Beam-lib

2.16.3

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Chapter 1

Main Page

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1.1 Introduction

The Beam Beam-lib C++ class library provides a base library for developing real-time and other applications with multi-processor and multi-host support. The Bmeam-lib system has the following features:

- Simple Object based development.
- Simple Object base library for Strings, Lists, Network access etc.
- Support for multi-threaded applications with Mutex Objects etc.
- Usable from C++ and Python.
- IDL based object creation tool allows easy creation of C++ and Python objects from IDL language.
- IDL provides the ability to create SQL database schema automatically.
- Database access that allows BDEV Objects to be stored.
- BOAP (Beam Object Access Protocol) provides a simple, low overhead protocol, that allows access to remote objects using an RPC mechanism.
- Database access via a layer that allows simultaineous access to different database systems including MYSQL and BEAM BDEV native object database.
- Concept of Object domains.

1.2 Components

The beam-lib system is split into the following libraries:

- LibBeam: This is the base class library containing the base 'C++' classes.
- LibBeamPy: This contains Python components to allow access to the BEAM class library from Python (limited access).
- Bidl: The BEAM BDEV IDL compiler. This takes Object definitions and Interface definitions and creates C++ and Python objects to implement them.

1.3 API Examples

Some simple client examples are listed below:

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 4

Class Index

4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 5

File Index

5.1 File List

Here is a list of all files with brief descriptions:

Chapter 6

Namespace Documentation

6.1 Boapns Namespace Reference

Classes

- class BoapEntry
- class Boapns

Variables

- const BUInt32 apiVersion = 0

6.1.1 Variable Documentation

6.1.1.1 apiVersion

```
const BUInt32 Boapns::apiVersion = 0
```

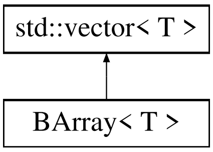
Chapter 7

Class Documentation

7.1 BArray< T > Class Template Reference

```
#include <BArray.h>
```

Inheritance diagram for BArray< T >:



Public Types

- typedef int(∗ SortFunc) (T &a, T &b)

  Prototype for sorting function.

Public Member Functions

- BArray ()
- BArray (BSize size, T value=T())
- BArray (const BArray &array)
- BUInt number () const
- void append (const T &value)
- void append (const BArray< T > &array)
- void insert (BUInt pos, const T &value)
- void del (BUInt pos, BUInt num=1)
- T & rear ()
- void sort ()

7.1.1 Detailed Description

template<class T>
class BArray< T >

Template based Array class. This is based on the Standard C++ library vector class and has all of the functionality of that class.

7.1.2 Member Typedef Documentation

7.1.2.1 SortFunc

```
template<class T>
typedef int(* BArray< T >::SortFunc) (T &a, T &b)
```

Prototype for sorting function.

7.1.3 Constructor & Destructor Documentation

7.1.3.1 BArray() [1/3]

```
template<class T>
BArray< T >::BArray ( )  [inline]
```

7.1.3.2 BArray() [2/3]

```
template<class T>
BArray< T >::BArray (
             BSize size,
             T value = T() )  [inline]
```

7.1.3.3 BArray() [3/3]

```
template<class T>
BArray< T >::BArray (
             const BArray< T > & array )  [inline]
```

7.1.4 Member Function Documentation

7.1.4.1 append() [1/2]

```
template<class T>
void BArray< T >::append (
             const T & value )   [inline]
```

7.1.4.2 append() [2/2]

```
template<class T>
void BArray< T >::append (
             const BArray< T > & array )
```

7.1.4.3 del()

```
template<class T>
void BArray< T >::del (
             BUInt pos,
             BUInt num = 1 )   [inline]
```

7.1.4.4 insert()

```
template<class T>
void BArray< T >::insert (
             BUInt pos,
             const T & value )   [inline]
```

7.1.4.5 number()

```
template<class T>
BUInt BArray< T >::number ( ) const   [inline]
```

7.1.4.6 rear()

```
template<class T>
T& BArray< T >::rear ( )  [inline]
```

7.1.4.7 sort()

```
template<class T>
void BArray< T >::sort ( )  [inline]
```

The documentation for this class was generated from the following file:

- BArray.h

7.2 BAtomic< Type > Class Template Reference

BAtomic class.

```
#include <BAtomic.h>
```

Public Member Functions

- BAtomic (Type value=0)
- Type getValue () const
- Type add (long value)
- Type operator++ (int)
- Type operator++ ()
- Type operator-- (int)
- Type operator-- ()
- operator Type () const

7.2.1 Detailed Description

template< class Type >
class BAtomic< Type >

BAtomic class.

7.2.2 Constructor & Destructor Documentation

7.2.2.1 BAtomic()

```
template<class Type >
BAtomic< Type >::BAtomic (
             Type value = 0 )  [inline]
```

7.2.3 Member Function Documentation

7.2.3.1 add()

```
template<class Type >
Type BAtomic< Type >::add (
             long value )  [inline]
```

7.2.3.2 getValue()

```
template<class Type >
Type BAtomic< Type >::getValue ( ) const  [inline]
```

7.2.3.3 operator Type()

```
template<class Type >
BAtomic< Type >::operator Type ( ) const  [inline]
```

7.2.3.4 operator++() [1/2]

```
template<class Type >
Type BAtomic< Type >::operator++ (
             int  )  [inline]
```

7.2.3.5 operator++() [2/2]

```
template<class Type >
Type BAtomic< Type >::operator++ ( )  [inline]
```

7.2.3.6 operator--() [1/2]

```
template<class Type >
Type BAtomic< Type >::operator-- (
             int  )  [inline]
```

7.2.3.7 operator--() [2/2]

```
template<class Type >
Type BAtomic< Type >::operator-- ( )  [inline]
```

The documentation for this class was generated from the following file:

- BAtomic.h

7.3 BAtomicCount Class Reference

BAtomicCount class.

```
#include <BAtomicCount.h>
```

Public Member Functions

- BAtomicCount (long value=0)
- long getValue () const
- long add (long value)
- long operator++ (int)
- long operator++ ()
- long operator-- (int)
- long operator-- ()
- operator long () const

7.3.1 Detailed Description

BAtomicCount class.

7.3.2 Constructor & Destructor Documentation

7.3.2.1 BAtomicCount()

```
BAtomicCount::BAtomicCount (
             long value = 0 )  [inline]
```

7.3.3 Member Function Documentation

7.3.3.1 add()

```
long BAtomicCount::add (
            long value )  [inline]
```

7.3.3.2 getValue()

```
long BAtomicCount::getValue ( ) const  [inline]
```

7.3.3.3 operator long()

```
BAtomicCount::operator long ( ) const  [inline]
```

7.3.3.4 operator++() [1/2]

```
long BAtomicCount::operator++ (
            int  )  [inline]
```

7.3.3.5 operator++() [2/2]

```
long BAtomicCount::operator++ ( )  [inline]
```

7.3.3.6 operator--() [1/2]

```
long BAtomicCount::operator-- (
            int  )  [inline]
```

7.3.3.7 operator--() [2/2]

```
long BAtomicCount::operator-- ( ) [inline]
```

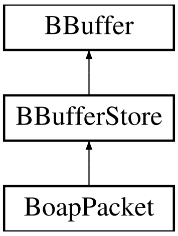
The documentation for this class was generated from the following file:

- BAtomicCount.h

7.4 BBuffer Class Reference

```
#include <BBuffer.h>
```

Inheritance diagram for BBuffer:



Public Member Functions

- BBuffer (BUInt size=0)

  Create and manipulate a data buffer. On creation the buffer size defaults to 1024 bytes.
- ∼BBuffer ()
- int setSize (BUInt32 size)

  Sets the bufer size.
- int setData (const void ∗data, BUInt32 size)

  Sets buffer data resized to contain the data.
- int writeData (BUInt32 pos, const void ∗data, BUInt32 size)

  Writes data into buffer from offset pos.
- char ∗ data ()

  The data.
- BUInt32 size ()

  Size of the buffer in bytes.
- int resize (BUInt32 size)

  Alternative to setSize()

Protected Attributes

- BUInt32 odataSize
- char ∗ odata
- BUInt32 osize

7.4.1 Constructor & Destructor Documentation

7.4.1.1 BBuffer()

```
BBuffer::BBuffer (
             BUInt size = 0 )
```

Create and manipulate a data buffer. On creation the buffer size defaults to 1024 bytes.

7.4.1.2 ∼BBuffer()

```
BBuffer::∼BBuffer ( )
```

7.4.2 Member Function Documentation

7.4.2.1 data()

```
char * BBuffer::data ( )
```

The data.

7.4.2.2 resize()

```
int BBuffer::resize (
             BUInt32 size )  [inline]
```

Alternative to setSize()

7.4.2.3 setData()

```
int BBuffer::setData (
             const void * data,
             BUInt32 size )
```

Sets buffer data resized to contain the data.

7.4.2.4 setSize()

```
int BBuffer::setSize (
             BUInt32 size )
```

Sets the bufer size.

7.4.2.5 size()

```
BUInt32 BBuffer::size ( )
```

Size of the buffer in bytes.

7.4.2.6 writeData()

```
int BBuffer::writeData (
             BUInt32 pos,
             const void * data,
             BUInt32 size )
```

Writes data into buffer from offset pos.

7.4.3 Member Data Documentation

7.4.3.1 odata

```
char* BBuffer::odata  [protected]
```

7.4.3.2 odataSize

```
BUInt32 BBuffer::odataSize  [protected]
```

7.4.3.3 osize

```
BUInt32 BBuffer::osize  [protected]
```

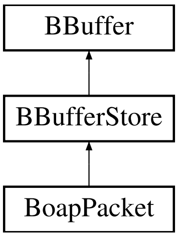
The documentation for this class was generated from the following files:

- BBuffer.h
- BBuffer.cpp

7.5 BBufferStore Class Reference

```
#include <BBuffer.h>
```

Inheritance diagram for BBufferStore:



Public Member Functions

- BBufferStore (BUInt size=0, int swapBytes=BBigEndian)
- ∼BBufferStore ()
- BUInt32 getPos ()
- void setPos (BUInt32 pos)
- BString getHexString ()
- void setHexString (BString s)
- int push (BInt8 v)
- int push (BUInt8 v)
- int push (BInt16 v)
- int push (BUInt16 v)
- int push (BInt32 v)
- int push (BUInt32 v)
- int push (BInt64 v)
- int push (BUInt64 v)
- int push (BFloat32 v)
- int push (BFloat64 v)
- int push (const BString &v)
- int push (const BError &v)
- int push (const BTimeStamp &v)
- int push (const BComplex &v)
- int push (BUInt32 nBytes, const void ∗data, const char ∗swapType="1")
- int pop (BInt8 &v)
- int pop (BUInt8 &v)
- int pop (BInt16 &v)
- int pop (BUInt16 &v)
- int pop (BInt32 &v)
- int pop (BUInt32 &v)
- int pop (BInt64 &v)
- int pop (BUInt64 &v)
- int pop (BFloat32 &v)
- int pop (BFloat64 &v)
- int pop (BString &v)
- int pop (BError &v)
- int pop (BTimeStamp &v)
- int pop (BComplex &v)
- int pop (BUInt32 nBytes, void ∗data, const char ∗swapType="1")

Protected Attributes

- BUInt32 opos
- int oswapBytes

7.5.1 Constructor & Destructor Documentation

7.5.1.1 BBufferStore()

```
BBufferStore::BBufferStore (
             BUInt size = 0,
             int swapBytes = BBigEndian )
```

7.5.1.2 ∼BBufferStore()

```
BBufferStore::∼BBufferStore ( )
```

7.5.2 Member Function Documentation

7.5.2.1 getHexString()

```
BString BBufferStore::getHexString ( )
```

7.5.2.2 getPos()

```
BUInt32 BBufferStore::getPos ( )
```

7.5.2.3 pop() [1/15]

```
int BBufferStore::pop (
             BInt8 & v )
```

7.5.2.4 pop() [2/15]

```
int BBufferStore::pop (
             BUInt8 & v )
```

7.5.2.5 pop() [3/15]

```
int BBufferStore::pop (
             BInt16 & v )
```

7.5.2.6 pop() [4/15]

```
int BBufferStore::pop (
             BUInt16 & v )
```

7.5.2.7 pop() [5/15]

```
int BBufferStore::pop (
             BInt32 & v )
```

7.5.2.8 pop() [6/15]

```
int BBufferStore::pop (
             BUInt32 & v )
```

7.5.2.9 pop() [7/15]

```
int BBufferStore::pop (
             BInt64 & v )
```

7.5.2.10 pop() [8/15]

```
int BBufferStore::pop (
             BUInt64 & v )
```

7.5.2.11 pop() [9/15]

```
int BBufferStore::pop (
            BFloat32 & v )
```

7.5.2.12 pop() [10/15]

```
int BBufferStore::pop (
            BFloat64 & v )
```

7.5.2.13 pop() [11/15]

```
int BBufferStore::pop (
            BString & v )
```

7.5.2.14 pop() [12/15]

```
int BBufferStore::pop (
            BError & v )
```

7.5.2.15 pop() [13/15]

```
int BBufferStore::pop (
            BTimeStamp & v )
```

7.5.2.16 pop() [14/15]

```
int BBufferStore::pop (
            BComplex & v )
```

7.5.2.17 pop() [15/15]

```
int BBufferStore::pop (
            BUInt32 nBytes,
            void * data,
            const char * swapType = "1" )
```

7.5.2.18 push() [1/15]

```
int BBufferStore::push (
            BInt8 v )
```

7.5.2.19 push() [2/15]

```
int BBufferStore::push (
            BUInt8 v )
```

7.5.2.20 push() [3/15]

```
int BBufferStore::push (
            BInt16 v )
```

7.5.2.21 push() [4/15]

```
int BBufferStore::push (
            BUInt16 v )
```

7.5.2.22 push() [5/15]

```
int BBufferStore::push (
            BInt32 v )
```

7.5.2.23 push() [6/15]

```
int BBufferStore::push (
            BUInt32 v )
```

7.5.2.24 push() [7/15]

```
int BBufferStore::push (
            BInt64 v )
```

7.5.2.25 push() [8/15]

```
int BBufferStore::push (
            BUInt64 v )
```

7.5.2.26 push() [9/15]

```
int BBufferStore::push (
            BFloat32 v )
```

7.5.2.27 push() [10/15]

```
int BBufferStore::push (
            BFloat64 v )
```

7.5.2.28 push() [11/15]

```
int BBufferStore::push (
            const BString & v )
```

7.5.2.29 push() [12/15]

```
int BBufferStore::push (
            const BError & v )
```

7.5.2.30 push() [13/15]

```
int BBufferStore::push (
            const BTimeStamp & v )
```

7.5.2.31 push() [14/15]

```
int BBufferStore::push (
            const BComplex & v )
```

7.5.2.32 push() [15/15]

```
int BBufferStore::push (
            BUInt32 nBytes,
            const void * data,
            const char * swapType = "1" )
```

7.5.2.33 setHexString()

```
void BBufferStore::setHexString (
            BString s )
```

7.5.2.34 setPos()

```
void BBufferStore::setPos (
            BUInt32 pos )
```

7.5.3 Member Data Documentation

7.5.3.1 opos

```
BUInt32 BBufferStore::opos  [protected]
```

7.5.3.2 oswapBytes

```
int BBufferStore::oswapBytes  [protected]
```

The documentation for this class was generated from the following files:

- BBuffer.h
- BBuffer.cpp

7.6 BComms Class Reference

```
#include <BComms.h>
```

Public Types

- enum Flush { FlushRead, FlushWrite, FlushReadWrite }

Public Member Functions

- BComms ()
- virtual ∼BComms ()
- virtual BError init ()
- virtual void close ()
- virtual const char ∗ name ()

  The name of this interface.
- virtual BUInt32 byteRate ()

  The byte rate of this interface.
- virtual BError setPacketMode (Bool packetMode)

  Set packet mode.
- virtual Bool packetMode ()

  Device is in packet mode.
- virtual BError setTimeout (BTimeout timeoutUs)

  Set communication timeout.
- virtual BError connect (const char ∗resource)

  Create a connection.
- virtual Bool isConnected ()
- virtual BError disconnect ()

  Disconnect.
- virtual void flush (Flush flush)
- virtual BUInt writeAvailable ()
- virtual BError write (const void ∗data, BUInt32 nBytes, BUInt32 &nTrans)=0
- virtual BError writeChunks (const BDataChunk ∗chunks, BUInt nChunks, BUInt32 &nTrans)
- virtual BUInt readAvailable ()
- virtual BError read (void ∗data, BUInt32 num, BUInt32 &nTrans)=0
- virtual BError wait (BUInt32 eventSet, BTimeout timeoutUs=BTimeoutForever, BUInt32 num=1)
- virtual void eventQueue (BEventQueue ∗eventQueue, BUInt32 event, BUInt32 eventSet, BUInt num=1)
- virtual void eventEnable (Bool on)

  Enable events to be sent.

Protected Attributes

- Bool oconnected
- Bool opacketMode
- BTimeout otimeout
- BEventQueue ∗ oeventQueue
- Bool oeventEnabled
- BUInt32 oevent
- BUInt32 oeventSet
- BUInt oeventNum

7.6.1 Member Enumeration Documentation

7.6.1.1 Flush

```
enum BComms::Flush
```

Enumerator

FlushRead	
FlushWrite	
FlushReadWrite	

7.6.2 Constructor & Destructor Documentation

7.6.2.1 BComms()

```
BComms::BComms ( )
```

7.6.2.2 ∼BComms()

```
BComms::∼BComms ( ) [virtual]
```

7.6.3 Member Function Documentation

7.6.3.1 byteRate()

```
BUInt32 BComms::byteRate ( ) [virtual]
```

The byte rate of this interface.

7.6.3.2 close()

```
void BComms::close ( ) [virtual]
```

7.6.3.3 connect()

```
BError BComms::connect (
             const char * resource ) [virtual]
```

Create a connection.

7.6.3.4 disconnect()

```
BError BComms::disconnect ( )  [virtual]
```

Disconnect.

7.6.3.5 eventEnable()

```
void BComms::eventEnable (
             Bool on )  [virtual]
```

Enable events to be sent.

7.6.3.6 eventQueue()

```
void BComms::eventQueue (
             BEventQueue * eventQueue,
             BUInt32 event,
             BUInt32 eventSet,
             BUInt num = 1 )  [virtual]
```

7.6.3.7 flush()

```
void BComms::flush (
             Flush flush )  [virtual]
```

7.6.3.8 init()

```
BError BComms::init ( )  [virtual]
```

7.6.3.9 isConnected()

```
Bool BComms::isConnected ( )  [virtual]
```

7.6.3.10 name()

```
const char * BComms::name ( ) [virtual]
```

The name of this interface.

7.6.3.11 packetMode()

```
Bool BComms::packetMode ( ) [virtual]
```

Device is in packet mode.

7.6.3.12 read()

```
virtual BError BComms::read (
             void * data,
             BUInt32 num,
             BUInt32 & nTrans ) [pure virtual]
```

7.6.3.13 readAvailable()

```
BUInt BComms::readAvailable ( ) [virtual]
```

7.6.3.14 setPacketMode()

```
BError BComms::setPacketMode (
             Bool packetMode ) [virtual]
```

Set packet mode.

7.6.3.15 setTimeout()

```
BError BComms::setTimeout (
             BTimeout timeoutUs ) [virtual]
```

Set communication timeout.

7.6.3.16 wait()

```
BError BComms::wait (
             BUInt32 eventSet,
             BTimeout timeoutUs = BTimeoutForever,
             BUInt32 num = 1 )  [virtual]
```

7.6.3.17 write()

```
virtual BError BComms::write (
             const void * data,
             BUInt32 nBytes,
             BUInt32 & nTrans )  [pure virtual]
```

7.6.3.18 writeAvailable()

```
BUInt BComms::writeAvailable ( )  [virtual]
```

7.6.3.19 writeChunks()

```
BError BComms::writeChunks (
             const BDataChunk * chunks,
             BUInt nChunks,
             BUInt32 & nTrans )  [virtual]
```

7.6.4 Member Data Documentation

7.6.4.1 oconnected

```
Bool BComms::oconnected  [protected]
```

7.6.4.2 oevent

```
BUInt32 BComms::oevent  [protected]
```

7.6.4.3 oeventEnabled

```
Bool BComms::oeventEnabled  [protected]
```

7.6.4.4 oeventNum

```
BUInt BComms::oeventNum  [protected]
```

7.6.4.5 oeventQueue

```
BEventQueue* BComms::oeventQueue  [protected]
```

7.6.4.6 oeventSet

```
BUInt32 BComms::oeventSet  [protected]
```

7.6.4.7 opacketMode

```
Bool BComms::opacketMode  [protected]
```

7.6.4.8 otimeout

```
BTimeout BComms::otimeout  [protected]
```

The documentation for this class was generated from the following files:

- BComms.h
- BComms.cpp

7.7 BCond Class Reference

```
#include <BCond.h>
```

Public Member Functions

- BCond ()

  Thread conditional variable.
- ∼BCond ()
- int signal ()
- int wait ()
- int timedWait (int timeOutUs)

7.7.1 Constructor & Destructor Documentation

7.7.1.1 BCond()

```
BCond::BCond ( )
```

Thread conditional variable.

7.7.1.2 ∼BCond()

```
BCond::∼BCond ( )
```

7.7.2 Member Function Documentation

7.7.2.1 signal()

```
int BCond::signal ( )
```

7.7.2.2 timedWait()

```
int BCond::timedWait (
              int timeOutUs )
```

7.7.2.3 wait()

```
int BCond::wait ( )
```

The documentation for this class was generated from the following files:

- BCond.h
- BCond.cpp

7.8 BCondBool Class Reference

Thread conditional boolean.

```
#include <BCondInt.h>
```

Public Member Functions

- BCondBool ()
- ∼BCondBool ()
- int set ()

  Set value. Wakes waiting.
- int clear ()

  Clear Value.
- int value ()

  Current value.
- int wait ()

  Wait until value is true.
- int timedWait (int timeOutUs)

  Wait until set, with timeout.
- operator int ()

7.8.1 Detailed Description

Thread conditional boolean.

7.8.2 Constructor & Destructor Documentation

7.8.2.1 BCondBool()

```
BCondBool::BCondBool ( )
```

7.8.2.2 ∼BCondBool()

```
BCondBool::∼BCondBool ( )
```

7.8.3 Member Function Documentation

7.8.3.1 clear()

```
int BCondBool::clear ( )
```

Clear Value.

7.8.3.2 operator int()

```
BCondBool::operator int ( )  [inline]
```

7.8.3.3 set()

```
int BCondBool::set ( )
```

Set value. Wakes waiting.

7.8.3.4 timedWait()

```
int BCondBool::timedWait (
             int timeOutUs )
```

Wait until set, with timeout.

7.8.3.5 value()

```
int BCondBool::value ( )
```

Current value.

7.8.3.6 wait()

```
int BCondBool::wait ( )
```

Wait until value is true.

The documentation for this class was generated from the following files:

- BCondInt.h
- BCondInt.cpp

7.9 BCondInt Class Reference

Thread conditional value.

```
#include <BCondInt.h>
```

Public Member Functions

- BCondInt ()
- ∼BCondInt ()
- void setValue (BInt value)

  Set the value. Wakes waiting.
- BInt value () const

  Current value.
- BInt increment (BInt v=1)

  Increment. Wakes waiting.
- BInt decrement (BInt v=1)

  Decrement. Wakes waiting.
- Bool waitMoreThanOrEqual (BInt v, Bool decrement=0, BTimeout timeoutUs=BTimeoutForever)

  Wait until value is at least the value given.
- Bool waitLessThanOrEqual (BInt v, Bool increment=0, BTimeout timeoutUs=BTimeoutForever)

  Wait until value is equal to or below the value given.
- Bool waitLessThan (BInt v, BTimeout timeoutUs=BTimeoutForever)

  Wait until value is equal to or below the value given.
- void operator+= (int v)

  Add to value. Wakes waiting.
- void operator-= (int v)

  Subtract from value. Wakes waiting.
- void operator++ (int)

  Increment value. Wakes waiting.
- void operator-- (int)

  Decrement value. Wakes waiting.

7.9.1 Detailed Description

Thread conditional value.

7.9.2 Constructor & Destructor Documentation

7.9.2.1 BCondInt()

```
BCondInt::BCondInt ( )
```

7.9.2.2 ∼BCondInt()

```
BCondInt::∼BCondInt ( )
```

7.9.3 Member Function Documentation

7.9.3.1 decrement()

```
BInt BCondInt::decrement (
             BInt v = 1 )
```

Decrement. Wakes waiting.

7.9.3.2 increment()

```
BInt BCondInt::increment (
             BInt v = 1 )
```

Increment. Wakes waiting.

7.9.3.3 operator++()

```
void BCondInt::operator++ (
             int   )  [inline]
```

Increment value. Wakes waiting.

7.9.3.4 operator+=()

```
void BCondInt::operator+= (
             int v )  [inline]
```

Add to value. Wakes waiting.

7.9.3.5 operator--()

```
void BCondInt::operator-- (
             int  )  [inline]
```

Decrement value. Wakes waiting.

7.9.3.6 operator-=()

```
void BCondInt::operator-= (
             int v )  [inline]
```

Subtract from value. Wakes waiting.

7.9.3.7 setValue()

```
void BCondInt::setValue (
             BInt value )
```

Set the value. Wakes waiting.

7.9.3.8 value()

```
BInt BCondInt::value ( ) const
```

Current value.

7.9.3.9 waitLessThan()

```
Bool BCondInt::waitLessThan (
             BInt v,
             BTimeout timeoutUs = BTimeoutForever )
```

Wait until value is equal to or below the value given.

7.9.3.10 waitLessThanOrEqual()

```
Bool BCondInt::waitLessThanOrEqual (
            BInt v,
            Bool increment = 0,
            BTimeout timeoutUs = BTimeoutForever )
```

Wait until value is equal to or below the value given.

7.9.3.11 waitMoreThanOrEqual()

```
Bool BCondInt::waitMoreThanOrEqual (
            BInt v,
            Bool decrement = 0,
            BTimeout timeoutUs = BTimeoutForever )
```

Wait until value is at least the value given.

The documentation for this class was generated from the following files:

- BCondInt.h
- BCondInt.cpp

7.10 BCondResource Class Reference

Resource lock.

`#include <BCondInt.h>`

Public Member Functions

- BCondResource ()
- ∼BCondResource ()
- int lock (uint32_t timeOutUs=0)

  Lock the resource, will wait for all usage to be 0.
- int unlock ()

  Unlock the resource.
- int start (uint32_t timeOutUs=0)

  Start using the resource.
- int end ()

  Finish using the resource.
- int locked ()
- int inUse ()

7.10.1 Detailed Description

Resource lock.

7.10.2 Constructor & Destructor Documentation

7.10.2.1 BCondResource()

```
BCondResource::BCondResource ( )
```

7.10.2.2 ∼BCondResource()

```
BCondResource::∼BCondResource ( )
```

7.10.3 Member Function Documentation

7.10.3.1 end()

```
int BCondResource::end ( )
```

Finish using the resource.

7.10.3.2 inUse()

```
int BCondResource::inUse ( )
```

7.10.3.3 lock()

```
int BCondResource::lock (
             uint32_t timeOutUs = 0 )
```

Lock the resource, will wait for all usage to be 0.

7.10.3.4 locked()

```
int BCondResource::locked ( )
```

7.10.3.5 start()

```
int BCondResource::start (
             uint32_t timeOutUs = 0 )
```

Start using the resource.

7.10.3.6 unlock()

```
int BCondResource::unlock ( )
```

Unlock the resource.

The documentation for this class was generated from the following files:

- BCondInt.h
- BCondInt.cpp

7.11 BCondValue Class Reference

Thread conditional value.

```
#include <BCondInt.h>
```

Public Member Functions

- BCondValue ()
- ∼BCondValue ()
- void setValue (int value)

  Set the value. Wakes waiting.
- int value ()

  Current value.
- int increment (int v=1)

  Increment. Wakes waiting.
- int decrement (int v=1)

  Decrement. Wakes waiting.
- int waitMoreThanOrEqual (int v, int decrement=0, int timeOutUs=0)

  Wait until value is at least the value given.
- int waitLessThanOrEqual (int v, int increment=0, int timeOutUs=0)

  Wait until value is equal to or below the value given.
- int waitLessThan (int v, int timeOutUs=0)

  Wait until value is equal to or below the value given.
- void operator+= (int v)

  Add to value. Wakes waiting.
- void operator-= (int v)

  Subtract from value. Wakes waiting.
- void operator++ (int)

  Increment value. Wakes waiting.
- void operator-- (int)

  Decrement value. Wakes waiting.

7.11.1 Detailed Description

Thread conditional value.

7.11.2 Constructor & Destructor Documentation

7.11.2.1 BCondValue()

```
BCondValue::BCondValue ( )
```

7.11.2.2 ∼BCondValue()

```
BCondValue::∼BCondValue ( )
```

7.11.3 Member Function Documentation

7.11.3.1 decrement()

```
int BCondValue::decrement (
             int v = 1 )
```

Decrement. Wakes waiting.

7.11.3.2 increment()

```
int BCondValue::increment (
             int v = 1 )
```

Increment. Wakes waiting.

7.11.3.3 operator++()

```
void BCondValue::operator++ (
             int  )  [inline]
```

Increment value. Wakes waiting.

7.11.3.4 operator+=()

```
void BCondValue::operator+= (
             int v )  [inline]
```

Add to value. Wakes waiting.

7.11.3.5 operator--()

```
void BCondValue::operator-- (
             int  )  [inline]
```

Decrement value. Wakes waiting.

7.11.3.6 operator-=()

```
void BCondValue::operator-= (
             int v )  [inline]
```

Subtract from value. Wakes waiting.

7.11.3.7 setValue()

```
void BCondValue::setValue (
             int value )
```

Set the value. Wakes waiting.

7.11.3.8 value()

```
int BCondValue::value ( )
```

Current value.

7.11.3.9 waitLessThan()

```
int BCondValue::waitLessThan (
             int v,
             int timeOutUs = 0 )
```

Wait until value is equal to or below the value given.

7.11.3.10 waitLessThanOrEqual()

```
int BCondValue::waitLessThanOrEqual (
             int v,
             int increment = 0,
             int timeOutUs = 0 )
```

Wait until value is equal to or below the value given.

7.11.3.11 waitMoreThanOrEqual()

```
int BCondValue::waitMoreThanOrEqual (
             int v,
             int decrement = 0,
             int timeOutUs = 0 )
```

Wait until value is at least the value given.

The documentation for this class was generated from the following files:

- BCondInt.h
- BCondInt.cpp

7.12 BCondWrap Class Reference

```
#include <BCondInt.h>
```

Public Member Functions

- BCondWrap ()
- ∼BCondWrap ()
- void setValue (uint32_t value)

  Set the value. Wakes waiting.
- uint32_t value ()

  Current value.
- uint32_t increment (uint32_t v=1)

  Increment. Wakes waiting.
- uint32_t decrement (uint32_t v=1)

  Decrement. Wakes waiting.
- int waitMoreThanOrEqual (uint32_t v, uint32_t decrement=0, uint32_t timeOutUs=0)

  Wait until value is at least the value given.
- int waitLessThanOrEqual (uint32_t v, uint32_t increment=0, uint32_t timeOutUs=0)

  Wait until value is equal to or below the value given.
- int waitLessThan (uint32_t v, uint32_t timeOutUs=0)

  Wait until value is equal to or below the value given.
- void operator+= (int v)

  Add to value. Wakes waiting.
- void operator-= (int v)

  Subtract from value. Wakes waiting.
- void operator++ (int)

  Increment value. Wakes waiting.
- void operator-- (int)

  Decrement value. Wakes waiting.

7.12.1 Constructor & Destructor Documentation

7.12.1.1 BCondWrap()

```
BCondWrap::BCondWrap ( )
```

7.12.1.2 ∼BCondWrap()

```
BCondWrap::∼BCondWrap ( )
```

7.12.2 Member Function Documentation

7.12.2.1 decrement()

```
uint32_t BCondWrap::decrement (
             uint32_t v = 1 )
```

Decrement. Wakes waiting.

7.12.2.2 increment()

```
uint32_t BCondWrap::increment (
             uint32_t v = 1 )
```

Increment. Wakes waiting.

7.12.2.3 operator++()

```
void BCondWrap::operator++ (
             int  )  [inline]
```

Increment value. Wakes waiting.

7.12.2.4 operator+=()

```
void BCondWrap::operator+= (
             int v )  [inline]
```

Add to value. Wakes waiting.

7.12.2.5 operator--()

```
void BCondWrap::operator-- (
             int  )  [inline]
```

Decrement value. Wakes waiting.

7.12.2.6 operator-=()

```
void BCondWrap::operator-= (
             int v )  [inline]
```

Subtract from value. Wakes waiting.

7.12.2.7 setValue()

```
void BCondWrap::setValue (
             uint32_t value )
```

Set the value. Wakes waiting.

7.12.2.8 value()

```
uint32_t BCondWrap::value ( )
```

Current value.

7.12.2.9 waitLessThan()

```
int BCondWrap::waitLessThan (
             uint32_t v,
             uint32_t timeOutUs = 0 )
```

Wait until value is equal to or below the value given.

7.12.2.10 waitLessThanOrEqual()

```
int BCondWrap::waitLessThanOrEqual (
            uint32_t v,
            uint32_t increment = 0,
            uint32_t timeOutUs = 0 )
```

Wait until value is equal to or below the value given.

7.12.2.11 waitMoreThanOrEqual()

```
int BCondWrap::waitMoreThanOrEqual (
            uint32_t v,
            uint32_t decrement = 0,
            uint32_t timeOutUs = 0 )
```

Wait until value is at least the value given.

The documentation for this class was generated from the following files:

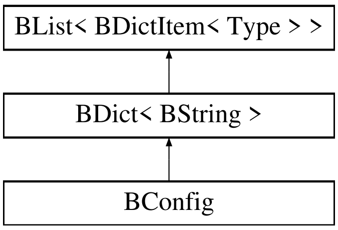
- BCondInt.h
- BCondInt.cpp

7.13 BConfig Class Reference

This class implements the configuration file access.

```
#include <BConfig.h>
```

Inheritance diagram for BConfig:



Public Member Functions

- BError open (BString fileName, BString mode="r")
- void close ()
- BError read ()
- BError write ()
- BString findValue (BString name)
- BString fileName ()

Additional Inherited Members

7.13.1 Detailed Description

This class implements the configuration file access.

7.13.2 Member Function Documentation

7.13.2.1 close()

```
void BConfig::close ( )
```

7.13.2.2 fileName()

```
BString BConfig::fileName ( )
```

7.13.2.3 findValue()

```
BString BConfig::findValue (
             BString name )
```

7.13.2.4 open()

```
BError BConfig::open (
             BString fileName,
             BString mode = "r" )
```

7.13.2.5 read()

```
BError BConfig::read ( )
```

7.13.2.6 write()

```
BError BConfig::write ( )
```

The documentation for this class was generated from the following files:

- BConfig.h
- BConfig.cpp

7.14 BDataChunk Class Reference

```
#include <BTypes.h>
```

Public Member Functions

- BDataChunk (void ∗data=0, BUInt size=0)

Public Attributes

- void ∗ data
- BUInt size

7.14.1 Constructor & Destructor Documentation

7.14.1.1 BDataChunk()

```
BDataChunk::BDataChunk (
              void * data = 0,
              BUInt size = 0 )  [inline]
```

7.14.2 Member Data Documentation

7.14.2.1 data

```
void* BDataChunk::data
```

7.14.2.2 size

```
BUInt BDataChunk::size
```

The documentation for this class was generated from the following file:

- BTypes.h

7.15 BDate Class Reference

```
#include <BDate.h>
```

Public Member Functions

- BDate (int year=0, int month=1, int day=1)
- BDate (BString str)
- ∼BDate ()
- void clear ()

  Clear the date/time.
- void setFirst ()

  Set the first date available.
- void setLast ()

  Set the last date available.
- void set (time_t time)

  Set time using Unix time (seconds from 1970-01-01)
- void set (int year=0, int month=1, int day=1)
- void setYDay (int year=0, int yday=0)
- void setNow ()

  Set the timeStamp to now.
- int year ()
- int yday ()
- int month ()
- int day ()
- void getDate (int &year, int &mon, int &day)
- BString getString ()

  Get the time as an ISO date/time string.
- BString getStringFormatted (BString format)

  Gets the time in a string form as per the format. Format syntax as per strftime()
- BError setString (BString str)

  Set the time from an ISO date/time.
- int isSet ()
- int compare (const BDate &date) const

  Compare two dates.
- operator BString ()
- int operator== (const BDate &date) const
- int operator!= (const BDate &date) const
- int operator> (const BDate &date) const
- int operator>= (const BDate &date) const
- int operator< (const BDate &date) const
- int operator<= (const BDate &date) const

Static Public Member Functions

- static int isLeap (int year)
- static int daysInMonth (int year, int month)

Public Attributes

- uint16_t oyear

  Year (0 .. 65535)
- uint16_t oyday

  Day in year (0 .. 365)

7.15.1 Constructor & Destructor Documentation

7.15.1.1 BDate() [1/2]

```
BDate::BDate (
             int year = 0,
             int month = 1,
             int day = 1 )
```

7.15.1.2 BDate() [2/2]

```
BDate::BDate (
             BString str )
```

7.15.1.3 ∼BDate()

```
BDate::∼BDate ( )
```

7.15.2 Member Function Documentation

7.15.2.1 clear()

```
void BDate::clear ( )
```

Clear the date/time.

7.15.2.2 compare()

```
int BDate::compare (
             const BDate & date ) const
```

Compare two dates.

7.15.2.3 day()

```
int BDate::day ( )
```

7.15.2.4 daysInMonth()

```
int BDate::daysInMonth (
             int year,
             int month )  [static]
```

7.15.2.5 getDate()

```
void BDate::getDate (
             int & year,
             int & mon,
             int & day )
```

7.15.2.6 getString()

```
BString BDate::getString ( )
```

Get the time as an ISO date/time string.

7.15.2.7 getStringFormatted()

```
BString BDate::getStringFormatted (
             BString format )
```

Gets the time in a string form as per the format. Format syntax as per strftime()

7.15.2.8 isLeap()

```
int BDate::isLeap (
             int year )  [static]
```

7.15.2.9 isSet()

```
int BDate::isSet ( )  [inline]
```

7.15.2.10 month()

```
int BDate::month ( )
```

7.15.2.11 operator BString()

```
BDate::operator BString ( )  [inline]
```

7.15.2.12 operator"!=()

```
int BDate::operator!= (
             const BDate & date ) const  [inline]
```

7.15.2.13 operator<()

```
int BDate::operator< (
             const BDate & date ) const  [inline]
```

7.15.2.14 operator<=()

```
int BDate::operator<= (
             const BDate & date ) const  [inline]
```

7.15.2.15 operator==()

```
int BDate::operator== (
             const BDate & date ) const  [inline]
```

7.15.2.16 operator>()

```
int BDate::operator> (
             const BDate & date ) const  [inline]
```

7.15.2.17 operator>=()

```
int BDate::operator>= (
             const BDate & date ) const  [inline]
```

7.15.2.18 set() [1/2]

```
void BDate::set (
             time_t time )
```

Set time using Unix time (seconds from 1970-01-01)

7.15.2.19 set() [2/2]

```
void BDate::set (
             int year = 0,
             int month = 1,
             int day = 1 )
```

7.15.2.20 setFirst()

```
void BDate::setFirst ( )
```

Set the first date available.

7.15.2.21 setLast()

```
void BDate::setLast ( )
```

Set the last date available.

7.15.2.22 setNow()

```
void BDate::setNow ( )
```

Set the timeStamp to now.

7.15.2.23 setString()

```
BError BDate::setString (
             BString str )
```

Set the time from an ISO date/time.

7.15.2.24 setYDay()

```
void BDate::setYDay (
             int year = 0,
             int yday = 0 )
```

7.15.2.25 yday()

```
int BDate::yday ( )
```

7.15.2.26 year()

```
int BDate::year ( )
```

7.15.3 Member Data Documentation

7.15.3.1 oyday

```
uint16_t BDate::oyday
```

Day in year (0 .. 365)

7.15.3.2 oyear

```
uint16_t BDate::oyear
```

Year (0 .. 65535)

The documentation for this class was generated from the following files:

- BDate.h
- BDate-1.cpp
- BDate.cpp

7.16 BDebugBacktrace Class Reference

```
#include <BDebug.h>
```

Public Member Functions

- BDebugBacktrace ()
- ∼BDebugBacktrace ()
- void dumpBacktraceStdout (char ∗comment)
- int dumpBacktraceFile (char ∗fileName, char ∗comment)
- void dumpBacktraceSyslog (char ∗comment)
- void dumpBacktrace (char ∗strBuf, int strBufLen, char ∗comment)

7.16.1 Constructor & Destructor Documentation

7.16.1.1 BDebugBacktrace()

```
BDebugBacktrace::BDebugBacktrace ( )
```

7.16.1.2 ∼BDebugBacktrace()

```
BDebugBacktrace::∼BDebugBacktrace ( )
```

7.16.2 Member Function Documentation

7.16.2.1 dumpBacktrace()

```
void BDebugBacktrace::dumpBacktrace (
             char * strBuf,
             int strBufLen,
             char * comment )
```

7.16.2.2 dumpBacktraceFile()

```
int BDebugBacktrace::dumpBacktraceFile (
             char * fileName,
             char * comment )
```

7.16.2.3 dumpBacktraceStdout()

```
void BDebugBacktrace::dumpBacktraceStdout (
             char * comment )
```

7.16.2.4 dumpBacktraceSyslog()

```
void BDebugBacktrace::dumpBacktraceSyslog (
             char * comment )
```

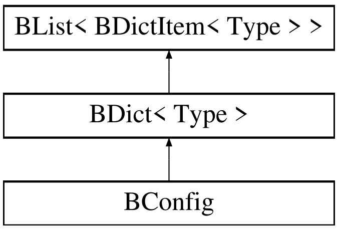
The documentation for this class was generated from the following file:

- BDebug.h

7.17 BDict< Type > Class Template Reference

```
#include <BDict.h>
```

Inheritance diagram for BDict< Type >:



Public Types

- typedef BIter iterator

Public Member Functions

- BDict (int hashSize=100)
- BDict (const BDict< Type > &dict)
- int hasKey (const BString &k) const
- BString key (const BIter &i) const
- void clear ()

    Clear the list.
- void insert (BIter &i, const BDictItem< Type > &item)

    Insert item before item.
- void append (const BDictItem< Type > &item)
- void append (const BDict< Type > &dict)
- void del (const BString &k)
- void del (BIter &i)

    Delete specified item.
- BIter find (const BString &k) const
- Type & operator[ ] (const BString &i)
- const Type & operator[ ] (const BString &i) const
- Type & operator[ ] (const BIter &i)
- const Type & operator[ ] (const BIter &i) const
- Type & operator[ ] (int i)
- const Type & operator[ ] (int i) const
- BDict< Type > operator+ (const BDict< Type > &dict) const
- BDict< Type > & operator= (const BDict< Type > &dict)
- void hashPrint ()

Additional Inherited Members

7.17.1 Member Typedef Documentation

7.17.1.1 iterator

```
template<class Type>
typedef BIter BDict< Type >::iterator
```

7.17.2 Constructor & Destructor Documentation

7.17.2.1 BDict() [1/2]

```
template<class Type >
BDict< Type >::BDict (
              int hashSize = 100 )
```

7.17.2.2 BDict() [2/2]

```
template<class Type >
BDict< Type >::BDict (
              const BDict< Type > & dict )
```

7.17.3 Member Function Documentation

7.17.3.1 append() [1/2]

```
template<class Type >
void BDict< Type >::append (
              const BDictItem< Type > & item )
```

7.17.3.2 append() [2/2]

```
template<class Type >
void BDict< Type >::append (
              const BDict< Type > & dict )
```

7.17.3.3 clear()

```
template<class Type >
void BDict< Type >::clear ( )  [virtual]
```

Clear the list.

