

# LibBeamApi Reference Manual

## 0.3.8

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# Chapter 1

## LibBeamApi Namespace Index

### 1.1 LibBeamApi Namespace List

Here is a list of all namespaces with brief descriptions:

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## Chapter 2

# LibBeamApi Hierarchical Index

### 2.1 LibBeamApi Class Hierarchy

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

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BBuffer . . . . .	12
BCond . . . . .	14
BCondBool . . . . .	15
BCondInt . . . . .	17
BCondValue . . . . .	20
BCondWrap . . . . .	23
BEntry . . . . .	29
BError . . . . .	37
BEventError . . . . .	42
BEvent . . . . .	40
BEventError . . . . .	42
BEventInt . . . . .	43
BEventPipe . . . . .	45
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BList< T > . . . . .	52
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BList< BNameValue< T > > . . . . .	52
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BObject . . . . .	92
BPoll . . . . .	94
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BoapSignalObject . . . . .	90
BoapSignalObject . . . . .	90
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BoapServer . . . . .	77
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BTimer . . . . .	127
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## Chapter 3

# LibBeamApi Class Index

### 3.1 LibBeamApi Class List

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

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<a href="#">BBuffer</a>	12
<a href="#">BCond</a>	14
<a href="#">BCondBool</a> (Thread conditional boolean )	15
<a href="#">BCondInt</a> (Thread conditional integer )	17
<a href="#">BCondValue</a> (Thread conditional value )	20
<a href="#">BCondWrap</a>	23
<a href="#">BDir</a> (File system directory class )	26
<a href="#">BEntry</a> (Manipulate a name value pair )	29
<a href="#">BEntryFile</a> (File of Entries )	32
<a href="#">BEntryList</a> (List of Entries. Where an entry is a name value pair )	34
<a href="#">BError</a> (Error return class )	37
<a href="#">BEvent</a> (This class provides a base class for all event objects that can be sent over the events interface )	40
<a href="#">BEventError</a>	42
<a href="#">BEventInt</a> (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 )	43
<a href="#">BEventPipe</a> (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 )	45
<a href="#">BFile</a> (File operations class )	47
<a href="#">BIter</a> (Iterator for <a href="#">BList</a> )	51
<a href="#">BList&lt; T &gt;</a> (Template based list class )	52
<a href="#">BList&lt; T &gt;::Node</a>	59
<a href="#">BMutex</a> (Mutex class )	60
<a href="#">BNameValue&lt; T &gt;</a>	62
<a href="#">BNameValueList&lt; T &gt;</a>	63
<a href="#">BoapClientObject</a>	64
<a href="#">Boapns::BoapEntry</a>	68
<a href="#">BoapFuncEntry</a>	69
<a href="#">Boapns::Boapns</a>	70
<a href="#">BoapPacket</a>	71
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<a href="#">BoapServerConnection</a> . . . . .	83
<a href="#">BoapServiceEntry</a> . . . . .	85
<a href="#">BoapServiceObject</a> . . . . .	86
<a href="#">BoapSignalObject</a> . . . . .	90
<a href="#">BObject</a> . . . . .	92
<a href="#">BPoll</a> (This class provides an interface for polling a number of file descriptors. It uses round robin polling ) . . . . .	94
<a href="#">BRefData</a> (Referenced data storage ) . . . . .	97
<a href="#">BRtc</a> (Realtime clock ) . . . . .	99
<a href="#">BRtcThreaded</a> (Threaded real time clock ) . . . . .	101
<a href="#">BRWLock</a> (Thread read-write locks ) . . . . .	103
<a href="#">BSema</a> (Semaphore class ) . . . . .	105
<a href="#">BSocket</a> . . . . .	107
<a href="#">BSocketAddress</a> (Socket Address ) . . . . .	112
<a href="#">BSocketAddressINET</a> (IP aware socket address ) . . . . .	114
<a href="#">BString</a> . . . . .	117
<a href="#">BThread</a> . . . . .	125
<a href="#">BTimer</a> (Stopwatch style timer ) . . . . .	127
<a href="#">BUrl</a> (Basic access to a Url ) . . . . .	130

