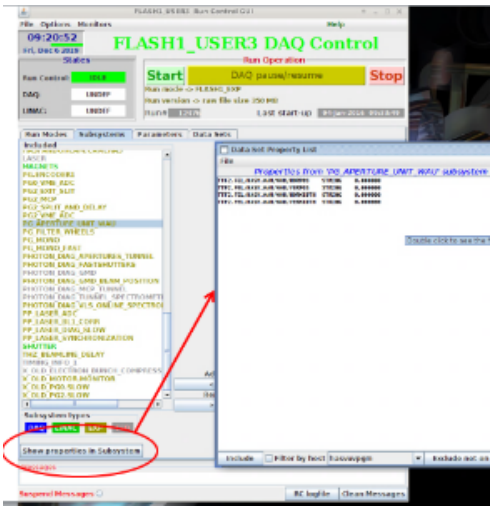
Configuring the user DAQs

BOLD entries are important and often used by Users ...

Contents:

The User DAQs can be configured to save a certain set of predefined parameters. The parameters are grouped in so-called subsystems which are described below.

The actual configuration has to be done using the RCGUI. To look what DOOCS properties are actually saved within one specific subsystem one can use the "show properties in subsystems" button.



Common subsystems (for FLASH1 and FLASH2)

DAQ internal servers (needed to run the DAQ)

Name of the subsystem	function	description
FL1/2USER1/2/3_ALL_MAIN_DAQ	DAQ Server (HAS TO BE INCLUDED!)	Main DAQ server
FL1/2USER1/2/3_DAQ_FAST_COLLECTOR	DAQ Server (HAS TO BE INCLUDED!)	Main DAQ server
FL1/2USER1/2/3_EVB	DAQ Server (HAS TO BE INCLUDED!)	Main DAQ server / Event builder
FL1/2USER1/2/3_EVB_RAW	DAQ Server (HAS TO BE INCLUDED!)	Main DAQ server / Event builder
FL1/2USER1/2/3_DAQ_MONITOR	DAQ Server (SHOULD TO BE INCLUDED!)	DAQ MONITOR server to check and send data

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Subsystems for FLASH1

FL1 Photon Diagnostics

Name of the subsystem	function	description
PHOTON_DIAG_FL1_GMD_PULSE_ENERGY	Photon Diag Information (always saved in photon diag stream)	Contains all relevant information from the GMD. Including the pulse resolved energy, the calibrated average pulse energy, the averaged XUV-beam position measured with the GMD, and the respective error bars ("sigma"). All additional expert parameters that are not needed for User data analysis (only for GMD troubbleshooting) are summarized in PHOTON_DIAG_FL1_GMD_EXPERT which is only available in the PBD.
FL1USER1/2/3_PHFLUX_COPY (Old GMD server based on VME based data) (will be removed end of 2020)	DAQ Server	Server that COPIES the pulse energy per pulse of the FEL (GMD Values) that are calculated in the PBD DAQ. **If GMD values are needed in the user DAQ THIS ONE should be used**
PHOTON_DIAG_GMD_BEAM_POSITION (Old GMD server based on VME based data) (will be removed end of 2020)	Photon Diag Information (always saved in photon diag stream)	Gas monitor detector Positioninformation of the XUV Beam.
PHOTON_DIAG_VLS_ONLINE_SPECTROMETER_CAMERA	Photon Diag Information (usually saved in photon diag stream)	Data of the online spectrometer. The spectrometer has to be moved in and set up ! check with your local contact
PHOTON_DIAG_TUNNEL_SPECTROMETER_CAMERA	Photon Diag Information (always saved in photon diag stream)	The Data of the XUV spectrometer located in the FLASH1 tunnel. (The spectra are anyway always when the mirror reflects XUV light to the detector in the GMD_DATA)
PHOTON_DIAG_APERTURES_TUNNEL	Photon Diag Information (always saved in photon diag stream)	Position of the apertures in the FLASH1 tunnel
PHOTON_DIAG_MCP_TUNNEL	Photon Diag Information (always saved in photon diag stream)	MCP tool in the photon diag. section in the tunnel - Needs experts to be operated! Usually not active

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FL1 Electron Diagnostics

Name of the subsystem	function	description
FLASH.BAM.DAQ (ELECTRON_BEAM_ARRIVAL_MONITOR)	Electron Beam diagnostics (also in GMD stream)	Arrivaltime of the electrons for each bunch
ELECTRON_BUNCH_CHARGE	Electron Beam diagnostics	Bunch charge for each electron bunch along the accelerator
ELECTRON_BUNCH_COMPRESSION_MONITOR	Electron Beam diagnostics	Bunch compression monitors. They give a relative measure for the electron bunch duration
FLASH.BPM (ELECTRON_BEAM_POSITION_MONITOR)	Electron Beam diagnostics	Beam position of the electron bunch for different positions in the accelerator

FL1USER1/2 /3_ENERGY_COPY	Electron Beam diagnostics	Server that calculates the electron energy and the resulting XUV wavelength for each bunch. IT NEEDS THE MAGNETS, ELECTRON_BUNCH_CHARGE and FLASH.BPM to be included in order to work !!!
TIMING_INFO_1	General timing information	Train ID, set, bunch pattern, start time of FLASH1 ...