Reimplemented from BList< BDictItem< Type > >.

7.17.3.4 del() [1/2]

```
template<class Type >
void BDict< Type >::del (
             const BString & k )
```

7.17.3.5 del() [2/2]

```
template<class Type >
void BDict< Type >::del (
             BIter & i )  [virtual]
```

Delete specified item.

Reimplemented from BList< BDictItem< Type > >.

7.17.3.6 find()

```
template<class Type >
BIter BDict< Type >::find (
             const BString & k ) const
```

7.17.3.7 hashPrint()

```
template<class Type >
void BDict< Type >::hashPrint ( )
```

7.17.3.8 hasKey()

```
template<class Type >
int BDict< Type >::hasKey (
             const BString & k ) const
```

7.17.3.9 insert()

```
template<class Type >
void BDict< Type >::insert (
             BIter & i,
             const BDictItem< Type > & item )  [virtual]
```

Insert item before item.

Reimplemented from BList< BDictItem< Type > >.

7.17.3.10 key()

```
template<class Type >
BString BDict< Type >::key (
             const BIter & i ) const
```

7.17.3.11 operator+()

```
template<class Type >
BDict< Type > BDict< Type >::operator+ (
             const BDict< Type > & dict ) const
```

7.17.3.12 operator=()

```
template<class Type >
BDict< Type > & BDict< Type >::operator= (
             const BDict< Type > & dict )
```

7.17.3.13 operator[]() [1/6]

```
template<class Type >
Type & BDict< Type >::operator[] (
             const BString & i )
```

7.17.3.14 operator[]() [2/6]

```
template<class Type >
const Type & BDict< Type >::operator[] (
             const BString & i ) const
```

7.17.3.15 operator[]() [3/6]

```
template<class Type >
Type & BDict< Type >::operator[] (
             const BIter & i )
```

7.17.3.16 operator[]() [4/6]

```
template<class Type >
const Type & BDict< Type >::operator[] (
             const BIter & i ) const
```

7.17.3.17 operator[]() [5/6]

```
template<class Type >
Type & BDict< Type >::operator[] (
             int i )
```

7.17.3.18 operator[]() [6/6]

```
template<class Type >
const Type & BDict< Type >::operator[] (
             int i ) const
```

The documentation for this class was generated from the following file:

- BDict.h

7.18 BDictItem< Type > Class Template Reference

Template based Dictionary class.

```
#include <BDict.h>
```

Public Member Functions

- BDictItem (BString k="", Type v=Type())

Public Attributes

- BString key
- Type value

7.18.1 Detailed Description

template<class Type>
class BDictItem< Type >

Template based Dictionary class.

7.18.2 Constructor & Destructor Documentation

7.18.2.1 BDictItem()

```
template<class Type>
BDictItem< Type >::BDictItem (
             BString k = "",
             Type v = Type() )  [inline]
```

7.18.3 Member Data Documentation

7.18.3.1 key

```
template<class Type>
BString BDictItem< Type >::key
```

7.18.3.2 value

```
template<class Type>
Type BDictItem< Type >::value
```

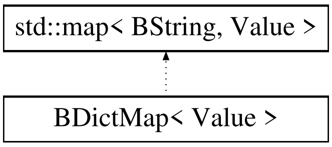
The documentation for this class was generated from the following file:

- BDict.h

7.19 BDictMap< Value > Class Template Reference

```
#include <BDictMap.h>
```

Inheritance diagram for BDictMap< Value >:



Public Types

- typedef BDictMap< Value >::iterator iterator

Public Member Functions

- void clear ()
- int hasKey (const BString &k)
- BString key (iterator &i)
- unsigned int size ()
- void start (iterator &i)
- int isEnd (iterator &i)
- void next (iterator &i)
- void del (const iterator &i)
- void del (const BString &k)
- Value & operator[ ] (iterator &i)
- Value & operator[ ] (const BString &i)

7.19.1 Detailed Description

template<typename Value>
class BDictMap< Value >

Template based Array class. This is based on the Standard C++ library map class and has all of the functionality of that class.

7.19.2 Member Typedef Documentation

7.19.2.1 iterator

```
template<typename Value>
typedef BDictMap<Value>::iterator BDictMap< Value >::iterator
```

7.19.3 Member Function Documentation

7.19.3.1 clear()

```
template<typename Value>
void BDictMap< Value >::clear ( )  [inline]
```

7.19.3.2 del() [1/2]

```
template<typename Value>
void BDictMap< Value >::del (
             const iterator & i )  [inline]
```

7.19.3.3 del() [2/2]

```
template<typename Value>
void BDictMap< Value >::del (
             const BString & k )  [inline]
```

7.19.3.4 hasKey()

```
template<typename Value>
int BDictMap< Value >::hasKey (
             const BString & k )  [inline]
```

7.19.3.5 isEnd()

```
template<typename Value>
int BDictMap< Value >::isEnd (
             iterator & i )  [inline]
```

7.19.3.6 key()

```
template<typename Value>
BString BDictMap< Value >::key (
             iterator & i )  [inline]
```

7.19.3.7 next()

```
template<typename Value>
void BDictMap< Value >::next (
             iterator & i )  [inline]
```

7.19.3.8 operator[]() [1/2]

```
template<typename Value>
Value& BDictMap< Value >::operator[] (
             iterator & i )  [inline]
```

7.19.3.9 operator[]() [2/2]

```
template<typename Value>
Value& BDictMap< Value >::operator[] (
             const BString & i )  [inline]
```

7.19.3.10 size()

```
template<typename Value>
unsigned int BDictMap< Value >::size ( )  [inline]
```

7.19.3.11 start()

```
template<typename Value>
void BDictMap< Value >::start (
             iterator & i )  [inline]
```

The documentation for this class was generated from the following file:

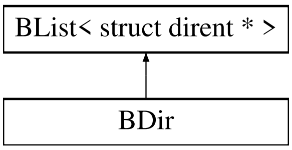
- BDictMap.h

7.20 BDir Class Reference

File system directory class.

```
#include <BDir.h>
```

Inheritance diagram for BDir:



Public Member Functions

- BDir ()
- BDir (BString name)
- ∼BDir ()
- BError open (BString name)

  Reads named directory.
- BError error ()

  Current value of error.
- BError read ()

  read/re-reads directory
- void clear ()

  Clears list.
- void setWild (BString wild)

  Set wildcard filter string used on read.
- void setSort (int on)

  Set alpha sort on/off.
- BString entryName (BIter i)

  Get filename.
- struct stat entryStat (BIter i)

  Get file stats.
- struct stat64 entryStat64 (BIter i)

  Get file stats 64.

Additional Inherited Members

7.20.1 Detailed Description

File system directory class.

7.20.2 Constructor & Destructor Documentation

7.20.2.1 BDir() [1/2]

```
BDir::BDir ( )
```

7.20.2.2 BDir() [2/2]

```
BDir::BDir (
            BString name )
```

7.20.2.3 ∼BDir()

```
BDir::∼BDir ( )
```

7.20.3 Member Function Documentation

7.20.3.1 clear()

```
void BDir::clear ( )  [virtual]
```

Clears list.

Reimplemented from BList< struct dirent ∗ >.

7.20.3.2 entryName()

```
BString BDir::entryName (
             BIter i )
```

Get filename.

7.20.3.3 entryStat()

```
struct stat BDir::entryStat (
             BIter i )
```

Get file stats.

7.20.3.4 entryStat64()

```
struct stat64 BDir::entryStat64 (
             BIter i )
```

Get file stats 64.

7.20.3.5 error()

```
BError BDir::error ( )
```

Current value of error.

7.20.3.6 open()

```
BError BDir::open (
             BString name )
```

Reads named directory.

7.20.3.7 read()

```
BError BDir::read ( )
```

read/re-reads directory

7.20.3.8 setSort()

```
void BDir::setSort (
             int on )
```

Set alpha sort on/off.

7.20.3.9 setWild()

```
void BDir::setWild (
             BString wild )
```

Set wildcard filter string used on read.

The documentation for this class was generated from the following files:

- BDir.h
- BDir.cpp

7.21 BDuration Class Reference

```
#include <BDuration.h>
```

Public Member Functions

- BDuration (int hour=0, int minute=0, int second=0, int microsecond=0)
- BDuration (BString str)
- ∼BDuration ()
- void clear ()

  Clear the duration.
- void set (int hour=0, int minute=0, int second=0, int microsecond=0)
- void addMilliSeconds (int64_t milliSeconds)

  Add the given number of milli seconds.
- void addMicroSeconds (int64_t microSeconds)

  Add the given number of micro seconds.
- void addSeconds (int seconds)

  Add the given number of seconds.
- uint32_t getSeconds ()

  Get number of seconds.
- uint64_t getMicroSeconds ()

  Get number of micro seconds.
- int hour ()
- int minute ()
- int second ()
- int microSecond ()
- BString getString ()

  Get the time as an ISO date/time string.
- BError setString (BString time)

  Set the time from an ISO date/time.

7.21.1 Constructor & Destructor Documentation

7.21.1.1 BDuration() [1/2]

```
BDuration::BDuration (
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.21.1.2 BDuration() [2/2]

```
BDuration::BDuration (
             BString str )
```

7.21.1.3 ∼BDuration()

```
BDuration::∼BDuration ( )
```

7.21.2 Member Function Documentation

7.21.2.1 addMicroSeconds()

```
void BDuration::addMicroSeconds (
             int64_t microSeconds )
```

Add the given number of micro seconds.

7.21.2.2 addMilliSeconds()

```
void BDuration::addMilliSeconds (
             int64_t milliSeconds )
```

Add the given number of milli seconds.

7.21.2.3 addSeconds()

```
void BDuration::addSeconds (
             int seconds )
```

Add the given number of seconds.

7.21.2.4 clear()

```
void BDuration::clear ( )
```

Clear the duration.

7.21.2.5 getMicroSeconds()

```
uint64_t BDuration::getMicroSeconds ( )
```

Get number of micro seconds.

7.21.2.6 getSeconds()

```
uint32_t BDuration::getSeconds ( )
```

Get number of seconds.

7.21.2.7 getString()

```
BString BDuration::getString ( )
```

Get the time as an ISO date/time string.

7.21.2.8 hour()

```
int BDuration::hour ( )
```

7.21.2.9 microSecond()

```
int BDuration::microSecond ( )
```

7.21.2.10 minute()

```
int BDuration::minute ( )
```

7.21.2.11 second()

```
int BDuration::second ( )
```

7.21.2.12 set()

```
void BDuration::set (
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.21.2.13 setString()

```
BError BDuration::setString (
            BString time )
```

Set the time from an ISO date/time.

The documentation for this class was generated from the following files:

- BDuration.h
- BDuration.cpp

7.22 BEntry Class Reference

Manipulate a name value pair.

```
#include <BEntry.h>
```

Public Member Functions

- BEntry ()
- BEntry (BString name, BString value)

  Set name and value.
- BEntry (BString line)

  Set name and value from white space deliminated string.
- BString getName ()

  Get the name.
- BString getValue ()

  Get the value.
- void setLine (BString line)

  Set name and value from white space deliminated string.
- void setName (BString name)

  Set the name.
- void setValue (BString value)

  Set the value.
- BString line ()

  Return name and value as padded single string.
- void print ()

  Print name and value.

7.22.1 Detailed Description

Manipulate a name value pair.

7.22.2 Constructor & Destructor Documentation

7.22.2.1 BEntry() [1/3]

```
BEntry::BEntry ( )
```

7.22.2.2 BEntry() [2/3]

```
BEntry::BEntry (
             BString name,
             BString value )
```

Set name and value.

7.22.2.3 BEntry() [3/3]

```
BEntry::BEntry (
             BString line )
```

Set name and value from white space deliminated string.

7.22.3 Member Function Documentation

7.22.3.1 getName()

```
BString BEntry::getName ( )
```

Get the name.

7.22.3.2 getValue()

```
BString BEntry::getValue ( )
```

Get the value.

7.22.3.3 line()

```
BString BEntry::line ( )
```

Return name and value as padded single string.

7.22.3.4 print()

```
void BEntry::print ( )
```

Print name and value.

7.22.3.5 setLine()

```
void BEntry::setLine (
            BString line )
```

Set name and value from white space deliminated string.

7.22.3.6 setName()

```
void BEntry::setName (
            BString name )
```

Set the name.

7.22.3.7 setValue()

```
void BEntry::setValue (
            BString value )
```

Set the value.

The documentation for this class was generated from the following files:

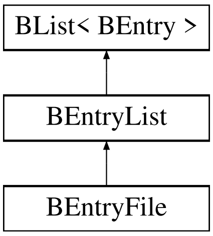
- BEntry.h
- BEntry.cpp

7.23 BEntryFile Class Reference

File of Entries.

```
#include <BEntry.h>
```

Inheritance diagram for BEntryFile:



Public Member Functions

- BEntryFile ()
- BEntryFile (BString filename)

  Opens entryfile.
- ∼BEntryFile ()
- int open (BString filename)

  Opens entryfile.
- int read ()

  Reads entry file and builds list.
- int write ()

  Writes list to entryfile.
- int writeList (BEntryList &l)

  Writes specified list to file.
- void clear ()

  Clears current list.
- BString filename ()

  Returns the filename.

Additional Inherited Members

7.23.1 Detailed Description

File of Entries.

7.23.2 Constructor & Destructor Documentation

7.23.2.1 BEntryFile() [1/2]

```
BEntryFile::BEntryFile ( )
```

7.23.2.2 BEntryFile() [2/2]

```
BEntryFile::BEntryFile (
              BString filename )
```

Opens entryfile.

7.23.2.3 ∼BEntryFile()

```
BEntryFile::∼BEntryFile ( )
```

7.23.3 Member Function Documentation

7.23.3.1 clear()

```
void BEntryFile::clear ( )  [virtual]
```

Clears current list.

Reimplemented from BEntryList.

7.23.3.2 filename()

```
BString BEntryFile::filename ( )
```

Returns the filename.

7.23.3.3 open()

```
int BEntryFile::open (
             BString filename )
```

Opens entryfile.

7.23.3.4 read()

```
int BEntryFile::read ( )
```

Reads entry file and builds list.

7.23.3.5 write()

```
int BEntryFile::write ( )
```

Writes list to entryfile.

7.23.3.6 writeList()

```
int BEntryFile::writeList (
            BEntryList & l )
```

Writes specified list to file.

The documentation for this class was generated from the following files:

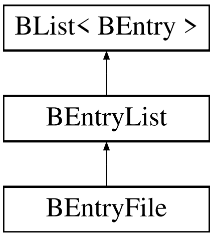
- BEntry.h
- BEntry.cpp

7.24 BEntryList Class Reference

List of Entries. Where an entry is a name value pair.

`#include <BEntry.h>`

Inheritance diagram for BEntryList:



Public Member Functions

- BEntryList ()
- int isSet (BString name)

  1 if name is in list and value is set
- BEntry ∗ find (BString name)

  Returns entry if name is found otherwise NULL.
- BString findValue (BString name)

  Returns value of name. Returns "" if name not found.
- int setValue (BString name, BString value)

  Set the value of name. Returns 0 if name not found.
- int setValueRaw (BString name, BString value)

  Raw setting of value without looking up existing entry.
- void deleteEntry (BString name)

  Deletes the entry.
- void print ()

  Print list.
- BString getString ()

  Return list as string. Each Entry padded and on a new line.
- void insert (BIter &i, const BEntry &item)

  Insert item before item.
- void del (BIter &i)

  Delete specified item.
- void clear ()

  Clear the list.
- BEntryList & operator= (const BEntryList &l)

Additional Inherited Members

7.24.1 Detailed Description

List of Entries. Where an entry is a name value pair.

7.24.2 Constructor & Destructor Documentation

7.24.2.1 BEntryList()

```
BEntryList::BEntryList ( )
```

7.24.3 Member Function Documentation

7.24.3.1 clear()

```
void BEntryList::clear ( )  [virtual]
```

Clear the list.

Reimplemented from BList< BEntry >.

Reimplemented in BEntryFile.

7.24.3.2 del()

```
void BEntryList::del (
             BIter & i )  [virtual]
```

Delete specified item.

Reimplemented from BList< BEntry >.

7.24.3.3 deleteEntry()

```
void BEntryList::deleteEntry (
             BString name )
```

Deletes the entry.

7.24.3.4 find()

```
BEntry * BEntryList::find (
             BString name )
```

Returns entry if name is found otherwise NULL.

7.24.3.5 findValue()

```
BString BEntryList::findValue (
             BString name )
```

Returns value of name. Returns "" if name not found.

7.24.3.6 getString()

```
BString BEntryList::getString ( )
```

Return list as string. Each Entry padded and on a new line.

7.24.3.7 insert()

```
void BEntryList::insert (
             BIter & i,
             const BEntry & item )  [virtual]
```

Insert item before item.

Reimplemented from BList< BEntry >.

7.24.3.8 isSet()

```
int BEntryList::isSet (
             BString name )
```

1 if name is in list and value is set

7.24.3.9 operator=()

```
BEntryList & BEntryList::operator= (
             const BEntryList & l )
```

7.24.3.10 print()

```
void BEntryList::print ( )
```

Print list.

7.24.3.11 setValue()

```
int BEntryList::setValue (
             BString name,
             BString value )
```

Set the value of name. Returns 0 if name not found.

7.24.3.12 setValueRaw()

```
int BEntryList::setValueRaw (
             BString name,
             BString value )
```

Raw setting of value without looking up existing entry.

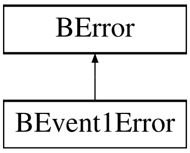
The documentation for this class was generated from the following files:

- BEntry.h
- BEntry.cpp

7.25 BError Class Reference

```
#include <BError.h>
```

Inheritance diagram for BError:



Public Member Functions

- BError (int errNo=ErrorOk, BString errStr="")

  Create object.
- BError (BString errStr)

  Create with error set and error string.
- BError copy ()

  Return an independant copy.
- BError & set (int errNo, BString errStr="")

  Set error number and message.
- BError & clear ()

  Clear the error.
- BError & setError (BString errStr="")

  Set error type ERROR with optional message.
- BString getString () const

  Get error message.
- int getNumber () const

  Get The error number.
- int num () const

  Get The error number.
- const char ∗ str () const

  Return a char∗ string.
- int getErrorNo () const

  Get The error number.
- operator int () const

  Return error number.

7.25.1 Detailed Description

Error return class. This class is used to return the error status from a function. It encapsulates an integer error number and a string. An error number of ErrorOk (0) indicates no error, a value of ErrorMisc (1) indicates some error and a value of ErrorWarning (2) indiactes a warning. Specific error numbers are defeined in BErrorNum. System low level errors (errno) are defined by negativer values. Specific application errors are those above the value 64.

7.25.2 Constructor & Destructor Documentation

7.25.2.1 BError() [1/2]

```
BError::BError (
            int errNo = ErrorOk,
            BString errStr = "" )
```

Create object.

7.25.2.2 BError() [2/2]

```
BError::BError (
             BString errStr )
```

Create with error set and error string.

7.25.3 Member Function Documentation

7.25.3.1 clear()

```
BError & BError::clear ( )
```

Clear the error.

7.25.3.2 copy()

```
BError BError::copy ( )
```

Return an independant copy.

7.25.3.3 getErrorNo()

```
int BError::getErrorNo ( ) const
```

Get The error number.

7.25.3.4 getNumber()

```
int BError::getNumber ( ) const
```

Get The error number.

7.25.3.5 getString()

```
BString BError::getString ( ) const
```

Get error message.

7.25.3.6 num()

```
int BError::num ( ) const
```

Get The error number.

7.25.3.7 operator int()

```
BError::operator int ( ) const  [inline]
```

Return error number.

7.25.3.8 set()

```
BError & BError::set (
             int errNo,
             BString errStr = "" )
```

Set error number and message.

7.25.3.9 setError()

```
BError & BError::setError (
             BString errStr = "" )
```

Set error type ERROR with optional message.

7.25.3.10 str()

```
const char * BError::str ( ) const
```

Return a char∗ string.

The documentation for this class was generated from the following files:

- BError.h
- BError.cpp

7.26 BErrorTime Class Reference

Error return class.

```
#include <BErrorTime.h>
```

Public Types

- enum Type { None = 0, Error = 1 }

Public Member Functions

- BErrorTime (int errNo=None, BTimeStamp errTime=BTimeStamp(), BString errStr="")

  Create object.
- BErrorTime & set (int errNo, BTimeStamp errTime=BTimeStamp(), BString errStr="")

  Set error number and message.
- BErrorTime & clear ()

  Clear the error.
- int getErrorNo () const

  Get The error number.
- BTimeStamp getTime () const

  Get time.
- BString getString () const

  Get error message.
- BErrorTime copy ()

  Return an independant copy.
- operator int () const

  Return error number.

7.26.1 Detailed Description

Error return class.

7.26.2 Member Enumeration Documentation

7.26.2.1 Type

```
enum BErrorTime::Type
```

Enumerator

None	
Error	

7.26.3 Constructor & Destructor Documentation

7.26.3.1 BErrorTime()

```
BErrorTime::BErrorTime (
             int errNo = None,
             BTimeStamp errTime = BTimeStamp(),
             BString errStr = "" )
```

Create object.

7.26.4 Member Function Documentation

7.26.4.1 clear()

```
BErrorTime & BErrorTime::clear ( )
```

Clear the error.

7.26.4.2 copy()

```
BErrorTime BErrorTime::copy ( )
```

Return an independant copy.

7.26.4.3 getErrorNo()

```
int BErrorTime::getErrorNo ( ) const
```

Get The error number.

7.26.4.4 getString()

```
BString BErrorTime::getString ( ) const
```

Get error message.

7.26.4.5 getTime()

```
BTimeStamp BErrorTime::getTime ( ) const
```

Get time.

7.26.4.6 operator int()

```
BErrorTime::operator int ( ) const
```

Return error number.

7.26.4.7 set()

```
BErrorTime & BErrorTime::set (
                int errNo,
                BTimeStamp errTime = BTimeStamp(),
                BString errStr = "" )
```

Set error number and message.

The documentation for this class was generated from the following files:

- BErrorTime.h
- BErrorTime.cpp

7.27 BEvent Class Reference

```
#include <BEvent.h>
```

Public Member Functions

- BEvent (BUInt32 type=BEventTypeNone, BUInt32 arg=0)
- BUInt32 type ()
- BUInt32 arg ()

7.27.1 Constructor & Destructor Documentation

7.27.1.1 BEvent()

```
BEvent::BEvent (
            BUInt32 type = BEventTypeNone,
            BUInt32 arg = 0 )
```

7.27.2 Member Function Documentation

7.27.2.1 arg()

```
BUInt32 BEvent::arg ( )
```

7.27.2.2 type()

```
BUInt32 BEvent::type ( )
```

The documentation for this class was generated from the following files:

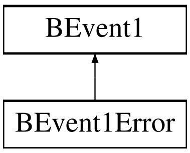
- BEvent.h
- BEvent.cpp

7.28 BEvent1 Class Reference

This class provides a base class for all event objects that can be sent over the events interface.

```
#include <BEvent1.h>
```

Inheritance diagram for BEvent1:



Public Member Functions

- BEvent1 (uint32_t type)
- virtual ∼BEvent1 ()
- uint32_t getType ()
- virtual BError getBinary (void ∗data, uint32_t &size)
- virtual BError setBinary (void ∗data, uint32_t &size)

7.28.1 Detailed Description

This class provides a base class for all event objects that can be sent over the events interface.

7.28.2 Constructor & Destructor Documentation

7.28.2.1 BEvent1()

```
BEvent1::BEvent1 (
            uint32_t type )
```

7.28.2.2 ∼BEvent1()

```
BEvent1::∼BEvent1 ( )  [virtual]
```

7.28.3 Member Function Documentation

7.28.3.1 getBinary()

```
BError BEvent1::getBinary (
            void * data,
            uint32_t & size )  [virtual]
```

Reimplemented in BEvent1Error.

7.28.3.2 getType()

```
uint32_t BEvent1::getType ( )
```

7.28.3.3 setBinary()

```
BError BEvent1::setBinary (
             void * data,
             uint32_t & size )  [virtual]
```

Reimplemented in BEvent1Error.

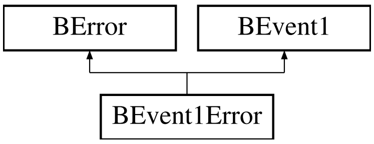
The documentation for this class was generated from the following files:

- BEvent1.h
- BEvent1.cpp

7.29 BEvent1Error Class Reference

```
#include <BEvent1.h>
```

Inheritance diagram for BEvent1Error:



Public Member Functions

- BEvent1Error (int errNo=ErrorOk, BString errStr="")
- BError getBinary (void ∗data, uint32_t &size)
- BError setBinary (void ∗data, uint32_t &size)

7.29.1 Constructor & Destructor Documentation

7.29.1.1 BEvent1Error()

```
BEvent1Error::BEvent1Error (
             int errNo = ErrorOk,
             BString errStr = "" )
```

7.29.2 Member Function Documentation

7.29.2.1 getBinary()

```
BError BEvent1Error::getBinary (
             void * data,
             uint32_t & size )  [virtual]
```

Reimplemented from BEvent1.

7.29.2.2 setBinary()

```
BError BEvent1Error::setBinary (
             void * data,
             uint32_t & size )  [virtual]
```

Reimplemented from BEvent1.

The documentation for this class was generated from the following files:

- BEvent1.h
- BEvent1.cpp

7.30 BEvent1Int Class Reference

This class provides an interface for sending simple integer events via a file descriptor. This allows threads to send events that can be picked up by the poll system call.

```
#include <BEvent1.h>
```

Public Member Functions

- BEvent1Int ()
- ∼BEvent1Int ()
- void clear ()

  Clear events pending.
- BError sendEvent (int event)

  Send an event.
- BError getEvent (int &event, int timeOutUs=-1)

  Receive the event.
- int getFd ()

7.30.1 Detailed Description

This class provides an interface for sending simple integer events via a file descriptor. This allows threads to send events that can be picked up by the poll system call.

7.30.2 Constructor & Destructor Documentation

7.30.2.1 BEvent1Int()

```
BEvent1Int::BEvent1Int ( )
```

7.30.2.2 ∼BEvent1Int()

```
BEvent1Int::∼BEvent1Int ( )
```

7.30.3 Member Function Documentation

7.30.3.1 clear()

```
void BEvent1Int::clear ( )
```

Clear events pending.

7.30.3.2 getEvent()

```
BError BEvent1Int::getEvent (
              int & event,
              int timeOutUs = -1 )
```

Receive the event.

7.30.3.3 getFd()

```
int BEvent1Int::getFd ( )
```

7.30.3.4 sendEvent()

```
BError BEvent1Int::sendEvent (
            int event )
```

Send an event.

The documentation for this class was generated from the following files:

- BEvent1.h
- BEvent1.cpp

7.31 BEvent1Pipe Class Reference

This class provides a base interface for sending events via a pipe. This allows threads to send events that can be picked up by the poll system call.

```
#include <BEvent1.h>
```

Public Member Functions

- BEvent1Pipe ()
- ∼BEvent1Pipe ()
- void clear ()

  Clear events pending.
- BError sendEvent (BEvent1 ∗event)

  Send an event.
- BError getEvent (BEvent1 ∗event, int timeOutUs=-1)

  Receive the event.
- int getReceiveFd ()

  returns the receive file descriptor for the poll system call

7.31.1 Detailed Description

This class provides a base interface for sending events via a pipe. This allows threads to send events that can be picked up by the poll system call.

7.31.2 Constructor & Destructor Documentation

7.31.2.1 BEvent1Pipe()

```
BEvent1Pipe::BEvent1Pipe ( )
```

7.31.2.2 ∼BEvent1Pipe()

```
BEvent1Pipe::∼BEvent1Pipe ( )
```

7.31.3 Member Function Documentation

7.31.3.1 clear()

```
void BEvent1Pipe::clear ( )
```

Clear events pending.

7.31.3.2 getEvent()

```
BError BEvent1Pipe::getEvent (
             BEvent1 * event,
             int timeOutUs = -1 )
```

Receive the event.

7.31.3.3 getReceiveFd()

```
int BEvent1Pipe::getReceiveFd ( )
```

returns the receive file descriptor for the poll system call

7.31.3.4 sendEvent()

```
BError BEvent1Pipe::sendEvent (
             BEvent1 * event )
```

Send an event.

The documentation for this class was generated from the following files:

- BEvent1.h
- BEvent1.cpp

7.32 BEventPipe Class Reference

This class provides an interface for sending simple integer events via a pipe file descriptor.

```
#include <BEvent.h>
```

Public Member Functions

- BEventPipe ()
- ∼BEventPipe ()
- void clear ()

  Clear events pending.
- int getFd ()
- BUInt writeAvailable () const
- BError write (const BEvent &event, BTimeout timeout=BTimeoutForever)

  Append an item onto the queue.
- BUInt readAvailable () const
- BError read (BEvent &event, BTimeout timeout=BTimeoutForever)

  Get an item from the queue.

7.32.1 Detailed Description

This class provides an interface for sending simple integer events via a pipe file descriptor.

7.32.2 Constructor & Destructor Documentation

7.32.2.1 BEventPipe()

```
BEventPipe::BEventPipe ( )
```

7.32.2.2 ∼BEventPipe()

```
BEventPipe::∼BEventPipe ( )
```

7.32.3 Member Function Documentation

7.32.3.1 clear()

```
void BEventPipe::clear ( )
```

Clear events pending.

7.32.3.2 getFd()

```
int BEventPipe::getFd ( )
```

7.32.3.3 read()

```
BError BEventPipe::read (
             BEvent & event,
             BTimeout timeout = BTimeoutForever )
```

Get an item from the queue.

7.32.3.4 readAvailable()

```
BUInt BEventPipe::readAvailable ( ) const
```

7.32.3.5 write()

```
BError BEventPipe::write (
             const BEvent & event,
             BTimeout timeout = BTimeoutForever )
```

Append an item onto the queue.

7.32.3.6 writeAvailable()

```
BUInt BEventPipe::writeAvailable ( ) const
```

The documentation for this class was generated from the following files:

- BEvent.h
- BEvent.cpp

7.33 BFifo< Type > Class Template Reference

```
#include <BFifo.h>
```

Public Member Functions

- BFifo (BUInt size)
- ∼BFifo ()
- void clear ()
- BUInt size ()

  Returns fifo size.
- BError resize (BUInt size)

  Resize FIFO, clears it as well.
- BError rebase ()

  Rebases fifo so read pointer is at zero moving memory as needed.
- BUInt writeAvailable ()

  How many items that can be written.
- BUInt writeAvailableChunk ()

  How many items that can be written in a chunk.
- BError write (const Type v)

  Write a single item.
- BError write (const Type ∗data, BUInt num)

  Write a set of items. Can only write a maximum of writeAvailableChunk() to save going beyond end of FIFO buffer.
- Type ∗ writeData ()

  Returns a pointer to the data.
- Type ∗ writeData (BUInt &num)

  Returns a pointer to the data and how many can be written in a chunk.
- void writeDone (BUInt num)

  Indicates when write is complete.
- void writeBackup (BUInt num)

  Backup, remove num items at end of fifo. Careful, make sure read is not already happening.
- BUInt readAvailable ()

  How many items are available to read.
- BUInt readAvailableChunk ()

  How many items are available to read in a chunk.
- Type read ()

  Read one item.
- BError read (Type ∗data, BUInt num)

  Read a set of items.
- Type ∗ readData ()

  Returns a pointer to the data.
- Type ∗ readData (BUInt &num)

  Returns a pointer to the data and how many can be read in a chunk.
- void readDone (BUInt num)
- Type readPos (BUInt pos)

  Read item at given offset from current read position.
- void writePos (BUInt pos, const Type &v)

  Write item at given offset from current read position.
- Type & operator[ ] (int pos)

  Direct access to read samples in buffer.

Protected Attributes

- BUInt osize

  The size of the FIFO.
- Type ∗ odata

  FIFO memory buffer.
- volatile BUInt owritePos

  The write pointer.
- volatile BUInt oreadPos

  The read pointer.

7.33.1 Constructor & Destructor Documentation

7.33.1.1 BFifo()

```
template<class Type>
BFifo< Type >::BFifo (
             BUInt size )
```

7.33.1.2 ∼BFifo()

```
template<class Type>
BFifo< Type >::∼BFifo ( )
```

7.33.2 Member Function Documentation

7.33.2.1 clear()

```
template<class Type>
void BFifo< Type >::clear ( )
```

7.33.2.2 operator[]()

```
template<class Type>
Type& BFifo< Type >::operator[] (
             int pos )
```

Direct access to read samples in buffer.

7.33.2.3 read() [1/2]

```
template<class Type>
Type BFifo< Type >::read ( )
```

Read one item.

7.33.2.4 read() [2/2]

```
template<class Type>
BError BFifo< Type >::read (
             Type * data,
             BUInt num )
```

Read a set of items.

7.33.2.5 readAvailable()

```
template<class Type>
BUInt BFifo< Type >::readAvailable ( )
```

How many items are available to read.

7.33.2.6 readAvailableChunk()

```
template<class Type>
BUInt BFifo< Type >::readAvailableChunk ( )
```

How many items are available to read in a chunk.

7.33.2.7 readData() [1/2]

```
template<class Type>
Type* BFifo< Type >::readData ( )
```

Returns a pointer to the data.

7.33.2.8 readData() [2/2]

```
template<class Type>
Type* BFifo< Type >::readData (
             BUInt & num )
```

Returns a pointer to the data and how many can be read in a chunk.

7.33.2.9 readDone()

```
template<class Type>
void BFifo< Type >::readDone (
             BUInt num )
```

7.33.2.10 readPos()

```
template<class Type>
Type BFifo< Type >::readPos (
             BUInt pos )
```

Read item at given offset from current read position.

7.33.2.11 rebase()

```
template<class Type>
BError BFifo< Type >::rebase ( )
```

Rebases fifo so read pointer is at zero moving memory as needed.

7.33.2.12 resize()

```
template<class Type>
BError BFifo< Type >::resize (
             BUInt size )
```

Resize FIFO, clears it as well.

7.33.2.13 size()

```
template<class Type>
BUInt BFifo< Type >::size ( )
```

Returns fifo size.

7.33.2.14 write() [1/2]

```
template<class Type>
BError BFifo< Type >::write (
             const Type v )
```

Write a single item.

7.33.2.15 write() [2/2]

```
template<class Type>
BError BFifo< Type >::write (
             const Type * data,
             BUInt num )
```

Write a set of items. Can only write a maximum of writeAvailableChunk() to save going beyond end of FIFO buffer.

7.33.2.16 writeAvailable()

```
template<class Type>
BUInt BFifo< Type >::writeAvailable ( )
```

How many items that can be written.

7.33.2.17 writeAvailableChunk()

```
template<class Type>
BUInt BFifo< Type >::writeAvailableChunk ( )
```

How many items that can be written in a chunk.

7.33.2.18 writeBackup()

```
template<class Type>
void BFifo< Type >::writeBackup (
             BUInt num )
```

Backup, remove num items at end of fifo. Careful, make sure read is not already happening.

7.33.2.19 writeData() [1/2]

```
template<class Type>
Type* BFifo< Type >::writeData ( )
```

Returns a pointer to the data.

7.33.2.20 writeData() [2/2]

```
template<class Type>
Type* BFifo< Type >::writeData (
             BUInt & num )
```

Returns a pointer to the data and how many can be written in a chunk.

7.33.2.21 writeDone()

```
template<class Type>
void BFifo< Type >::writeDone (
             BUInt num )
```

Indicates when write is complete.

7.33.2.22 writePos()

```
template<class Type>
void BFifo< Type >::writePos (
             BUInt pos,
             const Type & v )
```

Write item at given offset from current read position.

7.33.3 Member Data Documentation

7.33.3.1 odata

```
template<class Type>
Type* BFifo< Type >::odata  [protected]
```

FIFO memory buffer.

7.33.3.2 oreadPos

```
template<class Type>
volatile BUInt BFifo< Type >::oreadPos  [protected]
```

The read pointer.

7.33.3.3 osize

```
template<class Type>
BUInt BFifo< Type >::osize  [protected]
```

The size of the FIFO.

7.33.3.4 owritePos

```
template<class Type>
volatile BUInt BFifo< Type >::owritePos  [protected]
```

The write pointer.

The documentation for this class was generated from the following file:

- BFifo.h

7.34 BFifoCirc< Type > Class Template Reference

This class implements a thread safe FIFO buffer.

```
#include <BFifoCirc.h>
```

Public Types

- enum { defaultSize = 1024 }

Public Member Functions

- BFifoCirc (uint32_t size=defaultSize)
- ∼BFifoCirc ()
- uint32_t size ()

  Return the buffers actual size.
- void clear ()

  Clear all of the data in the buffer.
- uint32_t writeAvailable ()

  Returns the space available to write.
- BError writeWaitAvailable (uint32_t numFifoSamples)

  Wait for the given number of samples.
- BError write (const Type ∗data, uint32_t numFifoSamples)

  Writes the data to the buffer. Blocks until complete.
- Type ∗ writeData ()

  Return a pointer to the current start of the buffer.
- void writeDone (uint32_t numFifoSamples)

  Update the write pointer.
- uint32_t readAvailable ()

  Returns the number of bytes of data available.
- BError readWaitAvailable (uint32_t numFifoSamples)

  Wait for given number of samples.
- BError read (Type ∗data, uint32_t numFifoSamples)
- Type ∗ readData ()

  Pointer to raw data.
- BError readDone (uint32_t numFifoSamples)

  Updates read pointer.
- Type & operator[ ] (int pos)

  Direct access to read samples in buffer.

Protected Member Functions

- BError mapCircularBuffer (uint32_t size)
- void unmapCircularBuffer ()

Protected Attributes

- BMutex olock
- uint32_t ovmSize
- uint32_t osize
- Type ∗ odata
- BFifoCircPos owritePos

  Current write position.
- BCondValue owriteNumFifoSamples

  The number of samples in the FIFO.
- BFifoCircPos oreadPos

  Current read position.

7.34.1 Detailed Description

template<class Type>
class BFifoCirc< Type >

This class implements a thread safe FIFO buffer.

7.34.2 Member Enumeration Documentation

7.34.2.1 anonymous enum

```
template<class Type >
anonymous enum
```

Enumerator

defaultSize	

7.34.3 Constructor & Destructor Documentation

7.34.3.1 BFifoCirc()

```
template<class Type >
BFifoCirc< Type >::BFifoCirc (
            uint32_t size = defaultSize )
```

7.34.3.2 ∼BFifoCirc()

```
template<class Type >
BFifoCirc< Type >::∼BFifoCirc ( )
```

7.34.4 Member Function Documentation

7.34.4.1 clear()

```
template<class Type >
void BFifoCirc< Type >::clear ( )
```

Clear all of the data in the buffer.

7.34.4.2 mapCircularBuffer()

```
template<class Type >
BError BFifoCirc< Type >::mapCircularBuffer (
             uint32_t size )  [protected]
```

7.34.4.3 operator[]()

```
template<class Type >
Type& BFifoCirc< Type >::operator[] (
             int pos )
```

Direct access to read samples in buffer.

7.34.4.4 read()

```
template<class Type >
BError BFifoCirc< Type >::read (
             Type * data,
             uint32_t numFifoSamples )
```

7.34.4.5 readAvailable()

```
template<class Type >
uint32_t BFifoCirc< Type >::readAvailable ( )
```

Returns the number of bytes of data available.

7.34.4.6 readData()

```
template<class Type >
Type* BFifoCirc< Type >::readData ( )
```

Pointer to raw data.

7.34.4.7 readDone()

```
template<class Type >
BError BFifoCirc< Type >::readDone (
             uint32_t numFifoSamples )
```

Updates read pointer.

7.34.4.8 readWaitAvailable()

```
template<class Type >
BError BFifoCirc< Type >::readWaitAvailable (
             uint32_t numFifoSamples )
```

Wait for given number of samples.

7.34.4.9 size()

```
template<class Type >
uint32_t BFifoCirc< Type >::size ( )
```

Return the buffers actual size.

7.34.4.10 unmapCircularBuffer()

```
template<class Type >
void BFifoCirc< Type >::unmapCircularBuffer ( )  [protected]
```

7.34.4.11 write()

```
template<class Type >
BError BFifoCirc< Type >::write (
             const Type * data,
             uint32_t numFifoSamples )
```

Writes the data to the buffer. Blocks until complete.

7.34.4.12 writeAvailable()

```
template<class Type >
uint32_t BFifoCirc< Type >::writeAvailable ( )
```

Returns the space available to write.

7.34.4.13 writeData()

```
template<class Type >
Type* BFifoCirc< Type >::writeData ( )
```

Return a pointer to the current start of the buffer.

7.34.4.14 writeDone()

```
template<class Type >
void BFifoCirc< Type >::writeDone (
             uint32_t numFifoSamples )
```

Update the write pointer.

7.34.4.15 writeWaitAvailable()

```
template<class Type >
BError BFifoCirc< Type >::writeWaitAvailable (
             uint32_t numFifoSamples )
```

Wait for the given number of samples.

7.34.5 Member Data Documentation

7.34.5.1 odata

```
template<class Type >
Type* BFifoCirc< Type >::odata  [protected]
```

7.34.5.2 olock

```
template<class Type >
BMutex BFifoCirc< Type >::olock  [protected]
```

7.34.5.3 oreadPos

```
template<class Type >
BFifoCircPos BFifoCirc< Type >::oreadPos  [protected]
```

Current read position.

7.34.5.4 osize

```
template<class Type >
uint32_t BFifoCirc< Type >::osize  [protected]
```

7.34.5.5 ovmSize

```
template<class Type >
uint32_t BFifoCirc< Type >::ovmSize  [protected]
```

7.34.5.6 owriteNumFifoSamples

```
template<class Type >
BCondValue BFifoCirc< Type >::owriteNumFifoSamples  [protected]
```

The number of samples in the FIFO.

7.34.5.7 owritePos

```
template<class Type >
BFifoCircPos BFifoCirc< Type >::owritePos  [protected]
```

Current write position.

The documentation for this class was generated from the following file:

- BFifoCirc.h

7.35 BFifoCircPos Class Reference

This class implements a pointer into the Fifo's circular buffer.

```
#include <BFifoCirc.h>
```

Public Member Functions

- BFifoCircPos (uint32_t size)
- void setSize (uint32_t size)
- void set (uint32_t pos)

  Sets the position.
- uint32_t pos ()

  The current position.
- void increment (uint32_t numFifoSamples)

  Increment the pointer by the given value.
- uint32_t difference (const BFifoCircPos &pos)

  Return the difference between the two pointers.
- operator int ()
- void operator+= (uint32_t numFifoSamples)
- int operator== (const BFifoCircPos &pos)
- int operator!= (const BFifoCircPos &pos)

7.35.1 Detailed Description

This class implements a pointer into the Fifo's circular buffer.

