

Configuring the user DAQs

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DAQ internal servers (needed to run the DAQ)

| Name of the subsystem | function | description |
|---------------------------------|-------------------------------------|---|
| FL1USER1/2/3_ALL_MAIN_DAQ | DAQ Server (HAS TO BE INCLUDED!) | Main DAQ server |
| FL1USER1/2/3_DAQ_FAST_COLLECTOR | DAQ Server (HAS TO BE INCLUDED!) | Main DAQ server |
| FL1USER1/2/3_EVB | DAQ Server (HAS TO BE INCLUDED!) | Main DAQ server / Event builder |
| FL1USER1/2/3_EVB_RAW | DAQ Server (HAS TO BE INCLUDED!) | Main DAQ server / Event builder |
| FL1USER1/2/3_DAQ_MONITOR | DAQ Server (SHOULD TO BE INCLUDED!) | DAQ MONITOR server to check and send data |

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Photon Diagnostics

| Name of the subsystem | function | description |
|--|--|--|
| FL1USER1/2/3_PHFLUX_COPY | 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 | Photon Diag Information (also in GMD stream) | Gas monitor detector Position information of the XUV Beam. |
| PHOTON_DIAG_VLS_ONLINE_SPECTROMETER_CAMERA | Photon Diag Information (also in GMD 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 (also in GMD 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_APERTURE_S_TUNNEL | Photon Diag Information (also in GMD stream) | Position of the apertures in the FLASH1 tunnel |
| PHOTON_DIAG_MCP_TUNNEL | Photon Diag Information (also in GMD stream) | MCP tool in the photon diag. section in the tunnel |

old stuff - this needs lots of data and computation that can fail - replaced by the PHFLUX_COPY server:

| | | |
|---|--|--|
| !FL1USER1/2_PHOTON_DIAG_GMD_PHFLUX_SERVER | DAQ Server | Server that calculates the pulse energy per pulse of the FEL (GMD Values). ATTENTION - IT NEEDS SEVERAL THINGS TO BE INCLUDED in order to work !!!: PHOTON_DIAG_GMD , FL1USER1/2_ENERGY_DOGLEG, ELECTRON_BUNCH_CHARGE, MAGNETS and FLASH.BPM |
| PHOTON_DIAG_GMD | Photon Diag Information (also in GMD stream) | Gas monitor detector. Measuring the pulse energy of the FEL . HAS TO BE COMBINED WITH EXP2_PHOTON_DIAG_GMD_PHFLUX_SERVER AND ELECTRON_BUNCH_CHARGE |

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Electron Diagnostics

| Name of the subsystem | function | description |
|--|--|---|
| 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 |
| ELECTRON_BEAM_POSITION_MONITOR | Electron Beam diagnostics | Beam position of the electron bunch for different positions in the accelerator |
| FL1USER1/2_ENERGY_DOGLEG | DAQ Server | 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 | bunch pattern of the FEL (FLASH1) |

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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) |
| PG_FILTER_WHEELS | PG Beamline data | Position information of the 3 PG filter wheels |
| PG_APERTURE_UNIT_WAU | PG Beamline data | |
| PG_MONO | PG Beamline data | |
| PG2_EXIT_SLIT | PG Beamline data | |
| 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 stuff

| 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_GOTTHARD1 | Data from the Experiments | data from the PSI Gotthard detector |

| | | |
|--------------------------------------|---------------------------|--|
| EXPERIMENT_MOTT_DETECT_ADC | Data from the Experiments | data from the MOTT detector |
| EXPERIMENT_ACQIRIS_CPC11 | Data from the Experiments | ACQIRIS CPC11 data (Finis ACQ) |
| EXPERIMENT_ACQIRIS_CPC12 | Data from the Experiments | ACQIRIS CPC12 data |
| EXPERIMENT_PROPERTY_SERVER_PARAMETER | Data from the Experiments | Parameters 20 and 21 of the FS-FL property server. This numbers can be set by an external program. |
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PPlaser / THz

| 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 | Motor positions, delay settings etc |
| PP_LASER_SYNCHRONIZATION | Pump-Probe Laser Data | Info about the quality of the synchronization of the laser |
| THZ_BEAMLINE_DELAY | THz Beamline Data | Positions of the THz Delayline |

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Cameras

| Name of the subsystem | function | description |
|---------------------------|---------------|--|
| CAMERA_ICCD8]] | Camera images | PCO camera (at FL2 Spectrometer) |
| CAMERA_PPLAS_HASFPPLASCAM | Camera images | Cameras in the laser hutch |
| CAMERA_BL_HASFBLCAM1 | Camera images | Camera : CAM2 (for laser at CAMP) image and ROIs are recorded (on HASFBLCAM1) |
| 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) |

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Special Middle layer servers

| Name of the subsystem | function | description |
|------------------------------|------------|--|
| EXP2_MAGNIXX | DAQ Server | used to provide ADC (Aquiris) data plus GMD , delay etc for the same bunch ID - |
| FL1USER1 /2_SPECTGROUP_ML | DAQ Server | Middle layer server that cuts spectra in smaller chunks and saves the relevant part ... the more elegant way is to use the grouping option of the ADCs |
| FL1USER1 /2_CALIB_SERVERS | DAQ Server | ??? |
| FL1USER1 /2_IMAGE_SCAN_ML | DAQ Server | ??? |

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