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FL1 Beamlines

Name of the subsystem	function	description
PHOTONDIAG_FAST_SHUTTERS	Fast shutter status (also in GMD stream)	ADC readout of the status of the BL and the PG shutter (0 is closed / 1 is open)
EXPERIMENT_BL_POLARIZER	BL beamline data	motor positions of the permanently build in polarizer in the BL beamlines
EXPERIMENT_PROPERTY_SERVER_PARAMETER (BL2 Split and delay unit)	BL beamline data	The settings of the BL2 Autocorrelator
PG_FILTER_WHEELS	PG Beamline data	Position information of the 3 PG filter wheels
PG_APERTURE_UNIT_WAU	PG Beamline data	Slit positions of the (water cooled) aperture unit in front of the mono
PG_MONO	PG Beamline data	settings of the PG monochromator
PG_MONO_FAST	PG Beamline data	??????????????????????????????????????
PG2_EXIT_SLIT	PG Beamline data	settings of the exit slit (including the set dispersion)
PG.ENCODER	PG Beamline data	Encoder readback values of ???????? encoder at PG
PG2_SPLIT_AND_DELAY	PG Beamline data	PG2 Split and delay unit motor positions and encoder readings
PG2_MCP	PG Beamline data	MCP tool at the PG2
PG0_VME_ADC	PG Beamline data	ADCs of the PG0 VME
PG2_VME_ADC	PG Beamline data	ADCs of the PG2 VME

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Experiment related infrastructure (integrated at the beamline)

Name of the subsystem	function	description
EXPERIMENT_GHZ_ADC_BL1	Data from the Experiments	MTCA based 2/4 Gsample ADC available via patch panel at the beamline
EXPERIMENT_GHZ_ADC_BL2	Data from the Experiments	MTCA based 2/4 Gsample ADC available via patch panel at the beamline
EXPERIMENT_GHZ_ADC_BL3	Data from the Experiments	MTCA based 2/4 Gsample ADC available via patch panel at the beamline
EXPERIMENT_GHZ_ADC_PG	Data from the Experiments	MTCA based 2/4 Gsample ADC available via patch panel at the beamline
EXPERIMENT_MHZ_ADC_BL1	Data from the Experiments	MTCA based 108 Msample ADC available via patch panel at the beamline
EXPERIMENT_MHZ_ADC_BL2	Data from the Experiments	MTCA based 108 Msample ADC available via patch panel at the beamline
EXPERIMENT_MHZ_ADC_BL3	Data from the Experiments	MTCA based 108 Msample ADC available via patch panel at the beamline
EXPERIMENT_MHZ_ADC_PG	Data from the Experiments	MTCA based 108 Msample ADC available via patch panel at the beamline
EXPERIMENT_ADC_PULSE_HEIGHT_BL1	Data from the Experiments	This server integrates the area below the peaks detected by the 108 Msample ADC and delivers one value per FEL pulse in the train.
EXPERIMENT_ADC_PULSE_HEIGHT_BL2	Data from the Experiments	This server integrates the area below the peaks detected by the 108 Msample ADC and delivers one value per FEL pulse in the train.

EXPERIMENT_ADC_PULSE_HEIGHT_BL3	Data from the Experiments	This server integrates the area below the peaks detected by the 108 Msample ADC and delivers one value per FEL pulse in the train.
EXPERIMENT_ADC_PULSE_HEIGHT_PG	Data from the Experiments	This server integrates the area below the peaks detected by the 108 Msample ADC and delivers one value per FEL pulse in the train.
EXPERIMENT_ADC_DMA_PARAM	Data from the Experiments	Sample rates of the ADCs (for technical reasons this saves the rates of ALL fast ADCs at FLASH ...)
EXPERIMENT_ADC_TRIG_TIMING	Data from the Experiments	Saves the timing settings of the ADC boards. (for technical reasons this saves the timings of ALL fast ADCs at FLASH ...)
EXPERIMENT_PROPERTY_SERVER_PARAMETER	Data from the Experiments	Parameters 19,20,21 and 60 of the FS-FL property server. This numbers can be set by an external program. And the settings of the BL2 Autocorrelator