7.35.2 Constructor & Destructor Documentation

7.35.2.1 BFifoCircPos()

```
BFifoCircPos::BFifoCircPos (
          uint32_t size )
```

7.35.3 Member Function Documentation

7.35.3.1 difference()

```
uint32_t BFifoCircPos::difference (
          const BFifoCircPos & pos )
```

Return the difference between the two pointers.

7.35.3.2 increment()

```
void BFifoCircPos::increment (
             uint32_t numFifoSamples )
```

Increment the pointer by the given value.

7.35.3.3 operator int()

```
BFifoCircPos::operator int ( )
```

7.35.3.4 operator"!=()

```
int BFifoCircPos::operator!= (
             const BFifoCircPos & pos )
```

7.35.3.5 operator+=()

```
void BFifoCircPos::operator+= (
             uint32_t numFifoSamples )
```

7.35.3.6 operator==()

```
int BFifoCircPos::operator== (
             const BFifoCircPos & pos )
```

7.35.3.7 pos()

```
uint32_t BFifoCircPos::pos ( )
```

The current position.

7.35.3.8 set()

```
void BFifoCircPos::set (
            uint32_t pos )
```

Sets the position.

7.35.3.9 setSize()

```
void BFifoCircPos::setSize (
            uint32_t size )
```

The documentation for this class was generated from the following files:

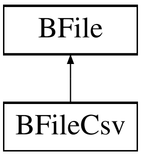
- BFifoCirc.h
- BFifoCirc.cpp

7.36 BFile Class Reference

File operations class.

`#include <BFile.h>`

Inheritance diagram for BFile:



Public Member Functions

- BFile ()
- BFile (const BFile &file)

    Create opened specified file.
- ∼BFile ()
- BError open (BString name, BString mode)

    Open file.
- BError open (FILE ∗file)

    Assign object to opened file handle.
- BError open (int fd, BString mode)

    Assign object to opened file descriptor.
- BError close ()

    Close file.
- int isOpen ()

    Returns 1 if the file is open.

- int isEnd ()

  Returns 1 if at the end of the file, 0 otherwise.
- FILE ∗ getFd ()

  File descriptor.
- BUInt64 length ()

  File size in bytes.
- int setVBuf (char ∗buf, int mode, size_t size)

  Set stream buffering options.
- int read (void ∗buf, int nbytes)

  Read from file.
- int readString (BString &str)

  Read string. (ref fgets)
- char ∗ fgets (char ∗buf, size_t size)
- int write (const void ∗buf, int nbytes)

  Write to file.
- int writeString (const BString &str)

  Write string to file.
- int seek (BUInt64 pos)

  Set seek position.
- BUInt64 position ()

  The files position.
- int printf (const char ∗fmt,...)

  Formated print into the file.
- BError truncate ()

  Truncate the file.
- BError flush ()

  Flush the file.
- BString fileName ()

  Return file name.
- BFile & operator= (const BFile &file)

7.36.1 Detailed Description

File operations class.

7.36.2 Constructor & Destructor Documentation

7.36.2.1 BFile() [1/2]

```
BFile::BFile ( )
```

7.36.2.2 BFile() [2/2]

```
BFile::BFile (
             const BFile & file )
```

Create opened specified file.

7.36.2.3 ∼BFile()

```
BFile::∼BFile ( )
```

7.36.3 Member Function Documentation

7.36.3.1 close()

```
BError BFile::close ( )
```

Close file.

7.36.3.2 fgets()

```
char * BFile::fgets (
             char * buf,
             size_t size )
```

7.36.3.3 fileName()

```
BString BFile::fileName ( )
```

Return file name.

7.36.3.4 flush()

```
BError BFile::flush ( )
```

Flush the file.

7.36.3.5 getFd()

```
FILE * BFile::getFd ( )
```

File descriptor.

7.36.3.6 isEnd()

```
int BFile::isEnd ( )
```

Returns 1 if at the end of the file, 0 otherwise.

7.36.3.7 isOpen()

```
int BFile::isOpen ( )
```

Returns 1 if the file is open.

7.36.3.8 length()

```
BUInt64 BFile::length ( )
```

File size in bytes.

7.36.3.9 open() [1/3]

```
BError BFile::open (
             BString name,
             BString mode )
```

Open file.

7.36.3.10 open() [2/3]

```
BError BFile::open (
             FILE * file )
```

Assign object to opened file handle.

7.36.3.11 open() [3/3]

```
BError BFile::open (
            int fd,
            BString mode )
```

Assign object to opened file descriptor.

7.36.3.12 operator=()

```
BFile & BFile::operator= (
            const BFile & file )
```

7.36.3.13 position()

```
BUInt64 BFile::position ( )
```

The files position.

7.36.3.14 printf()

```
int BFile::printf (
            const char * fmt,
             ... )
```

Formated print into the file.

7.36.3.15 read()

```
int BFile::read (
            void * buf,
            int nbytes )
```

Read from file.

7.36.3.16 readString()

```
int BFile::readString (
            BString & str )
```

Read string. (ref fgets)

7.36.3.17 seek()

```
int BFile::seek (
            BUInt64 pos )
```

Set seek position.

7.36.3.18 setVBuf()

```
int BFile::setVBuf (
            char * buf,
            int mode,
            size_t size )
```

Set stream buffering options.

7.36.3.19 truncate()

```
BError BFile::truncate ( )
```

Truncate the file.

7.36.3.20 write()

```
int BFile::write (
            const void * buf,
            int nbytes )
```

Write to file.

7.36.3.21 writeString()

```
int BFile::writeString (
            const BString & str )
```

Write string to file.

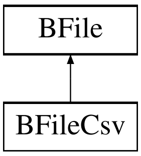
The documentation for this class was generated from the following files:

- BFile.h
- BFile.cpp

7.37 BFileCsv Class Reference

```
#include <BFileCsv.h>
```

Inheritance diagram for BFileCsv:



Public Member Functions

- BFileCsv (char separator=';')
- BError readCsv (BStringList &csvList)
- BError writeCsv (BStringList &csvList)

7.37.1 Constructor & Destructor Documentation

7.37.1.1 BFileCsv()

```
BFileCsv::BFileCsv (
             char separator = ';' )
```

7.37.2 Member Function Documentation

7.37.2.1 readCsv()

```
BError BFileCsv::readCsv (
             BStringList & csvList )
```

7.37.2.2 writeCsv()

```
BError BFileCsv::writeCsv (
             BStringList & csvList )
```

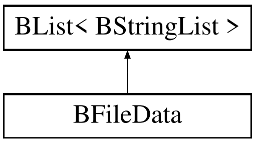
The documentation for this class was generated from the following files:

- BFileCsv.h
- BFileCsv.cpp

7.38 BFileData Class Reference

```
#include <BFileData.h>
```

Inheritance diagram for BFileData:



Public Member Functions

- BError open (BString filename)
- BError getNextId (int &id)
- BError find (int id, BStringList &csvList)
- BError write (int id, BStringList &csvList)
- BError del (int id)

Additional Inherited Members

7.38.1 Member Function Documentation

7.38.1.1 del()

```
BError BFileData::del (
            int id )
```

7.38.1.2 find()

```
BError BFileData::find (
            int id,
            BStringList & csvList )
```

7.38.1.3 getNextId()

```
BError BFileData::getNextId (
            int & id )
```

7.38.1.4 open()

```
BError BFileData::open (
            BString filename )
```

7.38.1.5 write()

```
BError BFileData::write (
            int id,
            BStringList & csvList )
```

The documentation for this class was generated from the following files:

- BFileData.h
- BFileData.cpp

7.39 BFirmwareFileHeader Struct Reference

```
#include <BFirmware.h>
```

Public Attributes

- BUInt32 magic
- BUInt32 itemType
- BUInt32 fileLength
- BUInt32 checksum
- BUInt32 platform
- BUInt32 format
- BUInt32 numSegments
- BUInt32 startAddress
- BUInt8 ver0
- BUInt8 ver1
- BUInt8 ver2
- BUInt8 ver3
- BUInt32 special [7]

7.39.1 Member Data Documentation

7.39.1.1 checksum

```
BUInt32 BFirmwareFileHeader::checksum
```

7.39.1.2 fileLength

```
BUInt32 BFirmwareFileHeader::fileLength
```

7.39.1.3 format

```
BUInt32 BFirmwareFileHeader::format
```

7.39.1.4 itemType

```
BUInt32 BFirmwareFileHeader::itemType
```

7.39.1.5 magic

```
BUInt32 BFirmwareFileHeader::magic
```

7.39.1.6 numSegments

```
BUInt32 BFirmwareFileHeader::numSegments
```

7.39.1.7 platform

```
BUInt32 BFirmwareFileHeader::platform
```

7.39.1.8 special

```
BUInt32 BFirmwareFileHeader::special[7]
```

7.39.1.9 startAddress

```
BUInt32 BFirmwareFileHeader::startAddress
```

7.39.1.10 ver0

```
BUInt8 BFirmwareFileHeader::ver0
```

7.39.1.11 ver1

```
BUInt8 BFirmwareFileHeader::ver1
```

7.39.1.12 ver2

```
BUInt8 BFirmwareFileHeader::ver2
```

7.39.1.13 ver3

```
BUInt8 BFirmwareFileHeader::ver3
```

The documentation for this struct was generated from the following file:

- BFirmware.h

7.40 BFirmwareInfo Struct Reference

```
#include <BFirmware.h>
```

Public Attributes

- BUInt32 magic
- BUInt32 length
- BUInt32 checksum
- BUInt8 type
- BUInt8 ver0
- BUInt8 ver1
- BUInt8 ver2

7.40.1 Member Data Documentation

7.40.1.1 checksum

```
BUInt32 BFirmwareInfo::checksum
```

7.40.1.2 length

```
BUInt32 BFirmwareInfo::length
```

7.40.1.3 magic

```
BUInt32 BFirmwareInfo::magic
```

7.40.1.4 type

```
BUInt8 BFirmwareInfo::type
```

7.40.1.5 ver0

```
BUInt8 BFirmwareInfo::ver0
```

7.40.1.6 ver1

```
BUInt8 BFirmwareInfo::ver1
```

7.40.1.7 ver2

```
BUInt8 BFirmwareInfo::ver2
```

The documentation for this struct was generated from the following file:

- BFirmware.h

7.41 BFirmwareSegHeader Struct Reference

```
#include <BFirmware.h>
```

Public Attributes

- BUInt32 magic
- BUInt32 itemType
- BUInt32 fileLength
- BUInt32 checksum
- BUInt32 platform
- BUInt32 format
- BUInt32 dataLength
- BUInt32 address
- BUInt32 length
- BUInt32 special [7]

7.41.1 Member Data Documentation

7.41.1.1 address

```
BUInt32 BFirmwareSegHeader::address
```

7.41.1.2 checksum

```
BUInt32 BFirmwareSegHeader::checksum
```

7.41.1.3 dataLength

```
BUInt32 BFirmwareSegHeader::dataLength
```

7.41.1.4 fileLength

```
BUInt32 BFirmwareSegHeader::fileLength
```

7.41.1.5 format

```
BUInt32 BFirmwareSegHeader::format
```

7.41.1.6 itemType

```
BUInt32 BFirmwareSegHeader::itemType
```

7.41.1.7 length

```
BUInt32 BFirmwareSegHeader::length
```

7.41.1.8 magic

```
BUInt32 BFirmwareSegHeader::magic
```

7.41.1.9 platform

```
BUInt32 BFirmwareSegHeader::platform
```

7.41.1.10 special

```
BUInt32 BFirmwareSegHeader::special[7]
```

The documentation for this struct was generated from the following file:

- BFirmware.h

7.42 BIter Class Reference

Iterator for BList.

```
#include <BList.h>
```

Public Member Functions

- BIter (BNode ∗i=0)
- operator BNode ∗ ()
- int operator== (const BIter &i)
- int valid ()

7.42.1 Detailed Description

Iterator for BList.

7.42.2 Constructor & Destructor Documentation

7.42.2.1 BIter()

```
BIter::BIter (
             BNode ∗ i = 0 )  [inline]
```

7.42.3 Member Function Documentation

7.42.3.1 operator BNode ∗()

```
BIter::operator BNode ∗ ( )  [inline]
```

7.42.3.2 operator==()

```
int BIter::operator== (
             const BIter & i )  [inline]
```

7.42.3.3 valid()

```
int BIter::valid ( )  [inline]
```

The documentation for this class was generated from the following file:

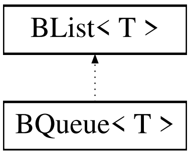
- BList.h

7.43 BList< T > Class Template Reference

Template based list class.

```
#include <BList.h>
```

Inheritance diagram for BList< T >:



Classes

- class Node

Public Types

- typedef int(∗ SortFunc) (T &a, T &b)

  Prototype for sorting function.

Public Member Functions

- BList ()
- BList (const BList< T > &l)
- virtual ∼BList ()
- void start (BIter &i) const

  Iterator to start of list.
- BIter begin () const

  Iterator for start of list.
- BIter end () const

  Iterator for end of list.
- BIter end (BIter &i) const

  Iterator for end of list.
- void next (BIter &i) const

  Iterator for next item in list.
- void prev (BIter &i)

  Iterator for previous item in list.
- BIter goTo (int pos) const

  Iterator for pos item in list.
- int position (BIter i)

  Postition in list item with iterator i.
- unsigned int number () const

  Number of items in list.
- unsigned int size () const

  Number of items in list.
- int isStart (BIter &i) const

True if iterator refers to first item.

- int isEnd (BIter &i) const

  True if iterator refers to last item.
- T & front ()

  Get first item in list.
- T & rear ()

  Get last item in list.
- T & get (BIter i)

  Get item specified by iterator in list.
- const T & get (BIter i) const

  Get item specified by iterator in list.
- void append (const T &item)

  Append item to list.
- virtual void insert (BIter &i, const T &item)

  Insert item before item.
- void insertAfter (BIter &i, const T &item)

  Insert item after item.
- virtual void clear ()

  Clear the list.
- virtual void del (BIter &i)

  Delete specified item.
- void deleteLast ()

  Delete last item.
- void deleteFirst ()

  Delete fisrt item.
- void push (const T &i)

  Push item onto list.
- T pop ()

  Pop item from list deleteing item.
- void queueAdd (const T &i)

  Add item to end of list.
- T queueGet ()

  Get item from front of list deleteing item.
- void append (const BList< T > &l)

  Append list to list.
- int has (const T &i) const

  Checks if the item is in the list.
- void swap (BIter i1, BIter i2)

  Swap two items in list.
- void sort ()

  Sort list based on get(i) values.
- void sort (SortFunc func)

  Sort list based on Sort func.
- BList< T > & operator= (const BList< T > &l)
- T & operator[ ] (int i)
- const T & operator[ ] (int i) const
- T & operator[ ] (BIter i)
- const T & operator[ ] (const BIter &i) const
- BList< T > operator+ (const BList< T > &l) const

Protected Member Functions

- virtual Node ∗ nodeGet (BIter i)
- virtual const Node ∗ nodeGet (BIter i) const
- virtual Node ∗ nodeCreate (const T &item)

Protected Attributes

- Node ∗ onodes
- unsigned int olength

7.43.1 Detailed Description

template<class T>
class BList< T >

Template based list class.

7.43.2 Member Typedef Documentation

7.43.2.1 SortFunc

```
template<class T>
typedef int(∗ BList< T >::SortFunc) (T &a, T &b)
```

Prototype for sorting function.

7.43.3 Constructor & Destructor Documentation

7.43.3.1 BList() [1/2]

```
template<class T >
BList< T >::BList ( )
```

7.43.3.2 BList() [2/2]

```
template<class T>
BList< T >::BList (
            const BList< T > & l )
```

7.43.3.3 ∼BList()

```
template<class T >
BList< T >::∼BList ( )  [virtual]
```

7.43.4 Member Function Documentation

7.43.4.1 append() [1/2]

```
template<class T>
void BList< T >::append (
             const T & item )
```

Append item to list.

7.43.4.2 append() [2/2]

```
template<class T>
void BList< T >::append (
             const BList< T > & l )
```

Append list to list.

7.43.4.3 begin()

```
template<class T >
BIter BList< T >::begin ( ) const
```

Iterator for start of list.

7.43.4.4 clear()

```
template<class T >
void BList< T >::clear ( )  [virtual]
```

Clear the list.

Reimplemented in BEntryFile, BDir, BEntryList, BDict< Type >, BQueue< T >, and BQueue< BoapMcPacket >.

7.43.4.5 del()

```
template<class T >
void BList< T >::del (
             BIter & i )  [virtual]
```

Delete specified item.

Reimplemented in BEntryList, and BDict< Type >.

7.43.4.6 deleteFirst()

```
template<class T >
void BList< T >::deleteFirst ( )
```

Delete fisrt item.

7.43.4.7 deleteLast()

```
template<class T >
void BList< T >::deleteLast ( )
```

Delete last item.

7.43.4.8 end() [1/2]

```
template<class T >
BIter BList< T >::end ( ) const
```

Iterator for end of list.

7.43.4.9 end() [2/2]

```
template<class T >
BIter BList< T >::end (
             BIter & i ) const
```

Iterator for end of list.

7.43.4.10 front()

```
template<class T >
T & BList< T >::front ( )
```

Get first item in list.

7.43.4.11 get() [1/2]

```
template<class T >
T & BList< T >::get (
             BIter i )
```

Get item specified by iterator in list.

7.43.4.12 get() [2/2]

```
template<class T >
const T & BList< T >::get (
             BIter i ) const
```

Get item specified by iterator in list.

7.43.4.13 goTo()

```
template<class T >
BIter BList< T >::goTo (
             int pos ) const
```

Iterator for pos item in list.

7.43.4.14 has()

```
template<class T>
int BList< T >::has (
             const T & i ) const
```

Checks if the item is in the list.

7.43.4.15 insert()

```
template<class T>
void BList< T >::insert (
             BIter & i,
             const T & item )  [virtual]
```

Insert item before item.

Reimplemented in BEntryList, and BDict< Type >.

7.43.4.16 insertAfter()

```
template<class T>
void BList< T >::insertAfter (
             BIter & i,
             const T & item )
```

Insert item after item.

7.43.4.17 isEnd()

```
template<class T >
int BList< T >::isEnd (
             BIter & i ) const
```

True if iterator refers to last item.

7.43.4.18 isStart()

```
template<class T >
int BList< T >::isStart (
             BIter & i ) const
```

True if iterator refers to first item.

7.43.4.19 next()

```
template<class T >
void BList< T >::next (
             BIter & i ) const
```

Iterator for next item in list.

7.43.4.20 nodeCreate()

```
template<class T>
BList< T >::Node * BList< T >::nodeCreate (
            const T & item )  [protected], [virtual]
```

7.43.4.21 nodeGet() [1/2]

```
template<class T >
BList< T >::Node * BList< T >::nodeGet (
            BIter i )  [protected], [virtual]
```

7.43.4.22 nodeGet() [2/2]

```
template<class T >
const BList< T >::Node * BList< T >::nodeGet (
            BIter i ) const  [protected], [virtual]
```

7.43.4.23 number()

```
template<class T >
unsigned int BList< T >::number ( ) const
```

Number of items in list.

7.43.4.24 operator+()

```
template<class T>
BList< T > BList< T >::operator+ (
            const BList< T > & l ) const
```

7.43.4.25 operator=()

```
template<class T>
BList< T > & BList< T >::operator= (
            const BList< T > & l )
```

7.43.4.26 operator[]() [1/4]

```
template<class T >
T & BList< T >::operator[] (
             int i )
```

7.43.4.27 operator[]() [2/4]

```
template<class T >
const T & BList< T >::operator[] (
             int i ) const
```

7.43.4.28 operator[]() [3/4]

```
template<class T >
T & BList< T >::operator[] (
             BIter i )
```

7.43.4.29 operator[]() [4/4]

```
template<class T >
const T & BList< T >::operator[] (
             const BIter & i ) const
```

7.43.4.30 pop()

```
template<class T >
T BList< T >::pop ( )
```

Pop item from list deleteing item.

7.43.4.31 position()

```
template<class T >
int BList< T >::position (
             BIter i )
```

Postition in list item with iterator i.

7.43.4.32 prev()

```
template<class T >
void BList< T >::prev (
             BIter & i )
```

Iterator for previous item in list.

7.43.4.33 push()

```
template<class T>
void BList< T >::push (
             const T & i )
```

Push item onto list.

7.43.4.34 queueAdd()

```
template<class T>
void BList< T >::queueAdd (
             const T & i )
```

Add item to end of list.

7.43.4.35 queueGet()

```
template<class T >
T BList< T >::queueGet ( )
```

Get item from front of list deleteing item.

7.43.4.36 rear()

```
template<class T >
T & BList< T >::rear ( )
```

Get last item in list.

7.43.4.37 size()

```
template<class T >
unsigned int BList< T >::size ( ) const
```

Number of items in list.

7.43.4.38 sort() [1/2]

```
template<class T >
void BList< T >::sort ( )
```

Sort list based on get(i) values.

7.43.4.39 sort() [2/2]

```
template<class T >
void BList< T >::sort (
             SortFunc func )
```

Sort list based on Sort func.

7.43.4.40 start()

```
template<class T >
void BList< T >::start (
             BIter & i ) const
```

Iterator to start of list.

7.43.4.41 swap()

```
template<class T >
void BList< T >::swap (
             BIter i1,
             BIter i2 )
```

Swap two items in list.

7.43.5 Member Data Documentation

7.43.5.1 olength

```
template<class T>
unsigned int BList< T >::olength  [protected]
```

7.43.5.2 onodes

```
template<class T>
Node* BList< T >::onodes  [protected]
```

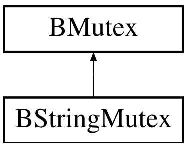
The documentation for this class was generated from the following files:

- BList.h
- BList_func.h

7.44 BMutex Class Reference

```
#include <BMutex.h>
```

Inheritance diagram for BMutex:



Public Types

- enum Type { Normal, Recursive }

Public Member Functions

- BMutex (Type type=Normal)
- BMutex (const BMutex &mutex)
- ∼BMutex ()
- int lock ()

  Set lock, wait as necessary.
- int timedLock (int timeoutUs)

  Set lock, wait as necessary but timeout after given time.
- int unlock ()

  Unlock the lock.
- int tryLock ()

  Test the lock.
- BMutex & operator= (const BMutex &mutex)

7.44.1 Detailed Description

Mutex class Note these are recursive Mutexes and so you need to make sure the number of unlocks equals the number of locks.

7.44.2 Member Enumeration Documentation

7.44.2.1 Type

```
enum BMutex::Type
```

Enumerator

Normal	
Recursive	

7.44.3 Constructor & Destructor Documentation

7.44.3.1 BMutex() [1/2]

```
BMutex::BMutex (
              Type type = Normal )
```

7.44.3.2 BMutex() [2/2]

```
BMutex::BMutex (
              const BMutex & mutex )
```

7.44.3.3 ∼BMutex()

```
BMutex::∼BMutex ( )
```

7.44.4 Member Function Documentation

7.44.4.1 lock()

```
int BMutex::lock ( )
```

Set lock, wait as necessary.

7.44.4.2 operator=()

```
BMutex & BMutex::operator= (
             const BMutex & mutex )
```

7.44.4.3 timedLock()

```
int BMutex::timedLock (
             int timeoutUs )
```

Set lock, wait as necessary but timeout after given time.

7.44.4.4 tryLock()

```
int BMutex::tryLock ( )
```

Test the lock.

7.44.4.5 unlock()

```
int BMutex::unlock ( )
```

Unlock the lock.

The documentation for this class was generated from the following files:

- BMutex.h
- BMutex.cpp

7.45 BMutexLock Class Reference

```
#include <BMutex.h>
```

Public Member Functions

- BMutexLock (BMutex &lock, int doLock=0)
- ∼BMutexLock ()
- int lock ()
- int unlock ()

7.45.1 Constructor & Destructor Documentation

7.45.1.1 BMutexLock()

```
BMutexLock::BMutexLock (
             BMutex & lock,
             int doLock = 0 )  [inline]
```

7.45.1.2 ∼BMutexLock()

```
BMutexLock::∼BMutexLock ( )  [inline]
```

7.45.2 Member Function Documentation

7.45.2.1 lock()

```
int BMutexLock::lock ( )  [inline]
```

7.45.2.2 unlock()

```
int BMutexLock::unlock ( )  [inline]
```

The documentation for this class was generated from the following file:

- BMutex.h

7.46 BMysql Class Reference

```
#include <BMysql.h>
```

Public Member Functions

- BMysql ()
- ∼BMysql ()
- BError open (BString hostName, BString dataBase, BString userName, BString password)
- void close ()
- BError get (BString table, BString where, BDictString &fields)
- BError insert (BString table, BDictString fields, BUInt32 ∗id=0)
- BError update (BString table, BUInt32 id, BDictString fields)
- BError del (BString table, BUInt32 id)

  Delete record from table.
- BError flush ()

  Flush all data to disk.
- BString escapeString (BString str)

  Escapes special characters in the string.
- BError query (BString cmd, BList< BDictString > &result)
- MYSQL & db ()
- void setDebug (int debug)

7.46.1 Constructor & Destructor Documentation

7.46.1.1 BMysql()

```
BMysql::BMysql ( )
```

7.46.1.2 ∼BMysql()

```
BMysql::∼BMysql ( )
```

7.46.2 Member Function Documentation

7.46.2.1 close()

```
void BMysql::close ( )
```

7.46.2.2 db()

```
MYSQL & BMysql::db ( )
```

7.46.2.3 del()

```
BError BMysql::del (
            BString table,
            BUInt32 id )
```

Delete record from table.

7.46.2.4 escapeString()

```
BString BMysql::escapeString (
            BString str )
```

Escapes special characters in the string.

7.46.2.5 flush()

```
BError BMysql::flush ( )
```

Flush all data to disk.

7.46.2.6 get()

```
BError BMysql::get (
            BString table,
            BString where,
            BDictString & fields )
```

7.46.2.7 insert()

```
BError BMysql::insert (
            BString table,
            BDictString fields,
            BUInt32 * id = 0 )
```

7.46.2.8 open()

```
BError BMysql::open (
             BString hostName,
             BString dataBase,
             BString userName,
             BString password )
```

7.46.2.9 query()

```
BError BMysql::query (
             BString cmd,
             BList< BDictString > & result )
```

7.46.2.10 setDebug()

```
void BMysql::setDebug (
             int debug )
```

7.46.2.11 update()

```
BError BMysql::update (
             BString table,
             BUInt32 id,
             BDictString fields )
```

The documentation for this class was generated from the following files:

- BMysql.h
- BMysql.cpp

7.47 BNameValue< T > Class Template Reference

```
#include <BNameValue.h>
```

Public Member Functions

- BNameValue ()
- BNameValue (BString name, const T &value)
- BString getName ()
- T & getValue ()

7.47.1 Constructor & Destructor Documentation

7.47.1.1 BNameValue() [1/2]

```
template<class T >
BNameValue< T >::BNameValue ( )  [inline]
```

7.47.1.2 BNameValue() [2/2]

```
template<class T >
BNameValue< T >::BNameValue (
             BString name,
             const T & value )  [inline]
```

7.47.2 Member Function Documentation

7.47.2.1 getName()

```
template<class T >
BString BNameValue< T >::getName ( )  [inline]
```

7.47.2.2 getValue()

```
template<class T >
T& BNameValue< T >::getValue ( )  [inline]
```

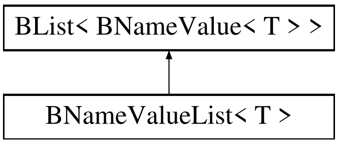
The documentation for this class was generated from the following file:

- BNameValue.h

7.48 BNameValueList< T > Class Template Reference

```
#include <BNameValue.h>
```

Inheritance diagram for BNameValueList< T >:



Public Member Functions

- T ∗ find (BString name)
- BIter findPos (BString name)

Additional Inherited Members

7.48.1 Member Function Documentation

7.48.1.1 find()

```
template<class T >
T* BNameValueList< T >::find (
             BString name )  [inline]
```

7.48.1.2 findPos()

```
template<class T >
BIter BNameValueList< T >::findPos (
             BString name )  [inline]
```

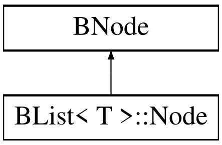
The documentation for this class was generated from the following file:

- BNameValue.h

7.49 BNode Class Reference

```
#include <BList.h>
```

Inheritance diagram for BNode:



Public Member Functions

- BNode ()

Public Attributes

- BNode ∗ next
- BNode ∗ prev

7.49.1 Constructor & Destructor Documentation

7.49.1.1 BNode()

```
BNode::BNode ( )  [inline]
```

7.49.2 Member Data Documentation

7.49.2.1 next

```
BNode* BNode::next
```

7.49.2.2 prev

```
BNode* BNode::prev
```

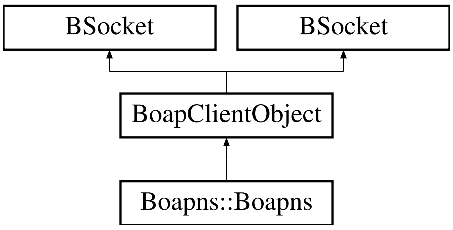
The documentation for this class was generated from the following file:

- BList.h

7.50 BoapClientObject Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapClientObject:



Public Member Functions

- BoapClientObject (BString name="")
- virtual ∼BoapClientObject ()
- BError connectService (BString name)

  Connects to the named service.
- BError disconnectService ()

  Disconnects from the named service.
- BString getServiceName ()

  Get the name of the service.
- BError ping (BUInt32 &apiVersion)

  Pings the connection and finds the remotes version number.
- BError setConnectionPriority (BoapPriority priority)

  Sets the connection priority.
- void setMaxLength (BUInt32 maxLength)

  Sets the maximum packet length.
- void setTimeout (int timeout)

  Sets the timeout in micro seconds. -1 is wait indefinitely.
- BoapClientObject (BString name)
- BError connectService (BString name)

Protected Member Functions

- BError pingLocked (BUInt32 &apiVersion)
- BError checkApiVersion ()
- BError performCall (BoapPacket &tx, BoapPacket &rx)

  Performs a RPC call to the named service.
- BError performSend (BoapPacket &tx)

  Performs a send to the named service.
- BError performRecv (BoapPacket &rx)

  Performs a receive.
- virtual BError handleReconnect (BError err)

  Handle a reconnect performing autorisaztion if required.
- BError performSend (BoapPacket &tx)
- BError performRecv (BoapPacket &rx)
- BError performCall (BoapPacket &tx, BoapPacket &rx)

Protected Attributes

- BString oname
- BUInt32 oapiVersion
- BoapPriority opriority
- BoapService oservice
- int oconnected
- BUInt32 omaxLength
- BoapPacket otx
- BoapPacket orx
- BMutex olock
- int otimeout
- int oreconnect

  Handle an automatic reconnect on timeout.

Additional Inherited Members

7.50.1 Constructor & Destructor Documentation

7.50.1.1 BoapClientObject() [1/2]

```
BoapClientObject::BoapClientObject (
            BString name = "" )
```

7.50.1.2 ∼BoapClientObject()

```
BoapClientObject::∼BoapClientObject ( )  [virtual]
```

7.50.1.3 BoapClientObject() [2/2]

```
BoapClientObject::BoapClientObject (
            BString name )
```

7.50.2 Member Function Documentation

7.50.2.1 checkApiVersion()

```
BError BoapClientObject::checkApiVersion ( )  [protected]
```

7.50.2.2 connectService() [1/2]

```
BError BoapClientObject::connectService (
            BString name )
```

Connects to the named service.

7.50.2.3 connectService() [2/2]

```
BError BoapClientObject::connectService (
            BString name )
```

7.50.2.4 disconnectService()

```
BError BoapClientObject::disconnectService ( )
```

Disconnects from the named service.

7.50.2.5 getServiceName()

```
BString BoapClientObject::getServiceName ( )
```

Get the name of the service.

7.50.2.6 handleReconnect()

```
BError BoapClientObject::handleReconnect (
            BError err )  [protected], [virtual]
```

Handle a reconnect performing autorisaztion if required.

7.50.2.7 performCall() [1/2]

```
BError BoapClientObject::performCall (
            BoapPacket & tx,
            BoapPacket & rx )  [protected]
```

Performs a RPC call to the named service.

7.50.2.8 performCall() [2/2]

```
BError BoapClientObject::performCall (
            BoapPacket & tx,
            BoapPacket & rx )  [protected]
```

7.50.2.9 performRecv() [1/2]

```
BError BoapClientObject::performRecv (
             BoapPacket & rx )  [protected]
```

Performs a receive.

7.50.2.10 performRecv() [2/2]

```
BError BoapClientObject::performRecv (
             BoapPacket & rx )  [protected]
```

7.50.2.11 performSend() [1/2]

```
BError BoapClientObject::performSend (
             BoapPacket & tx )  [protected]
```

Performs a send to the named service.

7.50.2.12 performSend() [2/2]

```
BError BoapClientObject::performSend (
             BoapPacket & tx )  [protected]
```

7.50.2.13 ping()

```
BError BoapClientObject::ping (
             BUInt32 & apiVersion )
```

Pings the connection and finds the remotes version number.

7.50.2.14 pingLocked()

```
BError BoapClientObject::pingLocked (
             BUInt32 & apiVersion )  [protected]
```

7.50.2.15 setConnectionPriority()

```
BError BoapClientObject::setConnectionPriority (
             BoapPriority priority )
```

Sets the connection priority.

7.50.2.16 setMaxLength()

```
void BoapClientObject::setMaxLength (
             BUInt32 maxLength )
```

Sets the maximum packet length.

7.50.2.17 setTimeout()

```
void BoapClientObject::setTimeout (
             int timeout )
```

Sets the timeout in micro seconds. -1 is wait indefinitely.

7.50.3 Member Data Documentation

7.50.3.1 oapiVersion

```
BUInt32 BoapClientObject::oapiVersion [protected]
```

7.50.3.2 oconnected

```
int BoapClientObject::oconnected [protected]
```

7.50.3.3 olock

```
BMutex BoapClientObject::olock [protected]
```

7.50.3.4 omaxLength

```
BUInt32 BoapClientObject::omaxLength [protected]
```

7.50.3.5 oname

```
BString BoapClientObject::oname [protected]
```

7.50.3.6 opriority

```
BoapPriority BoapClientObject::opriority [protected]
```

7.50.3.7 oreconnect

```
int BoapClientObject::oreconnect [protected]
```

Handle an automatic reconnect on timeout.

7.50.3.8 orx

```
BoapPacket BoapClientObject::orx [protected]
```

7.50.3.9 oservice

```
BoapService BoapClientObject::oservice [protected]
```

7.50.3.10 otimeout

```
int BoapClientObject::otimeout [protected]
```

7.50.3.11 otx

```
BoapPacket BoapClientObject::otx  [protected]
```

The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.51 Boapns::BoapEntry Class Reference

```
#include <BoapnsD.h>
```

Public Member Functions

- BoapEntry (BString pname=BString(), BString phostName=BString(), BList< BString > paddressList=BList< BString >(), BUInt32 pport=BUInt32(), BUInt32 pservice=BUInt32())

Public Attributes

- BString name
- BString hostName
- BList< BString > addressList
- BUInt32 port
- BUInt32 service

7.51.1 Constructor & Destructor Documentation

7.51.1.1 BoapEntry()

```
Boapns::BoapEntry::BoapEntry (
            BString pname = BString(),
            BString phostName = BString(),
            BList< BString > paddressList = BList<BString >(),
            BUInt32 pport = BUInt32(),
            BUInt32 pservice = BUInt32() )
```

7.51.2 Member Data Documentation

7.51.2.1 addressList

```
BList<BString > Boapns::BoapEntry::addressList
```

7.51.2.2 hostName

```
BString Boapns::BoapEntry::hostName
```

7.51.2.3 name

```
BString Boapns::BoapEntry::name
```

7.51.2.4 port

```
BUInt32 Boapns::BoapEntry::port
```

7.51.2.5 service

```
BUInt32 Boapns::BoapEntry::service
```

The documentation for this class was generated from the following files:

- BoapnsD.h
- BoapnsD.cpp

7.52 BoapFuncEntry Class Reference

```
#include <Boap.h>
```

Public Member Functions

- BoapFuncEntry (int cmd, BoapFunc func)
- BoapFuncEntry (int cmd, BoapFunc func)

Public Attributes

- BUInt32 ocmd
- BoapFunc ofunc
- UInt32 ocmd

7.52.1 Constructor & Destructor Documentation

7.52.1.1 BoapFuncEntry() [1/2]

```
BoapFuncEntry::BoapFuncEntry (
             int cmd,
             BoapFunc func )
```

7.52.1.2 BoapFuncEntry() [2/2]

```
BoapFuncEntry::BoapFuncEntry (
             int cmd,
             BoapFunc func )
```

7.52.2 Member Data Documentation

7.52.2.1 ocmd [1/2]

```
UInt32 BoapFuncEntry::ocmd
```

7.52.2.2 ocmd [2/2]

```
BUInt32 BoapFuncEntry::ocmd
```

7.52.2.3 ofunc

```
BoapFunc BoapFuncEntry::ofunc
```

The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.53 BoapMc1Comms Class Reference

```
#include <BoapMc1.h>
```

Public Member Functions

- BoapMc1Comms (Bool threaded=0, BUInt reqSize=512)
- virtual ∼BoapMc1Comms ()
- void setCommsMode (Bool halfDuplex)

  Sets half duplex mode.
- void setComms (BComms &comms)

  Sets the communications interface to use.
- void setComms (BComms ∗comms)

  Sets the communications interface to use.
- void setAddress (BUInt16 addressTo, BUInt16 addressFrom)

  Sets the to and from addresses.
- BUInt32 getApiVersion ()

  Returns the API version.
- BUInt32 setTimeout (BUInt32 timeoutUs)

  Sets the call timeout returning the current value.
- virtual BError validate ()

  Validate the request.
- BoapMc1Packet ∗ packetRx ()

  Returns a reference to the current RX packet.
- virtual BError processRx ()

  Process any RX packets queuing them as needed.

Protected Member Functions

- virtual BError processRequests ()

  Check and process any requests.
- virtual BError processRequest ()

  Check and process any request.
- BError packetTx (BDataChunk ∗chunks, BUInt nChunks, BUInt16 waitCmdReply)
- BError packetRxData (void ∗data, BUInt nBytes)
- BError packetRxEnd ()

Protected Attributes

- Bool othreaded

  Threaded operation.
- BUInt32 oreqSize

  The maximum request size.
- BMutex olockCall

  Lock for RPC calls. Only one at a time.
- BMutex olockTx

  Lock for TX.
- BComms ∗ ocomms
- BUInt32 oapiVersion

- Bool ohalfDuplex

  Half duplex mode.
- BUInt32 otimeout

  The timeout in us for calls.
- BUInt16 oaddressTo
- BUInt16 oaddressFrom
- BoapMc1Packet opacketRxBase
- BoapMc1Packet ∗ opacketRx

  The RX packet.
- BoapMc1Packet opacketTxBase
- BoapMc1Packet ∗ opacketTx

  The TX packet.
- BUInt opacketRpcCmd

  Waiting for RPC reply to cmd.
- BSemaphore opacketRpcSema

  Wait RPC reply semaphore.
- BSemaphore opacketRpcDoneSema

  Wait RPC complete semaphore.
- BoapMc1Error oerror

  The call return error;.

7.53.1 Constructor & Destructor Documentation

7.53.1.1 BoapMc1Comms()

```
BoapMc1Comms::BoapMc1Comms (
            Bool threaded = 0,
            BUInt reqSize = 512 )
```

7.53.1.2 ∼BoapMc1Comms()

```
BoapMc1Comms::∼BoapMc1Comms ( )  [virtual]
```

7.53.2 Member Function Documentation

7.53.2.1 getApiVersion()

```
BUInt32 BoapMc1Comms::getApiVersion ( )
```

Returns the API version.

7.53.2.2 packetRx()

```
BoapMc1Packet * BoapMc1Comms::packetRx ( )
```

Returns a reference to the current RX packet.

7.53.2.3 packetRxData()

```
BError BoapMc1Comms::packetRxData (
             void * data,
             BUInt nBytes )  [protected]
```

7.53.2.4 packetRxEnd()

```
BError BoapMc1Comms::packetRxEnd ( )  [protected]
```

7.53.2.5 packetTx()

```
BError BoapMc1Comms::packetTx (
             BDataChunk * chunks,
             BUInt nChunks,
             BUInt16 waitCmdReply )  [protected]
```

7.53.2.6 processRequest()

```
BError BoapMc1Comms::processRequest ( )  [protected], [virtual]
```

Check and process any request.

7.53.2.7 processRequests()

```
BError BoapMc1Comms::processRequests ( )  [protected], [virtual]
```

Check and process any requests.

7.53.2.8 processRx()

```
BError BoapMc1Comms::processRx ( )  [virtual]
```

Process any RX packets queuing them as needed.

7.53.2.9 setAddress()

```
void BoapMc1Comms::setAddress (
            BUInt16 addressTo,
            BUInt16 addressFrom )
```

Sets the to and from addresses.

7.53.2.10 setComms() [1/2]

```
void BoapMc1Comms::setComms (
            BComms & comms )
```

Sets the communications interface to use.

7.53.2.11 setComms() [2/2]

```
void BoapMc1Comms::setComms (
            BComms * comms )
```

Sets the communications interface to use.

7.53.2.12 setCommsMode()

```
void BoapMc1Comms::setCommsMode (
            Bool halfDuplex )
```

Sets half duplex mode.

7.53.2.13 setTimeout()

```
BUInt32 BoapMc1Comms::setTimeout (
            BUInt32 timeoutUs )
```

Sets the call timeout returning the current value.

7.53.2.14 validate()

```
BError BoapMc1Comms::validate ( )  [virtual]
```

Validate the request.

7.53.3 Member Data Documentation

7.53.3.1 oaddressFrom

```
BUInt16 BoapMc1Comms::oaddressFrom  [protected]
```

7.53.3.2 oaddressTo

```
BUInt16 BoapMc1Comms::oaddressTo  [protected]
```

7.53.3.3 oapiVersion

```
BUInt32 BoapMc1Comms::oapiVersion  [protected]
```

7.53.3.4 ocomms

```
BComms* BoapMc1Comms::ocomms  [protected]
```

7.53.3.5 oerror

```
BoapMc1Error BoapMc1Comms::oerror  [protected]
```

The call return error;.

7.53.3.6 ohalfDuplex

```
Bool BoapMc1Comms::ohalfDuplex  [protected]
```

Half duplex mode.

7.53.3.7 olockCall

```
BMutex BoapMc1Comms::olockCall  [protected]
```

Lock for RPC calls. Only one at a time.

7.53.3.8 olockTx

```
BMutex BoapMc1Comms::olockTx  [protected]
```

Lock for TX.

7.53.3.9 opacketRpcCmd

```
BUInt BoapMc1Comms::opacketRpcCmd  [protected]
```

Waiting for RPC reply to cmd.

7.53.3.10 opacketRpcDoneSema

```
BSemaphore BoapMc1Comms::opacketRpcDoneSema  [protected]
```

Wait RPC complete semaphore.