## Chapter 4

# LibBeamApi File Index

### 4.1 LibBeamApi File List

Here is a list of all files with brief descriptions:

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BBuffer.h	135
BCond.cpp	136
BCond.h	137
BCondInt.cpp	138
BCondInt.h	139
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BEntry.h	143
BError.cpp	144
BError.h	145
BEvent.cpp	146
BEvent.h	147
BFile.cpp	148
BFile.h	149
BList.h	150
BList_func.h	151
BMutex.cpp	152
BMutex.h	153
BNameValue.h	154
Boap.cpp	155
Boap.h	157
BoapnsC.cc	159
BoapnsC.h	160
BoapnsD.cc	161
BoapnsD.h	162
BoapSimple.cc	163
BoapSimple.h	164
BObject.cc	166
BObject.h	167
BPoll-1.cpp	168

<a href="#">BPoll.cpp</a>	169
<a href="#">BPoll.h</a>	170
<a href="#">BRefData.cpp</a>	171
<a href="#">BRefData.h</a>	172
<a href="#">BRtc.cpp</a>	173
<a href="#">BRtc.h</a>	174
<a href="#">BRWLock.cpp</a>	175
<a href="#">BRWLock.h</a>	176
<a href="#">BSema.cpp</a>	177
<a href="#">BSema.h</a>	178
<a href="#">BSocket.cpp</a>	179
<a href="#">BSocket.h</a>	180
<a href="#">BString.cpp</a>	181
<a href="#">BString.h</a>	182
<a href="#">BThread.cpp</a>	183
<a href="#">BThread.h</a>	184
<a href="#">BTimer.cpp</a>	185
<a href="#">BTimer.h</a>	186
<a href="#">BTypes.h</a>	187
<a href="#">BUrl.cpp</a>	190
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## Chapter 5

# LibBeamApi Namespace Documentation

### 5.1 Boapns Namespace Reference

#### Classes

- class [Boapns](#)
- class [BoapEntry](#)

#### 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)

#### Variables

- const [BUInt32](#) apiVersion = 0

### 5.1.1 Function Documentation

5.1.1.1 **BError** Boapns::addEntry (BoapEntry *entry*)

5.1.1.2 **Boapns::Boapns** (BString *name*)

5.1.1.3 **BError** Boapns::delEntry (BString *name*)

5.1.1.4 **BError** Boapns::getEntry (BString *name*, BoapEntry & *entry*)

5.1.1.5 **BError** Boapns::getEntryList (BList< BoapEntry > & *entryList*)

5.1.1.6 **BError** Boapns::getNewName (BString & *name*)

5.1.1.7 **BError** Boapns::getVersion (BString & *version*)

### 5.1.2 Variable Documentation

5.1.2.1 const BUInt32 Boapns::apiVersion = 0

## Chapter 6

# LibBeamApi Class Documentation

### 6.1 BArray< T > Class Template Reference

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

#### Public Member Functions

- [BArray](#) ()
- [BArray](#) ([BSize](#) size, T value=T())
- [BArray](#) (const [BArray](#) &array)

#### 6.1.1 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.

#### 6.1.2 Constructor & Destructor Documentation

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

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

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

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

- [BArray.h](#)

## 6.2 BBuffer Class Reference

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

### Public Member Functions

- [BBuffer \(\)](#)  
*Create and manipulate a data buffer. On creation the buffer size defaults to 1024 bytes.*
- [~BBuffer \(\)](#)
- [int setSize \(uint32\\_t size\)](#)  
*Sets the bufer size.*
- [int setData \(const void \\*data, uint32\\_t size\)](#)  
*Sets buffer data resized to contain the data.*
- [int writeData \(uint32\\_t pos, const void \\*data, uint32\\_t size\)](#)  
*Writes data into buffer from offset pos.*
- [void \\* data \(\)](#)  
*The data.*
- [uint32\\_t size \(\)](#)  
*Size of the buffer in bytes.*

### Private Attributes

- [uint32\\_t osize](#)
- [uint32\\_t odatasize](#)
- [void \\* odata](#)

### 6.2.1 Constructor & Destructor Documentation

#### 6.2.1.1 BBuffer::BBuffer ()

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

#### 6.2.1.2 BBuffer::~~BBuffer ()

### 6.2.2 Member Function Documentation

#### 6.2.2.1 int BBuffer::setSize (uint32\_t size)

Sets the bufer size.