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Subsystems for User experiments

Name of the subsystem	function	description
EXPERIMENT_GOTTHARD1	Data from user experiments	data from the (mobile) PSI Gotthard fast line detector detector
EXPERIMENT_KALYPSO	Soon to come fast line detector for users ...	
EXPERIMENT_MOTT_DETECT_ADC	Data from user experiments	data from the MOTT detector
EXPERIMENT_HEXTOF	Data from user experiments	data from the HEXTOF detector
EXPERIMENT_HEXTOF_MOTORS	Data from user experiments	Motor positions of the aparatus
EXPERIMENT_THEMIS_DETECTOR_4Q	Data from user experiments	data from the THEMIS detector
EXPERIMENT_MULTIP	Data from user experiments	some cameras associated to the MULTIP experiment
EXPERIMENT_MULTIP_CAM2	Data from user experiments	some more cameras associated to the MULTIP experiment
EXPERIMENT_MUSIX	Data from user experiments	some cameras associated to the MUSiX experiment
EXPERIMENT_MUSIX_MOTORS	Data from user experiments	some motors associated to the MUSiX experiment
EXPERIMENT_COOKIEBOX_ADC	DATA from 16 GHz ADCs	used for the Petra cookiebox (only available on User3 upto now)
EXPERIMENT_BL_POLARIZER	BL beamline data	motor positions of the permanently build in polarizer in the BL beamlines

CAMP / BL1

Name of the subsystem	function	description
CAMP_PARAMETERS	Data from experiments	Pressures of the CAMP chamber(s)
CAMP_DESC	Data from experiments	Motor positions of DESC delayline
CAMP_ISEG	Data from experiments	High voltage settings of CAMP detectors
CAMP_JET	Data from experiments	Settings of the gas / cluster jet at CAMP ?

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THz Beamline

Name of the subsystem	function	description
THZ_BEAMLINE_DELAY	THz Beamline Data	Positions of the THz Delayline

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FL1 Cameras

Name of the subsystem	function	description
HASFANDORCAM.CAMERAS	Camera images	for Andor cameras (on hasfandor.desy.de)
CAMERA_BL_HASFBLCAM1	Camera images	CAMP beamline cameras on on HASFBLCAM1
CAMERA_BL_HASFBLCAM2	Camera images	cameras on on HASFBLCAM2 (also mainly CAMP usage)
CAMERA_BL_HASVUVFW01	Camera images	can save Beamline cameras (e.g. BL0M0 cam ...)
CAMERA_PG_HASVUVPGFW4	Camera images	Cameras at PG
CAMERA_PG_HASVUVPG1	Camera images	PG ROIs & Images of Cameras (1,2A,2B,3,3.2,4.2) (Computer hasvuvpgfw1; PG1 Rack)
CAMERA_PG_HASVUVPG2	Camera images	PG ROIs & Images of Cameras (ANDOR,4,6,7SES)
CAMERA_PG_HASVUVFW01	Camera images	PG2 Experiment camera ports, flexible to use for user experiments (HASVUVFW01 in PG2 Rack)
CAMERA_ICCD8	Camera images	PCO camera (meanwhile permanently installed at the FL2 Spectrometer)

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FL1 PPlaser

Name of the subsystem	function	description
PP_LASER_ADC	Pump-Probe Laser Data	ADCs used to measure photodiode signals looking at the laser beam
PP_LASER_DIAG_SLOW	Pump-Probe Laser Data	The encoder of the delayline (actually saved as fast 10 Hz data!), delay settings, streak camera etc
PP_LASER_SYNCHRONIZATION	Pump-Probe Laser Data	Info about the quality of the synchronization of the laser
CAMERA_PPLAS_HASFPPLASCAM	Camera images	Cameras in the laser hutch
FLASH.FEL.FLAPPRACK	Pump-Probe Laser Data	values of the drift correlator ?
PP_LASER_BL1_CORR	Pump-Probe Laser Data	Laser pulse duration setup at BL1 / CAMP