7.53.3.11 opacketRpcSema

```
BSemaphore BoapMc1Comms::opacketRpcSema  [protected]
```

Wait RPC reply semaphore.

7.53.3.12 opacketRx

```
BoapMc1Packet* BoapMc1Comms::opacketRx  [protected]
```

The RX packet.

7.53.3.13 opacketRxBase

```
BoapMc1Packet BoapMc1Comms::opacketRxBase  [protected]
```

7.53.3.14 opacketTx

```
BoapMc1Packet* BoapMc1Comms::opacketTx  [protected]
```

The TX packet.

7.53.3.15 opacketTxBase

```
BoapMc1Packet BoapMc1Comms::opacketTxBase  [protected]
```

7.53.3.16 oreqSize

```
BUInt32 BoapMc1Comms::oreqSize  [protected]
```

The maximum request size.

7.53.3.17 othreaded

```
Bool BoapMc1Comms::othreaded  [protected]
```

Threaded operation.

7.53.3.18 otimeout

```
BUInt32 BoapMc1Comms::otimeout  [protected]
```

The timeout in us for calls.

The documentation for this class was generated from the following files:

- BoapMc1.h
- BoapMc1.cpp

7.54 BoapMc1Error Struct Reference

```
#include <BoapMc1.h>
```

Public Attributes

- BInt16 number

  The error number.
- char string [32]

  The error string.

7.54.1 Member Data Documentation

7.54.1.1 number

```
BInt16 BoapMc1Error::number
```

The error number.

7.54.1.2 string

```
char BoapMc1Error::string[32]
```

The error string.

The documentation for this struct was generated from the following file:

- BoapMc1.h

7.55 BoapMc1Packet Class Reference

```
#include <BoapMc1.h>
```

Public Attributes

- BoapMc1PacketHead head
- char data [8]

7.55.1 Member Data Documentation

7.55.1.1 data

```
char BoapMc1Packet::data[8]
```

7.55.1.2 head

```
BoapMc1PacketHead BoapMc1Packet::head
```

The documentation for this class was generated from the following file:

- BoapMc1.h

7.56 BoapMc1PacketHead Struct Reference

```
#include <BoapMc1.h>
```

Public Attributes

- BUInt16 magic

  Packet magic pattern.
- BUInt16 length

  Total packet length including the header.
- BUInt16 addressTo

  Address to send to.
- BUInt16 addressFrom

  Address packet is from.
- BUInt16 cmd

  The RPC command or reply number.
- BInt16 error

  Error number.
- BUInt32 checksum

  Packet checksum, when used.

7.56.1 Member Data Documentation

7.56.1.1 addressFrom

```
BUInt16 BoapMc1PacketHead::addressFrom
```

Address packet is from.

7.56.1.2 addressTo

```
BUInt16 BoapMc1PacketHead::addressTo
```

Address to send to.

7.56.1.3 checksum

```
BUInt32 BoapMc1PacketHead::checksum
```

Packet checksum, when used.

7.56.1.4 cmd

```
BUInt16 BoapMc1PacketHead::cmd
```

The RPC command or reply number.

7.56.1.5 error

```
BInt16 BoapMc1PacketHead::error
```

Error number.

7.56.1.6 length

```
BUInt16 BoapMc1PacketHead::length
```

Total packet length including the header.

7.56.1.7 magic

```
BUInt16 BoapMc1PacketHead::magic
```

Packet magic pattern.

The documentation for this struct was generated from the following file:

- BoapMc1.h

7.57 BoapMcClientObject Class Reference

```
#include <BoapMc.h>
```

Public Member Functions

- BoapMcClientObject (BComms &comms)
- virtual ∼BoapMcClientObject ()
- void setAddress (BUInt8 addressTo, BUInt8 addressFrom)
- BUInt32 getApiVersion ()

    Returns the API version.

Protected Member Functions

- BError performCall ()

    Performs a RPC call to the named service.
- BError performSend ()

    Performs a send to the named service.
- BError performRecv ()

    Performs a receive.

Protected Attributes

- BUInt32 oapiVersion
- BComms & ocomms
- BUInt8 oaddressTo
- BUInt8 oaddressFrom
- BoapMcPacket opacket

7.57.1 Constructor & Destructor Documentation

7.57.1.1 BoapMcClientObject()

```
BoapMcClientObject::BoapMcClientObject (
             BComms & comms )
```

7.57.1.2 ∼BoapMcClientObject()

```
BoapMcClientObject::∼BoapMcClientObject ( )  [virtual]
```

7.57.2 Member Function Documentation

7.57.2.1 getApiVersion()

```
BUInt32 BoapMcClientObject::getApiVersion ( )
```

Returns the API version.

7.57.2.2 performCall()

```
BError BoapMcClientObject::performCall ( )  [protected]
```

Performs a RPC call to the named service.

7.57.2.3 performRecv()

```
BError BoapMcClientObject::performRecv ( )  [protected]
```

Performs a receive.

7.57.2.4 performSend()

```
BError BoapMcClientObject::performSend ( )  [protected]
```

Performs a send to the named service.

7.57.2.5 setAddress()

```
void BoapMcClientObject::setAddress (
             BUInt8 addressTo,
             BUInt8 addressFrom )
```

7.57.3 Member Data Documentation

7.57.3.1 oaddressFrom

```
BUInt8 BoapMcClientObject::oaddressFrom  [protected]
```

7.57.3.2 oaddressTo

```
BUInt8 BoapMcClientObject::oaddressTo  [protected]
```

7.57.3.3 oapiVersion

```
BUInt32 BoapMcClientObject::oapiVersion  [protected]
```

7.57.3.4 ocomms

```
BComms& BoapMcClientObject::ocomms  [protected]
```

7.57.3.5 opacket

`BoapMcPacket BoapMcClientObject::opacket [protected]`

The documentation for this class was generated from the following files:

- BoapMc.h
- BoapMc.cpp

7.58 BoapMcComms Class Reference

`#include <BoapMc.h>`

Public Member Functions

- BoapMcComms (Bool threaded=0, BUInt rxQueueSize=4)
- virtual ∼BoapMcComms ()
- void setCommsMode (Bool slave, BUInt txQueueSize)

  Sets slave mode.
- void setComms (BComms &comms)

  Sets the communications interface to use.
- void setComms (BComms ∗comms)

  Sets the communications interface to use.
- void setAddress (BUInt8 addressTo, BUInt8 addressFrom)

  Sets the to and from addresses.
- BUInt32 getApiVersion ()

  Returns the API version.
- BUInt32 setTimeout (BUInt32 timeoutUs)

  Sets the call timeout returning the current value.
- virtual BError processRx (BTimeout timeoutUs=BTimeoutForever)

  Process any RX packets queuing them as needed.
- virtual BError processRequests (BTimeout timeoutUs=BTimeoutForever)

  Check and process all requests.
- virtual BError processRequest (BTimeout timeoutUs=BTimeoutForever)

  Check and process any request.
- virtual BError processPacket (BoapMcPacket &rx, BoapMcPacket &tx)

  Process a recieved packet.

Protected Member Functions

- BError performCall ()

  Performs a RPC call to the remote side.
- BError performSend ()

  Performs a RPC send to the remote side.
- BError packetSend (BoapMcPacket &packet)

  Receives a packet.
- BError packetRecv (BoapMcPacket &packet)

  Receives a packet.

Protected Attributes

- Bool othreaded
- BMutex olockCall

  Lock for RPC calls. Only one at a time.
- BMutex olockTx

  Lock for TX.
- BComms ∗ ocomms
- BUInt32 oapiVersion
- Bool oslave

  Set slave mode.
- BUInt32 otimeout

  The timeout in us for calls.
- BUInt8 oaddressTo
- BUInt8 oaddressFrom
- BoapMcPacket opacket

  Packet RX buffer.
- BoapMcPacket opacketTx

  Packet TX buffer for calls.
- BoapMcPacket opacketRx

  Packet RX buffer for calls.
- BSemaphore opacketRxSema

  Wait RX semaphore.
- BoapMcPacket opacketReqTx

  Packet TX buffer for requests.
- BoapMcPacket opacketReqRx

  Packet RX buffer for requests.
- BQueue< BoapMcPacket > opacketReqQueue

  Packet RX buffer queue for requests.
- BFifo< BoapMcPacket > opacketTxQueue

  Packet TX Queue.
- BSemaphoreCount opacketTxQueueWriteNum

  Packet TX Queue number.
- BSemaphore opacketTxSema

  Wait for TX semaphore.

7.58.1 Constructor & Destructor Documentation

7.58.1.1 BoapMcComms()

```
BoapMcComms::BoapMcComms (
            Bool threaded = 0,
            BUInt rxQueueSize = 4 )
```

7.58.1.2 ∼BoapMcComms()

```
BoapMcComms::∼BoapMcComms ( )  [virtual]
```

7.58.2 Member Function Documentation

7.58.2.1 getApiVersion()

```
BUInt32 BoapMcComms::getApiVersion ( )
```

Returns the API version.

7.58.2.2 packetRecv()

```
BError BoapMcComms::packetRecv (
              BoapMcPacket & packet )  [protected]
```

Receives a packet.

7.58.2.3 packetSend()

```
BError BoapMcComms::packetSend (
              BoapMcPacket & packet )  [protected]
```

Receives a packet.

7.58.2.4 performCall()

```
BError BoapMcComms::performCall ( )  [protected]
```

Performs a RPC call to the remote side.

7.58.2.5 performSend()

```
BError BoapMcComms::performSend ( )  [protected]
```

Performs a RPC send to the remote side.

7.58.2.6 processPacket()

```
BError BoapMcComms::processPacket (
            BoapMcPacket & rx,
            BoapMcPacket & tx )  [virtual]
```

Process a recieved packet.

7.58.2.7 processRequest()

```
BError BoapMcComms::processRequest (
            BTimeout timeoutUs = BTimeoutForever )  [virtual]
```

Check and process any request.

7.58.2.8 processRequests()

```
BError BoapMcComms::processRequests (
            BTimeout timeoutUs = BTimeoutForever )  [virtual]
```

Check and process all requests.

7.58.2.9 processRx()

```
BError BoapMcComms::processRx (
            BTimeout timeoutUs = BTimeoutForever )  [virtual]
```

Process any RX packets queuing them as needed.

!!! This should wait on comms for timeoutUs !!!

7.58.2.10 setAddress()

```
void BoapMcComms::setAddress (
            BUInt8 addressTo,
            BUInt8 addressFrom )
```

Sets the to and from addresses.

7.58.2.11 setComms() [1/2]

```
void BoapMcComms::setComms (
            BComms & comms )
```

Sets the communications interface to use.

7.58.2.12 setComms() [2/2]

```
void BoapMcComms::setComms (
            BComms * comms )
```

Sets the communications interface to use.

7.58.2.13 setCommsMode()

```
void BoapMcComms::setCommsMode (
            Bool slave,
            BUInt txQueueSize )
```

Sets slave mode.

7.58.2.14 setTimeout()

```
BUInt32 BoapMcComms::setTimeout (
            BUInt32 timeoutUs )
```

Sets the call timeout returning the current value.

7.58.3 Member Data Documentation

7.58.3.1 oaddressFrom

```
BUInt8 BoapMcComms::oaddressFrom  [protected]
```

7.58.3.2 oaddressTo

```
BUInt8 BoapMcComms::oaddressTo  [protected]
```

7.58.3.3 oapiVersion

```
BUInt32 BoapMcComms::oapiVersion  [protected]
```

7.58.3.4 ocomms

```
BComms* BoapMcComms::ocomms  [protected]
```

7.58.3.5 olockCall

```
BMutex BoapMcComms::olockCall  [protected]
```

Lock for RPC calls. Only one at a time.

7.58.3.6 olockTx

```
BMutex BoapMcComms::olockTx  [protected]
```

Lock for TX.

7.58.3.7 opacket

```
BoapMcPacket BoapMcComms::opacket  [protected]
```

Packet RX buffer.

7.58.3.8 opacketReqQueue

```
BQueue<BoapMcPacket> BoapMcComms::opacketReqQueue  [protected]
```

Packet RX buffer queue for requests.

7.58.3.9 opacketReqRx

`BoapMcPacket BoapMcComms::opacketReqRx [protected]`

Packet RX buffer for requests.

7.58.3.10 opacketReqTx

`BoapMcPacket BoapMcComms::opacketReqTx [protected]`

Packet TX buffer for requests.

7.58.3.11 opacketRx

`BoapMcPacket BoapMcComms::opacketRx [protected]`

Packet RX buffer for calls.

7.58.3.12 opacketRxSema

`BSemaphore BoapMcComms::opacketRxSema [protected]`

Wait RX semaphore.

7.58.3.13 opacketTx

`BoapMcPacket BoapMcComms::opacketTx [protected]`

Packet TX buffer for calls.

7.58.3.14 opacketTxQueue

`BFifo<BoapMcPacket> BoapMcComms::opacketTxQueue [protected]`

Packet TX Queue.

7.58.3.15 opacketTxQueueWriteNum

```
BSemaphoreCount BoapMcComms::opacketTxQueueWriteNum [protected]
```

Packet TX Queue number.

7.58.3.16 opacketTxSema

```
BSemaphore BoapMcComms::opacketTxSema [protected]
```

Wait for TX semaphore.

7.58.3.17 oslave

```
Bool BoapMcComms::oslave [protected]
```

Set slave mode.

7.58.3.18 othreaded

```
Bool BoapMcComms::othreaded [protected]
```

7.58.3.19 otimeout

```
BUInt32 BoapMcComms::otimeout [protected]
```

The timeout in us for calls.

The documentation for this class was generated from the following files:

- BoapMc.h
- BoapMc.cpp

7.59 BoapMcPacket Class Reference

```
#include <BoapMc.h>
```

Public Attributes

- BoapMcPacketHead head
- char data [256 - sizeof(BoapMcPacketHead)]

7.59.1 Member Data Documentation

7.59.1.1 data

```
char BoapMcPacket::data[256 - sizeof(BoapMcPacketHead)]
```

7.59.1.2 head

```
BoapMcPacketHead BoapMcPacket::head
```

The documentation for this class was generated from the following file:

- BoapMc.h

7.60 BoapMcPacketHead Struct Reference

```
#include <BoapMc.h>
```

Public Attributes

- BUInt8 length
- BUInt8 addressTo
- BUInt8 addressFrom
- BUInt8 cmd
- BUInt16 error
- BUInt16 checksum

7.60.1 Member Data Documentation

7.60.1.1 addressFrom

```
BUInt8 BoapMcPacketHead::addressFrom
```

7.60.1.2 addressTo

```
BUInt8 BoapMcPacketHead::addressTo
```

7.60.1.3 checksum

```
BUInt16 BoapMcPacketHead::checksum
```

7.60.1.4 cmd

```
BUInt8 BoapMcPacketHead::cmd
```

7.60.1.5 error

```
BUInt16 BoapMcPacketHead::error
```

7.60.1.6 length

```
BUInt8 BoapMcPacketHead::length
```

The documentation for this struct was generated from the following file:

- BoapMc.h

7.61 BoapMcServiceObject Class Reference

```
#include <BoapMc.h>
```

Public Member Functions

- BoapMcServiceObject ()
- virtual ∼BoapMcServiceObject ()
- virtual BError process (BoapMcPacket &rx, BoapMcPacket &tx)
- virtual BError processEvent (BoapMcPacket &rx)

Protected Member Functions

- BError sendEvent (BoapMcPacket &tx)

Protected Attributes

- BUInt32 oapiVersion

7.61.1 Constructor & Destructor Documentation

7.61.1.1 BoapMcServiceObject()

```
BoapMcServiceObject::BoapMcServiceObject ( )
```

7.61.1.2 ∼BoapMcServiceObject()

```
BoapMcServiceObject::∼BoapMcServiceObject ( )  [virtual]
```

7.61.2 Member Function Documentation

7.61.2.1 process()

```
BError BoapMcServiceObject::process (
            BoapMcPacket & rx,
            BoapMcPacket & tx )  [virtual]
```

7.61.2.2 processEvent()

```
BError BoapMcServiceObject::processEvent (
            BoapMcPacket & rx )  [virtual]
```

7.61.2.3 sendEvent()

```
BError BoapMcServiceObject::sendEvent (
            BoapMcPacket & tx )  [protected]
```

7.61.3 Member Data Documentation

7.61.3.1 oapiVersion

```
BUInt32 BoapMcServiceObject::oapiVersion  [protected]
```

The documentation for this class was generated from the following files:

- BoapMc.h
- BoapMc.cpp

7.62 BoapMcSignalObject Class Reference

```
#include <BoapMc.h>
```

Public Member Functions

- BoapMcSignalObject (BComms &comms)

Protected Member Functions

- BError performSend (BoapMcPacket &tx)

Protected Attributes

- BComms & ocomms

7.62.1 Constructor & Destructor Documentation

7.62.1.1 BoapMcSignalObject()

```
BoapMcSignalObject::BoapMcSignalObject (
            BComms & comms )
```

7.62.2 Member Function Documentation

7.62.2.1 performSend()

```
BError BoapMcSignalObject::performSend (
             BoapMcPacket & tx )   [protected]
```

7.62.3 Member Data Documentation

7.62.3.1 ocomms

```
BComms& BoapMcSignalObject::ocomms  [protected]
```

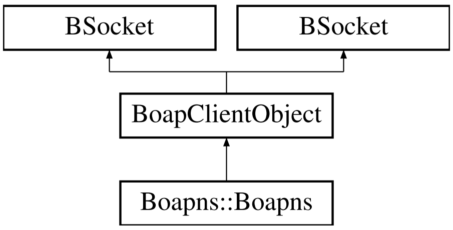
The documentation for this class was generated from the following files:

- BoapMc.h
- BoapMc.cpp

7.63 Boapns::Boapns Class Reference

```
#include <BoapnsC.h>
```

Inheritance diagram for Boapns::Boapns:



Public Member Functions

- Boapns (BString name="")
- BError getVersion (BString &version)
- BError getEntryList (BList< BoapEntry > &entryList)
- BError getEntry (BString name, BoapEntry &entry)
- BError addEntry (BoapEntry entry)
- BError delEntry (BString name)
- BError getNewName (BString &name)

Additional Inherited Members

7.63.1 Constructor & Destructor Documentation

7.63.1.1 Boapns()

```
Boapns::Boapns::Boapns (
            BString name = "" )
```

7.63.2 Member Function Documentation

7.63.2.1 addEntry()

```
BError Boapns::Boapns::addEntry (
            BoapEntry entry )
```

7.63.2.2 delEntry()

```
BError Boapns::Boapns::delEntry (
            BString name )
```

7.63.2.3 getEntry()

```
BError Boapns::Boapns::getEntry (
            BString name,
            BoapEntry & entry )
```

7.63.2.4 getEntryList()

```
BError Boapns::Boapns::getEntryList (
            BList< BoapEntry > & entryList )
```

7.63.2.5 getNewName()

```
BError Boapns::Boapns::getNewName (
            BString & name )
```

7.63.2.6 getVersion()

```
BError Boapns::Boapns::getVersion (
              BString & version )
```

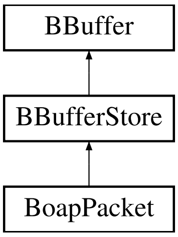
The documentation for this class was generated from the following files:

- BoapnsC.h
- BoapnsC.cpp

7.64 BoapPacket Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapPacket:



Public Member Functions

- BoapPacket ()
- ∼BoapPacket ()
- BUInt32 getCmd ()
- int peekHead (BoapPacketHead &head)
- int pushHead (BoapPacketHead &head)
- int popHead (BoapPacketHead &head)
- void updateHead ()
- BoapPacket ()
- ∼BoapPacket ()
- int resize (int size)
- BError setData (void ∗data, int nbytes)
- int nbytes ()
- char ∗ data ()
- int pushHead (BoapPacketHead &head)
- int push (Int8 v)
- int push (UInt8 v)
- int push (Int16 v)
- int push (UInt16 v)
- int push (Int32 v)
- int push (UInt32 v)
- int push (BString &v)
- int push (Double v)
- int push (BError &v)
- int push (UInt32 nBytes, const void ∗data)

- int popHead (BoapPacketHead &head)
- int pop (Int8 &v)
- int pop (UInt8 &v)
- int pop (Int16 &v)
- int pop (UInt16 &v)
- int pop (Int32 &v)
- int pop (UInt32 &v)
- int pop (BString &v)
- int pop (Double &v)
- int pop (BError &v)
- int pop (UInt32 nBytes, void ∗data)

Additional Inherited Members

7.64.1 Constructor & Destructor Documentation

7.64.1.1 BoapPacket() [1/2]

```
BoapPacket::BoapPacket ( )
```

7.64.1.2 ∼BoapPacket() [1/2]

```
BoapPacket::∼BoapPacket ( )
```

7.64.1.3 BoapPacket() [2/2]

```
BoapPacket::BoapPacket ( )
```

7.64.1.4 ∼BoapPacket() [2/2]

```
BoapPacket::∼BoapPacket ( )
```

7.64.2 Member Function Documentation

7.64.2.1 data()

```
char * BoapPacket::data ( )
```

7.64.2.2 getCmd()

```
BUInt32 BoapPacket::getCmd ( )
```

7.64.2.3 nbytes()

```
int BoapPacket::nbytes ( )
```

7.64.2.4 peekHead()

```
int BoapPacket::peekHead (
             BoapPacketHead & head )
```

7.64.2.5 pop() [1/10]

```
int BoapPacket::pop (
             Int8 & v )
```

7.64.2.6 pop() [2/10]

```
int BoapPacket::pop (
             UInt8 & v )
```

7.64.2.7 pop() [3/10]

```
int BoapPacket::pop (
             Int16 & v )
```

7.64.2.8 pop() [4/10]

```
int BoapPacket::pop (
            UInt16 & v )
```

7.64.2.9 pop() [5/10]

```
int BoapPacket::pop (
            Int32 & v )
```

7.64.2.10 pop() [6/10]

```
int BoapPacket::pop (
            UInt32 & v )
```

7.64.2.11 pop() [7/10]

```
int BoapPacket::pop (
            BString & v )
```

7.64.2.12 pop() [8/10]

```
int BoapPacket::pop (
            Double & v )
```

7.64.2.13 pop() [9/10]

```
int BoapPacket::pop (
            BError & v )
```

7.64.2.14 pop() [10/10]

```
int BoapPacket::pop (
            UInt32 nBytes,
            void * data )
```

7.64.2.15 popHead() [1/2]

```
int BoapPacket::popHead (
             BoapPacketHead & head )
```

7.64.2.16 popHead() [2/2]

```
int BoapPacket::popHead (
             BoapPacketHead & head )
```

7.64.2.17 push() [1/10]

```
int BoapPacket::push (
             Int8 v )
```

7.64.2.18 push() [2/10]

```
int BoapPacket::push (
             UInt8 v )
```

7.64.2.19 push() [3/10]

```
int BoapPacket::push (
             Int16 v )
```

7.64.2.20 push() [4/10]

```
int BoapPacket::push (
             UInt16 v )
```

7.64.2.21 push() [5/10]

```
int BoapPacket::push (
             Int32 v )
```

7.64.2.22 push() [6/10]

```
int BoapPacket::push (
            UInt32 v )
```

7.64.2.23 push() [7/10]

```
int BoapPacket::push (
            BString & v )
```

7.64.2.24 push() [8/10]

```
int BoapPacket::push (
            Double v )
```

7.64.2.25 push() [9/10]

```
int BoapPacket::push (
            BError & v )
```

7.64.2.26 push() [10/10]

```
int BoapPacket::push (
            UInt32 nBytes,
            const void * data )
```

7.64.2.27 pushHead() [1/2]

```
int BoapPacket::pushHead (
            BoapPacketHead & head )
```

7.64.2.28 pushHead() [2/2]

```
int BoapPacket::pushHead (
            BoapPacketHead & head )
```

7.64.2.29 resize()

```
int BoapPacket::resize (
             int size )
```

7.64.2.30 setData()

```
BError BoapPacket::setData (
             void * data,
             int nbytes )
```

7.64.2.31 updateHead()

```
void BoapPacket::updateHead ( )
```

The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.65 BoapPacketHead Struct Reference

```
#include <Boap.h>
```

Public Attributes

- BUInt32 type
- BUInt32 length
- BUInt32 service
- BUInt32 cmd
- UInt32 length
- BoapType type
- BoapService service
- UInt32 cmd
- UInt32 reserved [12]

7.65.1 Member Data Documentation

7.65.1.1 cmd [1/2]

`UInt32 BoapPacketHead::cmd`

7.65.1.2 cmd [2/2]

`BUInt32 BoapPacketHead::cmd`

7.65.1.3 length [1/2]

`UInt32 BoapPacketHead::length`

7.65.1.4 length [2/2]

`BUInt32 BoapPacketHead::length`

7.65.1.5 reserved

`UInt32 BoapPacketHead::reserved[12]`

7.65.1.6 service [1/2]

`BoapService BoapPacketHead::service`

7.65.1.7 service [2/2]

`BUInt32 BoapPacketHead::service`

7.65.1.8 type [1/2]

`BUInt32 BoapPacketHead::type`

7.65.1.9 type [2/2]

```
BoapType BoapPacketHead::type
```

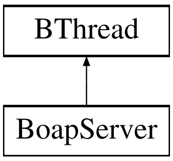
The documentation for this struct was generated from the following files:

- Boap.h
- BoapSimple.h

7.66 BoapServer Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapServer:



Public Types

- enum { NOTHREADS =0, THREADED =1 }

Public Member Functions

- BoapServer ()
- virtual ∼BoapServer ()
- virtual BError init (BString boapNsHost="", int port=0, int threaded=0, int isBoapns=0)
- virtual BError run (int inThread=0)
- virtual BError process (BoapServerConnection ∗conn, BoapPacket &rx, BoapPacket &tx)
- virtual BError processEvent (BoapPacket &rx)
- virtual BError addObject (BoapServiceObject ∗object)
- virtual BError sendEvent (BoapPacket &tx)
- virtual BError processEvent (int fd)
- virtual void clientGone (BoapServerConnection ∗client)
- BSocket & getSocket ()
- BSocket & getEventSocket ()
- BString getHostName ()
- int getConnectionsNumber ()
- void closeConnections ()
- virtual BoapServerConnection ∗ newConnection (int fd, BSocketAddressINET address)
- BoapServer ()
- BError init (int boapNs=0)
- BError run ()
- BError processEvent (BoapPacket &rx)
- BError addObject (BoapServiceObject ∗object)
- BError process (int fd)
- BError sendEvent (BoapPacket &tx)
- BSocket & getSocket ()
- BSocket & getEventSocket ()
- BError processEvent (int fd)
- BString getHostName ()

Public Attributes

- BUInt64 onumOperations

7.66.1 Member Enumeration Documentation

7.66.1.1 anonymous enum

```
anonymous enum
```

Enumerator

NOTHREADS	
THREADED	

7.66.2 Constructor & Destructor Documentation

7.66.2.1 BoapServer() [1/2]

```
BoapServer::BoapServer ( )
```

7.66.2.2 ∼BoapServer()

```
BoapServer::∼BoapServer ( )  [virtual]
```

7.66.2.3 BoapServer() [2/2]

```
BoapServer::BoapServer ( )
```

7.66.3 Member Function Documentation

7.66.3.1 addObject() [1/2]

```
BError BoapServer::addObject (
             BoapServiceObject * object )
```

7.66.3.2 addObject() [2/2]

```
BError BoapServer::addObject (
             BoapServiceObject * object )   [virtual]
```

7.66.3.3 clientGone()

```
void BoapServer::clientGone (
             BoapServerConnection * client )   [virtual]
```

7.66.3.4 closeConnections()

```
void BoapServer::closeConnections ( )
```

7.66.3.5 getConnectionsNumber()

```
int BoapServer::getConnectionsNumber ( )
```

7.66.3.6 getEventSocket() [1/2]

```
BSocket& BoapServer::getEventSocket ( )
```

7.66.3.7 getEventSocket() [2/2]

```
BSocket & BoapServer::getEventSocket ( )
```

7.66.3.8 getHostName() [1/2]

```
BString BoapServer::getHostName ( )
```

7.66.3.9 getHostName() [2/2]

```
BString BoapServer::getHostName ( )
```

7.66.3.10 getSocket() [1/2]

```
BSocket& BoapServer::getSocket ( )
```

7.66.3.11 getSocket() [2/2]

```
BSocket & BoapServer::getSocket ( )
```

7.66.3.12 init() [1/2]

```
BError BoapServer::init (
             int boapNs = 0 )
```

7.66.3.13 init() [2/2]

```
BError BoapServer::init (
             BString boapNsHost = "",
             int port = 0,
             int threaded = 0,
             int isBoapns = 0 )  [virtual]
```

7.66.3.14 newConnection()

```
BoapServerConnection * BoapServer::newConnection (
             int fd,
             BSocketAddressINET address )  [virtual]
```

7.66.3.15 process() [1/2]

```
BError BoapServer::process (
            int fd )
```

7.66.3.16 process() [2/2]

```
BError BoapServer::process (
            BoapServerConnection * conn,
            BoapPacket & rx,
            BoapPacket & tx )  [virtual]
```

7.66.3.17 processEvent() [1/4]

```
BError BoapServer::processEvent (
            BoapPacket & rx )
```

7.66.3.18 processEvent() [2/4]

```
BError BoapServer::processEvent (
            int fd )
```

7.66.3.19 processEvent() [3/4]

```
BError BoapServer::processEvent (
            BoapPacket & rx )  [virtual]
```

7.66.3.20 processEvent() [4/4]

```
BError BoapServer::processEvent (
            int fd )  [virtual]
```

7.66.3.21 run() [1/2]

```
BError BoapServer::run ( )
```

7.66.3.22 run() [2/2]

```
BError BoapServer::run (
            int inThread = 0 )  [virtual]
```

7.66.3.23 sendEvent() [1/2]

```
BError BoapServer::sendEvent (
            BoapPacket & tx )
```

7.66.3.24 sendEvent() [2/2]

```
BError BoapServer::sendEvent (
            BoapPacket & tx )  [virtual]
```

7.66.4 Member Data Documentation

7.66.4.1 onumOperations

```
BUInt64 BoapServer::onumOperations
```

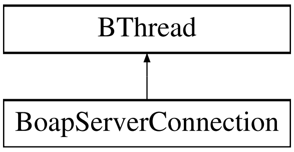
The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.67 BoapServerConnection Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapServerConnection:



Public Member Functions

- BoapServerConnection (BoapServer &boapServer, int fd)
- virtual ∼BoapServerConnection ()
- virtual BError init ()

  Initialise connection.
- virtual BError process ()
- virtual BSocket & getSocket ()
- virtual void setMaxLength (BUInt32 maxLength)
- virtual BError getHead (BoapPacketHead &head)
- virtual BError validate ()

  Validate the connection.

7.67.1 Constructor & Destructor Documentation

7.67.1.1 BoapServerConnection()

```
BoapServerConnection::BoapServerConnection (
            BoapServer & boapServer,
            int fd )
```

7.67.1.2 ∼BoapServerConnection()

```
BoapServerConnection::∼BoapServerConnection ( )  [virtual]
```

7.67.2 Member Function Documentation

7.67.2.1 getHead()

```
BError BoapServerConnection::getHead (
            BoapPacketHead & head )  [virtual]
```

7.67.2.2 getSocket()

```
BSocket & BoapServerConnection::getSocket ( )  [virtual]
```

7.67.2.3 init()

```
BError BoapServerConnection::init ( )  [virtual]
```

Initialise connection.

7.67.2.4 process()

```
BError BoapServerConnection::process ( )  [virtual]
```

7.67.2.5 setMaxLength()

```
void BoapServerConnection::setMaxLength (
            BUInt32 maxLength )  [virtual]
```

7.67.2.6 validate()

```
BError BoapServerConnection::validate ( )  [virtual]
```

Validate the connection.

The documentation for this class was generated from the following files:

- Boap.h
- Boap.cpp

7.68 BoapServiceEntry Class Reference

```
#include <Boap.h>
```

Public Member Functions

- BoapServiceEntry (BoapService service=0, BoapServiceObject ∗object=0)
- BoapServiceEntry (BoapService service=0, BoapServiceObject ∗object=0)

Public Attributes

- BoapService oservice
- BoapServiceObject ∗ oobject

7.68.1 Constructor & Destructor Documentation

7.68.1.1 BoapServiceEntry() [1/2]

```
BoapServiceEntry::BoapServiceEntry (
            BoapService service = 0,
            BoapServiceObject * object = 0 )  [inline]
```

7.68.1.2 BoapServiceEntry() [2/2]

```
BoapServiceEntry::BoapServiceEntry (
            BoapService service = 0,
            BoapServiceObject * object = 0 )  [inline]
```

7.68.2 Member Data Documentation

7.68.2.1 oobject

```
BoapServiceObject * BoapServiceEntry::oobject
```

7.68.2.2 oservice

```
BoapService BoapServiceEntry::oservice
```

The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h

7.69 BoapServiceObject Class Reference

```
#include <Boap.h>
```

Public Member Functions

- BoapServiceObject (BoapServer &server, BString name="")
- virtual ∼BoapServiceObject ()
- BError setName (BString name)
- BError sendEvent (BString signalName, BInt32 arg)
- virtual BError processEvent (BString objectName, BString name, BInt32 arg)
- BString name ()
- BError doPing (BoapServerConnection ∗conn, BoapPacket &rx, BoapPacket &tx)
- BError doConnectionPriority (BoapServerConnection ∗conn, BoapPacket &rx, BoapPacket &tx)
- BError process (BoapServerConnection ∗conn, BoapPacket &rx, BoapPacket &tx)
- virtual BError processEvent (BoapPacket &rx)
- BoapServiceObject (BoapServer &server, BString name)
- virtual ∼BoapServiceObject ()
- BError sendEvent (BString signalName, Int32 arg)
- virtual BError processEvent (BString objectName, BString name, Int32 arg)
- BString name ()
- BError process (BoapPacket &rx, BoapPacket &tx)
- virtual BError processEvent (BoapPacket &rx)

Protected Member Functions

- BError sendEvent (BoapPacket &tx)
- BError sendEvent (BoapPacket &tx)

Protected Attributes

- BoapServer & oserver
- BString oname
- BUInt32 oapiVersion
- BList< BoapFuncEntry > ofuncList

7.69.1 Constructor & Destructor Documentation

7.69.1.1 BoapServiceObject() [1/2]

```
BoapServiceObject::BoapServiceObject (
            BoapServer & server,
            BString name = "" )
```

7.69.1.2 ∼BoapServiceObject() [1/2]

```
BoapServiceObject::∼BoapServiceObject ( )  [virtual]
```

7.69.1.3 BoapServiceObject() [2/2]

```
BoapServiceObject::BoapServiceObject (
             BoapServer & server,
             BString name )
```

7.69.1.4 ∼BoapServiceObject() [2/2]

```
virtual BoapServiceObject::∼BoapServiceObject ( )  [virtual]
```

7.69.2 Member Function Documentation

7.69.2.1 doConnectionPriority()

```
BError BoapServiceObject::doConnectionPriority (
             BoapServerConnection * conn,
             BoapPacket & rx,
             BoapPacket & tx )
```

7.69.2.2 doPing()

```
BError BoapServiceObject::doPing (
             BoapServerConnection * conn,
             BoapPacket & rx,
             BoapPacket & tx )
```

7.69.2.3 name() [1/2]

```
BString BoapServiceObject::name ( )
```

7.69.2.4 name() [2/2]

```
BString BoapServiceObject::name ( )
```

7.69.2.5 process() [1/2]

```
BError BoapServiceObject::process (
             BoapPacket & rx,
             BoapPacket & tx )
```

7.69.2.6 process() [2/2]

```
BError BoapServiceObject::process (
             BoapServerConnection * conn,
             BoapPacket & rx,
             BoapPacket & tx )
```

7.69.2.7 processEvent() [1/4]

```
virtual BError BoapServiceObject::processEvent (
             BString objectName,
             BString name,
             Int32 arg )  [virtual]
```

7.69.2.8 processEvent() [2/4]

```
virtual BError BoapServiceObject::processEvent (
             BoapPacket & rx )  [virtual]
```

7.69.2.9 processEvent() [3/4]

```
BError BoapServiceObject::processEvent (
             BString objectName,
             BString name,
             BInt32 arg )  [virtual]
```

7.69.2.10 processEvent() [4/4]

```
BError BoapServiceObject::processEvent (
             BoapPacket & rx )  [virtual]
```

7.69.2.11 sendEvent() [1/4]

```
BError BoapServiceObject::sendEvent (
            BString signalName,
            Int32 arg )
```

7.69.2.12 sendEvent() [2/4]

```
BError BoapServiceObject::sendEvent (
            BoapPacket & tx )  [protected]
```

7.69.2.13 sendEvent() [3/4]

```
BError BoapServiceObject::sendEvent (
            BString signalName,
            BInt32 arg )
```

7.69.2.14 sendEvent() [4/4]

```
BError BoapServiceObject::sendEvent (
            BoapPacket & tx )  [protected]
```

7.69.2.15 setName()

```
BError BoapServiceObject::setName (
            BString name )
```

7.69.3 Member Data Documentation

7.69.3.1 oapiVersion

```
BUInt32 BoapServiceObject::oapiVersion  [protected]
```

7.69.3.2 ofuncList

```
BList< BoapFuncEntry > BoapServiceObject::ofuncList  [protected]
```

7.69.3.3 oname

```
BString BoapServiceObject::oname  [protected]
```

7.69.3.4 oserver

```
BoapServer & BoapServiceObject::oserver  [protected]
```

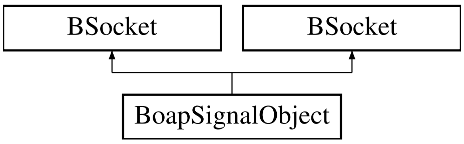
The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.70 BoapSignalObject Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapSignalObject:



Public Member Functions

- BoapSignalObject ()
- BoapSignalObject ()

Protected Member Functions

- BError performSend (BoapPacket &tx)
- BError performSend (BoapPacket &tx)

Protected Attributes

- BoapPacket otx
- BoapPacket orx

Additional Inherited Members

7.70.1 Constructor & Destructor Documentation

7.70.1.1 BoapSignalObject() [1/2]

```
BoapSignalObject::BoapSignalObject ( )
```

7.70.1.2 BoapSignalObject() [2/2]

```
BoapSignalObject::BoapSignalObject ( )
```

7.70.2 Member Function Documentation

7.70.2.1 performSend() [1/2]

```
BError BoapSignalObject::performSend (
              BoapPacket & tx )  [protected]
```

7.70.2.2 performSend() [2/2]

```
BError BoapSignalObject::performSend (
              BoapPacket & tx )  [protected]
```

7.70.3 Member Data Documentation

7.70.3.1 orx

```
BoapPacket BoapSignalObject::orx  [protected]
```

7.70.3.2 otx

```
BoapPacket BoapSignalObject::otx  [protected]
```

The documentation for this class was generated from the following files:

- Boap.h
- BoapSimple.h
- Boap.cpp
- BoapSimple.cc

7.71 BObj Class Reference

```
#include <BObj.h>
```

Public Member Functions

- BObj ()
- virtual ∼BObj ()
- virtual const char ∗ getType () const
- virtual const BObjMember ∗ getMembers () const
- virtual BError getMembers (BDictString &members)
- virtual BError getMember (BString name, BString &value)
- virtual BError setMembers (BDictString &members)
- virtual BError setMember (BString name, BString value)
- virtual void membersPrint () const

  Prints out members.
- virtual BString getDebugString ()

  Returns contents as a debug string.

7.71.1 Constructor & Destructor Documentation

7.71.1.1 BObj()

```
BObj::BObj ( )
```

7.71.1.2 ∼BObj()

```
BObj::∼BObj ( )  [virtual]
```

7.71.2 Member Function Documentation

7.71.2.1 getDebugString()

```
BString BObj::getDebugString ( )  [virtual]
```

Returns contents as a debug string.

7.71.2.2 getMember()

```
BError BObj::getMember (
            BString name,
            BString & value )  [virtual]
```

7.71.2.3 getMembers() [1/2]

```
const BObjMember * BObj::getMembers ( ) const  [virtual]
```

7.71.2.4 getMembers() [2/2]

```
BError BObj::getMembers (
            BDictString & members )  [virtual]
```

7.71.2.5 getType()

```
const char * BObj::getType ( ) const  [virtual]
```

7.71.2.6 membersPrint()

```
void BObj::membersPrint ( ) const  [virtual]
```

Prints out members.

7.71.2.7 setMember()

```
BError BObj::setMember (
            BString name,
            BString value )  [virtual]
```

7.71.2.8 setMembers()

```
BError BObj::setMembers (
            BDictString & members )  [virtual]
```

The documentation for this class was generated from the following files:

- BObj.h
- BObj.cpp

7.72 BObjMember Struct Reference

```
#include <BTypes.h>
```

Public Attributes

- BType type
- BTypeComp typeComp
- BUInt16 dataOffset
- BUInt16 size
- const char ∗ typeName
- const char ∗ name

7.72.1 Member Data Documentation

7.72.1.1 dataOffset

```
BUInt16 BObjMember::dataOffset
```

7.72.1.2 name

```
const char* BObjMember::name
```

7.72.1.3 size

```
BUInt16 BObjMember::size
```

7.72.1.4 type

```
BType BObjMember::type
```

7.72.1.5 typeComp

```
BTypeComp BObjMember::typeComp
```

7.72.1.6 typeName

```
const char* BObjMember::typeName
```

The documentation for this struct was generated from the following file:

- BTypes.h

7.73 BPoll Class Reference

This class provides an interface for polling a number of file descriptors. It uses round robin polling.

```
#include <BPoll.h>
```

Public Types

- typedef struct pollfd PollFd

Public Member Functions

- BPoll ()
- ∼BPoll ()
- void append (int fd, int events=POLLIN|POLLERR|POLLHUP|POLLNVAL)

  Append a file descriptor to polling list.
- void delFd (int fd)

  Remove a file descriptor from polling list.
- BError doPoll (int &fd, int timeoutUs=-1)

  Perform polling operation.
- BError doPollEvents (int &fd, int &events, int timeoutUs=-1)

  Perform polling operation and return events.
- int getPollFdsNum ()
- PollFd ∗ getPollFds ()
- void clear ()

7.73.1 Detailed Description

This class provides an interface for polling a number of file descriptors. It uses round robin polling.

7.73.2 Member Typedef Documentation

7.73.2.1 PollFd

```
typedef struct pollfd BPoll::PollFd
```

7.73.3 Constructor & Destructor Documentation

7.73.3.1 BPoll()

```
BPoll::BPoll ( )
```

7.73.3.2 ∼BPoll()

```
BPoll::∼BPoll ( )
```

7.73.4 Member Function Documentation

7.73.4.1 append()

```
void BPoll::append (
             int fd,
             int events = POLLIN|POLLERR|POLLHUP|POLLNVAL )
```

Append a file descriptor to polling list.

7.73.4.2 clear()

```
void BPoll::clear ( )
```

7.73.4.3 delFd()

```
void BPoll::delFd (
             int fd )
```

Remove a file descriptor from polling list.

7.73.4.4 doPoll()

```
BError BPoll::doPoll (
             int & fd,
             int timeoutUs = -1 )
```

Perform polling operation.

