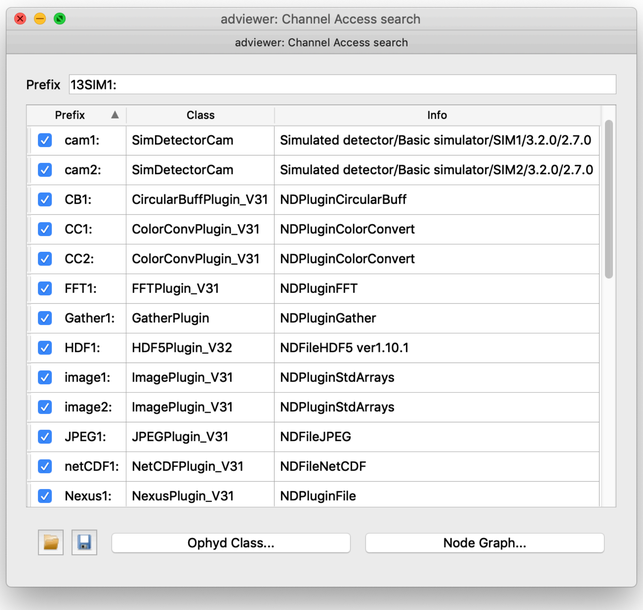
adviewer: The EPICS Area Detector Configurator You Didn't Know You Needed

SLAC NATIONAL ACCELERATOR LABORATORY

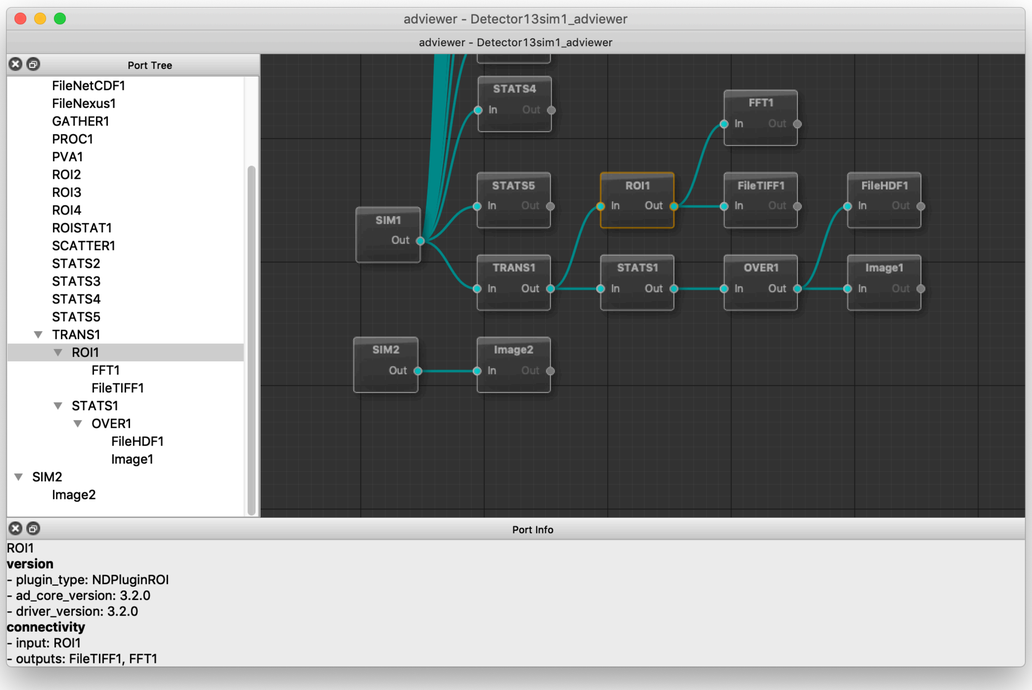
Photon Controls & Data Systems Department