#### 6.2.2.2 int BBuffer::setData (const void \* data, uint32\_t size)

Sets buffer data resized to contain the data.

**6.2.2.3** `int BBuffer::writeData (uint32_t pos, const void * data, uint32_t size)`

Writes data into buffer from offset pos.

**6.2.2.4** `void * BBuffer::data ()`

The data.

**6.2.2.5** `uint32_t BBuffer::size ()`

Size of the buffer in bytes.

**6.2.3 Member Data Documentation****6.2.3.1** `uint32_t BBuffer::osize` [private]**6.2.3.2** `uint32_t BBuffer::odatasize` [private]**6.2.3.3** `void* BBuffer::odata` [private]

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

- [BBuffer.h](#)
- [BBuffer.cpp](#)

## 6.3 BCond Class Reference

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

### Public Member Functions

- [BCond \(\)](#)  
*Thread conditional variable.*
- [~BCond \(\)](#)
- [int signal \(\)](#)
- [int wait \(\)](#)
- [int timedWait \(int timeOutUs\)](#)

### Private Attributes

- `pthread_mutex_t` [omutex](#)
- `pthread_cond_t` [ocond](#)

### 6.3.1 Constructor & Destructor Documentation

#### 6.3.1.1 BCond::BCond ()

Thread conditional variable.

#### 6.3.1.2 BCond::~~BCond ()

### 6.3.2 Member Function Documentation

#### 6.3.2.1 int BCond::signal ()

#### 6.3.2.2 int BCond::wait ()

#### 6.3.2.3 int BCond::timedWait (int *timeOutUs*)

### 6.3.3 Member Data Documentation

#### 6.3.3.1 pthread\_mutex\_t BCond::omutex [private]

#### 6.3.3.2 pthread\_cond\_t BCond::ocond [private]

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

- [BCond.h](#)
- [BCond.cpp](#)

## 6.4 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.*

### Private Attributes

- `pthread_mutex_t` [omutex](#)
- `pthread_cond_t` [ocond](#)
- `int` [ovalue](#)

#### 6.4.1 Detailed Description

Thread conditional boolean.

#### 6.4.2 Constructor & Destructor Documentation

##### 6.4.2.1 BCondBool::BCondBool ()

##### 6.4.2.2 BCondBool::~~BCondBool ()

#### 6.4.3 Member Function Documentation

##### 6.4.3.1 int BCondBool::set ()

Set value. Wakes waiting.

**6.4.3.2 int BCondBool::clear ()**

Clear Value.

**6.4.3.3 int BCondBool::value ()**

Current value.

**6.4.3.4 int BCondBool::wait ()**

Wait until value is true.

**6.4.3.5 int BCondBool::timedWait (int *timeOutUs*)**

Wait until set, with timeout.

**6.4.4 Member Data Documentation****6.4.4.1 pthread\_mutex\_t BCondBool::omutex** [private]**6.4.4.2 pthread\_cond\_t BCondBool::ocond** [private]**6.4.4.3 int BCondBool::ovalue** [private]

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

- [BCondInt.h](#)
- [BCondInt.cpp](#)

## 6.5 BCondInt Class Reference

Thread conditional integer.