7.73.4.5 doPollEvents()

```
BError BPoll::doPollEvents (
             int & fd,
             int & events,
             int timeoutUs = -1 )
```

Perform polling operation and return events.

7.73.4.6 getPollFds()

```
BPoll::PollFd * BPoll::getPollFds ( )
```

7.73.4.7 getPollFdsNum()

```
int BPoll::getPollFdsNum ( )
```

The documentation for this class was generated from the following files:

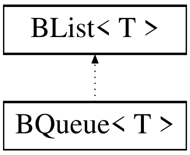
- BPoll.h
- BPoll.cpp

7.74 BQueue< T > Class Template Reference

Queue class.

```
#include <BQueue.h>
```

Inheritance diagram for BQueue< T >:



Public Member Functions

- BQueue (BUInt size)
- ∼BQueue ()
- void clear ()

  Clear the queue.
- BUInt writeAvailable () const
- BError write (const T &v, BTimeout timeout=BTimeoutForever)

  Append an item onto the queue.
- BUInt readAvailable () const
- BError read (T &v, BTimeout timeout=BTimeoutForever)

  Get an item from the queue.

7.74.1 Detailed Description

template<class T>
class BQueue< T >

Queue class.

7.74.2 Constructor & Destructor Documentation

7.74.2.1 BQueue()

```
template<class T >
BQueue< T >::BQueue (
             BUInt size )
```

7.74.2.2 ∼BQueue()

```
template<class T >
BQueue< T >::∼BQueue ( )
```

7.74.3 Member Function Documentation

7.74.3.1 clear()

```
template<class T >
void BQueue< T >::clear ( )  [virtual]
```

Clear the queue.

Reimplemented from BList< T >.

7.74.3.2 read()

```
template<class T>
BError BQueue< T >::read (
             T & v,
             BTimeout timeout = BTimeoutForever )
```

Get an item from the queue.

7.74.3.3 readAvailable()

```
template<class T >
BUInt BQueue< T >::readAvailable ( ) const
```

7.74.3.4 write()

```
template<class T>
BError BQueue< T >::write (
             const T & v,
             BTimeout timeout = BTimeoutForever )
```

Append an item onto the queue.

7.74.3.5 writeAvailable()

```
template<class T >
BUInt BQueue< T >::writeAvailable ( ) const
```

The documentation for this class was generated from the following file:

- BQueue.h

7.75 BRefData Class Reference

```
#include <BRefData.h>
```

Public Member Functions

- BRefData ()
- BRefData (int len)
- BRefData (const BRefData &refData)
- ∼BRefData ()
- BRefData ∗ copy ()

  Create a copy of this reference for writing, if necessary.
- BRefData ∗ addRef ()

  Increment the reference counter.
- int deleteRef ()

  Decrement the reference counter.
- char ∗ data ()

  Return the raw data pointer.
- int len ()

  Return the length in bytes.
- BRefData & operator= (const BRefData &refData)
- void setLen (int len)

  Set the length in bytes. Note should only be used if orefCount = 1.

7.75.1 Detailed Description

Referenced data storage. This is Thread safe to a degree. The reference counting is protected. However, setLen() is not and should be protected at a higher level.

7.75.2 Constructor & Destructor Documentation

7.75.2.1 BRefData() [1/3]

```
BRefData::BRefData ( )
```

7.75.2.2 BRefData() [2/3]

```
BRefData::BRefData (
              int len )
```

7.75.2.3 BRefData() [3/3]

```
BRefData::BRefData (
              const BRefData & refData )
```

7.75.2.4 ∼BRefData()

```
BRefData::∼BRefData ( )
```

7.75.3 Member Function Documentation

7.75.3.1 addRef()

```
BRefData * BRefData::addRef ( )
```

Increment the reference counter.

7.75.3.2 copy()

```
BRefData * BRefData::copy ( )
```

Create a copy of this reference for writing, if necessary.

7.75.3.3 data()

```
char* BRefData::data ( )  [inline]
```

Return the raw data pointer.

7.75.3.4 deleteRef()

```
int BRefData::deleteRef ( )
```

Decrement the reference counter.

7.75.3.5 len()

```
int BRefData::len ( )  [inline]
```

Return the length in bytes.

7.75.3.6 operator=()

```
BRefData & BRefData::operator= (
             const BRefData & refData )
```

7.75.3.7 setLen()

```
void BRefData::setLen (
             int len )
```

Set the length in bytes. Note should only be used if orefCount = 1.

The documentation for this class was generated from the following files:

- BRefData.h
- BRefData.cpp

7.76 BRtc Class Reference

Realtime clock.

```
#include <BRtc.h>
```

Public Member Functions

- BRtc ()
- ∼BRtc ()
- BError init (int rate)

  Setup interrupt rate.
- void wait (int delayUs)

  Wait specified uS.

7.76.1 Detailed Description

Realtime clock.

7.76.2 Constructor & Destructor Documentation

7.76.2.1 BRtc()

```
BRtc::BRtc ( )
```

7.76.2.2 ∼BRtc()

```
BRtc::∼BRtc ( )
```

7.76.3 Member Function Documentation

7.76.3.1 init()

```
BError BRtc::init (
              int rate )
```

Setup interrupt rate.

7.76.3.2 wait()

```
void BRtc::wait (
            int delayUs )
```

Wait specified uS.

The documentation for this class was generated from the following files:

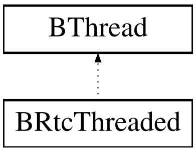
- BRtc.h
- BRtc.cpp

7.77 BRtcThreaded Class Reference

Threaded real time clock.

```
#include <BRtc.h>
```

Inheritance diagram for BRtcThreaded:



Public Member Functions

- BRtcThreaded ()
- ∼BRtcThreaded ()
- BError init (int rate)

  Setup interrupt rate.
- void wait (int delayUs)

  Wait specified uS.

7.77.1 Detailed Description

Threaded real time clock.

7.77.2 Constructor & Destructor Documentation

7.77.2.1 BRtcThreaded()

```
BRtcThreaded::BRtcThreaded ( )
```

7.77.2.2 ∼BRtcThreaded()

```
BRtcThreaded::∼BRtcThreaded ( )
```

7.77.3 Member Function Documentation

7.77.3.1 init()

```
BError BRtcThreaded::init (
             int rate )
```

Setup interrupt rate.

7.77.3.2 wait()

```
void BRtcThreaded::wait (
             int delayUs )
```

Wait specified uS.

The documentation for this class was generated from the following files:

- BRtc.h
- BRtc.cpp

7.78 BRWLock Class Reference

thread read-write locks

```
#include <BRWLock.h>
```

Public Member Functions

- BRWLock ()
- BRWLock (const BRWLock &rwlock)
- ∼BRWLock ()
- int rdLock ()

  Set lock, wait if necessary.
- int tryRdLock ()

  Test the lock.
- int wrLock ()

  Set lock, wait if necessary.
- int tryWrLock ()

  Test the lock.
- int unlock ()

  Unlock the lock.
- BRWLock & operator= (const BRWLock &rwlock)

7.78.1 Detailed Description

thread read-write locks

7.78.2 Constructor & Destructor Documentation

7.78.2.1 BRWLock() [1/2]

```
BRWLock::BRWLock ( )
```

7.78.2.2 BRWLock() [2/2]

```
BRWLock::BRWLock (
              const BRWLock & rwlock )
```

7.78.2.3 ∼BRWLock()

```
BRWLock::∼BRWLock ( )
```

7.78.3 Member Function Documentation

7.78.3.1 operator=()

```
BRWLock & BRWLock::operator= (
              const BRWLock & rwlock )
```

7.78.3.2 rdLock()

```
int BRWLock::rdLock ( )
```

Set lock, wait if necessary.

7.78.3.3 tryRdLock()

```
int BRWLock::tryRdLock ( )
```

Test the lock.

7.78.3.4 tryWrLock()

```
int BRWLock::tryWrLock ( )
```

Test the lock.

7.78.3.5 unlock()

```
int BRWLock::unlock ( )
```

Unlock the lock.

7.78.3.6 wrLock()

```
int BRWLock::wrLock ( )
```

Set lock, wait if necessary.

The documentation for this class was generated from the following files:

- BRWLock.h
- BRWLock.cpp

7.79 BSema Class Reference

Sempahore class.

```
#include <BSema.h>
```

Public Member Functions

- BSema (int value=0)
- BSema (const BSema &sema)
- ∼BSema ()
- int post ()

  Post condition.
- int wait ()

  Wait for contition.
- int timedWait (int timeUs)

  Wait for condition with timeout.
- int tryWait ()

  Test for the condition.
- int getValue () const
- BSema & operator= (const BSema &sema)

7.79.1 Detailed Description

Sempahore class.

7.79.2 Constructor & Destructor Documentation

7.79.2.1 BSema() [1/2]

```
BSema::BSema (
            int value = 0 )
```

7.79.2.2 BSema() [2/2]

```
BSema::BSema (
            const BSema & sema )
```

7.79.2.3 ∼BSema()

```
BSema::∼BSema ( )
```

7.79.3 Member Function Documentation

7.79.3.1 getValue()

```
int BSema::getValue ( ) const
```

7.79.3.2 operator=()

```
BSema & BSema::operator= (
             const BSema & sema )
```

7.79.3.3 post()

```
int BSema::post ( )
```

Post condition.

7.79.3.4 timedWait()

```
int BSema::timedWait (
             int timeUs )
```

Wait for condition with timeout.

7.79.3.5 tryWait()

```
int BSema::tryWait ( )
```

Test for the condition.

7.79.3.6 wait()

```
int BSema::wait ( )
```

Wait for contition.

The documentation for this class was generated from the following files:

- BSema.h
- BSema.cpp

7.80 BSemaphore Class Reference

Semaphore class.

```
#include <BSemaphore.h>
```

Public Member Functions

- BSemaphore ()
- BSemaphore (const BSemaphore &semaphore)
- ∼BSemaphore ()
- Bool wait (BTimeout timeoutUs=BTimeoutForever)

  Wait for the semaphore.
- void set ()

  Set the semaphore.
- int getValue () const
- BSemaphore & operator= (const BSemaphore &semaphore)

7.80.1 Detailed Description

Semaphore class.

7.80.2 Constructor & Destructor Documentation

7.80.2.1 BSemaphore() [1/2]

```
BSemaphore::BSemaphore ( )
```

7.80.2.2 BSemaphore() [2/2]

```
BSemaphore::BSemaphore (
             const BSemaphore & semaphore )
```

7.80.2.3 ∼BSemaphore()

```
BSemaphore::∼BSemaphore ( )
```

7.80.3 Member Function Documentation

7.80.3.1 getValue()

```
int BSemaphore::getValue ( ) const
```

7.80.3.2 operator=()

```
BSemaphore & BSemaphore::operator= (
             const BSemaphore & semaphore )
```

7.80.3.3 set()

```
void BSemaphore::set ( )
```

Set the semaphore.

7.80.3.4 wait()

```
Bool BSemaphore::wait (
             BTimeout timeoutUs = BTimeoutForever )
```

Wait for the semaphore.

The documentation for this class was generated from the following files:

- BSemaphore.h
- BSemaphore.cpp

7.81 BSemaphoreBool Class Reference

```
#include <BSemaphore.h>
```

Public Member Functions

- BSemaphoreBool ()
- BSemaphoreBool (const BSemaphoreBool &semaphore)
- ∼BSemaphoreBool ()
- void set (Bool on=1)
- void clear ()
- Bool wait (Bool v=1, BTimeout timeoutUs=BTimeoutForever)

  Wait for the semaphore.
- Bool value ()
- operator int ()
- int operator== (Bool on)
- BSemaphoreBool & operator= (Bool on)

7.81.1 Constructor & Destructor Documentation

7.81.1.1 BSemaphoreBool() [1/2]

```
BSemaphoreBool::BSemaphoreBool ( )
```

7.81.1.2 BSemaphoreBool() [2/2]

```
BSemaphoreBool::BSemaphoreBool (
              const BSemaphoreBool & semaphore )
```

7.81.1.3 ∼BSemaphoreBool()

```
BSemaphoreBool::∼BSemaphoreBool ( )
```

7.81.2 Member Function Documentation

7.81.2.1 clear()

```
void BSemaphoreBool::clear ( )
```

7.81.2.2 operator int()

```
BSemaphoreBool::operator int ( )
```

7.81.2.3 operator=()

```
BSemaphoreBool & BSemaphoreBool::operator= (
             Bool on )
```

7.81.2.4 operator==()

```
int BSemaphoreBool::operator== (
             Bool on )
```

7.81.2.5 set()

```
void BSemaphoreBool::set (
             Bool on = 1 )
```

7.81.2.6 value()

```
Bool BSemaphoreBool::value ( )
```

7.81.2.7 wait()

```
Bool BSemaphoreBool::wait (
             Bool v = 1,
             BTimeout timeoutUs = BTimeoutForever )
```

Wait for the semaphore.

The documentation for this class was generated from the following files:

- BSemaphore.h
- BSemaphore.cpp

7.82 BSemaphoreCount Class Reference

```
#include <BSemaphore.h>
```

Public Member Functions

- BSemaphoreCount ()
- BSemaphoreCount (const BSemaphoreCount &semaphore)
- ∼BSemaphoreCount ()
- void setValue (BUInt v)
- void add (int v=1)

  Set the semaphore.
- Bool wait (BUInt v=1, BTimeout timeoutUs=BTimeoutForever)

  Wait for the semaphore.
- Bool take (BUInt v=1, BTimeout timeoutUs=BTimeoutForever)

  Take for the semaphore.
- BUInt value ()
- BSemaphoreCount & operator= (const BSemaphoreCount &semaphore)

7.82.1 Constructor & Destructor Documentation

7.82.1.1 BSemaphoreCount() [1/2]

```
BSemaphoreCount::BSemaphoreCount ( )
```

7.82.1.2 BSemaphoreCount() [2/2]

```
BSemaphoreCount::BSemaphoreCount (
             const BSemaphoreCount & semaphore )
```

7.82.1.3 ∼BSemaphoreCount()

```
BSemaphoreCount::∼BSemaphoreCount ( )
```

7.82.2 Member Function Documentation

7.82.2.1 add()

```
void BSemaphoreCount::add (
             int v = 1 )
```

Set the semaphore.

7.82.2.2 operator=()

```
BSemaphoreCount & BSemaphoreCount::operator= (
             const BSemaphoreCount & semaphore )
```

7.82.2.3 setValue()

```
void BSemaphoreCount::setValue (
             BUInt v )
```

7.82.2.4 take()

```
Bool BSemaphoreCount::take (
             BUInt v = 1,
             BTimeout timeoutUs = BTimeoutForever )
```

Take for the semaphore.

7.82.2.5 value()

```
BUInt BSemaphoreCount::value ( )
```

7.82.2.6 wait()

```
Bool BSemaphoreCount::wait (
             BUInt v = 1,
             BTimeout timeoutUs = BTimeoutForever )
```

Wait for the semaphore.

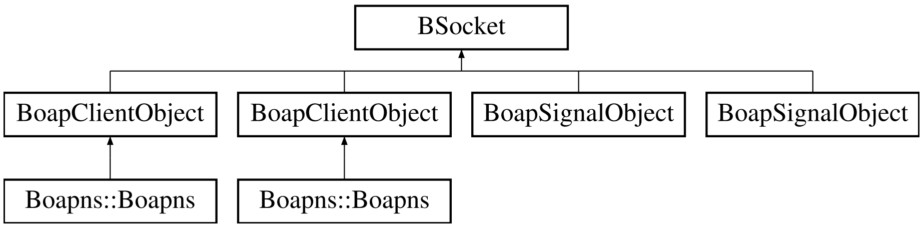
The documentation for this class was generated from the following files:

- BSemaphore.h
- BSemaphore.cpp

7.83 BSocket Class Reference

```
#include <BSocket.h>
```

Inheritance diagram for BSocket:



Public Types

- enum NType { STREAM, DGRAM }
- enum Priority { PriorityLow, PriorityNormal, PriorityHigh }

Public Member Functions

- BSocket ()
- BSocket (int fd)
- BSocket (NType type)
- BSocket (int domain, int type, int protocol)
- ∼BSocket ()
- BError init (int domain, int type, int protocol)
- BError init (NType type)
- void setFd (int fd)
- int getFd ()
- BError bind (const BSocketAddress &add)
- BError connect (const BSocketAddress &add)
- BError shutdown (int how)
- BError close ()
- BError listen (int backlog=5)
- BError accept (int &fd)
- BError accept (int &fd, BSocketAddress &address)
- BError send (const void ∗buf, BSize nbytes, BSize &nbytesSent, int flags=0)
- BError sendTo (const BSocketAddress &address, const void ∗buf, BSize nbytes, BSize &nbytesSent, int flags=0)
- BError sendChunks (const BDataChunk ∗chunks, BSize nChunks, BSize &nbytesSent, int flags=0)
- BError recv (void ∗buf, BSize maxbytes, BSize &nbytesRecv, int flags=0)
- BError recvFrom (BSocketAddress &address, void ∗buf, BSize maxbytes, BSize &nbytesRecv, int flags=0)
- BError recvWithTimeout (void ∗buf, BSize maxbytes, BSize &nbytesRecv, int timeout, int flags=0)
- BError recvFromWithTimeout (BSocketAddress &address, void ∗buf, BSize maxbytes, BSize &nbytesRecv, int timeout, int flags=0)
- BUInt recvAvailable ()
- BError setSockOpt (int level, int optname, void ∗optval, unsigned int optlen)
- BError getSockOpt (int level, int optname, void ∗optval, unsigned int ∗optlen)
- BError setReuseAddress (int on)
- BError setBroadCast (int on)
- BError setPriority (Priority priority)
- BError getMTU (uint32_t &mtu)
- BError getAddress (BSocketAddress &address)

7.83.1 Member Enumeration Documentation

7.83.1.1 NType

```
enum BSocket::NType
```

Enumerator

STREAM	
DGRAM	

7.83.1.2 Priority

```
enum BSocket::Priority
```

Enumerator

PriorityLow	
PriorityNormal	
PriorityHigh	

7.83.2 Constructor & Destructor Documentation

7.83.2.1 BSocket() [1/4]

```
BSocket::BSocket ( )
```

7.83.2.2 BSocket() [2/4]

```
BSocket::BSocket (
              int fd )
```

7.83.2.3 BSocket() [3/4]

```
BSocket::BSocket (
         NType type )
```

7.83.2.4 BSocket() [4/4]

```
BSocket::BSocket (
         int domain,
         int type,
         int protocol )
```

7.83.2.5 ∼BSocket()

```
BSocket::∼BSocket ( )
```

7.83.3 Member Function Documentation

7.83.3.1 accept() [1/2]

```
BError BSocket::accept (
         int & fd )
```

7.83.3.2 accept() [2/2]

```
BError BSocket::accept (
         int & fd,
         BSocketAddress & address )
```

7.83.3.3 bind()

```
BError BSocket::bind (
         const BSocketAddress & add )
```

7.83.3.4 close()

```
BError BSocket::close ( )
```

7.83.3.5 connect()

```
BError BSocket::connect (
             const BSocketAddress & add )
```

7.83.3.6 getAddress()

```
BError BSocket::getAddress (
             BSocketAddress & address )
```

7.83.3.7 getFd()

```
int BSocket::getFd ( )
```

7.83.3.8 getMTU()

```
BError BSocket::getMTU (
             uint32_t & mtu )
```

7.83.3.9 getSockOpt()

```
BError BSocket::getSockOpt (
             int level,
             int optname,
             void * optval,
             unsigned int * optlen )
```

7.83.3.10 init() [1/2]

```
BError BSocket::init (
             int domain,
             int type,
             int protocol )
```

7.83.3.11 init() [2/2]

```
BError BSocket::init (
            NType type )
```

7.83.3.12 listen()

```
BError BSocket::listen (
            int backlog = 5 )
```

7.83.3.13 recv()

```
BError BSocket::recv (
            void * buf,
            BSize maxbytes,
            BSize & nbytesRecv,
            int flags = 0 )
```

7.83.3.14 recvAvailable()

```
BUInt BSocket::recvAvailable ( )
```

7.83.3.15 recvFrom()

```
BError BSocket::recvFrom (
            BSocketAddress & address,
            void * buf,
            BSize maxbytes,
            BSize & nbytesRecv,
            int flags = 0 )
```

7.83.3.16 recvFromWithTimeout()

```
BError BSocket::recvFromWithTimeout (
            BSocketAddress & address,
            void * buf,
            BSize maxbytes,
            BSize & nbytesRecv,
            int timeout,
            int flags = 0 )
```

7.83.3.17 recvWithTimeout()

```
BError BSocket::recvWithTimeout (
             void * buf,
             BSize maxbytes,
             BSize & nbytesRecv,
             int timeout,
             int flags = 0 )
```

7.83.3.18 send()

```
BError BSocket::send (
             const void * buf,
             BSize nbytes,
             BSize & nbytesSent,
             int flags = 0 )
```

7.83.3.19 sendChunks()

```
BError BSocket::sendChunks (
             const BDataChunk * chunks,
             BSize nChunks,
             BSize & nbytesSent,
             int flags = 0 )
```

7.83.3.20 sendTo()

```
BError BSocket::sendTo (
             const BSocketAddress & address,
             const void * buf,
             BSize nbytes,
             BSize & nbytesSent,
             int flags = 0 )
```

7.83.3.21 setBroadCast()

```
BError BSocket::setBroadCast (
             int on )
```

7.83.3.22 setFd()

```
void BSocket::setFd (
            int fd )
```

7.83.3.23 setPriority()

```
BError BSocket::setPriority (
            Priority priority )
```

7.83.3.24 setReuseAddress()

```
BError BSocket::setReuseAddress (
            int on )
```

7.83.3.25 setSockOpt()

```
BError BSocket::setSockOpt (
            int level,
            int optname,
            void * optval,
            unsigned int optlen )
```

7.83.3.26 shutdown()

```
BError BSocket::shutdown (
            int how )
```

The documentation for this class was generated from the following files:

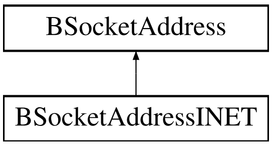
- BSocket.h
- BSocket.cpp

7.84 BSocketAddress Class Reference

Socket Address.

```
#include <BSocket.h>
```

Inheritance diagram for BSocketAddress:



Public Types

- typedef struct sockaddr SockAddr

Public Member Functions

- BSocketAddress ()
- BSocketAddress (const BSocketAddress &add)
- BSocketAddress (SockAddr ∗address, int len)
- ∼BSocketAddress ()
- BError set (SockAddr ∗address, int len)
- const SockAddr ∗ raw () const
- int len () const
- BString getString () const

  Return string version of address <ip>:<port>
- BSocketAddress & operator= (const BSocketAddress &add)
- operator const SockAddr ∗ () const
- int operator== (const BSocketAddress &add) const
- int operator!= (const BSocketAddress &add) const

7.84.1 Detailed Description

Socket Address.

7.84.2 Member Typedef Documentation

7.84.2.1 SockAddr

```
typedef struct sockaddr BSocketAddress::SockAddr
```

7.84.3 Constructor & Destructor Documentation

7.84.3.1 BSocketAddress() [1/3]

```
BSocketAddress::BSocketAddress ( )
```

7.84.3.2 BSocketAddress() [2/3]

```
BSocketAddress::BSocketAddress (
            const BSocketAddress & add )
```

7.84.3.3 BSocketAddress() [3/3]

```
BSocketAddress::BSocketAddress (
            SockAddr * address,
            int len )
```

7.84.3.4 ∼BSocketAddress()

```
BSocketAddress::∼BSocketAddress ( )
```

7.84.4 Member Function Documentation

7.84.4.1 getString()

```
BString BSocketAddress::getString ( ) const
```

Return string version of address <ip>:<port>

7.84.4.2 len()

```
int BSocketAddress::len ( ) const
```

7.84.4.3 operator const SockAddr ∗()

```
BSocketAddress::operator const SockAddr * ( ) const  [inline]
```

7.84.4.4 operator"!=()

```
int BSocketAddress::operator!= (
              const BSocketAddress & add ) const
```

7.84.4.5 operator=()

```
BSocketAddress & BSocketAddress::operator= (
              const BSocketAddress & add )
```

7.84.4.6 operator==()

```
int BSocketAddress::operator== (
              const BSocketAddress & add ) const
```

7.84.4.7 raw()

```
const BSocketAddress::SockAddr * BSocketAddress::raw ( ) const
```

7.84.4.8 set()

```
BError BSocketAddress::set (
              SockAddr * address,
              int len )
```

The documentation for this class was generated from the following files:

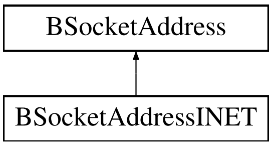
- BSocket.h
- BSocket.cpp

7.85 BSocketAddressINET Class Reference

IP aware socket address.

```
#include <BSocket.h>
```

Inheritance diagram for BSocketAddressINET:



Public Types

- typedef struct sockaddr_in SockAddrIP

Public Member Functions

- BError set (BString hostName, uint32_t port)
- BError set (uint32_t address, uint32_t port)
- BError set (BString hostName, BString service, BString type)
- void setPort (uint32_t port)
- uint32_t address ()

  Returns socket ip address.
- uint32_t port ()

  Returns socket port.
- BString getString ()

  Return string version of address <ip>:<port>

Static Public Member Functions

- static BString getHostName ()

  Get this hosts network name.
- static BList< uint32_t > getIpAddresses ()

  Get a list of all the IP addresses of this host.
- static BList< BString > getIpAddressList ()

  Get a list of all the IP addresses of this host under hostname.
- static BList< BString > getIpAddressListAll ()

  Get a list of all the IP addresses of this host looking at physical interfaces.

7.85.1 Detailed Description

IP aware socket address.

7.85.2 Member Typedef Documentation

7.85.2.1 SockAddrIP

```
typedef struct sockaddr_in BSocketAddressINET::SockAddrIP
```

7.85.3 Member Function Documentation

7.85.3.1 address()

```
uint32_t BSocketAddressINET::address ( )
```

Returns socket ip address.

7.85.3.2 getHostName()

```
BString BSocketAddressINET::getHostName ( )  [static]
```

Get this hosts network name.

7.85.3.3 getIpAddresses()

```
BList< uint32_t > BSocketAddressINET::getIpAddresses ( )  [static]
```

Get a list of all the IP addresses of this host.

7.85.3.4 getIpAddressList()

```
BList< BString > BSocketAddressINET::getIpAddressList ( )  [static]
```

Get a list of all the IP addresses of this host under hostname.

7.85.3.5 getIpAddressListAll()

```
BList< BString > BSocketAddressINET::getIpAddressListAll ( )  [static]
```

Get a list of all the IP addresses of this host looking at physical interfaces.

7.85.3.6 getString()

```
BString BSocketAddressINET::getString ( )
```

Return string version of address <ip>:<port>

7.85.3.7 port()

```
uint32_t BSocketAddressINET::port ( )
```

Returns socket port.

7.85.3.8 set() [1/3]

```
BError BSocketAddressINET::set (
             BString hostName,
             uint32_t port )
```

7.85.3.9 set() [2/3]

```
BError BSocketAddressINET::set (
             uint32_t address,
             uint32_t port )
```

7.85.3.10 set() [3/3]

```
BError BSocketAddressINET::set (
             BString hostName,
             BString service,
             BString type )
```

7.85.3.11 setPort()

```
void BSocketAddressINET::setPort (
             uint32_t port )
```

The documentation for this class was generated from the following files:

- BSocket.h
- BSocket.cpp

7.86 BSpi Class Reference

BSpi class.

```
#include <BSpi.h>
```

Public Types

- enum Mode { Mode0 = 0, Mode1 = 1, Mode2 = 2, Mode3 = 3 }

Public Member Functions

- BSpi ()
- BError init (BString devName, BUInt speed=1000000, Mode mode=Mode1, Bool csActive=0)
- BError transact (BUInt8 dev, void ∗txBuf, int txLen, int pad, void ∗rxBuf, int rxLen)

7.86.1 Detailed Description

BSpi class.

7.86.2 Member Enumeration Documentation

7.86.2.1 Mode

```
enum BSpi::Mode
```

Enumerator

Mode0	
Mode1	
Mode2	
Mode3	

7.86.3 Constructor & Destructor Documentation

7.86.3.1 BSpi()

```
BSpi::BSpi ( )
```

7.86.4 Member Function Documentation

7.86.4.1 init()

```
BError BSpi::init (
            BString devName,
            BUInt speed = 1000000,
            Mode mode = Mode1,
            Bool csActive = 0 )
```

7.86.4.2 transact()

```
BError BSpi::transact (
            BUInt8 dev,
            void * txBuf,
            int txLen,
            int pad,
            void * rxBuf,
            int rxLen )
```

The documentation for this class was generated from the following files:

- BSpi.h
- BSpi.cpp

7.87 BString Class Reference

`#include <BString.h>`

Public Member Functions

- BString ()
- BString (const BString &string)
- BString (const char ∗str)
- BString (const char ∗str, unsigned int len)
- BString (char ch)
- BString (BInt v)
- BString (BUInt v)
- BString (BUInt64 v)
- BString (double v)
- ∼BString ()
- BString copy () const

  Return an independant copy.
- int len () const

  Length of string.
- const char ∗ retStr () const

  Ptr to char∗ representation.
- const char ∗ str () const

  Ptr to char∗ representation.

- char ∗ retStrDup () const

  Ptr to newly malloc'd char∗.
- int retInt () const

  Return string as a int.
- unsigned int retUInt () const

  Return string as a int.
- double retDouble () const

  Return string as a double.
- BFloat64 retFloat64 () const

  Return string as a BFloat64.
- int compare (const BString &string) const

  Compare strings.
- int compareWild (const BString &string) const

  Compare string to string with wildcards.
- int compareWildExpression (const BString &string) const

  Compare string to space deliminated patterns.
- int compareRegex (const BString &pattern, int ignoreCase=0) const

  Compare strings.
- BString & truncate (int len)

  Truncate to length len.
- BString & pad (int len)

  Pad to length len.
- void clear ()

  Clear the string.
- BString & toUpper ()

  Convert to uppercase.
- BString & toLower ()

  Convert to lowercase.
- BString lowerFirst ()

  Return string with lowercase first character.
- void removeNL ()

  Remove if present NL from last char.
- BString justify (int leftMargin, int width)

  Justify the string to the given width.
- BString fixedLen (int length, int rightJustify=0)

  return string formated to fixed length
- BString firstLine ()

  Return first line.
- BString translateChar (char ch, BString replace=" ")

  Translate character converting them to the given string.
- BString reverse () const

  Reverse character order.
- BString subString (int start, int len) const

  Returns substring.
- int del (int start, int len)

  Delete substring.
- int insert (int start, BString str)

  Insert substring.
- int append (const BString &str)

  Append a string.
- BString add (const BString &str) const

Add strings returning result.
- BString & printf (const char ∗fmt,...)

  Formated print into the string.
- int find (char ch) const

  Find ch in string searching forwards.
- int find (BString str) const

  Find string in string searching forwards.
- int findReverse (char ch) const

  Find ch in string searching backwards.
- BString csvEncode () const

  Encode a string for CSV.
- BString & csvDecode (const BString str)

  Decode a string from CSV.
- BString base64Encode () const

  Encode a string to base64.
- BError base64Decode (BString &str) const

  Decode a string from base64.
- BList< BString > getTokenList (BString separators)

  Break string into tokens.
- BList< BString > getTokenList (char separator)

  Break string into tokens.
- BString removeSeparators (BString separators)

  Remove any char from sepatators from string.
- BString pullToken (BString terminators)

  Pull token from start of string.
- BString pullSeparators (BString separators)

  Pull separators from start of string.
- BString pullWord ()

  Pull a word out of the head of the string.
- BString pullLine ()

  Pull a line out of the head of the string.
- BList< BString > split (char splitChar)

  Split string into an array based on the character separator.
- BString dirname ()
- BString basename ()
- BString extension ()
- BUInt32 hash () const
- char & get (int pos)
- const char & get (int pos) const
- BString & operator= (const BString &string)
- char & operator[ ] (int pos)
- int operator== (const BString &s) const
- int operator== (const char ∗s) const
- int operator> (const BString &s) const
- int operator> (const char ∗s) const
- int operator< (const BString &s) const
- int operator< (const char ∗s) const
- int operator>= (const BString &s) const
- int operator<= (const BString &s) const
- int operator!= (const BString &s) const
- int operator!= (const char ∗s) const
- BString operator+ (const BString &s) const

- BString operator+ (const char ∗s) const
- BString operator+= (const BString &s)
- BString operator+= (const char ∗s)
- BString operator+ (char ch) const
- BString operator+ (BInt i) const
- BString operator+ (BUInt i) const
- BString operator+ (BUInt64 i) const
- operator const char ∗ () const
- BString field (int field) const
- char ∗∗ fields ()

Static Public Member Functions

- static BString convert (char ch)

    Converts char to string.
- static BString convert (BInt value)

    Converts int to string.
- static BString convert (BUInt value)

    Converts uint to string.
- static BString convert (double value, int eFormat=0)

    Converts double to string.
- static BString convert (BUInt64 value)

    Converts long long to string.
- static BString convertHex (BInt value)

    Converts int to string as hex value.
- static BString convertHex (BUInt value)

    Converts uint to string as hex value.

Protected Attributes

- BRefData ∗ ostr

7.87.1 Constructor & Destructor Documentation

7.87.1.1 BString() [1/9]

```
BString::BString ( )
```

7.87.1.2 BString() [2/9]

```
BString::BString (
            const BString & string )
```

7.87.1.3 BString() [3/9]

```
BString::BString (
            const char * str )
```

7.87.1.4 BString() [4/9]

```
BString::BString (
            const char * str,
            unsigned int len )
```

7.87.1.5 BString() [5/9]

```
BString::BString (
            char ch )
```

7.87.1.6 BString() [6/9]

```
BString::BString (
            BInt v )
```

7.87.1.7 BString() [7/9]

```
BString::BString (
            BUInt v )
```

7.87.1.8 BString() [8/9]

```
BString::BString (
            BUInt64 v )
```

7.87.1.9 BString() [9/9]

```
BString::BString (
            double v )
```

7.87.1.10 ∼BString()

```
BString::∼BString ( )
```

7.87.2 Member Function Documentation

7.87.2.1 add()

```
BString BString::add (
             const BString & str ) const
```

Add strings returning result.

7.87.2.2 append()

```
int BString::append (
             const BString & str )
```

Append a string.

7.87.2.3 base64Decode()

```
BError BString::base64Decode (
             BString & str ) const
```

Decode a string from base64.

7.87.2.4 base64Encode()

```
BString BString::base64Encode ( ) const
```

Encode a string to base64.

7.87.2.5 basename()

```
BString BString::basename ( )
```

7.87.2.6 clear()

```
void BString::clear ( )
```

Clear the string.

7.87.2.7 compare()

```
int BString::compare (
             const BString & string ) const
```

Compare strings.

7.87.2.8 compareRegex()

```
int BString::compareRegex (
             const BString & pattern,
             int ignoreCase = 0 ) const
```

Compare strings.

7.87.2.9 compareWild()

```
int BString::compareWild (
             const BString & string ) const
```

Compare string to string with wildcards.

7.87.2.10 compareWildExpression()

```
int BString::compareWildExpression (
             const BString & string ) const
```

Compare string to space deliminated patterns.

7.87.2.11 convert() [1/5]

```
BString BString::convert (
             char ch ) [static]
```

Converts char to string.

7.87.2.12 convert() [2/5]

```
BString BString::convert (
             BInt value )  [static]
```

Converts int to string.

7.87.2.13 convert() [3/5]

```
BString BString::convert (
             BUInt value )  [static]
```

Converts uint to string.

7.87.2.14 convert() [4/5]

```
BString BString::convert (
             double value,
             int eFormat = 0 )  [static]
```

Converts double to string.

7.87.2.15 convert() [5/5]

```
BString BString::convert (
             BUInt64 value )  [static]
```

Converts long long to string.

7.87.2.16 convertHex() [1/2]

```
BString BString::convertHex (
             BInt value )  [static]
```

Converts int to string as hex value.

7.87.2.17 convertHex() [2/2]

```
BString BString::convertHex (
             BUInt value )  [static]
```

Converts uint to string as hex value.

7.87.2.18 copy()

```
BString BString::copy ( ) const
```

Return an independant copy.

7.87.2.19 csvDecode()

```
BString & BString::csvDecode (
             const BString str )
```

Decode a string from CSV.

7.87.2.20 csvEncode()

```
BString BString::csvEncode ( ) const
```

Encode a string for CSV.

7.87.2.21 del()

```
int BString::del (
             int start,
             int len )
```

Delete substring.

7.87.2.22 dirname()

```
BString BString::dirname ( )
```

7.87.2.23 extension()

```
BString BString::extension ( )
```

7.87.2.24 field()

```
BString BString::field (
            int field ) const
```

7.87.2.25 fields()

```
char ** BString::fields ( )
```

7.87.2.26 find() [1/2]

```
int BString::find (
            char ch ) const
```

Find ch in string searching forwards.

7.87.2.27 find() [2/2]

```
int BString::find (
            BString str ) const
```

Find string in string searching forwards.

7.87.2.28 findReverse()

```
int BString::findReverse (
            char ch ) const
```

Find ch in string searching backwards.

7.87.2.29 firstLine()

```
BString BString::firstLine ( )
```

Return first line.

7.87.2.30 fixedLen()

```
BString BString::fixedLen (
             int length,
             int rightJustify = 0 )
```

return string formated to fixed length

7.87.2.31 get() [1/2]

```
char & BString::get (
             int pos )
```

7.87.2.32 get() [2/2]

```
const char & BString::get (
             int pos ) const
```

7.87.2.33 getTokenList() [1/2]

```
BList< BString > BString::getTokenList (
             BString separators )
```

Break string into tokens.

7.87.2.34 getTokenList() [2/2]

```
BList< BString > BString::getTokenList (
             char separator )
```

Break string into tokens.

7.87.2.35 hash()

```
BUInt32 BString::hash ( ) const
```

7.87.2.36 insert()

```
int BString::insert (
             int start,
             BString str )
```

Insert substring.

7.87.2.37 justify()

```
BString BString::justify (
             int leftMargin,
             int width )
```

Justify the string to the given width.

7.87.2.38 len()

```
int BString::len ( ) const
```

Length of string.

7.87.2.39 lowerFirst()

```
BString BString::lowerFirst ( )
```

Return string with lowercase first character.

7.87.2.40 operator const char *()

```
BString::operator const char * ( ) const  [inline]
```

7.87.2.41 operator"!=() [1/2]

```
int BString::operator!= (
             const BString & s ) const  [inline]
```

7.87.2.42 operator"!=() [2/2]

```
int BString::operator!= (
             const char * s ) const  [inline]
```

7.87.2.43 operator+() [1/6]

```
BString BString::operator+ (
             const BString & s ) const  [inline]
```

7.87.2.44 operator+() [2/6]

```
BString BString::operator+ (
             const char * s ) const  [inline]
```

7.87.2.45 operator+() [3/6]

```
BString BString::operator+ (
             char ch ) const  [inline]
```

7.87.2.46 operator+() [4/6]

```
BString BString::operator+ (
             BInt i ) const  [inline]
```

7.87.2.47 operator+() [5/6]

```
BString BString::operator+ (
             BUInt i ) const  [inline]
```

7.87.2.48 operator+() [6/6]

```
BString BString::operator+ (
            BUInt64 i ) const  [inline]
```

7.87.2.49 operator+=() [1/2]

```
BString BString::operator+= (
            const BString & s )  [inline]
```

7.87.2.50 operator+=() [2/2]

```
BString BString::operator+= (
            const char * s )  [inline]
```

7.87.2.51 operator<() [1/2]

```
int BString::operator< (
            const BString & s ) const  [inline]
```

7.87.2.52 operator<() [2/2]

```
int BString::operator< (
            const char * s ) const  [inline]
```

7.87.2.53 operator<=()

```
int BString::operator<= (
            const BString & s ) const  [inline]
```

7.87.2.54 operator=()

```
BString & BString::operator= (
            const BString & string )
```

7.87.2.55 operator==() [1/2]

```
int BString::operator== (
             const BString & s ) const  [inline]
```

7.87.2.56 operator==() [2/2]

```
int BString::operator== (
             const char * s ) const  [inline]
```

7.87.2.57 operator>() [1/2]

```
int BString::operator> (
             const BString & s ) const  [inline]
```

7.87.2.58 operator>() [2/2]

```
int BString::operator> (
             const char * s ) const  [inline]
```

7.87.2.59 operator>=()

```
int BString::operator>= (
             const BString & s ) const  [inline]
```

7.87.2.60 operator[]()

```
char & BString::operator[] (
             int pos )
```

7.87.2.61 pad()

```
BString & BString::pad (
             int len )
```

Pad to length len.

7.87.2.62 printf()

```
BString & BString::printf (
            const char * fmt,
             ... )
```

Formated print into the string.

7.87.2.63 pullLine()

```
BString BString::pullLine ( )
```

Pull a line out of the head of the string.

7.87.2.64 pullSeparators()

```
BString BString::pullSeparators (
            BString separators )
```

Pull separators from start of string.

7.87.2.65 pullToken()

```
BString BString::pullToken (
            BString terminators )
```

Pull token from start of string.

7.87.2.66 pullWord()

```
BString BString::pullWord ( )
```

Pull a word out of the head of the string.

7.87.2.67 removeNL()

```
void BString::removeNL ( )
```

Remove if present NL from last char.

7.87.2.68 removeSeparators()

```
BString BString::removeSeparators (
             BString separators )
```

Remove any char from sepatators from string.

7.87.2.69 retDouble()

```
double BString::retDouble ( ) const
```

Return string as a double.

7.87.2.70 retFloat64()

```
BFloat64 BString::retFloat64 ( ) const
```

Return string as a BFloat64.

7.87.2.71 retInt()

```
int BString::retInt ( ) const
```

Return string as a int.

7.87.2.72 retStr()

```
const char * BString::retStr ( ) const
```

Ptr to char* representation.

7.87.2.73 retStrDup()

```
char * BString::retStrDup ( ) const
```

Ptr to newly malloc'd char*.

7.87.2.74 retUInt()

```
unsigned int BString::retUInt ( ) const
```

Return string as a int.

7.87.2.75 reverse()

```
BString BString::reverse ( ) const
```

Reverse character order.

7.87.2.76 split()

```
BList< BString > BString::split (
              char splitChar )
```

Split string into an array based on the character separator.

7.87.2.77 str()

```
const char * BString::str ( ) const
```

Ptr to char* representation.

7.87.2.78 subString()

```
BString BString::subString (
              int start,
              int len ) const
```

Returns substring.

7.87.2.79 toLower()

```
BString & BString::toLower ( )
```

Convert to lowercase.

7.87.2.80 toUpper()

```
BString & BString::toUpper ( )
```

Convert to uppercase.

7.87.2.81 translateChar()

```
BString BString::translateChar (
             char ch,
             BString replace = " " )
```

Translate character converting them to the given string.

7.87.2.82 truncate()

```
BString & BString::truncate (
             int len )
```

Truncate to length len.