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Subsystems for FLASH2

FL2 Photon Diagnostics

Name of the subsystem	function	description
PHOTON_DIAG_FL2_GMD_PULSE_ENERGY	Photon Diag Information (always saved in photon diag stream)	Contains all relevant information from the GMD. Including the pulse resolved energy, the calibrated average pulse energy, the averaged XUV-beam position measured with the GMD, and the respective error bars ("sigma"). All additional expert parameters that are not needed for User data analysis (only for GMD troubbleshooting) are summarized in PHOTON_DIAG_FL2_GMD_EXPERT which is only available in the PBD2.
OPIS_DATA	Photon Diag Information (always saved in photon diag stream)	averaged (few sec) wavelength measured by OPIS (OPIS is not running permanently ... ask your local contact). FAST OPIS data is NOT forseed to be saved in the User DAQ!
CAMERA_ICCD8	Photon Diag Information	Camera of the FL2 Spectrometer located at FL22

PHOTON_DIAG_FL2_MCP	Photon Diag Information (always saved in photon diag stream)	MCP tool in the photon diag. section in the tunnel - Needs experts to be operated! Usually not active
FL2USER1_COMPACT_SPECTROMETER	Photon Diag Information (ML server)	The compact spectrometer is a movable XUV spectrometer that can be put behind a (transparent) experiment. The ML server calculated the spectrum (incl WL axis)
FL2USER1_COMPACT_SPECTROMETER_CAM	Photon Diag Information	This subsystem saved the camera images for the compact spectrometer.

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FL2 Electron Diagnostics

Name of the subsystem	function	description
FLASH.BAM.DAQ (ELECTRON_BEAM_ARRIVAL_MONITOR)	Electron Beam diagnostics (always saved in photon diag stream)	Arrival time of the electrons for each bunch. The BAM measures in the common accelerator section from FL1 and FL2. Thus arrival times of FL1 and FL2 are saved in the same trace ...
ELECTRON_BUNCH_CHARGE	Electron Beam diagnostics (always saved in photon diag stream)	Bunch charge for each electron bunch along the accelerator
ELECTRON_BUNCH_COMPRESSION_MONITOR	Electron Beam diagnostics	Bunch compression monitors. They give a relative measure for the electron bunch duration
FLASH.BPM (Electron Beam Position Monitor)	Electron Beam diagnostics	Beam position of the electron bunch for different sections in the accelerator
TIMING_INFO_1	General timing information (always saved in photon diag stream)	Train ID, set, bunch pattern, start time of FLASH2, reprate , ...

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FL2 Beamlines

Name of the subsystem	function	description
PHOTON_DIAG_FL2_FAST_SHUTTERS	Beamline information (always saved in the photon Diag DAQ as well)	Fast shutter status: ADC readout of the status of the FL2 shutter (0 is closed / 1 is open)
CAMERA_FL2.CAM01	Beamline information / camera image	set of beamline cameras in the FL2 Hall
CAMERA_FL2.CAM02	Beamline information / camera image	set of beamline cameras in the FL2 Hall

Experiment related infrastructure (integrated at the beamline)

Name of the subsystem	function	description
FLASH2.EXP.GHZ.ADC	Data from the Experiments	MTCA based 2/4 Gsample ADC available via patch panel at the beamline
FLASH2.EXP.MHZ.ADC	Data from the Experiments	MTCA based 108 Msample ADC available via patch panel at the beamline
EXPERIMENT_PROPERTY_SERVER_PARAMETER	Data from the Experiments	Parameters 19,20,21 and 60 of the FS-FL property server. This numbers can be set by an external program.

FLASH2.USER.DATA	Data from the Experiments	Parameters 0 to 7 FL24 property server. This numbers can be set by an external program. FLASH.UTIL/FL2.USR.STORE/FL24.EXP/VAL00-VAL07 (note these parameters are writable for not DESY accounts)

Subsystems for User experiments

Name of the subsystem	function	description
FLASH2.GOTTHARD	Data from user experiments	data from the (mobile) PSI Gotthard fast line detector detector
EXPERIMENT_KALYPSO	Data from user experiments	data from the (mobile) KALYPSO fast line detector detector
EXPERIMENT_MULTIP	Data from user experiments	some cameras associated to the MULTIP experiment
EXPERIMENT_MULTIP_CAM2	Data from user experiments	some more cameras associated to the MULTIP experiment
EXPERIMENT_MUSIX	Data from user experiments	some cameras associated to the MUSiX experiment
EXPERIMENT_MUSIX_MOTORS	Data from user experiments	some motors associated to the MUSiX experiment
EXPERIMENT_URSAPQ	Data from user experiments	some float values which are filled by the URSAPQ experiment (note these parameters are writable for not DESY accounts)

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FL2 PPlaser

Name of the subsystem	function	description
PP_LASER_FL2_DIAG_SLOW	Pump-Probe Laser Data	Delay settings, attonuator pos, and some synch info
FLASH_PP_LASER_LOCK	Pump-Probe Laser Data	Info about the quality of the synchronization of the laser

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