Kenneth Lauer

Start with a detector PV prefix
or an IOC PV List



Configure plugin chains
interactively



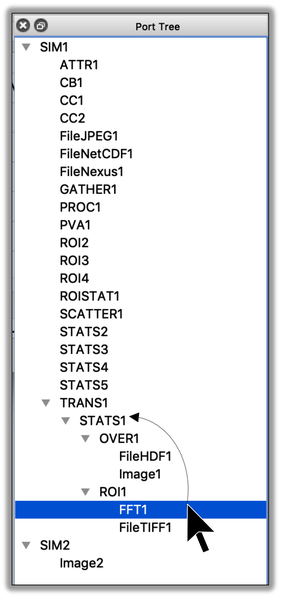
Auto-generate ophyd Detector code

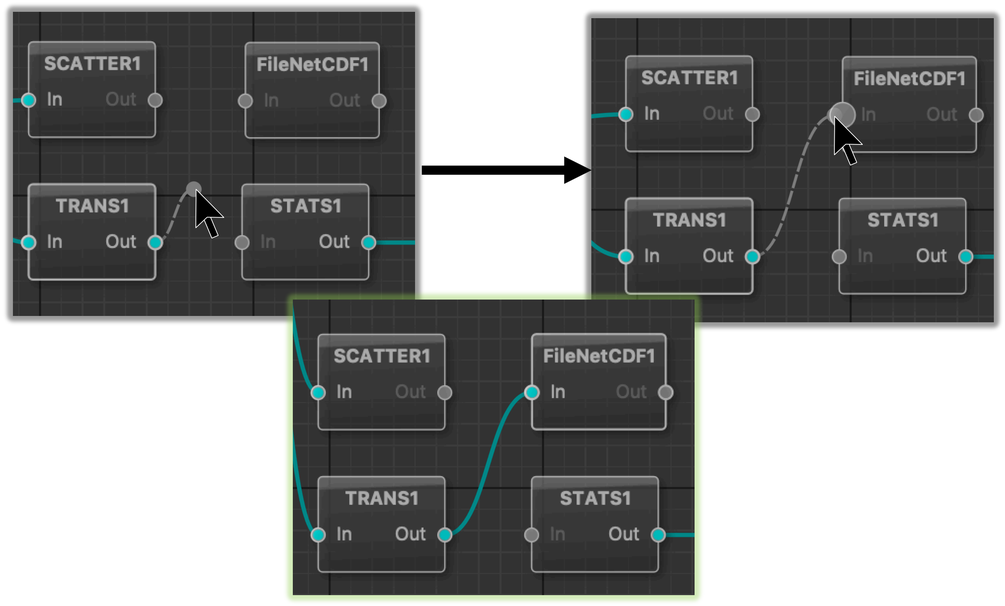
```
class Detector13sim1(DetectorBase, version=(2, 7, 0)):
    attr1 = Cpt(AttributePlugin_V31, 'Attr1:')
    cam = Cpt(SimDetectorCam, 'cam1:')
    cam2 = Cpt(SimDetectorCam, 'cam2:')
    cb1 = Cpt(CircularBuffPlugin_V31, 'CB1:')
    cc1 = Cpt(ColorConvPlugin_V31, 'CC1:')
    cc2 = Cpt(ColorConvPlugin_V31, 'CC2:')
    fft1 = Cpt(FFTPlugin_V31, 'FFT1:')
    gather1 = Cpt(GatherPlugin, 'Gather1:')
    hdf1 = Cpt(HDF5Plugin_V32, 'HDF1:')
    image1 = Cpt(ImagePlugin_V31, 'image1:')
    image2 = Cpt(ImagePlugin_V31, 'image2:')
    jpeg1 = Cpt(JPEGPlugin_V31, 'JPEG1:')
    netcdf1 = Cpt(NetCDFPlugin_V31, 'netCDF1:')
    nexus1 = Cpt(NexusPlugin_V31, 'Nexus1:')
    over1 = Cpt(OverlayPlugin_V31, 'Over1:')
    proc1 = Cpt(ProcessPlugin_V31, 'Proc1:')
    pva1 = Cpt(PvaPlugin_V31, 'Pva1:')
    roi1 = Cpt(ROIPlugin_V31, 'ROI1:')
    roi2 = Cpt(ROIPlugin_V31, 'ROI2:')
    roi3 = Cpt(ROIPlugin_V31, 'ROI3:')
    roi4 = Cpt(ROIPlugin_V31, 'ROI4:')
    roistat1 = Cpt(ROIStatPlugin_V31, 'ROIStat1:')
    scatter1 = Cpt(ScatterPlugin_V32, 'Scatter1:')
    stats1 = Cpt(StatsPlugin_V32, 'Stats1:')
    stats2 = Cpt(StatsPlugin_V32, 'Stats2:')
    stats3 = Cpt(StatsPlugin_V32, 'Stats3:')
    stats4 = Cpt(StatsPlugin_V32, 'Stats4:')
    stats5 = Cpt(StatsPlugin_V32, 'Stats5:')
    tiff1 = Cpt(TIFFPlugin_V31, 'TIFF1:')
    trans1 = Cpt(TransformPlugin_V31, 'Trans1:')


det = Detector13sim1('13SIM1:', name="det")
```

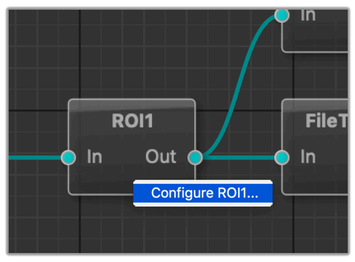
Use in your acquisition environment
or your own programs

Drag & drop in the port tree to reconfigure,

or work with the port graph directly:







Configure a plugin,
filtering settings
by name or value

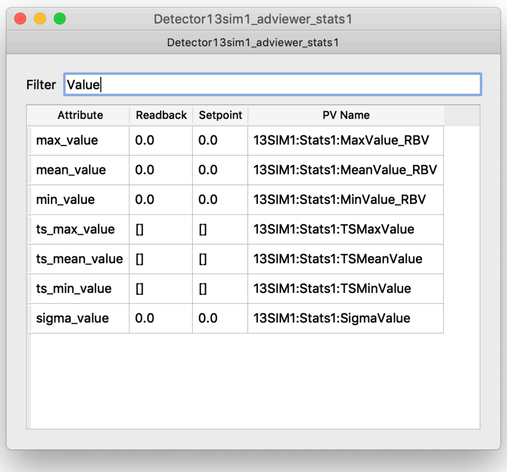


Image plugins:
spawn an image viewer

Abstract

EPICS Area Detector connects area detector cameras to plugin pipelines through the standard flat namespace that EPICS provides. Visualizing and re-configuring this port connectivity in AreaDetector can be confusing and - at times - painful. adviewer provides a Qt-based interactive graph visualization of all cameras and plugins, along with per-plugin configuration capabilities and integration with an image viewer. adviewer is built on Python, ophyd, typhon, qtpynodeeditor, and Qt (via qtpy).

https://github.com/pcdshub/adviewer/

Acknowledgments

adviewer is a side project that I've always wanted to see made but never had time to work on. I'd like to thank Brookhaven National Laboratory for providing me with a 2 week stay on the lovely Long Island - while aiding NSLS-II for an unrelated purpose – as it was during those nights and that weekend the majority of this application was implemented.

LCLS Linac Coherent Light Source

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