7.87.3 Member Data Documentation

7.87.3.1 ostr

```
BRefData* BString::ostr  [protected]
```

The documentation for this class was generated from the following files:

- BString.h
- BString.cpp

7.88 BStringLocked Class Reference

```
#include <BStringLocked.h>
```

Public Member Functions

- BStringLocked ()
- BStringLocked (const BStringLocked &s)
- BStringLocked (const BString &s)
- int len () const

  Length of string.
- operator BString () const
- BStringLocked operator+ (const BStringLocked &s) const
- BStringLocked & operator= (const BStringLocked &s)

7.88.1 Constructor & Destructor Documentation

7.88.1.1 BStringLocked() [1/3]

```
BStringLocked::BStringLocked ( )  [inline]
```

7.88.1.2 BStringLocked() [2/3]

```
BStringLocked::BStringLocked (
             const BStringLocked & s )  [inline]
```

7.88.1.3 BStringLocked() [3/3]

```
BStringLocked::BStringLocked (
             const BString & s )  [inline]
```

7.88.2 Member Function Documentation

7.88.2.1 len()

```
int BStringLocked::len ( ) const  [inline]
```

Length of string.

7.88.2.2 operator BString()

```
BStringLocked::operator BString ( ) const  [inline]
```

7.88.2.3 operator+()

```
BStringLocked BStringLocked::operator+ (
             const BStringLocked & s ) const  [inline]
```

7.88.2.4 operator=()

```
BStringLocked& BStringLocked::operator= (
             const BStringLocked & s )  [inline]
```

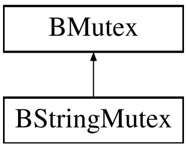
The documentation for this class was generated from the following file:

- BStringLocked.h

7.89 BStringMutex Class Reference

```
#include <BStringLocked.h>
```

Inheritance diagram for BStringMutex:



Public Member Functions

- BStringMutex ()

Additional Inherited Members

7.89.1 Constructor & Destructor Documentation

7.89.1.1 BStringMutex()

```
BStringMutex::BStringMutex ( )  [inline]
```

The documentation for this class was generated from the following file:

- BStringLocked.h

7.90 BTable Class Reference

```
#include <BTable.h>
```

Public Member Functions

- BTable ()
- ∼BTable ()
- void clear ()
- void setTitle (BArray< BString > title)
- void addRow (BArray< BString > data)
- void print ()

7.90.1 Constructor & Destructor Documentation

7.90.1.1 BTable()

```
BTable::BTable ( )
```

7.90.1.2 ∼BTable()

```
BTable::∼BTable ( )
```

7.90.2 Member Function Documentation

7.90.2.1 addRow()

```
void BTable::addRow (
            BArray< BString > data )
```

7.90.2.2 clear()

```
void BTable::clear ( )
```

7.90.2.3 print()

```
void BTable::print ( )
```

7.90.2.4 setTitle()

```
void BTable::setTitle (
            BArray< BString > title )
```

The documentation for this class was generated from the following files:

- BTable.h
- BTable.cpp

7.91 BTask Class Reference

```
#include <BTask.h>
```

Public Member Functions

- BTask (const char ∗name="", BUInt stackSize=0, BUInt priority=1)
- virtual ∼BTask ()
- void init (const char ∗name, BUInt stackSize=0, BUInt priority=1)
- BError start ()

  Starts the task running.
- void stop ()
- void waitForCompletion ()
- int setPriority (BUInt priority)

  Set the priority of the task: 0 upwards.
- virtual void run ()

Static Protected Member Functions

- static void ∗ taskFunc (void ∗)

Protected Attributes

- const char ∗ oname
- BUInt ostackSize
- BUInt opolicy
- BUInt opriority
- pthread_t othread
- Bool orunning

7.91.1 Constructor & Destructor Documentation

7.91.1.1 BTask()

```
BTask::BTask (
          const char ∗ name = "",
          BUInt stackSize = 0,
          BUInt priority = 1 )
```

7.91.1.2 ∼BTask()

```
BTask::∼BTask ( )  [virtual]
```

7.91.2 Member Function Documentation

7.91.2.1 init()

```
void BTask::init (
          const char ∗ name,
          BUInt stackSize = 0,
          BUInt priority = 1 )
```

7.91.2.2 run()

```
void BTask::run ( )  [virtual]
```

7.91.2.3 setPriority()

```
int BTask::setPriority (
             BUInt priority )
```

Set the priority of the task: 0 upwards.

7.91.2.4 start()

```
BError BTask::start ( )
```

Starts the task running.

7.91.2.5 stop()

```
void BTask::stop ( )
```

7.91.2.6 taskFunc()

```
void * BTask::taskFunc (
             void * arg )  [static], [protected]
```

7.91.2.7 waitForCompletion()

```
void BTask::waitForCompletion ( )
```

7.91.3 Member Data Documentation

7.91.3.1 oname

```
const char* BTask::oname  [protected]
```

7.91.3.2 opolicy

```
BUInt BTask::opolicy [protected]
```

7.91.3.3 opriority

```
BUInt BTask::opriority [protected]
```

7.91.3.4 orunning

```
Bool BTask::orunning [protected]
```

7.91.3.5 ostackSize

```
BUInt BTask::ostackSize [protected]
```

7.91.3.6 othread

```
pthread_t BTask::othread [protected]
```

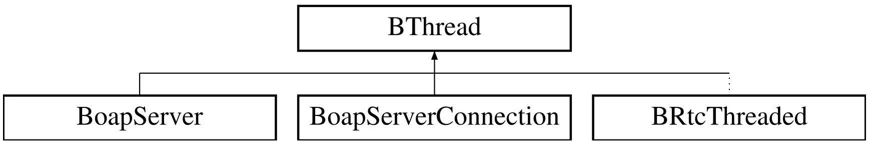
The documentation for this class was generated from the following files:

- BTask.h
- BTask.cpp

7.92 BThread Class Reference

```
#include <BThread.h>
```

Inheritance diagram for BThread:



Public Member Functions

- BThread ()
- virtual ∼BThread ()
- int setInitPriority (int policy, int priority)
- int setInitStackSize (size_t stackSize)
- int start ()
- void ∗ result ()
- int running ()
- int setPriority (int policy, int priority)
- int cancel ()
- void ∗ waitForCompletion ()
- pthread_t getThread ()
- virtual void ∗ function ()

7.92.1 Constructor & Destructor Documentation

7.92.1.1 BThread()

```
BThread::BThread ( )
```

7.92.1.2 ∼BThread()

```
BThread::∼BThread ( )  [virtual]
```

7.92.2 Member Function Documentation

7.92.2.1 cancel()

```
int BThread::cancel ( )
```

7.92.2.2 function()

```
void ∗ BThread::function ( )  [virtual]
```

7.92.2.3 getThread()

```
pthread_t BThread::getThread ( )
```

7.92.2.4 result()

```
void * BThread::result ( )
```

7.92.2.5 running()

```
int BThread::running ( )
```

7.92.2.6 setInitPriority()

```
int BThread::setInitPriority (
             int policy,
             int priority )
```

7.92.2.7 setInitStackSize()

```
int BThread::setInitStackSize (
             size_t stackSize )
```

7.92.2.8 setPriority()

```
int BThread::setPriority (
             int policy,
             int priority )
```

7.92.2.9 start()

```
int BThread::start ( )
```

7.92.2.10 waitForCompletion()

```
void * BThread::waitForCompletion ( )
```

The documentation for this class was generated from the following files:

- BThread.h
- BThread.cpp

7.93 BTime Class Reference

```
#include <BTime.h>
```

Public Member Functions

- BTime (BUInt32 t=0)
- void set (BUInt32 seconds)

  Set the date and time.
- void set (BUInt year, BUInt month, BUInt day, BUInt hour=0, BUInt minute=0, BUInt second=0)

  Set the date and time.
- void setYearDay (BUInt year, BUInt yearDay, BUInt hour=0, BUInt minute=0, BUInt second=0)

  Set the date and time.
- void getDate (BUInt &year, BUInt &month, BUInt &day) const

  Retun the date information.
- void getTime (BUInt &hour, BUInt &minute, BUInt &second) const

  Return the time information.
- BUInt32 getSeconds () const

  Return the number of seconds.
- int isSet () const

  Check if set.
- int isLeapYear ()

  Returns if a leap year.
- void addSeconds (int seconds)

  Add the given number of seconds.
- BString getString (BString format="isoT") const

  Gets the date/time in string format.
- BError setString (const BString dateTime)

  Sets the date/time from string format.
- int operator== (const BTime &time) const
- int operator!= (const BTime &time) const
- int operator> (const BTime &time) const
- int operator>= (const BTime &time) const
- int operator< (const BTime &time) const
- int operator<= (const BTime &time) const
- BTime operator+ (int seconds) const
- BTime & operator+= (int seconds)

7.93.1 Constructor & Destructor Documentation

7.93.1.1 BTime()

```
BTime::BTime (
             BUInt32 t = 0 )
```

7.93.2 Member Function Documentation

7.93.2.1 addSeconds()

```
void BTime::addSeconds (
             int seconds )
```

Add the given number of seconds.

7.93.2.2 getDate()

```
void BTime::getDate (
             BUInt & year,
             BUInt & month,
             BUInt & day ) const
```

Retun the date information.

7.93.2.3 getSeconds()

```
BUInt32 BTime::getSeconds ( ) const
```

Return the number of seconds.

7.93.2.4 getString()

```
BString BTime::getString (
             BString format = "isoT" ) const
```

Gets the date/time in string format.

7.93.2.5 getTime()

```
void BTime::getTime (
             BUInt & hour,
             BUInt & minute,
             BUInt & second ) const
```

Return the time information.

7.93.2.6 isLeapYear()

```
int BTime::isLeapYear ( )
```

Returns if a leap year.

7.93.2.7 isSet()

```
int BTime::isSet ( ) const  [inline]
```

Check if set.

7.93.2.8 operator"!=()

```
int BTime::operator!= (
             const BTime & time ) const  [inline]
```

7.93.2.9 operator+()

```
BTime BTime::operator+ (
             int seconds ) const  [inline]
```

7.93.2.10 operator+=()

```
BTime& BTime::operator+= (
             int seconds )  [inline]
```

7.93.2.11 operator<()

```
int BTime::operator< (
             const BTime & time ) const  [inline]
```

7.93.2.12 operator<=()

```
int BTime::operator<= (
             const BTime & time ) const  [inline]
```

7.93.2.13 operator==()

```
int BTime::operator== (
             const BTime & time ) const  [inline]
```

7.93.2.14 operator>()

```
int BTime::operator> (
             const BTime & time ) const  [inline]
```

7.93.2.15 operator>=()

```
int BTime::operator>= (
             const BTime & time ) const  [inline]
```

7.93.2.16 set() [1/2]

```
void BTime::set (
             BUInt32 seconds )
```

Set the date and time.

7.93.2.17 set() [2/2]

```
void BTime::set (
             BUInt year,
             BUInt month,
             BUInt day,
             BUInt hour = 0,
             BUInt minute = 0,
             BUInt second = 0 )
```

Set the date and time.

7.93.2.18 setString()

```
BError BTime::setString (
             const BString dateTime )
```

Sets the date/time from string format.

7.93.2.19 setYearDay()

```
void BTime::setYearDay (
             BUInt year,
             BUInt yearDay,
             BUInt hour = 0,
             BUInt minute = 0,
             BUInt second = 0 )
```

Set the date and time.

The documentation for this class was generated from the following files:

- BTime.h
- BTime.cpp

7.94 BTimer Class Reference

Stopwatch style timer.

```
#include <BTimer.h>
```

Public Member Functions

- BTimer ()
- ∼BTimer ()
- void start ()

  Start timer.
- void stop ()

  Stop timer.
- void clear ()

  Clear timer.
- double getElapsedTime ()

  Returns the elapsed time from the last start.
- void add (BTimer &timer)

  Add two timers.
- double average ()

  Average time is duration between start() and stop() / number of stops.
- double peak ()

  Peak time.

7.94.1 Detailed Description

Stopwatch style timer.

7.94.2 Constructor & Destructor Documentation

7.94.2.1 BTimer()

```
BTimer::BTimer ( )
```

7.94.2.2 ∼BTimer()

```
BTimer::∼BTimer ( )
```

7.94.3 Member Function Documentation

7.94.3.1 add()

```
void BTimer::add (
            BTimer & timer )
```

Add two timers.

7.94.3.2 average()

```
double BTimer::average ( )
```

Average time is duration between start() and stop() / number of stops.

7.94.3.3 clear()

```
void BTimer::clear ( )
```

Clear timer.

7.94.3.4 getElapsedTime()

```
double BTimer::getElapsedTime ( )
```

Returns the elapsed time from the last start.

7.94.3.5 peak()

```
double BTimer::peak ( )
```

Peak time.

7.94.3.6 start()

```
void BTimer::start ( )
```

Start timer.

7.94.3.7 stop()

```
void BTimer::stop ( )
```

Stop timer.

The documentation for this class was generated from the following files:

- BTimer.h
- BTimer.cpp

7.95 BTimeStamp Class Reference

```
#include <BTimeStamp.h>
```

Public Member Functions

- BTimeStamp ()
- BTimeStamp (int year, int month=1, int day=1, int hour=0, int minute=0, int second=0, int microsecond=0)
- BTimeStamp (const BString str)
- ∼BTimeStamp ()
- void clear ()

  Clear the date/time.
- void setFirst ()

  Set the first date available.
- void setLast ()

  Set the last date available.
- void set (time_t time, int microSeconds)

  Set time using Unix time (seconds from 1970-01-01)
- void set (int year=0, int month=1, int day=1, int hour=0, int minute=0, int second=0, int microsecond=0)
- void set (const BTimeStampMs &timeStamp)

  Set the timeStamp to given MS time stamp.
- void setYDay (int year=0, int yday=0, int hour=0, int minute=0, int second=0, int microsecond=0)
- void setTime (int hour=0, int minute=0, int second=0, int microsecond=0)
- void setNow ()

  Set the timeStamp to now.
- int year () const
- int yday () const
- int month () const
- int day () const
- int hour () const
- int minute () const
- int second () const
- int microSecond () const
- void getDate (int &year, int &mon, int &day) const
- BString getString (BString separator="T") const

  Get the time as an ISO date/time string.
- BError setString (const BString dateTime)

  Set the time from an ISO date/time.
- BString getStringNoMs (BString separator="T") const

  Get the time as an ISO date/time string without microseconds.
- BString getStringFormatted (BString format) const

  Gets the time in a string form as per the format. Format syntax as per strftime()
- void addMilliSeconds (int milliSeconds)

  Add the given number of milli seconds. This should be less that a year.
- void addMicroSeconds (int64_t microSeconds)

  Add the given number of micro seconds. This should be less that a year.
- void addSeconds (int seconds)

  Add the given number of seconds. This should be less that a year.
- uint32_t getYearSeconds () const

  Get number of seconds within the year.
- uint64_t getYearMicroSeconds () const

Get number of micro seconds within the year.

- int isSet () const
- int compare (const BTimeStamp &timeStamp) const

  Compare two dates.
- operator BString () const
- BTimeStamp & operator= (const BTimeStampMs &timeStamp)
- int operator== (const BTimeStamp &timeStamp) const
- int operator!= (const BTimeStamp &timeStamp) const
- int operator> (const BTimeStamp &timeStamp) const
- int operator>= (const BTimeStamp &timeStamp) const
- int operator< (const BTimeStamp &timeStamp) const
- int operator<= (const BTimeStamp &timeStamp) const

Static Public Member Functions

- static int isLeap (int year)
- static BInt64 difference (BTimeStamp t2, BTimeStamp t1)

Public Attributes

- uint16_t oyear

  Year (0 .. 65535)
- uint16_t oyday

  Day in year (0 .. 365)
- uint8_t ohour

  Hour (0 .. 23)
- uint8_t ominute

  Minute (0 .. 59)
- uint8_t osecond

  Second (0 .. 59)
- uint8_t ospare

  Padding.
- uint32_t omicroSecond

  MicroSecond (0 .. 999999)

7.95.1 Constructor & Destructor Documentation

7.95.1.1 BTimeStamp() [1/3]

```
BTimeStamp::BTimeStamp ( )
```

7.95.1.2 BTimeStamp() [2/3]

```
BTimeStamp::BTimeStamp (
             int year,
             int month = 1,
             int day = 1,
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.95.1.3 BTimeStamp() [3/3]

```
BTimeStamp::BTimeStamp (
             const BString str )
```

7.95.1.4 ∼BTimeStamp()

```
BTimeStamp::∼BTimeStamp ( )
```

7.95.2 Member Function Documentation

7.95.2.1 addMicroSeconds()

```
void BTimeStamp::addMicroSeconds (
             int64_t microSeconds )
```

Add the given number of micro seconds. This should be less that a year.

7.95.2.2 addMilliSeconds()

```
void BTimeStamp::addMilliSeconds (
             int milliSeconds )
```

Add the given number of milli seconds. This should be less that a year.

7.95.2.3 addSeconds()

```
void BTimeStamp::addSeconds (
             int seconds )
```

Add the given number of seconds. This should be less that a year.

7.95.2.4 clear()

```
void BTimeStamp::clear ( )
```

Clear the date/time.

7.95.2.5 compare()

```
int BTimeStamp::compare (
             const BTimeStamp & timeStamp ) const
```

Compare two dates.

7.95.2.6 day()

```
int BTimeStamp::day ( ) const
```

7.95.2.7 difference()

```
BInt64 BTimeStamp::difference (
             BTimeStamp t2,
             BTimeStamp t1 )  [static]
```

7.95.2.8 getDate()

```
void BTimeStamp::getDate (
             int & year,
             int & mon,
             int & day ) const
```

7.95.2.9 getString()

```
BString BTimeStamp::getString (
             BString separator = "T" ) const
```

Get the time as an ISO date/time string.

7.95.2.10 getStringFormatted()

```
BString BTimeStamp::getStringFormatted (
             BString format ) const
```

Gets the time in a string form as per the format. Format syntax as per strftime()

7.95.2.11 getStringNoMs()

```
BString BTimeStamp::getStringNoMs (
             BString separator = "T" ) const
```

Get the time as an ISO date/time string without microseconds.

7.95.2.12 getYearMicroSeconds()

```
uint64_t BTimeStamp::getYearMicroSeconds ( ) const
```

Get number of micro seconds within the year.

7.95.2.13 getYearSeconds()

```
uint32_t BTimeStamp::getYearSeconds ( ) const
```

Get number of seconds within the year.

7.95.2.14 hour()

```
int BTimeStamp::hour ( ) const
```

7.95.2.15 isLeap()

```
int BTimeStamp::isLeap (
             int year )  [static]
```

7.95.2.16 isSet()

```
int BTimeStamp::isSet ( ) const  [inline]
```

7.95.2.17 microSecond()

```
int BTimeStamp::microSecond ( ) const
```

7.95.2.18 minute()

```
int BTimeStamp::minute ( ) const
```

7.95.2.19 month()

```
int BTimeStamp::month ( ) const
```

7.95.2.20 operator BString()

```
BTimeStamp::operator BString ( ) const  [inline]
```

7.95.2.21 operator"!=()

```
int BTimeStamp::operator!= (
             const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.22 operator<()

```
int BTimeStamp::operator< (
              const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.23 operator<=()

```
int BTimeStamp::operator<= (
              const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.24 operator=()

```
BTimeStamp& BTimeStamp::operator= (
              const BTimeStampMs & timeStamp )  [inline]
```

7.95.2.25 operator==()

```
int BTimeStamp::operator== (
              const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.26 operator>()

```
int BTimeStamp::operator> (
              const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.27 operator>=()

```
int BTimeStamp::operator>= (
              const BTimeStamp & timeStamp ) const  [inline]
```

7.95.2.28 second()

```
int BTimeStamp::second ( ) const
```

7.95.2.29 set() [1/3]

```
void BTimeStamp::set (
             time_t time,
             int microSeconds )
```

Set time using Unix time (seconds from 1970-01-01)

7.95.2.30 set() [2/3]

```
void BTimeStamp::set (
             int year = 0,
             int month = 1,
             int day = 1,
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.95.2.31 set() [3/3]

```
void BTimeStamp::set (
             const BTimeStampMs & timeStamp )
```

Set the timeStamp to given MS time stamp.

7.95.2.32 setFirst()

```
void BTimeStamp::setFirst ( )
```

Set the first date available.

7.95.2.33 setLast()

```
void BTimeStamp::setLast ( )
```

Set the last date available.

7.95.2.34 setNow()

```
void BTimeStamp::setNow ( )
```

Set the timeStamp to now.

7.95.2.35 setString()

```
BError BTimeStamp::setString (
             const BString dateTime )
```

Set the time from an ISO date/time.

7.95.2.36 setTime()

```
void BTimeStamp::setTime (
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.95.2.37 setYDay()

```
void BTimeStamp::setYDay (
             int year = 0,
             int yday = 0,
             int hour = 0,
             int minute = 0,
             int second = 0,
             int microsecond = 0 )
```

7.95.2.38 yday()

```
int BTimeStamp::yday ( ) const
```

7.95.2.39 year()

```
int BTimeStamp::year ( ) const
```

7.95.3 Member Data Documentation

7.95.3.1 ohour

```
uint8_t BTimeStamp::ohour
```

Hour (0 .. 23)

7.95.3.2 omicroSecond

```
uint32_t BTimeStamp::omicroSecond
```

MicroSecond (0 .. 999999)

7.95.3.3 ominute

```
uint8_t BTimeStamp::ominute
```

Minute (0 .. 59)

7.95.3.4 osecond

```
uint8_t BTimeStamp::osecond
```

Second (0 .. 59)

7.95.3.5 ospare

```
uint8_t BTimeStamp::ospare
```

Padding.

7.95.3.6 oyday

```
uint16_t BTimeStamp::oyday
```

Day in year (0 .. 365)

7.95.3.7 oyear

```
uint16_t BTimeStamp::oyear
```

Year (0 .. 65535)

The documentation for this class was generated from the following files:

- BTimeStamp.h
- BTimeStamp.cpp

7.96 BTimeStampMs Class Reference

```
#include <BTimeStampMs.h>
```

Public Member Functions

- BTimeStampMs (BString str="")
- ∼BTimeStampMs ()
- void clear ()

  Clear the date/time.
- void setNow ()

  Set the timeStamp to now.
- void setFirst ()

  Set the first date available.
- void setLast ()

  Set the last date available.
- void set (time_t time, int milliSeconds=0)

  Set time using Unix time (seconds from 1970-01-01)
- void setYDay (int year=0, int yday=0, int hour=0, int minute=0, int second=0, int milliSecond=0)
- void setTime (int hour=0, int minute=0, int second=0, int milliSecond=0)
- BTimeStampMs & addMilliSeconds (int milliSeconds)

  Add the given number of milli seconds. This should be less that a year.
- BTimeStampMs & subMilliSeconds (int milliSeconds)

  Add the given number of milli seconds. This should be less that a year.
- BTimeStampMs & addSeconds (int seconds)

  Add the given number of seconds. This should be less that a year.
- BTimeStampMs & subSeconds (int seconds)

  Subtract the given number of seconds. This should be less that a year.
- uint32_t getYearSeconds ()

Get number of seconds within the year.
- uint64_t getYearMilliSeconds ()

  Get number of seconds within the year.
- BString getString (BString separator="T")

  Get the time as an ISO date/time string.
- BString getStringNoMs (BString separator="T")

  Get the time as an ISO date/time string with no ms.
- BError setString (BString dateTime)

  Set the time from an ISO date/time.
- BString getDurationString (BString separator="T")

  Get the time as an ISO date/time string but with month's and days starting from 0.
- BString getDurationStringNoMs (BString separator="T")

  Get the time as an ISO date/time string but with month's and days starting from 0 with no ms.
- BError setDurationString (BString dateTime)

  Set the time from an ISO date/time string but with month's and days starting from 0.
- BString getStringRaw ()
- void getDate (int &year, int &mon, int &day)

  Get the year, month and day.
- int compare (const BTimeStampMs &timeStamp)

  Compare two dates.
- int operator> (const BTimeStampMs &timeStamp)
- int operator>= (const BTimeStampMs &timeStamp)
- int operator< (const BTimeStampMs &timeStamp)
- int operator<= (const BTimeStampMs &timeStamp)

Static Public Member Functions

- static int isLeap (int year)
- static BUInt64 difference (BTimeStampMs t2, BTimeStampMs t1)

Public Attributes

- uint16_t year

  Year (2000 .. 3000)
- uint16_t yday

  Day in year (0 .. 365)
- uint16_t hour

  Hour (0 .. 23)
- uint16_t minute

  Minute (0 .. 59)
- uint16_t second

  Second (0 .. 59)
- uint16_t milliSecond

  MilliSecond (0 .. 999)
- int32_t sampleNumber

  The sample number this time refers to.

7.96.1 Constructor & Destructor Documentation

7.96.1.1 BTimeStampMs()

```
BTimeStampMs::BTimeStampMs (
             BString str = "" )
```

7.96.1.2 ∼BTimeStampMs()

```
BTimeStampMs::∼BTimeStampMs ( )
```

7.96.2 Member Function Documentation

7.96.2.1 addMilliSeconds()

```
BTimeStampMs & BTimeStampMs::addMilliSeconds (
             int milliSeconds )
```

Add the given number of milli seconds. This should be less that a year.

7.96.2.2 addSeconds()

```
BTimeStampMs & BTimeStampMs::addSeconds (
             int seconds )
```

Add the given number of seconds. This should be less that a year.

7.96.2.3 clear()

```
void BTimeStampMs::clear ( )
```

Clear the date/time.

7.96.2.4 compare()

```
int BTimeStampMs::compare (
             const BTimeStampMs & timeStamp )
```

Compare two dates.

7.96.2.5 difference()

```
BUInt64 BTimeStampMs::difference (
             BTimeStampMs t2,
             BTimeStampMs t1 )  [static]
```

7.96.2.6 getDate()

```
void BTimeStampMs::getDate (
             int & year,
             int & mon,
             int & day )
```

Get the year, month and day.

7.96.2.7 getDurationString()

```
BString BTimeStampMs::getDurationString (
             BString separator = "T" )
```

Get the time as an ISO date/time string but with month's and days starting from 0.

7.96.2.8 getDurationStringNoMs()

```
BString BTimeStampMs::getDurationStringNoMs (
             BString separator = "T" )
```

Get the time as an ISO date/time string but with month's and days starting from 0 with no ms.

7.96.2.9 getString()

```
BString BTimeStampMs::getString (
             BString separator = "T" )
```

Get the time as an ISO date/time string.

7.96.2.10 getStringNoMs()

```
BString BTimeStampMs::getStringNoMs (
             BString separator = "T" )
```

Get the time as an ISO date/time string with no ms.

7.96.2.11 getStringRaw()

```
BString BTimeStampMs::getStringRaw ( )
```

7.96.2.12 getYearMilliSeconds()

```
uint64_t BTimeStampMs::getYearMilliSeconds ( )
```

Get number of seconds within the year.

7.96.2.13 getYearSeconds()

```
uint32_t BTimeStampMs::getYearSeconds ( )
```

Get number of seconds within the year.

7.96.2.14 isLeap()

```
int BTimeStampMs::isLeap (
             int year )  [static]
```

7.96.2.15 operator<()

```
int BTimeStampMs::operator< (
             const BTimeStampMs & timeStamp )  [inline]
```

7.96.2.16 operator<=()

```
int BTimeStampMs::operator<= (
             const BTimeStampMs & timeStamp )  [inline]
```

7.96.2.17 operator>()

```
int BTimeStampMs::operator> (
             const BTimeStampMs & timeStamp )  [inline]
```

7.96.2.18 operator>=()

```
int BTimeStampMs::operator>= (
             const BTimeStampMs & timeStamp )  [inline]
```

7.96.2.19 set()

```
void BTimeStampMs::set (
             time_t time,
             int milliSeconds = 0 )
```

Set time using Unix time (seconds from 1970-01-01)

7.96.2.20 setDurationString()

```
BError BTimeStampMs::setDurationString (
             BString dateTime )
```

Set the time from an ISO date/time string but with month's and days starting from 0.

7.96.2.21 setFirst()

```
void BTimeStampMs::setFirst ( )
```

Set the first date available.

7.96.2.22 setLast()

```
void BTimeStampMs::setLast ( )
```

Set the last date available.

7.96.2.23 setNow()

```
void BTimeStampMs::setNow ( )
```

Set the timeStamp to now.

7.96.2.24 setString()

```
BError BTimeStampMs::setString (
             BString dateTime )
```

Set the time from an ISO date/time.

7.96.2.25 setTime()

```
void BTimeStampMs::setTime (
             int hour = 0,
             int minute = 0,
             int second = 0,
             int milliSecond = 0 )
```

7.96.2.26 setYDay()

```
void BTimeStampMs::setYDay (
             int year = 0,
             int yday = 0,
             int hour = 0,
             int minute = 0,
             int second = 0,
             int milliSecond = 0 )
```

7.96.2.27 subMilliSeconds()

```
BTimeStampMs & BTimeStampMs::subMilliSeconds (
              int milliSeconds )
```

Add the given number of milli seconds. This should be less that a year.

7.96.2.28 subSeconds()

```
BTimeStampMs & BTimeStampMs::subSeconds (
              int seconds )
```

Subtract the given number of seconds. This should be less that a year.

7.96.3 Member Data Documentation

7.96.3.1 hour

```
uint16_t BTimeStampMs::hour
```

Hour (0 .. 23)

7.96.3.2 milliSecond

```
uint16_t BTimeStampMs::milliSecond
```

MilliSecond (0 .. 999)

7.96.3.3 minute

```
uint16_t BTimeStampMs::minute
```

Minute (0 .. 59)

7.96.3.4 sampleNumber

```
int32_t BTimeStampMs::sampleNumber
```

The sample number this time refers to.

7.96.3.5 second

```
uint16_t BTimeStampMs::second
```

Second (0 .. 59)

7.96.3.6 yday

```
uint16_t BTimeStampMs::yday
```

Day in year (0 .. 365)

7.96.3.7 year

```
uint16_t BTimeStampMs::year
```

Year (2000 .. 3000)

The documentation for this class was generated from the following files:

- BTimeStampMs.h
- BTimeStampMs.cpp

7.97 BTimeUs Class Reference

```
#include <BTimeUs.h>
```

Public Member Functions

- BTimeUs (BUInt64 t=0)
- BTimeUs (BTime t)
- void set (BUInt64 microSeconds)

  Set the time to TAI us.
- void set (BUInt year, BUInt month, BUInt day, BUInt hour=0, BUInt minute=0, BUInt second=0, BUInt micro←↩ Second=0)

  Set the date and time from UTC.
- void setYearDay (BUInt year, BUInt yearDay, BUInt hour=0, BUInt minute=0, BUInt second=0, BUInt micro←↩ Second=0)

  Set the date and time from UTC.
- void getDate (BUInt &year, BUInt &month, BUInt &day) const

  Return the date information UTC.
- void getTime (BUInt &hour, BUInt &minute, BUInt &second) const

  Return the time information UTC.
- BUInt64 getSeconds () const

  Return the number of seconds TAI.
- BUInt64 getMicroSeconds () const

  Return the number of micro seconds TAI.
- int isSet () const

  Check if set.
- int isLeapYear ()

  Returns if a leap year.
- void addSeconds (BInt64 seconds)

  Add the given number of seconds.
- void addMicroSeconds (BInt64 microSeconds)

  Add the given number of seconds.
- BString getString (BString format="isoT") const

  Gets the date/time in string format.
- BString getStringUs (BString format="isoT") const

  Gets the date/time in string format.
- BError setString (const BString dateTime)

  Sets the date/time from string format.
- operator BTime () const
- int operator== (const BTimeUs &time) const
- int operator!= (const BTimeUs &time) const
- int operator> (const BTimeUs &time) const
- int operator>= (const BTimeUs &time) const
- int operator< (const BTimeUs &time) const
- int operator<= (const BTimeUs &time) const
- BTimeUs operator+ (BInt64 microSeconds) const
- BTimeUs & operator+= (BInt64 microSeconds)

7.97.1 Constructor & Destructor Documentation

7.97.1.1 BTimeUs() [1/2]

```
BTimeUs::BTimeUs (
            BUInt64 t = 0 )
```

7.97.1.2 BTimeUs() [2/2]

```
BTimeUs::BTimeUs (
            BTime t )
```

7.97.2 Member Function Documentation

7.97.2.1 addMicroSeconds()

```
void BTimeUs::addMicroSeconds (
            BInt64 microSeconds )
```

Add the given number of seconds.

7.97.2.2 addSeconds()

```
void BTimeUs::addSeconds (
            BInt64 seconds )
```

Add the given number of seconds.

7.97.2.3 getDate()

```
void BTimeUs::getDate (
            BUInt & year,
            BUInt & month,
            BUInt & day ) const
```

Return the date information UTC.

7.97.2.4 getMicroSeconds()

```
BUInt64 BTimeUs::getMicroSeconds ( ) const
```

Return the number of micro seconds TAI.

7.97.2.5 getSeconds()

```
BUInt64 BTimeUs::getSeconds ( ) const
```

Return the number of seconds TAI.

7.97.2.6 getString()

```
BString BTimeUs::getString (
             BString format = "isoT" ) const
```

Gets the date/time in string format.

7.97.2.7 getStringUs()

```
BString BTimeUs::getStringUs (
             BString format = "isoT" ) const
```

Gets the date/time in string format.

7.97.2.8 getTime()

```
void BTimeUs::getTime (
             BUInt & hour,
             BUInt & minute,
             BUInt & second ) const
```

Return the time information UTC.

7.97.2.9 isLeapYear()

```
int BTimeUs::isLeapYear ( )
```

Returns if a leap year.

7.97.2.10 isSet()

```
int BTimeUs::isSet ( ) const  [inline]
```

Check if set.

7.97.2.11 operator BTime()

```
BTimeUs::operator BTime ( ) const  [inline]
```

7.97.2.12 operator"!=()

```
int BTimeUs::operator!= (
             const BTimeUs & time ) const  [inline]
```

7.97.2.13 operator+()

```
BTimeUs BTimeUs::operator+ (
             BInt64 microSeconds ) const  [inline]
```

7.97.2.14 operator+=()

```
BTimeUs& BTimeUs::operator+= (
             BInt64 microSeconds )  [inline]
```

7.97.2.15 operator<()

```
int BTimeUs::operator< (
             const BTimeUs & time ) const  [inline]
```

7.97.2.16 operator<=()

```
int BTimeUs::operator<= (
             const BTimeUs & time ) const  [inline]
```

7.97.2.17 operator==()

```
int BTimeUs::operator== (
            const BTimeUs & time ) const  [inline]
```

7.97.2.18 operator>()

```
int BTimeUs::operator> (
            const BTimeUs & time ) const  [inline]
```

7.97.2.19 operator>=()

```
int BTimeUs::operator>= (
            const BTimeUs & time ) const  [inline]
```

7.97.2.20 set() [1/2]

```
void BTimeUs::set (
            BUInt64 microSeconds )
```

Set the time to TAI us.

7.97.2.21 set() [2/2]

```
void BTimeUs::set (
            BUInt year,
            BUInt month,
            BUInt day,
            BUInt hour = 0,
            BUInt minute = 0,
            BUInt second = 0,
            BUInt microSecond = 0 )
```

Set the date and time from UTC.

7.97.2.22 setString()

```
BError BTimeUs::setString (
            const BString dateTime )
```

Sets the date/time from string format.

7.97.2.23 setYearDay()

```
void BTimeUs::setYearDay (
             BUInt year,
             BUInt yearDay,
             BUInt hour = 0,
             BUInt minute = 0,
             BUInt second = 0,
             BUInt microSecond = 0 )
```

Set the date and time from UTC.

The documentation for this class was generated from the following files:

- BTimeUs.h
- BTimeUs.cpp

7.98 BUrl Class Reference

Basic access to a Url.

```
#include <BUrl.h>
```

Public Member Functions

- BUrl ()
- ∼BUrl ()
- BError readString (BString url, BString &str)

  Reads URL.

7.98.1 Detailed Description

Basic access to a Url.

7.98.2 Constructor & Destructor Documentation

7.98.2.1 BUrl()

```
BUrl::BUrl ( )
```

7.98.2.2 ∼BUrl()

```
BUrl::∼BUrl ( )
```

7.98.3 Member Function Documentation

7.98.3.1 readString()

```
BError BUrl::readString (
             BString url,
             BString & str )
```

Reads URL.

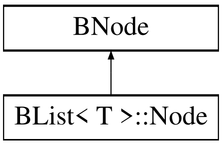
The documentation for this class was generated from the following files:

- BUrl.h
- BUrl.cpp

7.99 BList< T >::Node Class Reference

```
#include <BList.h>
```

Inheritance diagram for BList< T >::Node:



Public Member Functions

- Node (const T &i)

Public Attributes

- T item

7.99.1 Constructor & Destructor Documentation

7.99.1.1 Node()

```
template<class T>
BList< T >::Node::Node (
             const T & i )  [inline]
```

7.99.2 Member Data Documentation

7.99.2.1 item

```
template<class T>
T BList< T >::Node::item
```

The documentation for this class was generated from the following file:

- BList.h

Chapter 8

File Documentation

8.1 /src/bdev/beam-lib/doc/overview.dox File Reference

8.2 BArray.h File Reference

```
#include <BTypes.h>
#include <vector>
#include <algorithm>
```

Classes

- class BArray< T >

Macros

- #define BArrayLoop(list, i) for(BUInt i = 0; i < list.number(); i++)

8.2.1 Macro Definition Documentation

8.2.1.1 BArrayLoop

```
#define BArrayLoop(
              list,
              i ) for(BUInt i = 0; i < list.number(); i++)
```

8.3 BAtomic.h File Reference

```
#include <BTypes.h>
```

Classes

- class BAtomic< Type >

  BAtomic class.

Typedefs

- typedef BAtomic< BInt32 > BAtomicInt32
- typedef BAtomic< BInt64 > BAtomicInt64
- typedef BAtomic< BUInt32 > BAtomicUInt32
- typedef BAtomic< BUInt64 > BAtomicUInt64

8.3.1 Typedef Documentation

8.3.1.1 BAtomicInt32

```
typedef BAtomic<BInt32> BAtomicInt32
```

8.3.1.2 BAtomicInt64

```
typedef BAtomic<BInt64> BAtomicInt64
```

8.3.1.3 BAtomicUInt32

```
typedef BAtomic<BUInt32> BAtomicUInt32
```

8.3.1.4 BAtomicUInt64

```
typedef BAtomic<BUInt64> BAtomicUInt64
```

8.4 BAtomicCount.h File Reference

```
#include <bits/atomicity.h>
```

Classes

- class BAtomicCount

  BAtomicCount class.

8.5 BBuffer.cpp File Reference

```
#include <stdlib.h>
#include <memory.h>
#include <BBuffer.h>
#include <BEndian.h>
#include <BTimeStamp.h>
#include <BComplex.h>
```

Variables

- const int roundSize = 256

8.5.1 Variable Documentation

8.5.1.1 roundSize

```
const int roundSize = 256
```

8.6 BBuffer.h File Reference

```
#include <BTypes.h>
#include <BString.h>
#include <BError.h>
#include <BComplex.h>
#include <BEndian.h>
```

Classes

- class BBuffer
- class BBufferStore

Macros

- #define BBigEndian 0

8.6.1 Macro Definition Documentation

8.6.1.1 BBigEndian

```
#define BBigEndian 0
```

8.7 BComms.cpp File Reference

```
#include <BComms.h>
```

8.8 BComms.h File Reference

```
#include <BTypes.h>
#include <BEvent.h>
#include <BError.h>
```

Classes

- class BComms

8.9 BComplex.h File Reference

```
#include <BTypes.h>
#include <complex>
#include <algorithm>
```

Typedefs

- typedef std::complex< double > BComplex
- typedef std::complex< float > BComplex32
- typedef std::complex< double > BComplex64

8.9.1 Typedef Documentation

8.9.1.1 BComplex

```
typedef std::complex<double> BComplex
```

This is based on the Standard C++ library complex class and has all of the functionality of that class.

8.9.1.2 BComplex32

```
typedef std::complex<float> BComplex32
```

8.9.1.3 BComplex64

```
typedef std::complex<double> BComplex64
```

8.10 BCond.cpp File Reference

```
#include <BCond.h>
#include <sys/time.h>
#include <stdio.h>
```

8.11 BCond.h File Reference

```
#include <pthread.h>
```

Classes

- class BCond

8.12 BCondInt.cpp File Reference

```
#include <BCondInt.h>
#include <sys/time.h>
#include <stdio.h>
#include <errno.h>
```

Functions

- static struct timespec getTimeout (uint32_t timeOutUs)

8.12.1 Function Documentation

8.12.1.1 getTimeout()

```
static struct timespec getTimeout (
             uint32_t timeOutUs )  [static]
```

8.13 BCondInt.h File Reference

```
#include <BTypes.h>
#include <pthread.h>
```

Classes

- class BCondInt

  Thread conditional value.
- class BCondValue

  Thread conditional value.
- class BCondBool

  Thread conditional boolean.
- class BCondWrap
- class BCondResource

  Resource lock.

8.14 BConfig.cpp File Reference

```
#include <BConfig.h>
#include <string.h>
```

8.15 BConfig.h File Reference

```
#include <BDict.h>
#include <BFile.h>
#include <BMutex.h>
```

Classes

- class BConfig

  This class implements the configuration file access.

