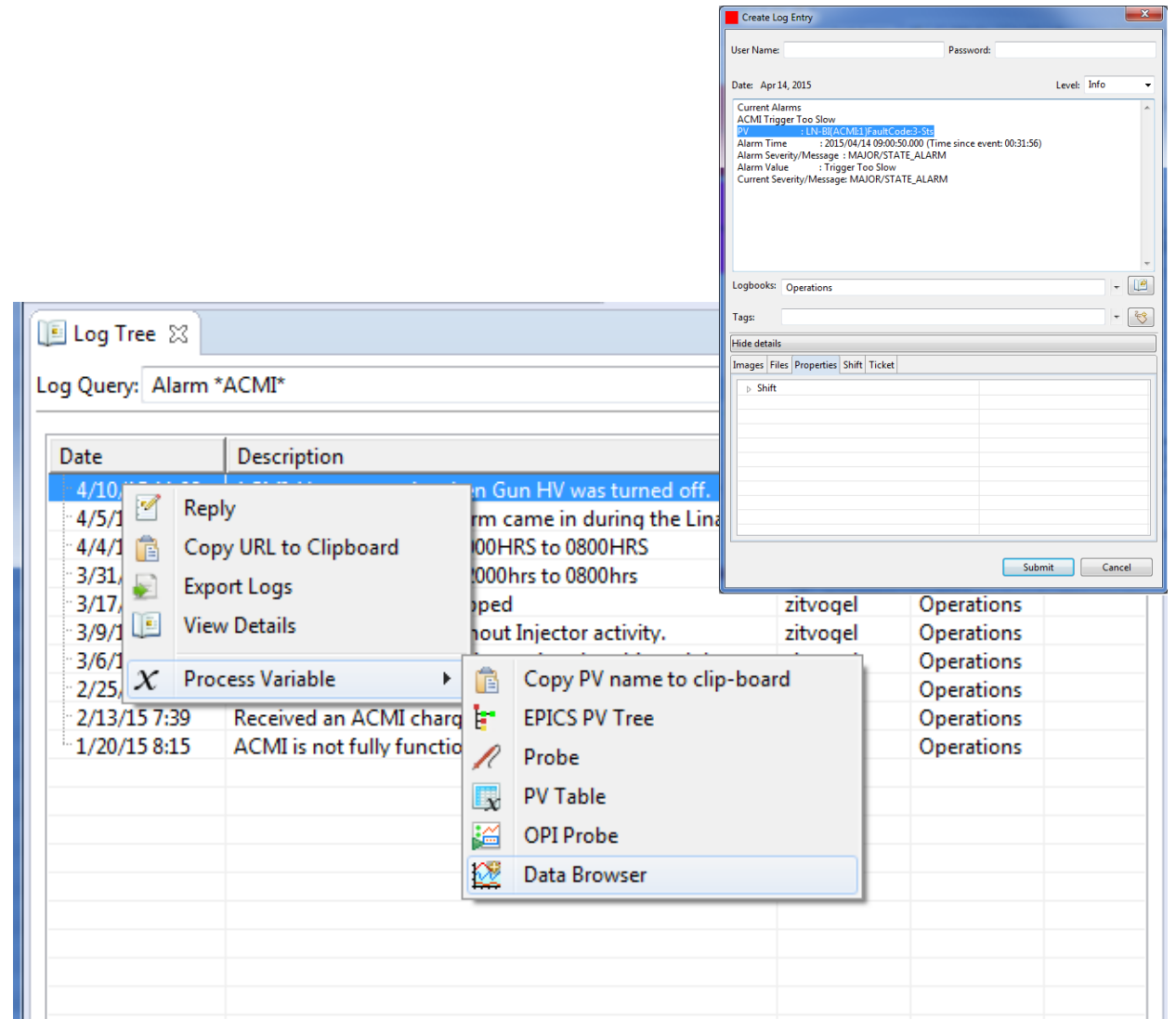
- Restore Context
  - Launch applications initialized to the state as described while making the log entry
  - Open archived data for associated pv's
  - Run OPI screens
  - Query other services





# Log Entries with PVs

- If log entries contain pv names defined with a specified format, cs-studio is able to extract that pv information from the log entry.
- CS-Studio will add the “Process Variable” sub menu to the context menu when it can extract a PV.
- The default syntax is PV:<PVName>/n, however we can define any regular expression for recognizing pv names.
- e.g.  
PV: XF:31IDA-OP{Tbl-Ax:X1}Mtr