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

### Public Member Functions

- [BCondInt](#) ()
- [~BCondInt](#) ()
- void [setValue](#) (int value)  
*Set value.*
- int [increment](#) ()  
*Increment.*
- int [decrement](#) ()  
*Decrement.*
- int [value](#) ()  
*Current value.*
- int [wait](#) ()  
*Wait until value is 0.*
- int [waitIncrement](#) (int timeOutUs=0)  
*Wait until value is 0 then increment.*
- int [waitNotZero](#) ()  
*Wait until value is not 0.*
- int [waitNotZeroDecrement](#) ()  
*Wait until value is not 0 and then decrement.*
- int [tryNotZeroDecrement](#) ()  
*Test if value is not 0, if not zero then decrement.*
- int [timedWait](#) (int timeOutUs)  
*Wait for the condition, with timeout.*
- void [operator++](#) (int)
- void [operator--](#) (int)

### Private Attributes

- pthread\_mutex\_t [omutex](#)
- pthread\_cond\_t [ocond](#)
- int [ovalue](#)

## 6.5.1 Detailed Description

Thread conditional integer.

## 6.5.2 Constructor & Destructor Documentation

### 6.5.2.1 BCondInt::BCondInt ()

### 6.5.2.2 BCondInt::~~BCondInt ()

## 6.5.3 Member Function Documentation

### 6.5.3.1 void BCondInt::setValue (int *value*)

Set value.

### 6.5.3.2 int BCondInt::increment ()

Increment.

### 6.5.3.3 int BCondInt::decrement ()

Decrement.

### 6.5.3.4 int BCondInt::value ()

Current value.

### 6.5.3.5 int BCondInt::wait ()

Wait until value is 0.

### 6.5.3.6 int BCondInt::waitIncrement (int *timeOutUs* = 0)

Wait until value is 0 then increment.

### 6.5.3.7 int BCondInt::waitNotZero ()

Wait until value is not 0.

### 6.5.3.8 int BCondInt::waitNotZeroDecrement ()

Wait until value is not 0 and then decrement.

### 6.5.3.9 int BCondInt::tryNotZeroDecrement ()

Test if value is not 0, if not zero then decrement.

#### 6.5.3.10 int BCondInt::timedWait (int *timeOutUs*)

Wait for the condition, with timeout.

#### 6.5.3.11 void BCondInt::operator++ (int) [inline]

#### 6.5.3.12 void BCondInt::operator-- (int) [inline]

### 6.5.4 Member Data Documentation

#### 6.5.4.1 pthread\_mutex\_t BCondInt::omutex [private]

#### 6.5.4.2 pthread\_cond\_t BCondInt::ocond [private]

#### 6.5.4.3 int BCondInt::ovalue [private]

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

- [BCondInt.h](#)
- [BCondInt.cpp](#)

## 6.6 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.*

### Private Attributes

- pthread\_mutex\_t [omutex](#)
- pthread\_cond\_t [ocond](#)
- int [ovalue](#)

## 6.6.1 Detailed Description

Thread conditional value.

## 6.6.2 Constructor & Destructor Documentation

### 6.6.2.1 BCondValue::BCondValue ()

### 6.6.2.2 BCondValue::~~BCondValue ()

## 6.6.3 Member Function Documentation

### 6.6.3.1 void BCondValue::setValue (int *value*)

Set the value. Wakes waiting.

### 6.6.3.2 int BCondValue::value ()

Current value.

### 6.6.3.3 int BCondValue::increment (int *v* = 1)

Increment. Wakes waiting.

### 6.6.3.4 int BCondValue::decrement (int *v* = 1)

Decrement. Wakes waiting.

### 6.6.3.5 int BCondValue::waitMoreThanOrEqual (int *v*, int *decrement* = 0, int *timeOutUs* = 0)

Wait until value is at least the value given.

### 6.6.3.6 int BCondValue::waitLessThanOrEqual (int *v*, int *increment* = 0, int *timeOutUs* = 0)

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

### 6.6.3.7 int BCondValue::waitLessThan (int *v*, int *timeOutUs* = 0)

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

### 6.6.3.8 void BCondValue::operator+= (int *v*) [inline]

Add to value. Wakes waiting.

### 6.6.3.9 void BCondValue::operator-= (int *v*) [inline]

Subtract from value. Wakes waiting.

**6.6.3.10 void BCondValue::operator++ (int) [inline]**

Increment value. Wakes waiting.