8.16 BCrc16.cpp File Reference

```
#include <BCrc16.h>
```

Functions

- BUInt16 bcrc16 (void ∗buf, BUInt16 len)

Variables

- static const BUInt8 table_crc_hi [ ]
- static const BUInt8 table_crc_lo [ ]

8.16.1 Function Documentation

8.16.1.1 bcrc16()

```
BUInt16 bcrc16 (
             void * buf,
             BUInt16 len )
```

8.16.2 Variable Documentation

8.16.2.1 table_crc_hi

```
const BUInt8 table_crc_hi[ ]  [static]
```

Initial value:

```
= {
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41,
    0x00, 0xC1, 0x81, 0x40, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0,
    0x80, 0x41, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1, 0x81, 0x40,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1,
    0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0, 0x80, 0x41,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1,
    0x81, 0x40, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x00, 0xC1, 0x81, 0x40,
    0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1,
    0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1, 0x81, 0x40,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x00, 0xC1, 0x81, 0x40,
    0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0,
    0x80, 0x41, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1, 0x81, 0x40,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41,
    0x00, 0xC1, 0x81, 0x40, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41,
    0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40, 0x00, 0xC1, 0x81, 0x40,
    0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0, 0x80, 0x41, 0x00, 0xC1,
    0x81, 0x40, 0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41,
    0x00, 0xC1, 0x81, 0x40, 0x01, 0xC0, 0x80, 0x41, 0x01, 0xC0,
    0x80, 0x41, 0x00, 0xC1, 0x81, 0x40
}
```

8.16.2.2 table_crc_lo

```
const BUInt8 table_crc_lo[]  [static]
```

Initial value:

```
= {
    0x00, 0xC0, 0xC1, 0x01, 0xC3, 0x03, 0x02, 0xC2, 0xC6, 0x06,
    0x07, 0xC7, 0x05, 0xC5, 0xC4, 0x04, 0xCC, 0x0C, 0x0D, 0xCD,
    0x0F, 0xCF, 0xCE, 0x0E, 0x0A, 0xCA, 0xCB, 0x0B, 0xC9, 0x09,
    0x08, 0xC8, 0xD8, 0x18, 0x19, 0xD9, 0x1B, 0xDB, 0xDA, 0x1A,
    0x1E, 0xDE, 0xDF, 0x1F, 0xDD, 0x1D, 0x1C, 0xDC, 0x14, 0xD4,
    0xD5, 0x15, 0xD7, 0x17, 0x16, 0xD6, 0xD2, 0x12, 0x13, 0xD3,
    0x11, 0xD1, 0xD0, 0x10, 0xF0, 0x30, 0x31, 0xF1, 0x33, 0xF3,
    0xF2, 0x32, 0x36, 0xF6, 0xF7, 0x37, 0xF5, 0x35, 0x34, 0xF4,
    0x3C, 0xFC, 0xFD, 0x3D, 0xFF, 0x3F, 0x3E, 0xFE, 0xFA, 0x3A,
    0x3B, 0xFB, 0x39, 0xF9, 0xF8, 0x38, 0x28, 0xE8, 0xE9, 0x29,
    0xEB, 0x2B, 0x2A, 0xEA, 0xEE, 0x2E, 0x2F, 0xEF, 0x2D, 0xED,
    0xEC, 0x2C, 0xE4, 0x24, 0x25, 0xE5, 0x27, 0xE7, 0xE6, 0x26,
    0x22, 0xE2, 0xE3, 0x23, 0xE1, 0x21, 0x20, 0xE0, 0xA0, 0x60,
    0x61, 0xA1, 0x63, 0xA3, 0xA2, 0x62, 0x66, 0xA6, 0xA7, 0x67,
    0xA5, 0x65, 0x64, 0xA4, 0x6C, 0xAC, 0xAD, 0x6D, 0xAF, 0x6F,
    0x6E, 0xAE, 0xAA, 0x6A, 0x6B, 0xAB, 0x69, 0xA9, 0xA8, 0x68,
    0x78, 0xB8, 0xB9, 0x79, 0xBB, 0x7B, 0x7A, 0xBA, 0xBE, 0x7E,
    0x7F, 0xBF, 0x7D, 0xBD, 0xBC, 0x7C, 0xB4, 0x74, 0x75, 0xB5,
    0x77, 0xB7, 0xB6, 0x76, 0x72, 0xB2, 0xB3, 0x73, 0xB1, 0x71,
    0x70, 0xB0, 0x50, 0x90, 0x91, 0x51, 0x93, 0x53, 0x52, 0x92,
    0x96, 0x56, 0x57, 0x97, 0x55, 0x95, 0x94, 0x54, 0x9C, 0x5C,
    0x5D, 0x9D, 0x5F, 0x9F, 0x9E, 0x5E, 0x5A, 0x9A, 0x9B, 0x5B,
    0x99, 0x59, 0x58, 0x98, 0x88, 0x48, 0x49, 0x89, 0x4B, 0x8B,
    0x8A, 0x4A, 0x4E, 0x8E, 0x8F, 0x4F, 0x8D, 0x4D, 0x4C, 0x8C,
    0x44, 0x84, 0x85, 0x45, 0x87, 0x47, 0x46, 0x86, 0x82, 0x42,
    0x43, 0x83, 0x41, 0x81, 0x80, 0x40
}
```

8.17 BCrc16.h File Reference

```
#include <BTypes.h>
```

Functions

- BUInt16 bcrc16 (void ∗buf, BUInt16 len)

8.17.1 Function Documentation

8.17.1.1 bcrc16()

```
BUInt16 bcrc16 (
            void * buf,
            BUInt16 len )
```

8.18 BCrc32.cpp File Reference

```
#include <BCrc32.h>
```

Functions

- BUInt32 bcrc32 (BUInt32 crc, const void ∗buf, BUInt32 len)

Variables

- static BUInt32 crc32_tab [ ]

8.18.1 Function Documentation

8.18.1.1 bcrc32()

```
BUInt32 bcrc32 (
            BUInt32 crc,
            const void ∗ buf,
            BUInt32 len )
```

8.18.2 Variable Documentation

8.18.2.1 crc32_tab

```
BUInt32 crc32_tab[ ]  [static]
```

8.19 BCrc32.h File Reference

```
#include <BTypes.h>
```

Functions

- BUInt32 bcrc32 (BUInt32 crc, const void ∗buf, BUInt32 len)

8.19.1 Function Documentation

8.19.1.1 bcrc32()

```
BUInt32 bcrc32 (
            BUInt32 crc,
            const void * buf,
            BUInt32 len )
```

8.20 BDate-1.cpp File Reference

```
#include <BDate.h>
#include <sys/time.h>
```

Functions

- void toBString (BDate &v, BString &s)
- void fromBString (BString &s, BDate &v)

Variables

- static int mon_yday [2][13]

8.20.1 Function Documentation

8.20.1.1 fromBString()

```
void fromBString (
            BString & s,
            BDate & v )
```

8.20.1.2 toBString()

```
void toBString (
            BDate & v,
            BString & s )
```

8.20.2 Variable Documentation

8.20.2.1 mon_yday

```
int mon_yday[2][13]  [static]
```

Initial value:

```
= {
    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },
    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.21 BDate.cpp File Reference

```
#include <BDate.h>
#include <sys/time.h>
```

Functions

- void toBString (BDate &v, BString &s)
- void fromBString (BString &s, BDate &v)

Variables

- static int mon_yday [2][13]

8.21.1 Function Documentation

8.21.1.1 fromBString()

```
void fromBString (
            BString & s,
            BDate & v )
```

8.21.1.2 toBString()

```
void toBString (
            BDate & v,
            BString & s )
```

8.21.2 Variable Documentation

8.21.2.1 mon_yday

```
int mon_yday[2][13]  [static]
```

Initial value:

```
= {
    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },
    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.22 BDate.h File Reference

```
#include <stdint.h>
#include <BError.h>
```

Classes

- class BDate

Functions

- void toBString (BDate &v, BString &s)
- void fromBString (BString &s, BDate &v)

8.22.1 Function Documentation

8.22.1.1 fromBString()

```
void fromBString (
            BString & s,
            BDate & v )
```

8.22.1.2 toBString()

```
void toBString (
            BDate & v,
            BString & s )
```

8.23 BDebug.cpp File Reference

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/time.h>
#include <stdarg.h>
#include <fcntl.h>
#include <ctype.h>
#include <BDebug.h>
```

Functions

- void bhd8 (const void ∗data, unsigned int n)
- void bhd8a (const void ∗data, unsigned int n)
- void bhda8 (const void ∗data, unsigned int n)
- void bhd32 (const void ∗data, unsigned int n)
- void bhda32 (const void ∗data, unsigned int n)
- double getTime ()
- void setDebug (int d)

Variables

- int bdebug

8.23.1 Function Documentation

8.23.1.1 bhd32()

```
void bhd32 (
            const void * data,
            unsigned int n )
```

8.23.1.2 bhd8()

```
void bhd8 (
            const void * data,
            unsigned int n )
```

8.23.1.3 bhd8a()

```
void bhd8a (
             const void * data,
             unsigned int n )
```

8.23.1.4 bhda32()

```
void bhda32 (
             const void * data,
             unsigned int n )
```

8.23.1.5 bhda8()

```
void bhda8 (
             const void * data,
             unsigned int n )
```

8.23.1.6 getTime()

```
double getTime ( )
```

8.23.1.7 setDebug()

```
void setDebug (
             int d )
```

8.23.2 Variable Documentation

8.23.2.1 bdebug

```
int bdebug
```

8.24 BDebug.h File Reference

```
#include <stdio.h>
#include <time.h>
#include <syslog.h>
```

Classes

- class BDebugBacktrace

Macros

- #define BDebug_STD 0x000001
- #define dprintf(level, fmt, a...)

  General debug functions.
- #define nprintf(fmt, a...) syslog(LOG_NOTICE, fmt, ##a)

  Warnings and errors logging.
- #define wprintf(fmt, a...) syslog(LOG_WARNING, fmt, ##a)
- #define eprintf(fmt, a...) syslog(LOG_ERR, fmt, ##a)
- #define dl1printf(fmt, a...)
- #define dl2printf(fmt, a...)
- #define dl3printf(fmt, a...)
- #define dl4printf(fmt, a...)

Functions

- void bhd8 (const void ∗data, unsigned int n)
- void bhd8a (const void ∗data, unsigned int n)
- void bhda8 (const void ∗data, unsigned int n)
- void bhd32 (const void ∗data, unsigned int n)
- void bhds32 (const void ∗data, unsigned int n)
- double getTime ()
- void setDebug (int debug)
- void tprintf (int log, const char ∗fmt,...)
- pid_t bgettid ()

Variables

- int bdebug

8.24.1 Macro Definition Documentation

8.24.1.1 BDebug_STD

```
#define BDebug_STD 0x000001
```

8.24.1.2 dl1printf

```
#define dl1printf(
              fmt,
              a...  )
```

8.24.1.3 dl2printf

```
#define dl2printf(
              fmt,
              a...  )
```

8.24.1.4 dl3printf

```
#define dl3printf(
              fmt,
              a...  )
```

8.24.1.5 dl4printf

```
#define dl4printf(
              fmt,
              a...  )
```

8.24.1.6 dprintf

```
#define dprintf(
              level,
              fmt,
              a...  )
```

General debug functions.

8.24.1.7 eprintf

```
#define eprintf(
              fmt,
              a...  ) syslog(LOG_ERR, fmt, ##a)
```

8.24.1.8 nprintf

```
#define nprintf(
              fmt,
              a...  ) syslog(LOG_NOTICE, fmt, ##a)
```

Warnings and errors logging.

8.24.1.9 wprintf

```
#define wprintf(
              fmt,
              a...  ) syslog(LOG_WARNING, fmt, ##a)
```

8.24.2 Function Documentation

8.24.2.1 bgettid()

```
pid_t bgettid ( )
```

8.24.2.2 bhd32()

```
void bhd32 (
             const void * data,
             unsigned int n )
```

8.24.2.3 bhd8()

```
void bhd8 (
             const void * data,
             unsigned int n )
```

8.24.2.4 bhd8a()

```
void bhd8a (
             const void * data,
             unsigned int n )
```

8.24.2.5 bhda8()

```
void bhda8 (
             const void * data,
             unsigned int n )
```

8.24.2.6 bhds32()

```
void bhds32 (
             const void * data,
             unsigned int n )
```

8.24.2.7 getTime()

```
double getTime ( )
```

8.24.2.8 setDebug()

```
void setDebug (
             int debug )
```

8.24.2.9 tprintf()

```
void tprintf (
             int log,
             const char * fmt,
              ... )
```

8.24.3 Variable Documentation

8.24.3.1 bdebug

```
int bdebug
```

8.25 BDict.cpp File Reference

```
#include <BDict.h>
```

Functions

- void toBString (const BDictString &v, BString &s)
- void fromBString (const BString &str, BDictString &v)
- BString bdictStringToString (const BDictString &dict)

8.25.1 Function Documentation

8.25.1.1 bdictStringToString()

```
BString bdictStringToString (
             const BDictString & dict )
```

8.25.1.2 fromBString()

```
void fromBString (
             const BString & str,
             BDictString & v )
```

8.25.1.3 toBString()

```
void toBString (
             const BDictString & v,
             BString & s )
```

8.26 BDict.h File Reference

```
#include <BNameValue.h>
```

Classes

- class BDictItem< Type >

  Template based Dictionary class.
- class BDict< Type >

Typedefs

- typedef BDict< BString > BDictString

Functions

- void toBString (const BDictString &v, BString &s)
- void fromBString (const BString &s, BDictString &v)
- BString bdictStringToString (const BDictString &dict)

8.26.1 Typedef Documentation

8.26.1.1 BDictString

```
typedef BDict<BString> BDictString
```

8.26.2 Function Documentation

8.26.2.1 bdictStringToString()

```
BString bdictStringToString (
             const BDictString & dict )
```

8.26.2.2 fromBString()

```
void fromBString (
             const BString & s,
             BDictString & v )
```

8.26.2.3 toBString()

```
void toBString (
            const BDictString & v,
            BString & s )
```

8.27 BDictMap.h File Reference

```
#include <BString.h>
#include <map>
```

Classes

- class BDictMap< Value >

Typedefs

- typedef BDictMap< BString > BDictMapString

8.27.1 Typedef Documentation

8.27.1.1 BDictMapString

```
typedef BDictMap<BString> BDictMapString
```

8.28 BDir.cpp File Reference

```
#include <BDir.h>
#include <dirent.h>
#include <stdlib.h>
#include <errno.h>
#include <string.h>
```

Functions

- static int wild (const dirent ∗e)

Variables

- static BString wildString

8.28.1 Function Documentation

8.28.1.1 wild()

```
static int wild (
             const dirent * e )  [static]
```

8.28.2 Variable Documentation

8.28.2.1 wildString

```
BString wildString  [static]
```

8.29 BDir.h File Reference

```
#include <BList.h>
#include <BString.h>
#include <BError.h>
#include <sys/stat.h>
```

Classes

- class BDir

  File system directory class.

8.30 BDuration.cpp File Reference

```
#include <BDuration.h>
#include <sys/time.h>
```

8.31 BDuration.h File Reference

```
#include <stdint.h>
#include <BError.h>
```

Classes

- class BDuration

8.32 BEndian.cpp File Reference

```
#include <BEndian.h>
#include <memory.h>
```

Functions

- void bswap_copy (int swap, const void ∗src, void ∗dst, BUInt32 nBytes, const char ∗swapType)

8.32.1 Function Documentation

8.32.1.1 bswap_copy()

```
void bswap_copy (
             int swap,
             const void * src,
             void * dst,
             BUInt32 nBytes,
             const char * swapType )
```

8.33 BEndian.h File Reference

```
#include <BTypes.h>
#include <byteswap.h>
```

Macros

- #define htobe16(x) __bswap_16 (x)
- #define htole16(x) (x)
- #define be16toh(x) __bswap_16 (x)
- #define le16toh(x) (x)
- #define htobe32(x) __bswap_32 (x)
- #define htole32(x) (x)
- #define be32toh(x) __bswap_32 (x)
- #define le32toh(x) (x)
- #define htobe64(x) __bswap_64 (x)
- #define htole64(x) (x)
- #define be64toh(x) __bswap_64 (x)
- #define le64toh(x) (x)

Functions

- void bswap_p8 (const void ∗s, void ∗d)
- void bswap_p16 (const void ∗s, void ∗d)
- void bswap_p32 (const void ∗s, void ∗d)
- void bswap_p64 (const void ∗s, void ∗d)
- void bswap_copy (int swap, const void ∗src, void ∗dst, BUInt32 nBytes, const char ∗swapType)
- uint16_t htole (uint16_t v)
- int16_t htole (int16_t v)
- uint32_t htole (uint32_t v)
- int32_t htole (int32_t v)
- uint64_t htole (uint64_t v)
- int64_t htole (int64_t v)
- double htole (double v)
- float htole (float v)
- uint16_t htobe (uint16_t v)
- int16_t htobe (int16_t v)
- uint32_t htobe (uint32_t v)
- int32_t htobe (int32_t v)
- uint64_t htobe (uint64_t v)
- int64_t htobe (int64_t v)
- double htobe (double v)
- float htobe (float v)
- uint16_t letoh (uint16_t v)
- int16_t letoh (int16_t v)
- uint32_t letoh (uint32_t v)
- int32_t letoh (int32_t v)
- uint64_t letoh (uint64_t v)
- int64_t letoh (int64_t v)
- double letoh (double v)
- float letoh (float v)
- uint16_t betoh (uint16_t v)
- int16_t betoh (int16_t v)
- uint32_t betoh (uint32_t v)
- int32_t betoh (int32_t v)
- uint64_t betoh (uint64_t v)
- int64_t betoh (int64_t v)
- double betoh (double v)
- float betoh (float v)

8.33.1 Macro Definition Documentation

8.33.1.1 be16toh

```
#define be16toh(
              x ) __bswap_16 (x)
```

8.33.1.2 be32toh

```
#define be32toh(
              x ) __bswap_32 (x)
```

8.33.1.3 be64toh

```
#define be64toh(
              x ) __bswap_64 (x)
```

8.33.1.4 htobe16

```
#define htobe16(
              x ) __bswap_16 (x)
```

8.33.1.5 htobe32

```
#define htobe32(
              x ) __bswap_32 (x)
```

8.33.1.6 htobe64

```
#define htobe64(
              x ) __bswap_64 (x)
```

8.33.1.7 htole16

```
#define htole16(
              x ) (x)
```

8.33.1.8 htole32

```
#define htole32(
              x ) (x)
```

8.33.1.9 htole64

```
#define htole64(
              x ) (x)
```

8.33.1.10 le16toh

```
#define le16toh(
              x ) (x)
```

8.33.1.11 le32toh

```
#define le32toh(
              x ) (x)
```

8.33.1.12 le64toh

```
#define le64toh(
              x ) (x)
```

8.33.2 Function Documentation

8.33.2.1 betoh() [1/8]

```
uint16_t betoh (
             uint16_t v )  [inline]
```

8.33.2.2 betoh() [2/8]

```
int16_t betoh (
             int16_t v )  [inline]
```

8.33.2.3 betoh() [3/8]

```
uint32_t betoh (
             uint32_t v )  [inline]
```

8.33.2.4 betoh() [4/8]

```
int32_t betoh (
             int32_t v )  [inline]
```

8.33.2.5 betoh() [5/8]

```
uint64_t betoh (
             uint64_t v )  [inline]
```

8.33.2.6 betoh() [6/8]

```
int64_t betoh (
             int64_t v )  [inline]
```

8.33.2.7 betoh() [7/8]

```
double betoh (
             double v )  [inline]
```

8.33.2.8 betoh() [8/8]

```
float betoh (
             float v )  [inline]
```

8.33.2.9 bswap_copy()

```
void bswap_copy (
             int swap,
             const void * src,
             void * dst,
             BUInt32 nBytes,
             const char * swapType )
```

8.33.2.10 bswap_p16()

```
void bswap_p16 (
             const void * s,
             void * d )  [inline]
```

8.33.2.11 bswap_p32()

```
void bswap_p32 (
             const void * s,
             void * d )  [inline]
```

8.33.2.12 bswap_p64()

```
void bswap_p64 (
             const void * s,
             void * d )  [inline]
```

8.33.2.13 bswap_p8()

```
void bswap_p8 (
             const void * s,
             void * d )  [inline]
```

8.33.2.14 htobe() [1/8]

```
uint16_t htobe (
             uint16_t v )  [inline]
```

8.33.2.15 htobe() [2/8]

```
int16_t htobe (
             int16_t v )  [inline]
```

8.33.2.16 htobe() [3/8]

```
uint32_t htobe (
             uint32_t v )  [inline]
```

8.33.2.17 htobe() [4/8]

```
int32_t htobe (
             int32_t v )  [inline]
```

8.33.2.18 htobe() [5/8]

```
uint64_t htobe (
             uint64_t v )  [inline]
```

8.33.2.19 htobe() [6/8]

```
int64_t htobe (
             int64_t v )  [inline]
```

8.33.2.20 htobe() [7/8]

```
double htobe (
             double v )  [inline]
```

8.33.2.21 htobe() [8/8]

```
float htobe (
             float v )  [inline]
```

8.33.2.22 htole() [1/8]

```
uint16_t htole (
             uint16_t v )  [inline]
```

8.33.2.23 htole() [2/8]

```
int16_t htole (
            int16_t v )  [inline]
```

8.33.2.24 htole() [3/8]

```
uint32_t htole (
            uint32_t v )  [inline]
```

8.33.2.25 htole() [4/8]

```
int32_t htole (
            int32_t v )  [inline]
```

8.33.2.26 htole() [5/8]

```
uint64_t htole (
            uint64_t v )  [inline]
```

8.33.2.27 htole() [6/8]

```
int64_t htole (
            int64_t v )  [inline]
```

8.33.2.28 htole() [7/8]

```
double htole (
            double v )  [inline]
```

8.33.2.29 htole() [8/8]

```
float htole (
            float v )  [inline]
```

8.33.2.30 letoh() [1/8]

```
uint16_t letoh (
             uint16_t v )  [inline]
```

8.33.2.31 letoh() [2/8]

```
int16_t letoh (
             int16_t v )  [inline]
```

8.33.2.32 letoh() [3/8]

```
uint32_t letoh (
             uint32_t v )  [inline]
```

8.33.2.33 letoh() [4/8]

```
int32_t letoh (
             int32_t v )  [inline]
```

8.33.2.34 letoh() [5/8]

```
uint64_t letoh (
             uint64_t v )  [inline]
```

8.33.2.35 letoh() [6/8]

```
int64_t letoh (
             int64_t v )  [inline]
```

8.33.2.36 letoh() [7/8]

```
double letoh (
             double v )  [inline]
```

8.33.2.37 letoh() [8/8]

```
float letoh (
             float v )  [inline]
```

8.34 BEntry.cpp File Reference

```
#include <ctype.h>
#include <stdio.h>
#include <string.h>
#include <unistd.h>
#include <fcntl.h>
#include <errno.h>
#include <BEntry.h>
```

8.35 BEntry.h File Reference

```
#include <BList.h>
#include <BString.h>
```

Classes

- class BEntry

  Manipulate a name value pair.
- class BEntryList

  List of Entries. Where an entry is a name value pair.
- class BEntryFile

  File of Entries.

8.36 BError.cpp File Reference

```
#include <BError.h>
```

8.37 BError.h File Reference

```
#include <BString.h>
```

Classes

- class BError

Enumerations

- enum BErrorNum {
ErrorOk = 0, ErrorMisc = 1, ErrorWarning = 2, ErrorParam = 3,
ErrorTimeout = 4, ErrorNotAvailable = 5, ErrorData = 6, ErrorChecksum = 7,
ErrorOverrun = 8, ErrorUnderrun = 9, ErrorInit = 10, ErrorConfig = 11,
ErrorNotImplemented = 12, ErrorResourceLimit = 13, ErrorEndOfFile = 14, ErrorFile = 15,
ErrorFormat = 16, ErrorComms = 17, ErrorAccessDenied = 18, ErrorNoData = 19,
ErrorEndOfData = 20, ErrorDataPresent = 21, ErrorDataTruncated = 22, ErrorApiVersion = 23,
ErrorAppBase = 64, ErrorUserBase = 96 }

8.37.1 Enumeration Type Documentation

8.37.1.1 BErrorNum

```
enum BErrorNum
```

Enumerator

ErrorOk	
ErrorMisc	
ErrorWarning	
ErrorParam	
ErrorTimeout	
ErrorNotAvailable	
ErrorData	
ErrorChecksum	
ErrorOverrun	
ErrorUnderrun	
ErrorInit	
ErrorConfig	
ErrorNotImplemented	
ErrorResourceLimit	
ErrorEndOfFile	
ErrorFile	
ErrorFormat	
ErrorComms	
ErrorAccessDenied	
ErrorNoData	
ErrorEndOfData	
ErrorDataPresent	
ErrorDataTruncated	
ErrorApiVersion	
ErrorAppBase	
ErrorUserBase	

8.38 BErrorTime.cpp File Reference

```
#include <BErrorTime.h>
```

8.39 BErrorTime.h File Reference

```
#include <BString.h>
#include <BTimeStamp.h>
```

Classes

- class BErrorTime

  Error return class.

8.40 BEvent.cpp File Reference

```
#include <BEvent.h>
#include <BPoll.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/ioctl.h>
```

8.41 BEvent.h File Reference

```
#include <BTypes.h>
#include <BQueue.h>
```

Classes

- class BEvent
- class BEventPipe

  This class provides an interface for sending simple integer events via a pipe file descriptor.

Typedefs

- typedef BQueue< BEvent > BEventQueue

  This class provides an interface for sending simple integer events via a BQueue.

8.41.1 Typedef Documentation

8.41.1.1 BEventQueue

```
typedef BQueue<BEvent> BEventQueue
```

This class provides an interface for sending simple integer events via a BQueue.

8.42 BEvent1.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <BEvent1.h>
#include <BPoll.h>
```

8.43 BEvent1.h File Reference

```
#include <stdint.h>
#include <BError.h>
```

Classes

- class BEvent1

  This class provides a base class for all event objects that can be sent over the events interface.
- class BEvent1Error
- class BEvent1Pipe

  This class provides a base interface for sending events via a pipe. This allows threads to send events that can be picked up by the poll system call.
- class BEvent1Int

  This class provides an interface for sending simple integer events via a file descriptor. This allows threads to send events that can be picked up by the poll system call.

Enumerations

- enum BEvent1Type { BEvent1TypeNone, BEvent1TypeInt, BEvent1TypeError }

8.43.1 Enumeration Type Documentation

8.43.1.1 BEvent1Type

```
enum BEvent1Type
```

Enumerator

BEvent1TypeNone	
BEvent1TypeInt	
BEvent1TypeError	

8.44 BFifo.h File Reference

```
#include <BTypes.h>
#include <BError.h>
#include <BFifo.inc>
```

Classes

- class BFifo< Type >

8.45 BFifo.inc File Reference

8.46 BFifoCirc.cpp File Reference

```
#include <BFifoCirc.h>
#include <fcntl.h>
#include <errno.h>
#include <sys/mman.h>
```

Macros

- #define dprintf(fmt, a...)

8.46.1 Macro Definition Documentation

8.46.1.1 dprintf

```
#define dprintf(
               fmt,
               a...  )
```

8.47 BFifoCirc.h File Reference

```
#include <stdint.h>
#include <BError.h>
#include <BCondInt.h>
#include <BMutex.h>
#include <BFifoCirc.inc>
```

Classes

- class BFifoCircPos

  This class implements a pointer into the Fifo's circular buffer.
- class BFifoCirc< Type >

  This class implements a thread safe FIFO buffer.

8.48 BFifoCirc.inc File Reference

8.49 BFile.cpp File Reference

```
#include <stdarg.h>
#include <BFile.h>
#include <sys/stat.h>
#include <string.h>
#include <errno.h>
#include <unistd.h>
```

Macros

- #define STRBUF 10240

8.49.1 Macro Definition Documentation

8.49.1.1 STRBUF

```
#define STRBUF 10240
```

8.50 BFile.h File Reference

```
#include <stdio.h>
#include <BTypes.h>
#include <BString.h>
#include <BError.h>
```

Classes

- class BFile

  File operations class.

8.51 BFileCsv.cpp File Reference

```
#include <BFileCsv.h>
#include <errno.h>
```

8.52 BFileCsv.h File Reference

```
#include <BFile.h>
```

Classes

- class BFileCsv

8.53 BFileData.cpp File Reference

```
#include <BFileCsv.h>
#include <BFileData.h>
#include <errno.h>
```

8.54 BFileData.h File Reference

```
#include <BError.h>
```

Classes

- class BFileData

8.55 BFirmware.h File Reference

```
#include <BTypes.h>
```

Classes

- struct BFirmwareFileHeader
- struct BFirmwareSegHeader
- struct BFirmwareInfo

Typedefs

- typedef BFirmwareFileHeader BFirmwareFirmwareHeader

Functions

- struct BFirmwareFileHeader __attribute__ ((packed))
- int bfirmwareValid (BUInt32 baseAddress, BUInt type, Bool checkChecksum, char ∗version=0)
- void bfirmwareBoot (BUInt32 baseAddress)

Variables

- const BUInt32 BFirmwareMagic = 0x01414542
- const BUInt32 BFirmwareTypeFile = 1
- const BUInt32 BFirmwareTypeFirmware = 2
- const BUInt32 BFirmwareTypeSegment = 3
- const BUInt32 BFirmwareFormatRaw = 0
- const BUInt32 BFirmwareFormatGzip = 1
- const BUInt32 BFirmwarePlatformBMeasure125 = 33
- const BUInt32 BFirmwarePlatformBMeasure125Cpu = 34
- const BUInt32 BFirmwarePlatformBMeasure125Fpga = 35
- const BUInt32 BFirmwarePlatformBMeasure125Wifi = 36
- const BUInt32 BFirmwarePlatformBMeasure125Boot = 37
- BUInt32 magic
- BUInt32 itemType
- BUInt32 fileLength
- BUInt32 checksum
- BUInt32 platform
- BUInt32 format
- BUInt32 numSegments
- BUInt32 startAddress
- BUInt8 ver0
- BUInt8 ver1
- BUInt8 ver2
- BUInt8 ver3
- BUInt32 special [7]
- BUInt32 dataLength
- BUInt32 address
- BUInt32 length
- const BUInt32 BFirmwareInfoMagic = 0xBBEEAA00
- const BUInt8 BFirmwareInfoEncrypt1 = 0x40
- struct BFirmwareInfo __attribute__

8.55.1 Typedef Documentation

8.55.1.1 BFirmwareFirmwareHeader

```
typedef BFirmwareFileHeader BFirmwareFirmwareHeader
```

8.55.2 Function Documentation

8.55.2.1 __attribute__()

```
struct BFirmwareFileHeader __attribute__ (
             (packed)   )
```

8.55.2.2 bfirmwareBoot()

```
void bfirmwareBoot (
             BUInt32 baseAddress )
```

8.55.2.3 bfirmwareValid()

```
int bfirmwareValid (
             BUInt32 baseAddress,
             BUInt type,
             Bool checkChecksum,
             char * version = 0 )
```

8.55.3 Variable Documentation

8.55.3.1 __attribute__

```
struct BoapMc1Error __attribute__
```

8.55.3.2 address

```
BUInt32 address
```

8.55.3.3 BFirmwareFormatGzip

```
const BUInt32 BFirmwareFormatGzip = 1
```

8.55.3.4 BFirmwareFormatRaw

```
const BUInt32 BFirmwareFormatRaw = 0
```

8.55.3.5 BFirmwareInfoEncrypt1

```
const BUInt8 BFirmwareInfoEncrypt1 = 0x40
```

8.55.3.6 BFirmwareInfoMagic

```
const BUInt32 BFirmwareInfoMagic = 0xBBEEAA00
```

8.55.3.7 BFirmwareMagic

```
const BUInt32 BFirmwareMagic = 0x01414542
```

8.55.3.8 BFirmwarePlatformBMeasure125

```
const BUInt32 BFirmwarePlatformBMeasure125 = 33
```

8.55.3.9 BFirmwarePlatformBMeasure125Boot

```
const BUInt32 BFirmwarePlatformBMeasure125Boot = 37
```

8.55.3.10 BFirmwarePlatformBMeasure125Cpu

```
const BUInt32 BFirmwarePlatformBMeasure125Cpu = 34
```

8.55.3.11 BFirmwarePlatformBMeasure125Fpga

```
const BUInt32 BFirmwarePlatformBMeasure125Fpga = 35
```

8.55.3.12 BFirmwarePlatformBMeasure125Wifi

```
const BUInt32 BFirmwarePlatformBMeasure125Wifi = 36
```

8.55.3.13 BFirmwareTypeFile

```
const BUInt32 BFirmwareTypeFile = 1
```

8.55.3.14 BFirmwareTypeFirmware

```
const BUInt32 BFirmwareTypeFirmware = 2
```

8.55.3.15 BFirmwareTypeSegment

```
const BUInt32 BFirmwareTypeSegment = 3
```

8.55.3.16 checksum

```
BUInt32 checksum
```

8.55.3.17 dataLength

```
BUInt32 dataLength
```

8.55.3.18 fileLength

```
BUInt32 fileLength
```

8.55.3.19 format

```
BUInt32 format
```

8.55.3.20 itemType

```
BUInt32 itemType
```

8.55.3.21 length

```
BUInt32 length
```

8.55.3.22 magic

```
BUInt32 magic
```

8.55.3.23 numSegments

```
BUInt32 numSegments
```

8.55.3.24 platform

```
BUInt32 platform
```

8.55.3.25 special

```
BUInt32 special
```

8.55.3.26 startAddress

```
BUInt32 startAddress
```

8.55.3.27 ver0

```
BUInt8 ver0
```

8.55.3.28 ver1

```
BUInt8 ver1
```

8.55.3.29 ver2

```
BUInt8 ver2
```

8.55.3.30 ver3

```
BUInt8 ver3
```

8.56 BList.h File Reference

```
#include <BList_func.h>
```

Classes

- class BNode
- class BIter

  Iterator for BList.
- class BList< T >

  Template based list class.
- class BList< T >::Node

Macros

- #define BListLoop(list, i) for(BIter i = list.begin(); !list.isEnd(i); list.next(i))

8.56.1 Macro Definition Documentation

8.56.1.1 BListLoop

```
#define BListLoop(
              list,
              i ) for(BIter i = list.begin(); !list.isEnd(i); list.next(i))
```

8.57 BList_func.h File Reference

```
#include <stdlib.h>
#include <stdio.h>
#include <string.h>
#include <memory.h>
```

8.58 BMutex.cpp File Reference

```
#include <BMutex.h>
```

Macros

- #define MDEBUG 0

8.58.1 Macro Definition Documentation

8.58.1.1 MDEBUG

```
#define MDEBUG 0
```

8.59 BMutex.h File Reference

```
#include <pthread.h>
```

Classes

- class BMutex
- class BMutexLock

8.60 BMysql.cpp File Reference

```
#include <stdlib.h>
#include <string.h>
#include <BMysql.h>
```

8.61 BMysql.h File Reference

```
#include <BTypes.h>
#include <BError.h>
#include <BDict.h>
#include <BMutex.h>
#include <mysql/mysql.h>
```

Classes

- class BMysql

8.62 BNameValue.h File Reference

```
#include <BList.h>
#include <BString.h>
```

Classes

- class BNameValue< T >
- class BNameValueList< T >

8.63 Boap.cpp File Reference

```
#include <stdlib.h>
#include <stdio.h>
#include <errno.h>
#include <unistd.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <netinet/tcp.h>
#include <Boap.h>
#include <byteswap.h>
#include <BoapnsD.h>
#include <BoapnsC.h>
```

Macros

- #define DEBUG 0
- #define APIVERSION_TEST 1
- #define dprintf(fmt, a...)
- #define IS_BIG_ENDIAN 1

Variables

- const int boapPort = 12000

  The default BOAP connection port.

8.63.1 Macro Definition Documentation

8.63.1.1 APIVERSION_TEST

```
#define APIVERSION_TEST 1
```

8.63.1.2 DEBUG

```
#define DEBUG 0
```

8.63.1.3 dprintf

```
#define dprintf(
              fmt,
              a...   )
```

8.63.1.4 IS_BIG_ENDIAN

```
#define IS_BIG_ENDIAN 1
```

8.63.2 Variable Documentation

8.63.2.1 boapPort

```
const int boapPort = 12000
```

The default BOAP connection port.

8.64 Boap.d File Reference

8.65 build_x86_64/Boap.d File Reference

8.66 Boap.h File Reference

```
#include <stdint.h>
#include <BTypes.h>
#include <BPoll.h>
#include <BSocket.h>
#include <BThread.h>
#include <BError.h>
#include <BEvent1.h>
#include <BMutex.h>
#include <BTimeStamp.h>
#include <BBuffer.h>
```

Classes

- struct BoapPacketHead
- class BoapPacket
- class BoapClientObject
- class BoapSignalObject
- class BoapServiceEntry
- class BoapServerConnection
- class BoapServer
- class BoapFuncEntry
- class BoapServiceObject

Namespaces

- Boapns

Typedefs

- typedef BUInt32 BoapService
- typedef BError(BoapServiceObject::∗ BoapFunc) (BoapServerConnection ∗conn, BoapPacket &rx, BoapPacket &tx)

Enumerations

- enum BoapType {
  BoapTypeRpc, BoapTypeRpcReply, BoapTypeSignal, BoapTypeRpcError,
  BoapTypeRpc, BoapTypeSignal }
- enum BoapPriority { BoapPriorityLow, BoapPriorityNormal, BoapPriorityHigh }

Variables

- const BUInt32 BoapMagic = 0x424F4100

8.66.1 Typedef Documentation

8.66.1.1 BoapFunc

```
typedef BError(BoapServiceObject::* BoapFunc) (BoapServerConnection *conn, BoapPacket &rx,
BoapPacket &tx)
```

8.66.1.2 BoapService

```
typedef BUInt32 BoapService
```

8.66.2 Enumeration Type Documentation

8.66.2.1 BoapPriority

```
enum BoapPriority
```

Enumerator

BoapPriorityLow	
BoapPriorityNormal	
BoapPriorityHigh	

8.66.2.2 BoapType

```
enum BoapType
```

Enumerator

BoapTypeRpc	
BoapTypeRpcReply	
BoapTypeSignal	
BoapTypeRpcError	
BoapTypeRpc	
BoapTypeSignal	

8.66.3 Variable Documentation

8.66.3.1 BoapMagic

```
const BUInt32 BoapMagic = 0x424F4100
```

8.67 BoapMc.cpp File Reference

```
#include <BoapMc.h>
#include <BCrc16.h>
#include <stdlib.h>
#include <string.h>
#include <stdio.h>
```

Macros

- #define DEBUG_LOCAL 0
- #define DEBUG_LOCAL1 0
- #define dlprintf(fmt, a...)
- #define dl1printf(fmt, a...)

8.67.1 Macro Definition Documentation

8.67.1.1 DEBUG_LOCAL

```
#define DEBUG_LOCAL 0
```

8.67.1.2 DEBUG_LOCAL1

```
#define DEBUG_LOCAL1 0
```

8.67.1.3 dl1printf

```
#define dl1printf(
              fmt,
              a... )
```

8.67.1.4 dlprintf

```
#define dlprintf(
              fmt,
              a... )
```

8.68 BoapMc.h File Reference

```
#include <BTypes.h>
#include <BMutex.h>
#include <BSemaphore.h>
#include <BQueue.h>
#include <BFifo.h>
#include <BComms.h>
```

Classes

- struct BoapMcPacketHead
- class BoapMcPacket
- class BoapMcClientObject
- class BoapMcSignalObject
- class BoapMcServiceObject
- class BoapMcComms

Enumerations

- enum BoapMcType { BoapMcTypeRequest = 0x00, BoapMcTypeReply = 0x80 }

Functions

- struct BoapMcPacketHead __attribute__ ((aligned(8), packed))

Variables

- BUInt8 length
- BUInt8 addressTo
- BUInt8 addressFrom
- BUInt8 cmd
- BUInt16 error
- BUInt16 checksum
- class BoapMcPacket __attribute__

8.68.1 Enumeration Type Documentation

8.68.1.1 BoapMcType

```
enum BoapMcType
```

Enumerator

BoapMcTypeRequest	
BoapMcTypeReply	

8.68.2 Function Documentation

8.68.2.1 __attribute__()

```
struct BoapMcPacketHead __attribute__ (
             (aligned(8), packed)  )
```

8.68.3 Variable Documentation

8.68.3.1 __attribute__

```
class BoapMcPacket __attribute__
```

8.68.3.2 addressFrom

```
BUInt8 addressFrom
```

8.68.3.3 addressTo

```
BUInt8 addressTo
```

8.68.3.4 checksum

```
BUInt16 checksum
```

8.68.3.5 cmd

```
BUInt8 cmd
```

8.68.3.6 error

```
BUInt16 error
```

8.68.3.7 length

```
BUInt8 length
```

8.69 BoapMc1.cpp File Reference

```
#include <BoapMc1.h>
#include <BSys.h>
#include <BCrc32.h>
#include <stdlib.h>
#include <string.h>
#include <stdio.h>
#include <BDebug.h>
```

Macros

- #define BDEBUGL1 0
- #define BDEBUGL2 0

8.69.1 Macro Definition Documentation

8.69.1.1 BDEBUGL1

```
#define BDEBUGL1 0
```

8.69.1.2 BDEBUGL2

```
#define BDEBUGL2 0
```

8.70 BoapMc1.h File Reference

```
#include <BTypes.h>
#include <BMutex.h>
#include <BSemaphore.h>
#include <BQueue.h>
#include <BFifo.h>
#include <BComms.h>
```

Classes

- struct BoapMc1PacketHead
- class BoapMc1Packet
- struct BoapMc1Error
- class BoapMc1Comms

Enumerations

- enum BoapMc1Type { BoapMc1TypeRequest = 0x0000, BoapMc1TypeReply = 0x8000 }

Functions

- struct BoapMc1PacketHead __attribute__ ((aligned(8), packed))
- BUInt32 boapMc1CommsRoundupLen (BUInt32 len)

Variables

- const BUInt16 BoapMc1Magic = 0x5542
- BUInt16 magic

  Packet magic pattern.
- BUInt16 length

  Total packet length including the header.
- BUInt16 addressTo

  Address to send to.
- BUInt16 addressFrom

  Address packet is from.
- BUInt16 cmd

  The RPC command or reply number.
- BInt16 error

  Error number.
- BUInt32 checksum

  Packet checksum, when used.
- BoapMc1PacketHead head
- char data [8]
- BInt16 number

  The error number.
- char string [32]

  The error string.
- class BoapMc1Comms __attribute__

8.70.1 Enumeration Type Documentation

8.70.1.1 BoapMc1Type

```
enum BoapMc1Type
```

Enumerator

BoapMc1TypeRequest	
BoapMc1TypeReply	

8.70.2 Function Documentation

8.70.2.1 __attribute__()

```
struct BoapMc1PacketHead __attribute__ (
            (aligned(8), packed)  )
```

8.70.2.2 boapMc1CommsRoundupLen()

```
BUInt32 boapMc1CommsRoundupLen (
             BUInt32 len )  [inline]
```

8.70.3 Variable Documentation

8.70.3.1 __attribute__

```
class BoapMc1Comms __attribute__
```

8.70.3.2 addressFrom

```
BUInt16 addressFrom
```

Address packet is from.

8.70.3.3 addressTo

```
BUInt16 addressTo
```

Address to send to.

8.70.3.4 BoapMc1Magic

```
const BUInt16 BoapMc1Magic = 0x5542
```

8.70.3.5 checksum

```
BUInt32 checksum
```

Packet checksum, when used.

8.70.3.6 cmd

```
BUInt16 cmd
```

The RPC command or reply number.

8.70.3.7 data

```
char data[8]
```

8.70.3.8 error

```
BInt16 error
```

Error number.

8.70.3.9 head

```
BoapMc1PacketHead head
```

8.70.3.10 length

```
BUInt16 length
```

Total packet length including the header.

8.70.3.11 magic

```
BUInt16 magic
```

Packet magic pattern.

8.70.3.12 number

```
BInt16 number
```

The error number.

8.70.3.13 string

```
char string[32]
```

The error string.

8.71 BoapnsC.cpp File Reference

```
#include <BoapnsC.h>
```

Namespaces

- Boapns

8.72 BoapnsC.h File Reference

```
#include <stdlib.h>
#include <stdint.h>
#include <Boap.h>
#include <BString.h>
#include <BList.h>
#include <BArray.h>
#include <BoapnsD.h>
```

Classes

- class Boapns::Boapns

Namespaces

- Boapns

Variables

- const BUInt32 Boapns::apiVersion = 0

8.73 BoapnsD.cpp File Reference

```
#include <BoapnsD.h>
```

Namespaces

- Boapns

8.74 BoapnsD.h File Reference

```
#include <Boap.h>
#include <BObj.h>
#include <BDate.h>
#include <BTimeStamp.h>
#include <BComplex.h>
#include <BList.h>
#include <BArray.h>
```

Classes

- class Boapns::BoapEntry

Namespaces

- Boapns

8.75 BoapSimple.cc File Reference

```
#include <stdlib.h>
#include <stdio.h>
#include <errno.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <Boap.h>
#include <BoapnsD.h>
#include <BoapnsC.h>
```

Macros

- #define DEBUG 0
- #define dprintf(fmt, a...)