# Olog Clients – CS-Studio

- Adapters
  - Provide dynamic runtime integration with cs-studio applications
  - Maintain loose coupling
- Extensions
  - Pluggable UI

Create Log Entry

User Name:  Password:

Date: Sep 27, 2013 Level: Info

Creating a Ticket

Logbooks: Operations

Tags:

Hide details

Images Files Properties **Ticket** Context

Tickets:

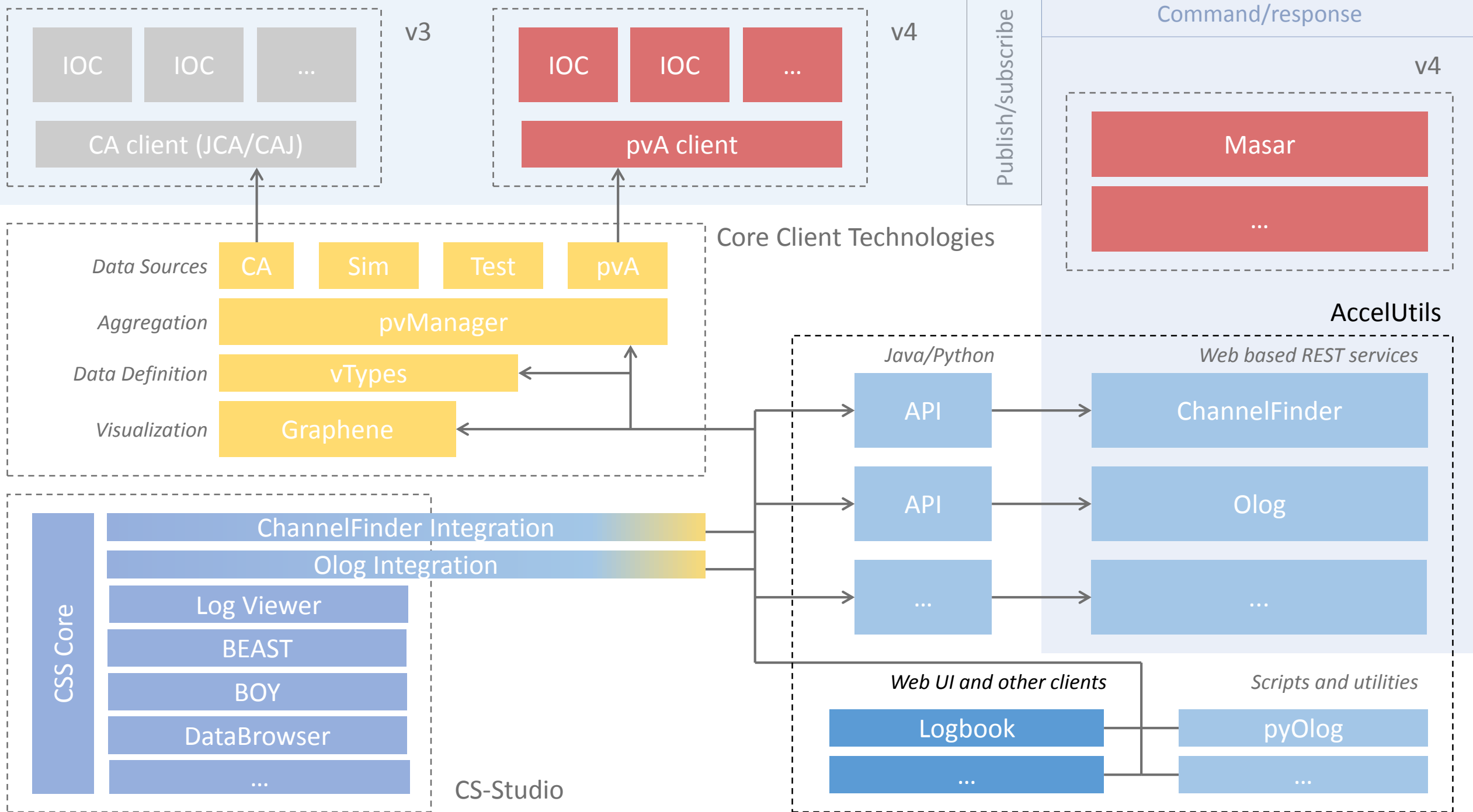
Ticket Id: 3245

URL: <http://trac.nsls2.bnl.gov/issues/3245>

Attach

Submit Cancel

Web client



# Olog Clients – Webclient

Olog v0.4 [New Log Entry](#) User

[Filter Log Entries](#)

LOGBOOKS

Filter Logbooks ...

