

Python3 support and other developments

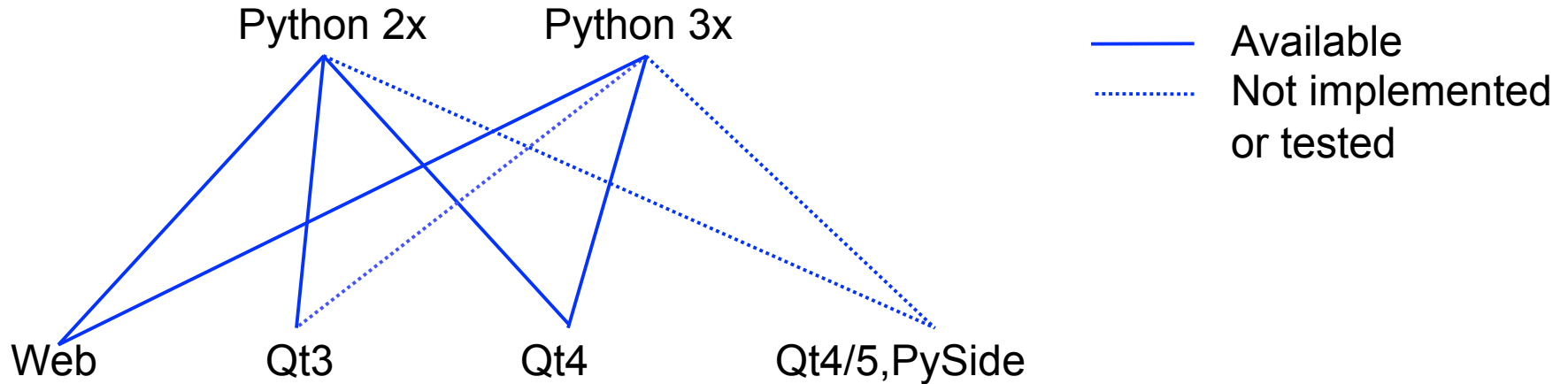
Ivars Karpīčs, EMBL-HH

Content

- Python3 support
- BeamlineTest
- SimpleHTML
- Queued autoprocessing
- Other developments

Python 3 support

- Initiated and major work done by Douglas Bezerra Beniz (LNLS).
- Support and interest to expand capacities of MXCuBE.
- Main work done in HardwareRepository. Almost no feedback from other sites. Does it work?
- Minor changes to hardware objects and Qt4 Bricks.
- Important is to ensure Python2.x compatibility.

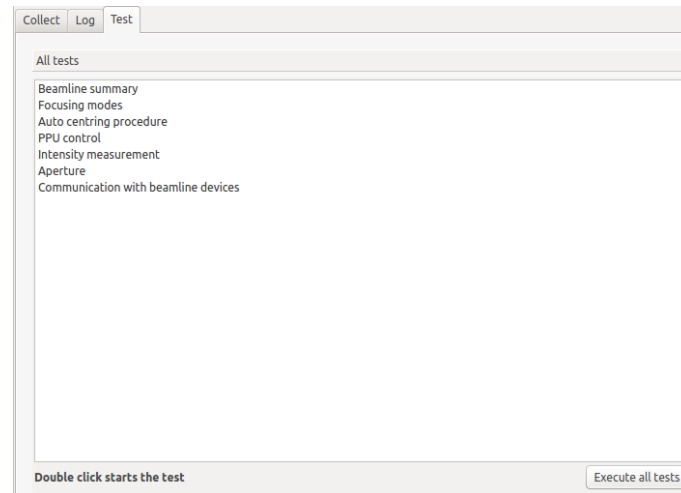


BeamlineTest

- There was a need to include test procedures.
- EMBL specific EMBLBeamlineTest.
- Available methods defined in the xml and in the hardware object.
- If method do not exists test will fail.
- Html and pdf as summary is generated.
- Possible to run single test or all test suite.

```
<available_tests>["ppu", "aperture", "autocentring", "summary", "com", "focusing", "measure_intensity"]</available_tests>  
<startup_tests>["ppu", "focusing", "measure_intensity"]</startup_tests>
```

```
TEST_DICT = {"summary": "Beamline summary",  
            "com": "Communication with beamline devices",  
            "ppu": "PPU control",  
            "focusing": "Focusing modes",  
            "aperture": "Aperture",  
            "alignbeam": "Align beam position",  
            "attenuators": "Attenuators",  
            "autocentring": "Auto centring procedure",  
            "measure_intensity": "Intensity measurement",  
            "graph": "Graph",  
            "sc_stats": "Sample changer statistics"}
```