Variables

- const int roundSize = 256

8.75.1 Macro Definition Documentation

8.75.1.1 DEBUG

```
#define DEBUG 0
```

8.75.1.2 dprintf

```
#define dprintf(
              fmt,
              a...   )
```

8.75.2 Variable Documentation

8.75.2.1 roundSize

```
const int roundSize = 256
```

8.76 BoapSimple.h File Reference

```
#include <stdint.h>
#include <BPoll.h>
#include <BSocket.h>
#include <BError.h>
```

Classes

- struct BoapPacketHead
- class BoapPacket
- class BoapClientObject
- class BoapSignalObject
- class BoapServiceEntry
- class BoapServer
- class BoapFuncEntry
- class BoapServiceObject

Typedefs

- typedef int8_t Int8
- typedef uint8_t UInt8
- typedef int16_t Int16
- typedef uint16_t UInt16
- typedef int32_t Int32
- typedef uint32_t UInt32
- typedef double Double
- typedef uint32_t BoapService
- typedef BError(BoapServiceObject::∗ BoapFunc) (BoapPacket &rx, BoapPacket &tx)

Enumerations

- enum BoapType {
  BoapTypeRpc, BoapTypeRpcReply, BoapTypeSignal, BoapTypeRpcError,
  BoapTypeRpc, BoapTypeSignal }

8.76.1 Typedef Documentation

8.76.1.1 BoapFunc

```
typedef BError(BoapServiceObject::∗ BoapFunc) (BoapPacket &rx, BoapPacket &tx)
```

8.76.1.2 BoapService

```
typedef uint32_t BoapService
```

8.76.1.3 Double

```
typedef double Double
```

8.76.1.4 Int16

```
typedef int16_t Int16
```

8.76.1.5 Int32

```
typedef int32_t Int32
```

8.76.1.6 Int8

```
typedef int8_t Int8
```

8.76.1.7 UInt16

```
typedef uint16_t UInt16
```

8.76.1.8 UInt32

```
typedef uint32_t UInt32
```

8.76.1.9 UInt8

```
typedef uint8_t UInt8
```

8.76.2 Enumeration Type Documentation

8.76.2.1 BoapType

```
enum BoapType
```

Enumerator

BoapTypeRpc	
BoapTypeRpcReply	
BoapTypeSignal	
BoapTypeRpcError	
BoapTypeRpc	
BoapTypeSignal	

8.77 BObj.cpp File Reference

```
#include <BObj.h>
```

8.78 BObj.h File Reference

```
#include <BTypes.h>
#include <BDict.h>
#include <BString.h>
#include <BError.h>
```

Classes

- class BObj

8.79 BObjStringFormat.cpp File Reference

```
#include <BObjStringFormat.h>
#include <BTime.h>
#include <math.h>
```

Functions

- BString toBString (BString n, Bool v)
- BString toBString (BString n, BInt8 v)
- BString toBString (BString n, BUInt8 v)
- BString toBString (BString n, BInt16 v)
- BString toBString (BString n, BUInt16 v)
- BString toBString (BString n, BInt32 v)
- BString toBString (BString n, BUInt32 v)
- BString toBString (BString n, BInt64 v)
- BString toBString (BString n, BUInt64 v)
- BString toBString (BString n, BFloat32 v)
- BString toBString (BString n, BFloat64 v)
- BString toBString (BString n, BChar v)
- BString toBString (BString n, const BChar ∗v)
- BString toBString (BString n, BString v)
- BString toBString (BString n, BError v)
- BString toBString (BString n, BTime v)
- BString toBString (BString name, const BObjMember ∗m, const void ∗obj, BStringList ignoreFields)
- BString toBString (BString n, BObj &obj)
- BString toBStringJson (BString n, Bool v)
- BString toBStringJson (BString n, BInt8 v)
- BString toBStringJson (BString n, BUInt8 v)
- BString toBStringJson (BString n, BInt16 v)

- BString toBStringJson (BString n, BUInt16 v)
- BString toBStringJson (BString n, BInt32 v)
- BString toBStringJson (BString n, BUInt32 v)
- BString toBStringJson (BString n, BInt64 v)
- BString toBStringJson (BString n, BUInt64 v)
- BString toBStringJson (BString n, BFloat32 v)
- BString toBStringJson (BString n, BFloat64 v)
- BString toBStringJson (BString n, BChar v)
- BString toBStringJson (BString n, const BChar ∗v)
- BString toBStringJson (BString n, BString v)
- BString toBStringJson (BString n, BError v)
- BString toBStringJson (BString n, BTime v)
- BString toBStringJson (BString n, const BObjMember ∗m, const void ∗obj, BStringList ignoreFields)
- BString toBStringJson (BString n, BObj &obj)
- BError toBDictStringFromJson (BString json, BDictString &ds)

8.79.1 Function Documentation

8.79.1.1 toBDictStringFromJson()

```
BError toBDictStringFromJson (
            BString json,
            BDictString & ds )
```

8.79.1.2 toBString() [1/18]

```
BString toBString (
            BString n,
            Bool v )
```

8.79.1.3 toBString() [2/18]

```
BString toBString (
            BString n,
            BInt8 v )
```

8.79.1.4 toBString() [3/18]

```
BString toBString (
            BString n,
            BUInt8 v )
```

8.79.1.5 toBString() [4/18]

```
BString toBString (
            BString n,
            BInt16 v )
```

8.79.1.6 toBString() [5/18]

```
BString toBString (
            BString n,
            BUInt16 v )
```

8.79.1.7 toBString() [6/18]

```
BString toBString (
            BString n,
            BInt32 v )
```

8.79.1.8 toBString() [7/18]

```
BString toBString (
            BString n,
            BUInt32 v )
```

8.79.1.9 toBString() [8/18]

```
BString toBString (
            BString n,
            BInt64 v )
```

8.79.1.10 toBString() [9/18]

```
BString toBString (
            BString n,
            BUInt64 v )
```

8.79.1.11 toBString() [10/18]

```
BString toBString (
             BString n,
             BFloat32 v )
```

8.79.1.12 toBString() [11/18]

```
BString toBString (
             BString n,
             BFloat64 v )
```

8.79.1.13 toBString() [12/18]

```
BString toBString (
             BString n,
             BChar v )
```

8.79.1.14 toBString() [13/18]

```
BString toBString (
             BString n,
             const BChar * v )
```

8.79.1.15 toBString() [14/18]

```
BString toBString (
             BString n,
             BString v )
```

8.79.1.16 toBString() [15/18]

```
BString toBString (
             BString n,
             BError v )
```

8.79.1.17 toBString() [16/18]

```
BString toBString (
            BString n,
            BTime v )
```

8.79.1.18 toBString() [17/18]

```
BString toBString (
            BString name,
            const BObjMember * m,
            const void * obj,
            BStringList ignoreFields )
```

8.79.1.19 toBString() [18/18]

```
BString toBString (
            BString n,
            BObj & obj )
```

8.79.1.20 toBStringJson() [1/18]

```
BString toBStringJson (
            BString n,
            Bool v )
```

8.79.1.21 toBStringJson() [2/18]

```
BString toBStringJson (
            BString n,
            BInt8 v )
```

8.79.1.22 toBStringJson() [3/18]

```
BString toBStringJson (
            BString n,
            BUInt8 v )
```

8.79.1.23 toBStringJson() [4/18]

```
BString toBStringJson (
            BString n,
            BInt16 v )
```

8.79.1.24 toBStringJson() [5/18]

```
BString toBStringJson (
            BString n,
            BUInt16 v )
```

8.79.1.25 toBStringJson() [6/18]

```
BString toBStringJson (
            BString n,
            BInt32 v )
```

8.79.1.26 toBStringJson() [7/18]

```
BString toBStringJson (
            BString n,
            BUInt32 v )
```

8.79.1.27 toBStringJson() [8/18]

```
BString toBStringJson (
            BString n,
            BInt64 v )
```

8.79.1.28 toBStringJson() [9/18]

```
BString toBStringJson (
            BString n,
            BUInt64 v )
```

8.79.1.29 toBStringJson() [10/18]

```
BString toBStringJson (
            BString n,
            BFloat32 v )
```

8.79.1.30 toBStringJson() [11/18]

```
BString toBStringJson (
            BString n,
            BFloat64 v )
```

8.79.1.31 toBStringJson() [12/18]

```
BString toBStringJson (
            BString n,
            BChar v )
```

8.79.1.32 toBStringJson() [13/18]

```
BString toBStringJson (
            BString n,
            const BChar * v )
```

8.79.1.33 toBStringJson() [14/18]

```
BString toBStringJson (
            BString n,
            BString v )
```

8.79.1.34 toBStringJson() [15/18]

```
BString toBStringJson (
            BString n,
            BError v )
```

8.79.1.35 toBStringJson() [16/18]

```
BString toBStringJson (
             BString n,
             BTime v )
```

8.79.1.36 toBStringJson() [17/18]

```
BString toBStringJson (
             BString n,
             const BObjMember * m,
             const void * obj,
             BStringList ignoreFields )
```

8.79.1.37 toBStringJson() [18/18]

```
BString toBStringJson (
             BString n,
             BObj & obj )
```

8.80 BObjStringFormat.h File Reference

```
#include <BObj.h>
#include <BString.h>
#include <BTime.h>
```

Functions

- BString toBString (BString name, Bool value)
- BString toBString (BString name, BInt8 value)
- BString toBString (BString name, BUInt8 value)
- BString toBString (BString name, BInt16 value)
- BString toBString (BString name, BUInt16 value)
- BString toBString (BString name, BInt32 value)
- BString toBString (BString name, BUInt32 value)
- BString toBString (BString name, BInt64 value)
- BString toBString (BString name, BUInt64 value)
- BString toBString (BString name, BFloat32 value)
- BString toBString (BString name, BFloat64 value)
- BString toBString (BString name, BChar value)
- BString toBString (BString name, const BChar *value)
- BString toBString (BString name, BString value)
- BString toBString (BString name, BError value)
- BString toBString (BString name, BTime time)

- BString toBString (BString name, const BObjMember ∗members, const void ∗obj, BStringList ignore↩ Fields=BStringList())
- BString toBString (BString name, BObj &obj)
- BString toBStringJson (BString name, Bool value)
- BString toBStringJson (BString name, BInt8 value)
- BString toBStringJson (BString name, BUInt8 value)
- BString toBStringJson (BString name, BInt16 value)
- BString toBStringJson (BString name, BUInt16 value)
- BString toBStringJson (BString name, BInt32 value)
- BString toBStringJson (BString name, BUInt32 value)
- BString toBStringJson (BString name, BInt64 value)
- BString toBStringJson (BString name, BUInt64 value)
- BString toBStringJson (BString name, BFloat32 value)
- BString toBStringJson (BString name, BFloat64 value)
- BString toBStringJson (BString name, BChar value)
- BString toBStringJson (BString name, const BChar ∗value)
- BString toBStringJson (BString name, BString value)
- BString toBStringJson (BString name, BError value)
- BString toBStringJson (BString name, BTime time)
- BString toBStringJson (BString name, const BObjMember ∗members, const void ∗obj, BStringList ignore↩ Fields=BStringList())
- BString toBStringJson (BString name, BObj &obj)
- BError toBDictStringFromJson (BString json, BDictString &ds)
- BString base64_encode (void ∗data, BUInt len)
- BError base64_decode (BString strIn, BString &strOut)

8.80.1 Function Documentation

8.80.1.1 base64_decode()

```
BError base64_decode (
            BString strIn,
            BString & strOut )
```

8.80.1.2 base64_encode()

```
BString base64_encode (
            void ∗ data,
            BUInt len )
```

8.80.1.3 toBDictStringFromJson()

```
BError toBDictStringFromJson (
            BString json,
            BDictString & ds )
```

8.80.1.4 toBString() [1/18]

```
BString toBString (
             BString name,
             Bool value )
```

8.80.1.5 toBString() [2/18]

```
BString toBString (
             BString name,
             BInt8 value )
```

8.80.1.6 toBString() [3/18]

```
BString toBString (
             BString name,
             BUInt8 value )
```

8.80.1.7 toBString() [4/18]

```
BString toBString (
             BString name,
             BInt16 value )
```

8.80.1.8 toBString() [5/18]

```
BString toBString (
             BString name,
             BUInt16 value )
```

8.80.1.9 toBString() [6/18]

```
BString toBString (
             BString name,
             BInt32 value )
```

8.80.1.10 toBString() [7/18]

```
BString toBString (
            BString name,
            BUInt32 value )
```

8.80.1.11 toBString() [8/18]

```
BString toBString (
            BString name,
            BInt64 value )
```

8.80.1.12 toBString() [9/18]

```
BString toBString (
            BString name,
            BUInt64 value )
```

8.80.1.13 toBString() [10/18]

```
BString toBString (
            BString name,
            BFloat32 value )
```

8.80.1.14 toBString() [11/18]

```
BString toBString (
            BString name,
            BFloat64 value )
```

8.80.1.15 toBString() [12/18]

```
BString toBString (
            BString name,
            BChar value )
```

8.80.1.16 toBString() [13/18]

```
BString toBString (
             BString name,
             const BChar * value )
```

8.80.1.17 toBString() [14/18]

```
BString toBString (
             BString name,
             BString value )
```

8.80.1.18 toBString() [15/18]

```
BString toBString (
             BString name,
             BError value )
```

8.80.1.19 toBString() [16/18]

```
BString toBString (
             BString name,
             BTime time )
```

8.80.1.20 toBString() [17/18]

```
BString toBString (
             BString name,
             const BObjMember * members,
             const void * obj,
             BStringList ignoreFields = BStringList() )
```

8.80.1.21 toBString() [18/18]

```
BString toBString (
             BString name,
             BObj & obj )
```

8.80.1.22 toBStringJson() [1/18]

```
BString toBStringJson (
            BString name,
            Bool value )
```

8.80.1.23 toBStringJson() [2/18]

```
BString toBStringJson (
            BString name,
            BInt8 value )
```

8.80.1.24 toBStringJson() [3/18]

```
BString toBStringJson (
            BString name,
            BUInt8 value )
```

8.80.1.25 toBStringJson() [4/18]

```
BString toBStringJson (
            BString name,
            BInt16 value )
```

8.80.1.26 toBStringJson() [5/18]

```
BString toBStringJson (
            BString name,
            BUInt16 value )
```

8.80.1.27 toBStringJson() [6/18]

```
BString toBStringJson (
            BString name,
            BInt32 value )
```

8.80.1.28 toBStringJson() [7/18]

```
BString toBStringJson (
            BString name,
            BUInt32 value )
```

8.80.1.29 toBStringJson() [8/18]

```
BString toBStringJson (
            BString name,
            BInt64 value )
```

8.80.1.30 toBStringJson() [9/18]

```
BString toBStringJson (
            BString name,
            BUInt64 value )
```

8.80.1.31 toBStringJson() [10/18]

```
BString toBStringJson (
            BString name,
            BFloat32 value )
```

8.80.1.32 toBStringJson() [11/18]

```
BString toBStringJson (
            BString name,
            BFloat64 value )
```

8.80.1.33 toBStringJson() [12/18]

```
BString toBStringJson (
            BString name,
            BChar value )
```

8.80.1.34 toBStringJson() [13/18]

```
BString toBStringJson (
            BString name,
            const BChar * value )
```

8.80.1.35 toBStringJson() [14/18]

```
BString toBStringJson (
            BString name,
            BString value )
```

8.80.1.36 toBStringJson() [15/18]

```
BString toBStringJson (
            BString name,
            BError value )
```

8.80.1.37 toBStringJson() [16/18]

```
BString toBStringJson (
            BString name,
            BTime time )
```

8.80.1.38 toBStringJson() [17/18]

```
BString toBStringJson (
            BString name,
            const BObjMember * members,
            const void * obj,
            BStringList ignoreFields = BStringList() )
```

8.80.1.39 toBStringJson() [18/18]

```
BString toBStringJson (
            BString name,
            BObj & obj )
```

8.81 BPoll.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <BPoll.h>
```

8.82 BPoll.h File Reference

```
#include <BList.h>
#include <BError.h>
#include <sys/poll.h>
```

Classes

- class BPoll

  This class provides an interface for polling a number of file descriptors. It uses round robin polling.

8.83 BQueue.h File Reference

```
#include <BTypes.h>
#include <BError.h>
#include <BList.h>
#include <BMutex.h>
#include <BCondInt.h>
```

Classes

- class BQueue< T >

  Queue class.

Typedefs

- typedef BQueue< BInt32 > BQueueInt

8.83.1 Typedef Documentation

8.83.1.1 BQueueInt

```
typedef BQueue<BInt32> BQueueInt
```

8.84 BRefData.cpp File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <BRefData.h>
```

Macros

- #define CHUNK 16

8.84.1 Macro Definition Documentation

8.84.1.1 CHUNK

```
#define CHUNK 16
```

8.85 BRefData.h File Reference

```
#include <BAtomicCount.h>
```

Classes

- class BRefData

8.86 BRtc.cpp File Reference

```
#include <BRtc.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <errno.h>
#include <unistd.h>
#include <fcntl.h>
#include <sys/ioctl.h>
#include <linux/rtc.h>
```

8.87 BRtc.h File Reference

```
#include <BError.h>
#include <BThread.h>
#include <BCond.h>
```

Classes

- class BRtc

  Realtime clock.
- class BRtcThreaded

  Threaded real time clock.

8.88 BRWLock.cpp File Reference

```
#include <BRWLock.h>
```

8.89 BRWLock.h File Reference

```
#include <pthread.h>
```

Classes

- class BRWLock

  thread read-write locks

8.90 BSema.cpp File Reference

```
#include <BSema.h>
#include <errno.h>
#include <sys/time.h>
```

8.91 BSema.h File Reference

```
#include <sys/types.h>
#include <semaphore.h>
```

Classes

- class BSema

  Sempahore class.

8.92 BSemaphore.cpp File Reference

```
#include <BSemaphore.h>
#include <sys/time.h>
```

8.93 BSemaphore.h File Reference

```
#include <BTypes.h>
#include <BMutex.h>
#include <semaphore.h>
```

Classes

- class BSemaphore

  Semaphore class.
- class BSemaphoreBool
- class BSemaphoreCount

8.94 BSocket.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <stdio.h>
#include <errno.h>
#include <sys/types.h>
#include <BSocket.h>
#include <sys/ioctl.h>
#include <sys/socket.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <net/if.h>
```

Macros

- #define IP_MTU 14

8.94.1 Macro Definition Documentation

8.94.1.1 IP_MTU

```
#define IP_MTU 14
```

8.95 BSocket.h File Reference

```
#include <BString.h>
#include <BError.h>
#include <BTypes.h>
#include <stdint.h>
#include <sys/types.h>
#include <netinet/in.h>
```

Classes

- class BSocketAddress

  Socket Address.
- class BSocketAddressINET

  IP aware socket address.
- class BSocket

Macros

- #define SOL_IP 0
- #define SO_PRIORITY 12
- #define MSG_NOSIGNAL 0

8.95.1 Macro Definition Documentation

8.95.1.1 MSG_NOSIGNAL

```
#define MSG_NOSIGNAL 0
```

8.95.1.2 SO_PRIORITY

```
#define SO_PRIORITY 12
```

8.95.1.3 SOL_IP

```
#define SOL_IP 0
```

8.96 BSpi.cpp File Reference

```
#include <BSpi.h>
#include <fcntl.h>
#include <errno.h>
#include <sys/ioctl.h>
#include <linux/spi/spidev.h>
```

8.97 BSpi.h File Reference

```
#include <BTypes.h>
#include <BError.h>
```

Classes

- class BSpi

  BSpi class.

8.98 BString.cpp File Reference

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <stdarg.h>
#include <ctype.h>
#include <BString.h>
#include <BError.h>
#include <regex.h>
```

Macros

- #define STRIP 0x7f
- #define MINUS '-'

Functions

- static int gmatch (const char ∗s, const char ∗p)
- std::ostream & operator<< (std::ostream &o, BString &s)
- std::istream & operator>> (std::istream &i, BString &s)
- int bstringListinList (BStringList &list, BString s)
- BString blistToString (const BStringList &list)
- BStringList bstringToList (BString str, int stripSpaces)
- BStringList charToList (const char ∗∗str)
- BString barrayToString (const BStringArray &list)
- BStringArray bstringToArray (BString str, int stripSpaces)
- BStringArray charToArray (const char ∗∗str)
- void toBString (BString &v, BString &s)
- void toBString (BStringList &v, BString &s)
- void toBString (BInt32 &v, BString &s)
- void toBString (BUInt32 &v, BString &s)
- void toBString (BUInt64 &v, BString &s)
- void toBString (BFloat64 &v, BString &s)
- void fromBString (BString &s, BString &v)
- void fromBString (BString &s, BStringList &v)
- void fromBString (BString &s, BInt32 &v)
- void fromBString (BString &s, BUInt32 &v)
- void fromBString (BString &s, BUInt64 &v)
- void fromBString (BString &s, BFloat64 &v)
- const char ∗ intToString (char ∗str, BUInt strLen, int value, int base)
- const char ∗ int64ToString (char ∗str, BUInt strLen, BInt64 value, int base)
- const char ∗ floatToString (char ∗str, BUInt strLen, BFloat32 f, BUInt precision)
- char ∗ bstrncpy (char ∗dest, const char ∗src, size_t n)
- char ∗ bstrtrim (char ∗str)

Variables

- static const BUInt8 base64_decode_table [ ]

8.98.1 Macro Definition Documentation

8.98.1.1 MINUS

```
#define MINUS '-'
```

8.98.1.2 STRIP

```
#define STRIP 0x7f
```

8.98.2 Function Documentation

8.98.2.1 barrayToString()

```
BString barrayToString (
             const BStringArray & list )
```

8.98.2.2 blistToString()

```
BString blistToString (
             const BStringList & list )
```

8.98.2.3 bstringListinList()

```
int bstringListinList (
             BStringList & list,
             BString s )
```

8.98.2.4 bstringToArray()

```
BStringArray bstringToArray (
             BString str,
             int stripSpaces )
```

8.98.2.5 bstringToList()

```
BStringList bstringToList (
             BString str,
             int stripSpaces )
```

8.98.2.6 bstrncpy()

```
char* bstrncpy (
             char * dest,
             const char * src,
             size_t n )
```

8.98.2.7 bstrtrim()

```
char* bstrtrim (
            char * str )
```

8.98.2.8 charToArray()

```
BStringArray charToArray (
            const char ** str )
```

8.98.2.9 charToList()

```
BStringList charToList (
            const char ** str )
```

8.98.2.10 floatToString()

```
const char* floatToString (
            char * str,
            BUInt strLen,
            BFloat32 f,
            BUInt precision )
```

8.98.2.11 fromBString() [1/6]

```
void fromBString (
            BString & s,
            BString & v )
```

8.98.2.12 fromBString() [2/6]

```
void fromBString (
            BString & s,
            BStringList & v )
```

8.98.2.13 fromBString() [3/6]

```
void fromBString (
             BString & s,
             BInt32 & v )
```

8.98.2.14 fromBString() [4/6]

```
void fromBString (
             BString & s,
             BUInt32 & v )
```

8.98.2.15 fromBString() [5/6]

```
void fromBString (
             BString & s,
             BUInt64 & v )
```

8.98.2.16 fromBString() [6/6]

```
void fromBString (
             BString & s,
             BFloat64 & v )
```

8.98.2.17 gmatch()

```
static int gmatch (
             const char * s,
             const char * p )  [static]
```

8.98.2.18 int64ToString()

```
const char* int64ToString (
             char * str,
             BUInt strLen,
             BInt64 value,
             int base )
```

8.98.2.19 intToString()

```
const char* intToString (
             char * str,
             BUInt strLen,
             int value,
             int base )
```

8.98.2.20 operator<<()

```
std::ostream& operator<< (
             std::ostream & o,
             BString & s )
```

8.98.2.21 operator>>()

```
std::istream& operator>> (
             std::istream & i,
             BString & s )
```

8.98.2.22 toBString() [1/6]

```
void toBString (
             BString & v,
             BString & s )
```

8.98.2.23 toBString() [2/6]

```
void toBString (
             BStringList & v,
             BString & s )
```

8.98.2.24 toBString() [3/6]

```
void toBString (
             BInt32 & v,
             BString & s )
```

8.98.2.25 toBString() [4/6]

```
void toBString (
            BUInt32 & v,
            BString & s )
```

8.98.2.26 toBString() [5/6]

```
void toBString (
            BUInt64 & v,
            BString & s )
```

8.98.2.27 toBString() [6/6]

```
void toBString (
            BFloat64 & v,
            BString & s )
```

8.98.3 Variable Documentation

8.98.3.1 base64_decode_table

```
const BUInt8 base64_decode_table[]  [static]
```

Initial value:

```
= {
    66,66,66,66,66,66,66,66,66,66,64,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,62,66,66,66,63,52,53,
    54,55,56,57,58,59,60,61,66,66,66,65,66,66,66, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,
    10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,66,66,66,66,66,66,26,27,28,
    29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,66,
    66,66,66,66,66,66
}
```

8.99 BString.h File Reference

```
#include <BTypes.h>
#include <BRefData.h>
#include <BList.h>
#include <BArray.h>
#include <iostream>
```

Classes

- class BString

Functions

- std::ostream & operator<< (std::ostream &o, BString &s)
- std::istream & operator>> (std::istream &i, BString &s)
- void toBString (BString &v, BString &s)
- void toBString (BStringList &v, BString &s)
- void toBString (BInt32 &v, BString &s)
- void toBString (BUInt32 &v, BString &s)
- void toBString (BUInt64 &v, BString &s)
- void toBString (BFloat64 &v, BString &s)
- void fromBString (BString &s, BString &v)
- void fromBString (BString &s, BStringList &v)
- void fromBString (BString &s, BInt32 &v)
- void fromBString (BString &s, BUInt32 &v)
- void fromBString (BString &s, BUInt64 &v)
- void fromBString (BString &s, BFloat64 &v)
- char from_hex (char ch)
- char to_hex (char code)
- char ∗ bstrncpy (char ∗dest, const char ∗src, size_t n)
- char ∗ bstrtrim (char ∗str)
- const char ∗ intToString (char ∗str, BUInt strLen, int value, int base=10)
- const char ∗ int64ToString (char ∗str, BUInt strLen, BInt64 value, int base=10)
- const char ∗ floatToString (char ∗str, BUInt strLen, BFloat32 f, BUInt precision)

8.99.1 Function Documentation

8.99.1.1 bstrncpy()

```
char* bstrncpy (
            char * dest,
            const char * src,
            size_t n )
```

8.99.1.2 bstrtrim()

```
char* bstrtrim (
            char * str )
```

8.99.1.3 floatToString()

```
const char* floatToString (
            char * str,
            BUInt strLen,
            BFloat32 f,
            BUInt precision )
```

8.99.1.4 from_hex()

```
char from_hex (
            char ch ) [inline]
```

8.99.1.5 fromBString() [1/6]

```
void fromBString (
            BString & s,
            BString & v )
```

8.99.1.6 fromBString() [2/6]

```
void fromBString (
            BString & s,
            BStringList & v )
```

8.99.1.7 fromBString() [3/6]

```
void fromBString (
            BString & s,
            BInt32 & v )
```

8.99.1.8 fromBString() [4/6]

```
void fromBString (
            BString & s,
            BUInt32 & v )
```

8.99.1.9 fromBString() [5/6]

```
void fromBString (
             BString & s,
             BUInt64 & v )
```

8.99.1.10 fromBString() [6/6]

```
void fromBString (
             BString & s,
             BFloat64 & v )
```

8.99.1.11 int64ToString()

```
const char* int64ToString (
             char * str,
             BUInt strLen,
             BInt64 value,
             int base = 10 )
```

8.99.1.12 intToString()

```
const char* intToString (
             char * str,
             BUInt strLen,
             int value,
             int base = 10 )
```

8.99.1.13 operator<<()

```
std::ostream& operator<< (
             std::ostream & o,
             BString & s )
```

8.99.1.14 operator>>()

```
std::istream& operator>> (
             std::istream & i,
             BString & s )
```

8.99.1.15 to_hex()

```
char to_hex (
             char code )  [inline]
```

8.99.1.16 toBString() [1/6]

```
void toBString (
             BString & v,
             BString & s )
```

8.99.1.17 toBString() [2/6]

```
void toBString (
             BStringList & v,
             BString & s )
```

8.99.1.18 toBString() [3/6]

```
void toBString (
             BInt32 & v,
             BString & s )
```

8.99.1.19 toBString() [4/6]

```
void toBString (
             BUInt32 & v,
             BString & s )
```

8.99.1.20 toBString() [5/6]

```
void toBString (
             BUInt64 & v,
             BString & s )
```

8.99.1.21 toBString() [6/6]

```
void toBString (
            BFloat64 & v,
            BString & s )
```

8.100 BStringLocked.h File Reference

```
#include <BString.h>
#include <BMutex.h>
```

Classes

- class BStringMutex
- class BStringLocked

8.101 BSys.cpp File Reference

```
#include <BSys.h>
#include <time.h>
```

Functions

- void delayUs (BUInt us)

  Will delay for given time in us, if tasks running task will sleep.
- void delayMs (BUInt ms)

  Will delay for given time in ms, if tasks running task will sleep.

8.101.1 Function Documentation

8.101.1.1 delayMs()

```
void delayMs (
            BUInt ms )
```

Will delay for given time in ms, if tasks running task will sleep.

8.101.1.2 delayUs()

```
void delayUs (
            BUInt us )
```

Will delay for given time in us, if tasks running task will sleep.

8.102 BSys.h File Reference

```
#include <BTypes.h>
```

Functions

- void delayUs (BUInt us)

  Will delay for given time in us, if tasks running task will sleep.
- void delayMs (BUInt ms)

  Will delay for given time in ms, if tasks running task will sleep.

8.102.1 Function Documentation

8.102.1.1 delayMs()

```
void delayMs (
            BUInt ms )
```

Will delay for given time in ms, if tasks running task will sleep.

8.102.1.2 delayUs()

```
void delayUs (
            BUInt us )
```

Will delay for given time in us, if tasks running task will sleep.

8.103 BTable.cpp File Reference

```
#include <BTable.h>
```

8.104 BTable.h File Reference

```
#include <BArray.h>
#include <BString.h>
```

Classes

- class BTable

8.105 BTask.cpp File Reference

```
#include <BTask.h>
#include <unistd.h>
#include <errno.h>
#include <sys/types.h>
```

8.106 BTask.h File Reference

```
#include <BError.h>
#include <pthread.h>
```

Classes

- class BTask

8.107 BThread.cpp File Reference

```
#include <BThread.h>
#include <unistd.h>
#include <errno.h>
#include <sys/types.h>
```

8.108 BThread.h File Reference

```
#include <pthread.h>
```

Classes

- class BThread

8.109 BTime.cpp File Reference

```
#include <BTime.h>
```

Functions

- static bool yearIsLeap (BUInt16 year)
- static BUInt16 yearDays (BUInt16 year)

Variables

- static BUInt16 monDays [2][13]

8.109.1 Function Documentation

8.109.1.1 yearDays()

```
static BUInt16 yearDays (
             BUInt16 year )  [inline], [static]
```

8.109.1.2 yearIsLeap()

```
static bool yearIsLeap (
             BUInt16 year )  [inline], [static]
```

8.109.2 Variable Documentation

8.109.2.1 monDays

```
BUInt16 monDays[2][13]  [static]
```

Initial value:

```
= {
    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },
    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.110 BTime.h File Reference

```
#include <BTypes.h>
#include <BError.h>
#include <BString.h>
```

Classes

- class BTime

8.111 BTimer.cpp File Reference

```
#include <BTimer.h>
#include <sys/time.h>
```

8.112 BTimer.h File Reference

```
#include <BMutex.h>
```

Classes

- class BTimer

  Stopwatch style timer.

8.113 BTimeStamp.cpp File Reference

```
#include <BTimeStamp.h>
#include <BTimeStampMs.h>
#include <sys/time.h>
```

Functions

- void toBString (BTimeStamp &v, BString &s)
- void fromBString (BString &s, BTimeStamp &v)

Variables

- static int mon_yday [2][13]

8.113.1 Function Documentation

8.113.1.1 fromBString()

```
void fromBString (
            BString & s,
            BTimeStamp & v )
```

8.113.1.2 toBString()

```
void toBString (
            BTimeStamp & v,
            BString & s )
```

8.113.2 Variable Documentation

8.113.2.1 mon_yday

```
int mon_yday[2][13]  [static]
```

Initial value:

```
= {

    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },

    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.114 BTimeStamp.h File Reference

```
#include <stdint.h>
#include <BError.h>
```

Classes

- class BTimeStamp

Functions

- void toBString (BTimeStamp &v, BString &s)
- void fromBString (BString &s, BTimeStamp &v)

8.114.1 Function Documentation

8.114.1.1 fromBString()

```
void fromBString (
            BString & s,
            BTimeStamp & v )
```

8.114.1.2 toBString()

```
void toBString (
            BTimeStamp & v,
            BString & s )
```

8.115 BTimeStampMs.cpp File Reference

```
#include <BTimeStampMs.h>
#include <sys/time.h>
```

Variables

- static int mon_yday [2][13]

8.115.1 Variable Documentation

8.115.1.1 mon_yday

```
int mon_yday[2][13]  [static]
```

Initial value:

```
= {
    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },
    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.116 BTimeStampMs.h File Reference

```
#include <stdint.h>
#include <BError.h>
```

Classes

- class BTimeStampMs

8.117 BTimeUs.cpp File Reference

```
#include <BTimeUs.h>
#include <stdio.h>
```

Functions

- static bool yearIsLeap (BUInt16 year)
- static BUInt16 yearDays (BUInt16 year)

Variables

- static BUInt16 monDays [2][13]

8.117.1 Function Documentation

8.117.1.1 yearDays()

```
static BUInt16 yearDays (
            BUInt16 year )  [inline], [static]
```

8.117.1.2 yearIsLeap()

```
static bool yearIsLeap (
            BUInt16 year )  [inline], [static]
```

8.117.2 Variable Documentation

8.117.2.1 monDays

```
BUInt16 monDays[2][13]  [static]
```

Initial value:

```
= {
    { 0, 31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334, 365 },
    { 0, 31, 60, 91, 121, 152, 182, 213, 244, 274, 305, 335, 366 }
}
```

8.118 BTimeUs.h File Reference

```
#include <BTypes.h>
#include <BError.h>
#include <BString.h>
#include <BTime.h>
```

Classes

- class BTimeUs

8.119 BTypes.h File Reference

```
#include <stdint.h>
#include <sys/types.h>
#include <vector>
```

Classes

- class BDataChunk
- struct BObjMember

Typedefs

- typedef bool Bool
- typedef int8_t BInt8
- typedef uint8_t BUInt8
- typedef int16_t BInt16
- typedef uint16_t BUInt16
- typedef int32_t BInt32
- typedef uint32_t BUInt32
- typedef int64_t BInt64
- typedef uint64_t BUInt64
- typedef float BFloat32
- typedef double BFloat64
- typedef char BChar
- typedef BInt32 BInt
- typedef BUInt32 BUInt
- typedef BFloat32 BFloat
- typedef BFloat64 BDouble
- typedef size_t BSize
- typedef std::vector< BFloat32 > BArrayFloat
- typedef std::vector< BFloat64 > BArrayDouble
- typedef BUInt32 BTimeout

Enumerations

- enum BEventType {
  BEventTypeNone, BEventTypeError, BEventTypeRead, BEventTypeReadLine,
  BEventTypeWrite, BEventTypeConnect, BEventTypeDisconnect, BEventTypeClientConnect,
  BEventTypeClientDisconnect }
- enum BEventWaitSet {
  BEventWaitNone = 0x00, BEventWaitError = 0x01, BEventWaitRead = 0x02, BEventWaitReadLine = 0x04,
  BEventWaitWrite = 0x08, BEventWaitConnect = 0x10, BEventWaitDisconnect = 0x20, BEventWaitClientConnect
  = 0x40,
  BEventWaitClientDisconnect = 0x80, BEventWaitAny = 0xFFFFFFFF }
- enum BType {
  BTypeNone, BTypeBool, BTypeInt8, BTypeUInt8,
  BTypeInt16, BTypeUInt16, BTypeInt32, BTypeUInt32,
  BTypeInt64, BTypeUInt64, BTypeFloat32, BTypeFloat64,
  BTypeChar, BTypeString, BTypeError, BTypeTime,
  BTypeTimeUs, BTypeObj = 100 }
- enum BTypeComp {
  BTypeCompSingle, BTypeCompArray, BTypeCompArrayFixed, BTypeCompList,
  BTypeCompDict }

Functions

- BTimeout timeoutTicks (BTimeout timeoutUs)
- void byteSwap8 (void ∗d, void ∗s)
- void byteSwap16 (void ∗d, void ∗s)
- void byteSwap32 (void ∗d, void ∗s)
- void byteSwap64 (void ∗d, void ∗s)

Variables

- const BTimeout BTimeoutForever = 0xFFFFFFFF

8.119.1 Typedef Documentation

8.119.1.1 BArrayDouble

```
typedef std::vector<BFloat64> BArrayDouble
```

8.119.1.2 BArrayFloat

```
typedef std::vector<BFloat32> BArrayFloat
```

8.119.1.3 BChar

```
typedef char BChar
```

8.119.1.4 BDouble

```
typedef BFloat64 BDouble
```

8.119.1.5 BFloat

```
typedef BFloat32 BFloat
```

8.119.1.6 BFloat32

```
typedef float BFloat32
```

8.119.1.7 BFloat64

```
typedef double BFloat64
```

8.119.1.8 BInt

```
typedef BInt32 BInt
```

8.119.1.9 BInt16

```
typedef int16_t BInt16
```

8.119.1.10 BInt32

```
typedef int32_t BInt32
```

8.119.1.11 BInt64

```
typedef int64_t BInt64
```

8.119.1.12 BInt8

```
typedef int8_t BInt8
```

8.119.1.13 Bool

```
typedef bool Bool
```

8.119.1.14 BSize

```
typedef size_t BSize
```

8.119.1.15 BTimeout

```
typedef BUInt32 BTimeout
```

8.119.1.16 BUInt

```
typedef BUInt32 BUInt
```

8.119.1.17 BUInt16

```
typedef uint16_t BUInt16
```

8.119.1.18 BUInt32

```
typedef uint32_t BUInt32
```

8.119.1.19 BUInt64

```
typedef uint64_t BUInt64
```

8.119.1.20 BUInt8

```
typedef uint8_t BUInt8
```

8.119.2 Enumeration Type Documentation

8.119.2.1 BEventType

```
enum BEventType
```

Enumerator

BEventTypeNone	
BEventTypeError	
BEventTypeRead	
BEventTypeReadLine	
BEventTypeWrite	
BEventTypeConnect	
BEventTypeDisconnect	
BEventTypeClientConnect	
BEventTypeClientDisconnect	

8.119.2.2 BEventWaitSet

```
enum BEventWaitSet
```

Enumerator

BEventWaitNone	
BEventWaitError	
BEventWaitRead	
BEventWaitReadLine	
BEventWaitWrite	
BEventWaitConnect	
BEventWaitDisconnect	
BEventWaitClientConnect	
BEventWaitClientDisconnect	
BEventWaitAny	

8.119.2.3 BType

```
enum BType
```

Enumerator

BTypeNone	
BTypeBool	
BTypeInt8	
BTypeUInt8	
BTypeInt16	
BTypeUInt16	
BTypeInt32	
BTypeUInt32	
BTypeInt64	
BTypeUInt64	
BTypeFloat32	
BTypeFloat64	
BTypeChar	
BTypeString	
BTypeError	
BTypeTime	
BTypeTimeUs	
BTypeObj	

8.119.2.4 BTypeComp

```
enum BTypeComp
```

Enumerator

BTypeCompSingle	
BTypeCompArray	
BTypeCompArrayFixed	
BTypeCompList	
BTypeCompDict	

8.119.3 Function Documentation

8.119.3.1 byteSwap16()

```
void byteSwap16 (
             void * d,
             void * s )  [inline]
```

8.119.3.2 byteSwap32()

```
void byteSwap32 (
             void * d,
             void * s )  [inline]
```

8.119.3.3 byteSwap64()

```
void byteSwap64 (
             void * d,
             void * s )  [inline]
```

8.119.3.4 byteSwap8()

```
void byteSwap8 (
             void * d,
             void * s )  [inline]
```

8.119.3.5 timeoutTicks()

```
BTimeout timeoutTicks (
             BTimeout timeoutUs )  [inline]
```

8.119.4 Variable Documentation

8.119.4.1 BTimeoutForever

```
const BTimeout BTimeoutForever = 0xFFFFFFFF
```

8.120 build_x86_64/BBuffer.d File Reference

8.121 build_x86_64/BComms.d File Reference

8.122 build_x86_64/BCond.d File Reference

8.123 build_x86_64/BCondInt.d File Reference

8.124 build_x86_64/BConfig.d File Reference

8.125 build_x86_64/BCrc16.d File Reference

8.126 build_x86_64/BCrc32.d File Reference

8.127 build_x86_64/BDate.d File Reference

8.128 build_x86_64/BDebug.d File Reference

8.129 build_x86_64/BDict.d File Reference

8.130 build_x86_64/BDir.d File Reference

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8.132 build_x86_64/BEndian.d File Reference

8.133 build_x86_64/BEntry.d File Reference

8.134 build_x86_64/BError.d File Reference

8.135 build_x86_64/BErrorTime.d File Reference

8.136 build_x86_64/BEvent.d File Reference

8.137 build_x86_64/BEvent1.d File Reference

8.138 build_x86_64/BFifoCirc.d File Reference

8.139 build_x86_64/BFile.d File Reference

8.140 build_x86_64/BFileCsv.d File Reference

8.141 build_x86_64/BFileData.d File Reference

8.142 build_x86_64/BMutex.d File Reference

8.143 build_x86_64/BMysql.d File Reference

8.144 build_x86_64/BoapMc.d File Reference

8.145 build_x86_64/BoapMc1.d File Reference

8.146 build_x86_64/BoapnsC.d File Reference

8.147 build_x86_64/BoapnsD.d File Reference

8.148 build_x86_64/BObj.d File Reference

8.149 build_x86_64/BObjStringFormat.d File Reference

8.150 build_x86_64/BPoll.d File Reference

8.151 build_x86_64/BRefData.d File Reference

8.152 build_x86_64/BRtc.d File Reference

8.153 build_x86_64/BRWLock.d File Reference

8.154 build_x86_64/BSema.d File Reference

8.155 build_x86_64/BSemaphore.d File Reference

8.156 build_x86_64/BSocket.d File Reference

8.157 build_x86_64/BSpi.d File Reference

8.158 build_x86_64/BString.d File Reference

8.159 build_x86_64/BSys.d File Reference

8.160 build_x86_64/BTable.d File Reference

8.161 build_x86_64/BTask.d File Reference

8.162 build_x86_64/BThread.d File Reference

8.163 build_x86_64/BTime.d File Reference

8.164 build_x86_64/BTimer.d File Reference

8.165 build_x86_64/BTimeStamp.d File Reference

8.166 build_x86_64/BTimeStampMs.d File Reference

8.167 build_x86_64/BTimeUs.d File Reference

8.168 build_x86_64/BUrl.d File Reference

8.169 BUrl.cpp File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <memory.h>
#include <BUrl.h>
#include <curl/curl.h>
```

8.170 BUrl.h File Reference

```
#include <stdio.h>
#include <BString.h>
#include <BError.h>
```

Classes

- class BUrl

  Basic access to a Url.

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