[Controls Commissioning](#)

[Electronics Maintenance](#)

[LOTO](#)

[Machine Physics](#)

[Mechanical Technicians](#)

[Operations](#)

TAGS

CREATED FROM

CREATED FROM - TO

☒ Include history

☒ Show newest first

Search ... [Search](#)

**rfiller, 2/4/14, 3:46 pm** 2/4/14, 3:46 pm  
Saved machine snapshot 583 which is the MBM mode to dump2.

**xiyang, 2/4/14, 3:44 pm** 2/4/14, 3:44 pm  
Make online live machine model for LTB in CSS. Now only LTB-B1 is in ap-HLA, and will wait for all the LTB dipoles are included in aphla in order for the final test of the code.

**rfiller, 2/4/14, 3:43 pm** 2/4/14, 3:43 pm  
Linac in MBM mode. 1.55nC on ICT1. Energy:199.6 +/-0.01 MeV Spread: 0.706+/-0.034% Useful charge: 82.6+/-0.557% This is GREAT! This is the best so far.

**rfiller, 2/4/14, 3:35 pm** 2/4/14, 3:35 pm  
Here is the beam energy spectrum. 0.32nC at ICT. Transmission is about 70%. Energy: 200.37+/-0.04 MeV Spread:0.139+/-0.008% WOW!!!! Useful charge:81%+/-1.5% THIS IS \_THE\_ \_BEST\_ since linac restart. However, there are the occasional drop outs of beam due presumably to the cavity ...

**xiyang, 2/4/14, 3:33 pm** 2/4/14, 3:33 pm  
Found image files overwritten. It was fixed with the help from Michael. Will check through all other cameras.

**santana, 2/4/14, 3:33 pm** 2/4/14, 3:33 pm  
Booster BD1 supply had an erroneous magnet overtemp fault. M.Fulkerson found bad connection. LB-Q5 supply is replaced.

[Show history](#)

**rfiller, 2/4/14, 2:16 pm** 2/4/14, 2:16 pm  
Kly3 with beam.

**rfiller, 2/4/14, 2:16 pm** 2/4/14, 2:16 pm  
Kly3 with no beam.

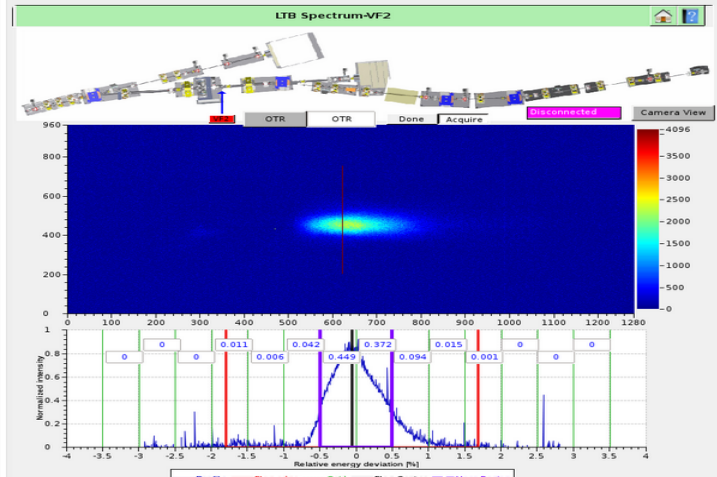
**rfiller, 2/4/14, 3:43 pm** [Show details](#)

Linac in MBM mode. 1.55nC on ICT1.  
Energy:199.6 +/-0.01 MeV  
Spread: 0.706+/-0.034%  
Useful charge: 82.6+/-0.557%

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Attachments

LTB Spectrum-VF2



Each shot

Energy	FWHM	Charge within +/-0.5%
199.61 MeV	0.739 %	82.153 %

UserLeftRegion: -0.5 % UserCharge within +/-0.5%: 82.706 %

Statistics

INFO: done:/epics/data/HLA\_result/2014-2

Over 10 shots	Average	Std Error
Energy [MeV]	199.6	0.01
FWHM [%]	0.706	0.034
Charge in +/-0.5% [%]	82.645	0.557

Save

# Olog Clients – Webclient

Olog

https://logbook.nsls2.bnl.gov/logbook/index.html#8022\_1

Olog v0.4

New Log Entry

User

Filter Log Entries

LOGBOOKS

Filter Logbooks ...