BeamlineTest

- Html page displayed in MXCuBE

File View Graphics Help
Collect Log Test Exporter

All tests
Beamline summary
Auto centring procedure
PPU control
Aperture
Align beam position
Communication with beamline devices

View test test

Beamline P13 Test results

Executed tests:

Name	Result	Start time	End time
Communication with beamline devices	Test failed (10 devices from 40 did not replied)	2016-06-21 16:54:09	2016-06-21 16:55:09

Communication with beamline devices

Started: 2016-06-21 16:54:09
Ended: 2016-06-21 16:55:09

Result : Test failed (10 devices from 40 did not replied)

Detailed results:

Replied	DNS name	IP address	Location	MAC address	Details
True	P13Slt1PkcOh	10.13.1.1	P13 OH	00-01-05-08-FE-86	Wia32 PLC; P13Slt1BPM server
True	P13DcmPkcOh	10.13.1.2	P13 OH	00-01-05-08-FE-9C	Wia32 PLC; P13Mono sever
True	P13Slt2PkcOh	10.13.1.3	P13 OH	00-01-05-08-FE-88	Wia32 PLC; P13Slt2BPM
True	P13HdmPkcOh	10.13.1.4	P13 OH	00-01-05-08-FE-A6	Wia32 PLC; P13HDM server
True	P13Exp7bPkcEh	10.13.1.5	P13 EH	00-01-05-09-5E-DF	Wia32 PLC; P13SmpTbI server
True	P13BcuPkcEh	10.13.1.6	P13 EH	00-01-05-0A-FC-F2	Wia32 PLC; P13BCU server
True	P13Slt3PkcEh	10.13.1.7	P13 EH	00-01-05-08-FE-96	Wia32 PLC; P13Slt3BPM server
True	P13KbPkcEh	10.13.1.8	P13 EH	00-01-05-0A-FC-F6	Wia32 PLC;
True	P13DetTransPkcEh	10.13.1.9	P13 EH	00-01-05-0A-FC-F4	Wia32 PLC; P13DetTrans server
True	P13VacInPkcRacks	10.13.1.10	Racks	00-01-05-03-1D-78	
True	P13CryoPkcEh	10.13.1.11	P13 EH	00-01-05-0A-FC-F8	Wia32 PLC; P13 Cryo control
True	P13FvPkcRacks	10.13.10.1	1st floor racks	00-18-7D-12-90-0E	Wia32 PC; Mono bragg server
True	P13Mstr1PCr6	10.13.10.2	Rack 6	00-18-7D-1B-F3-2B	Instrumentation client PC
True	P13Mstr2PCr6	10.13.10.3	Rack 6	00-18-7D-12-92-5B	Instrumentation client PC
False	P13DetTransMotEh	10.13.10.4	P13 EH	00-1B-21-BA-31-76	Wia PC; Detector Translation Motor
True	p13md201	10.13.10.5	Rack 6	00-08-9B-B8-91-95	Wia32 PC; md2 diffractometer
True	P13InstrPKR6	10.13.10.7	P13 CH	00-18-7D-13-AA-19	Instrumentation client PC; touch-screen
False	P13EScanPkcEh	10.13.10.8	P13 EH	08-00-06-90-B6-1F	Wia32 PC; Energy scan labview program
True	P13MarvinDevEh	10.13.10.9	P13 EH	00-C0-3A-60-2B-F8	Marvin Controller
True	P13KbHvPr7	10.13.20.1	MEZZ Rack P13-0	00-0B-AB-24-AB-2D	Linux services; KB power supplies
False	ggonix1	10.13.20.3	MEZZ Rack P13-8	00-0E-0C-71-07-6E	Linux services; Rayonix detector computer
True	zembra	10.13.20.4	P13 CH	00-5F-49-B5-8D-80	Linux services; data collection: MXCuBE, detector server
True	p13det01	10.13.20.5	MEZZ Rack P13-8	D4-AE-52-64-8B-0A	Linux services; pilatusfm camera server
True	p13pp01	10.13.25.1	MEZZ Rack P13-8	D4-AE-52-90-66-13	Linux data/processing; pilatusfm PPU
True	illassion	10.13.25.2	MEZZ Rack P13-8	84-2B-2B-64-B4-CD	Linux data/processing
True	P13HdmCam01Oh	10.13.30.1	P13 OH	00-0F-31-01-C4-4D	Horizontally-deflecting mirror camera
False	P13WhetCam0h	10.13.30.2	P13 OH	00-0F-31-01-CB-DE	White-beam monitor camera
False	P13BcuCamEh	10.13.30.3	P13 EH	00-0F-31-01-CD-47	BCU Camera
True	P13AxisCamEh	10.13.30.4	P13 EH	00-40-8C-AB-36-0D	Camera; Axis; observation
True	P13Picco1DevOh	10.13.40.1	P13 OH	00-20-4A-D0-06-88	Picoammeter; AH501B; slit1
True	P13Picco2DevOh	10.13.40.2	P13 OH	00-20-4A-D0-02-40	Picoammeter; AH501B; slit2
True	P13Picco3DevOh	10.13.40.3	P13 EH	00-20-4A-B1-1A-B3	Picoammeter; AH501B; slit3

