

Pds App

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Pds App package

This package contains various applications that are used by online or can be used to read xtc files.

app/bldreader.cc

Beamline data reader

Classes

- **class bldData**
Public Member Functions

```
void      reset ()
void      dump () const
void      header () const
```

Public Attributes

```
unsigned      seconds
unsigned      nanoseconds
unsigned      pulseId
const BldDataFEEGasDetEnergy *      gasdet
const BldDataEBeamV0 *      ebeamV0
const BldDataEBeam *      ebeam
const BldDataPhaseCavity *      phasecav
```

- **class myLevelIter**
Public Types

```
enum {Stop, Continue};
```

Public Member Functions

```
// Constructor
myLevelIter(Xtc* xtc, unsigned depth) // inherits from XtcIterator (see xtc package)
int process(Xtc* xtc);
```

Functions

```

void      usage (char *progrname)
bool      parse_time (const char *arg, ClockTime &clk)
int       main (int argc, char *argv[])

```

app/cfgreader.cc

Configuration reader

Classes

- **class myLevelIter**
This class inherits from XtcIterator and implements a large number of `process(DetInfo, ConfigInfo)` functions that can be called depending on which detector and configuration one is looking for.
- Functions

```

void      usage (char *progrname)
int       main (int argc, char *argv[])

```

app/dmgreader.cc

classes

- **class myLevelIter**
This class inherits from XtcIterator and implements one `process` member function.
Public Types:

```
enum {Stop, Continue}
```

Public Member Functions

```

// Constructor
myLevelIter(Xtc* xtc, unsigned depth)

process(Xtc* xtc)

```

Functions

```

void usage(char* progrname)
int main(int argc, char* argv[])

```

app/livextcreader.cc

Classes

- **Class LiveXtcFileIterator**
Public Member Functions

```

// Constructor and destructor
LiveXtcFileIterator(const char* xtename, size_t maxDgramSize)
~LiveXtcFileIterator()

Dgram* next()

```

- **Class myLevelIter**

Inherits from `XtcIterator` and implements the `process` member function.

Public Types

```
enum {Stop, Continue}
```

Public Member Functions

```
// Constructor
myLevelIter(Xtc* xtc, unsigned depth)

int process(Xtc* xtc)
```

Functions

```
void usage(char* progname)
int main(int argc, char* argv[])
```

app/xtcmodify.cc

Classes

- **Class myLevelIter**

Inherits from `XtcIterator` and implements several versions of the `process` member function in order to process data from several imaging detectors.

Public Types:

```
enum {Stop, Continue}
```

Public Member Functions

```
// Constructor
myLevelIter(Xtc* xtc,
            unsigned depth,
            int fd)

void process(DetInfo& info, Princeton::ConfigV1& config)
void process(DetInfo& info, const Princeton::FrameV1& frame)
void process(const DetInfo& d, const Camera::FrameV1& f)
void process(const DetInfo& info, const FCCD::FccdConfigV2& config)
int process(Xtc* xtc)
```

Functions

```
void usage(char* progname)
int main(int argc, char* argv[])
```

app/XtcMonitorMsg.cc and app/XtcMonitorMsg.hh

Classes

- **class XtcMonitorMsg**

Public Member Functions

```

XtcMonitorMsg ()
XtcMonitorMsg (int bufferIndex)
~XtcMonitorMsg ()

int          bufferIndex () const
int          numberOfBuffers () const
int          sizeofBuffers () const
XtcMonitorMsg *      bufferIndex (int b)
void          numberOfBuffers (int n)
void          sizeofBuffers (int s)

```

Static Public Member Functions

```

static void      sharedMemoryName (const char *tag, char *buffer)
static void      eventInputQueue (const char *tag, unsigned client, char *buffer)
static void      eventOutputQueue (const char *tag, unsigned client, char *buffer)
static void      transitionInputQueue (const char *tag, unsigned client, char *buffer)
static void      discoveryQueue (const char *tag, char *buffer)

```

app/XtcMonitorServer.cc and app/XtcMonitorServer.hh

Classes

- **class Pds::XtcMonitorServer**
Public Types

```

numberOfTrBuffers = 8
Handled
Deferred
enum { numberOfTrBuffers = 8 }
enum Result { Handled, Deferred }

```

Public Member Functions

```

// Constructor and destructor
XtcMonitorServer (const char *tag,
                  unsigned sizeofBuffers,
                  unsigned numberOfEvBuffers,
                  unsigned numberOfClients,
                  unsigned sequenceLength=1)
virtual ~XtcMonitorServer()
Result events (Dgram *dg)
void routine ()

