Status of DCS

PANDA CM 22/3

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History: Two compatible Implementations

Initial Implementation (Since ~2014)

C++: pvDataCPP, pvAccessCPP, …

Java: pvDataJava, pvAccessJava, …

Python: pvaPy

Gateway: pva2pva

✓ Included in EPICS 7: softIocPVA, 'QSRV', pvget/put/info/monitor

✓ Used in successful operation

- Same API for C++ & Java: Lowest common denominator, missing language advantages.

- Bugfixes, but no additions.

Updated Implementation (~2020)

C++: PVXS

Java: core-pva

Python: p4p

Gateway: p4p gateway

✓ APIs take advantage of each language

✓ Gateway's "fair" scheduling helps with arrays; known UDP port allows use via firewalls

✓ Active Development

  ✓ IPv6 support

  ✓ EPICS_PVA_NAME_SERVERS for TCP-only usage

- Not in EPICS base, yet.

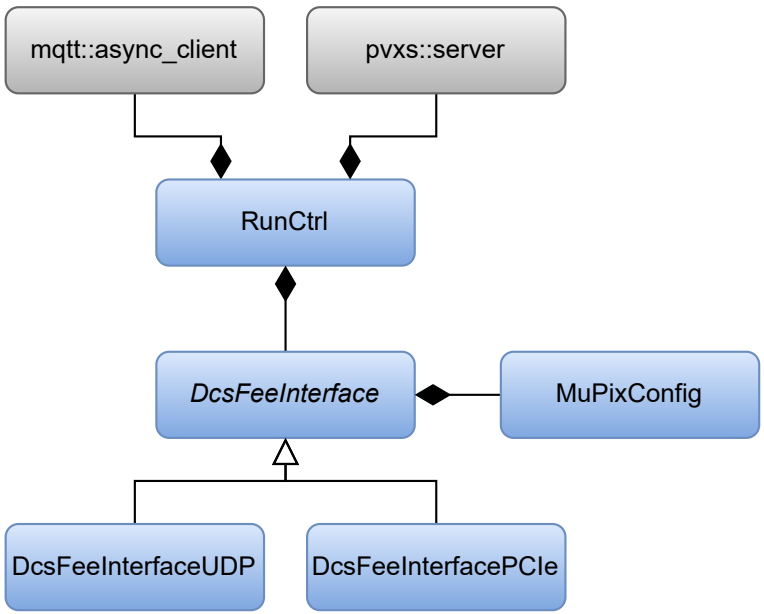
Same Protocol!

New PVA Server interface

Shortest PVaccess Server Example

```
#include <iostream>

#include <pvxs/server.h>
#include <pvxs/sharedpv.h>
#include <pvxs/nt.h>
#include <pvxs/log.h>

int main(int argc, char* argv[]) {
    using namespace pvxs;

    // (Optional) configuring logging using $PVXS_LOG
    logger_config_env();

    // Use pre-defined NTScalar structure w/ double for primary value field.
    Value initial = nt::NTScalar{TypeCode::Float64}.create();
    initial["value"] = 42.0;

    // Storage and access for network visible Process Variable
    server::SharedPV pv(server::SharedPV::buildMailbox());
    pv.open(initial);

    server::Server::fromEnv()        // Configure a server using $EPICS_PVAS_* or $EPICS_PVA_*
            .addPV("my:pv:name", pv) // add (and name) one local PV
            .run();                  // run until SIGINT

    return 0;
```

RunCtrl



- Send start/stop run commands to DCS and DAQ
- Loads configuration of MuPix and FEE (from JSON files)

MuPix Configuration

MuPix Configuration stored in JSON format

```
[
  {
    "id" : 0,
    "pixel" : [
      { "col" : 23, "row" : 104, "mask" : true }
    ]
  },
  {
    "id" : 1,
    "vref" : 1.8,
    "config" : {
      "ThHigh" : 0.7
    }
  }
]
```