Double click starts the test

Execute all tests

Communication with devices

Beam focusing

PPU

Execute

Pinging zembra at 10.13.20.4

55%

Execute

Beamline P13 Test results

Executed tests:

Name	Result	Start time	End time
------	--------	------------	----------

Execution method test_foo_meth for the test Foo meth does not exist

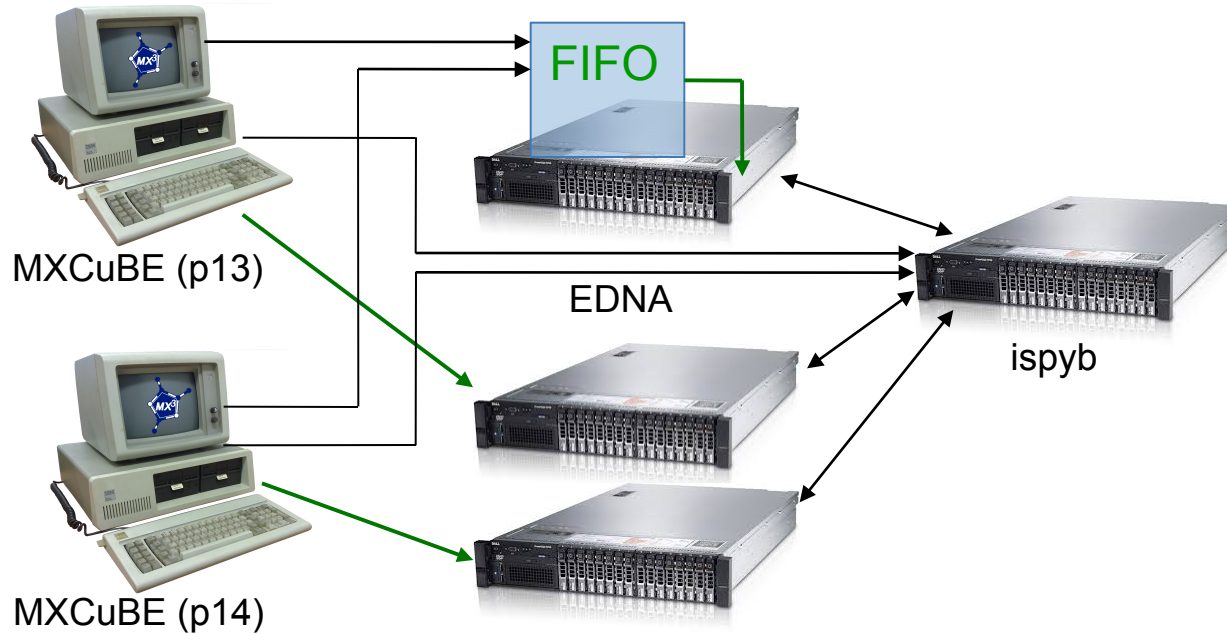
Pdf example from P13 and html form P14

SimpleHTML

- Used by ParallelProcessing to generate html report for MeshScan.
- Used also by BeamlineTest.
- Atomic methods to add text, image, headers, tables to the static html page.