```

Protected Member Functions

```

void _pop_transition ()

```

- **class Pds::ShMsg**
This class is defined in XtcMonitorServer.cc.
Public Member Functions

```

// Constructors and destructor
ShMsg ()
ShMsg (const XtcMonitorMsg &m, Dgram *dg)
~ShMsg ()

const XtcMonitorMsg & msg () const
Dgram * dg () const

```

- **class Pds::EventSequence**

This class is defined in XtcMonitorServer.cc
Public Member Functions

```

// Constructor and destructor
EventSequence (unsigned n)
~EventSequence ()

bool          complete () const
Dgram *      dgram (unsigned i) const
unsigned      current () const
unsigned      depth () const
void          insert (Dgram *dg)
void          clear ()

```

app/xtcmonserver.cc

Classes

- **class MyMonitorServer**

Inherits from XtcMonitorServer
Public Member Functions

```

// Constructor and destructor
MyMonitorServer (const char *tag,
                 unsigned sizeofBuffers,
                 unsigned numberOfEvBuffers,
                 unsigned numberOfClients,
                 unsigned sequenceLength)
~MyMonitorServer ()

XtcMonitorServer::Result events (Dgram *dg)
Dgram * newDatagram ()
void deleteDatagram (Dgram *dg)

```

Functions

```

long long int timeDiff (struct timespec *end, struct timespec *start)
void usage (char *progname)
void sigfunc (int sig_no)
int main (int argc, char *argv[])

```

app/XtcMonitorClient.cc and app/XtcMonitorClient.hh

Classes

- **class Pds::XtcMonitorClient**

Base class.

Public Member Functions

```
// Constructor and virtual destructor
XtcMonitorClient ()
virtual ~XtcMonitorClient ()

int run (const char *partitionTag, int tr_index=0)
int run (const char *partitionTag, int tr_index, int ev_index)
virtual int processDgram (Dgram *)
```

- **class Pds::DgramHandler**

(This class is defined in XtcMonitorClient.cc, not mentioned in .hh file)

Public Member Functions:

```
// Constructors
DgramHandler (XtcMonitorClient &client,
              mqd_t trq,
              mqd_t evqin,
              mqd_t *evqout,
              unsigned ev_index,
              const char *tag, char *myShm)

// Destructor
~DgramHandler ()

// Functions
bool event ()
bool transition ()
```

app/xtcmonclient.cc

Classes

- **class MyMonitorClient**

Inherits from Pds::XtcMonitorClient, implements its own processDgram function.

Public Member Functions

```
// Constructor
MyMonitorClient (int rate)

int processDgram (Pds::Dgram *dg)
```

Functions

```
void      usage (char *progname)
int       main (int argc, char *argv[])
```

app/xtcMonClientExample.cc

Another example of an xtc monitoring client.

Classes

- **class myLevelIter**

This one is similar to the implementation in e.g. bldreader.cc

- **class MyXtcMonitorClient**

This one is similar to the implementation in xtcmonclient.cc

- **Functions**

```
void      usage (char *progname)
int       main (int argc, char *argv[])
```

app/XtcEpicsIterator.cc and app/XtcEpicsIterator.hh

*Classes

- **class Pds::XtcEpicsIterator**
Public Member Functions

```
// Constructor
XtcEpicsIterator (Xtc *xtc, unsigned int iDepth)

virtual int process (Xtc *xtc)
```

Static Public Attributes

```
static const int      iXtcVersion = 1
static const Src      srcLevel
static const int      iMaxXtcSize = sizeof(EpicsPvCtrl<DBR_DOUBLE>) * 2600
static const TypeId::Type      typeIdXtc = TypeId::Id_Epics
```

app/XtcEpicsFileReader.cc and app/XtcEpicsFileReader.hh

Classes

- **class Pds::XtcEpicsFileReader**
Public Member Functions

```
// Constructor and destructor
XtcEpicsFileReader (char *lcFnXtc)
~XtcEpicsFileReader ()

int doFileRead ()
```

app/xtcEpicsReaderTest.cc

Functions

```
int      Pds::xtcEpicsReadTest (char *sFnXtc)
void     showUsageXtcEpicsTest ()
void     showVersionXtcEpicsTest ()
int      main (int argc, char **argv)
```

app/xtcreader.cc

Classes

- **class myLevelIter**
Similar implementation as in e.g. cfgreader.cc.

Functions

```
void      usage (char *progname)
int       main (int argc, char *argv[])
```