Controls Commissioning

Electronics Maintenance

LOTO

Machine Physics

Mechanical Technicians

Operations

TAGS

CREATED FROM

CREATED FROM - TO

Include history

Show newest first

Search ...

Search

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Booster BD1 supply had an erroneous magnet overtemp fault. M.Fulkerson found bad connection. LB-Q5 supply is replaced.

2/4/14, 3:33 pm

Show history

rfiller, 2/4/14, 2:16 pm

Kly3 with beam.

2/4/14, 2:16 pm

rfiller, 2/4/14, 2:16 pm

Kly3 with no beam.

2/4/14, 2:16 pm

xiyang, 2/4/14, 3:44 pm

Show details

Make online live machine model for LTB in CSS.  
Now only LTB-B1 is in ap-HLA, and will wait for all the LTB dipoles are included in aphla in order for the final test of the code.

Attachments

Start Stop

E 199.699

betax 21.4

alfax -4.378

betay 2.2

alfay -0.334

Live LTB Machine Model

HELP

Twiss at Start of LTB

Online Model Twiss

	theta	I
B1	0	0
B2	0	0
B3	0	0
B4	0	0
SP	0	0
BU3	0	0
BU4	0	0

	K1	I
Q1	-0	0
Q2	2.532	21
Q3	-0	0
Q4	-0	0
Q5	0.041	0
Q6	-3.526	0
Q7	-4.406	38.7
Q8	0	0
Q9	-5.659	49.8
Q10	6.974	53.5
Q11	-4.561	45.6
Q12	6.415	55
Q13	0	0
Q14	-3.391	29.2
Q15	1.926	17.5
Q1BD1	0	0
Q2BD1	0	0

# Olog Clients – Webclient

The screenshot displays the Olog webclient interface in a browser window. The address bar shows the URL `https://localhost:818/newlogbook/olog/public_html/new_log.html`. The page title is "Olog v0.2". The main navigation bar includes a "New Log Entry" button and a user profile "Shroffk".

The "New Log Entry" form is the central focus, featuring a back arrow, a title "New Log Entry", and three input fields: "Enter Logbooks ..." (with a book icon), "Enter Tags ..." (with a tag icon), and "Info" (with a dropdown arrow). Below these fields is a large text area for the log entry content.

The "Attachments" section is located below the text area, containing a green "+ Add files ..." button. A thumbnail of a file named "olog-properties.png" is shown, with a red "Remove" button underneath it.

The "Properties" section at the bottom of the form has a blue "Add a Property" link.

At the bottom right of the form are "Create" and "Cancel" buttons.

The right sidebar, titled "Quickly add metadata", contains two sections: "LOGBOOKS" and "TAGS". The "LOGBOOKS" section has a "Filter Logbooks ..." input field and a list of categories: "Controls commissioning", "Electronics Maintenance", "LOTO", "Mechanical Technicians", and "Operations" (which is highlighted in green). The "TAGS" section has a "Filter Tags ..." input field and a list of tags: "Bumps", "Inverpower Power Supplies", "Kicker", "Large Power Supplies", "RF Area", "Septums", "Temporary", and "Timing Systems".

# Olog Clients – Webclient

AT&T

11:49

PROCMAG

QWR085

REA Maintenance

ReA Operations

ReA Physics

TDCM

> TAGS

> CREATED FROM

> CREATED FROM - TO

Search ...

Search

laumberb, October 4th 2013, 1:58 pm

-Mike, Rogelio, and I attached a pump to the Batch Transfer Line between box 35 and MDB batch can. Vacuum started at 20mtorr.

thrush, October 4th 2013, 12:49 pm

Closed V9403 (WVotTL) and TDCMLNS. Reopened 9WSRFXN2.

laumberb, October 4th 2013, 12:48 pm

AT&T

11:59

Load more Log entries ...

nash, October 1st 2013, 2:42 pm

Hide details

REA Maintenance

Vacuum

Problem

October 1st 2013, 2:43 pm

Found box 19 vacuum station with cold cathode reading 2E-03 Torr. Evidently, the turbo pump had been unplugged (possibly due to a magnet water leak?, buckets were beneath the beamline stand). In this state, the turbo pump channels show the on command, the at-speed signal, and the fault signal. This needs to be addressed in the logic for the turbo gate valve as it stayed open.

Attachments