Queued autoprocessing

- Autoprocessing takes more time than data collection.
- Previous job submission skipped some jobs when running many collections in the row.
- A FIFO stack introduced to queue autoprocessing.



Other developments

- Added possibility to define log template with command line argument `-logTemplate`.

```
set LOG_TEMPLATE = "%(asctime)s|%(name)-5s|%(levelname)-7s|%(message)s_/%(module)s/"
```

```
python ${MXCUBE_ROOT}/BlissFramework/Qt4_startGUI.py ${MXCUBE_GUI_FILE} --hardwareRepository=${MXCUBE_XML}
} --hardwareObjectsDirs=${MXCUBE_HWOBJ}/EMBL:${MXCUBE_HWOBJ}/sample_changer --bricksDirs=${MXCUBE_BRICKS}
--logTemplate=${LOG_TEMPLATE} $argv
```

```
/home/karpics/beamlinesw/trunk/beamline/simulation/app/mxcube/HardwareObjects.xml
=====
2016-06-22 17:49:28,040|root |INFO    |Starting MXCuBE /Qt4_startGUI/
2016-06-22 17:49:28,040|root |INFO    |Qt4 GUI file: /home/karpics/beamlinesw/trunk/beamline/simulation/app
2016-06-22 17:49:28,040|root |INFO    |Hardware repository: /home/karpics/beamlinesw/trunk/beamline/simulat
-----
2016-06-22 17:49:28,055|root |INFO    |Connected to Hardware Repository server ['/home/karpics/beamlinesw/t
pervisor/
2016-06-22 17:49:28,207|root |WARNING|Could not find autocentring library, automatic centring is disabled_
2016-06-22 17:49:28,211|HWR |ERROR  |Cannot load Hardware Object "/eh1/diff-kappa_phi" : file not found._
2016-06-22 17:49:28,211|HWR |WARNING|BeamInfo hwobj is not defined /GenericDiffractometer/
2016-06-22 17:49:28,211|HWR |DEBUG  |Adding phi motor to centring motors /GenericDiffractometer/
2016-06-22 17:49:28,212|HWR |WARNING|Motor phiz listed in the centring motor list, but not initialized /Ge
2016-06-22 17:49:28,212|HWR |WARNING|Motor phiy listed in the centring motor list, but not initialized /Ge
2016-06-22 17:49:28,212|HWR |WARNING|Motor sampx listed in the centring motor list, but not initialized /G
2016-06-22 17:49:28,212|HWR |WARNING|Motor sampy listed in the centring motor list, but not initialized /G
2016-06-22 17:49:28,212|HWR |DEBUG  |Adding kappa motor to centring motors /GenericDiffractometer/
2016-06-22 17:49:28,212|HWR |WARNING|Motor kappa_phi listed in the centring motor list, but not initialize
2016-06-22 17:49:28,212|HWR |WARNING|Motor beam_x listed in the centring motor list, but not initialized /
2016-06-22 17:49:28,212|HWR |WARNING|Motor beam_y listed in the centring motor list, but not initialized /
2016-06-22 17:49:28,213|HWR |WARNING|Diffractometer: Sample Changer is not defined /GenericDiffractometer
2016-06-22 17:49:28,236|HWR |DEBUG  |GraphicsManager: Loading graphics from configuration file /tmp/mxcub
2016-06-22 17:49:28,970|HWR |DEBUG  |Attaching TINE channel: /TEST/collection/resolution state2 /Tine/
2016-06-22 17:49:28,971|HWR |DEBUG  |Attaching TINE channel: /TEST/collection/resolution position /Tine/
```


Thank you for your attention!