**6.6.3.11 void BCondValue::operator-- (int) [inline]**

Decrement value. Wakes waiting.

**6.6.4 Member Data Documentation****6.6.4.1 pthread\_mutex\_t BCondValue::omutex [private]****6.6.4.2 pthread\_cond\_t BCondValue::ocond [private]****6.6.4.3 int BCondValue::ovalue [private]**

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

- [BCondInt.h](#)
- [BCondInt.cpp](#)

## 6.7 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.*

### Private Member Functions

- int [diff](#) (uint32\_t v)

## Private Attributes

- pthread\_mutex\_t [omutex](#)
- pthread\_cond\_t [ocond](#)
- uint32\_t [ovalue](#)

## 6.7.1 Constructor & Destructor Documentation

### 6.7.1.1 BCondWrap::BCondWrap ()

### 6.7.1.2 BCondWrap::~~BCondWrap ()

## 6.7.2 Member Function Documentation

### 6.7.2.1 void BCondWrap::setValue (uint32\_t *value*)

Set the value. Wakes waiting.

### 6.7.2.2 uint32\_t BCondWrap::value ()

Current value.

### 6.7.2.3 uint32\_t BCondWrap::increment (uint32\_t *v* = 1)

Increment. Wakes waiting.

### 6.7.2.4 uint32\_t BCondWrap::decrement (uint32\_t *v* = 1)

Decrement. Wakes waiting.

### 6.7.2.5 int BCondWrap::waitMoreThanOrEqual (uint32\_t *v*, uint32\_t *decrement* = 0, uint32\_t *timeOutUs* = 0)

Wait until value is at least the value given.

### 6.7.2.6 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.

### 6.7.2.7 int BCondWrap::waitLessThan (uint32\_t *v*, uint32\_t *timeOutUs* = 0)

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

### 6.7.2.8 void BCondWrap::operator+= (int *v*) [inline]

Add to value. Wakes waiting.

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

Subtract from value. Wakes waiting.

**6.7.2.10 void BCondWrap::operator++ (int) [inline]**

Increment value. Wakes waiting.

**6.7.2.11 void BCondWrap::operator- (int) [inline]**

Decrement value. Wakes waiting.

**6.7.2.12 int BCondWrap::diff (uint32\_t v) [private]****6.7.3 Member Data Documentation****6.7.3.1 pthread\_mutex\_t BCondWrap::omutex [private]****6.7.3.2 pthread\_cond\_t BCondWrap::ocond [private]****6.7.3.3 uint32\_t BCondWrap::ovalue [private]**

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

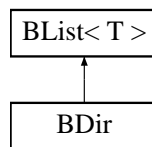
- [BCondInt.h](#)
- [BCondInt.cpp](#)

## 6.8 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.*
- stat [entryStat](#) (BIter i)  
*Get file stats.*
- stat64 [entryStat64](#) (BIter i)  
*Get file stats 64.*

## Private Attributes

- [BError](#) oerror
- [BString](#) odirname
- [BString](#) owild
- [int](#) osort

### 6.8.1 Detailed Description

File system directory class.

### 6.8.2 Constructor & Destructor Documentation

#### 6.8.2.1 [BDir::BDir](#) ()

#### 6.8.2.2 [BDir::BDir](#) ([BString](#) *name*)

#### 6.8.2.3 [BDir::~~BDir](#) ()

### 6.8.3 Member Function Documentation

#### 6.8.3.1 [BError](#) [BDir::open](#) ([BString](#) *name*)

Reads named directory.

#### 6.8.3.2 [BError](#) [BDir::error](#) ()

Current value of error.

#### 6.8.3.3 [BError](#) [BDir::read](#) ()

read/re-reads directory

#### 6.8.3.4 [void](#) [BDir::clear](#) () [virtual]

Clears list.

Reimplemented from [BList< T >](#).

#### 6.8.3.5 [void](#) [BDir::setWild](#) ([BString](#) *wild*)

Set wildcard filter string used on read.

#### 6.8.3.6 [void](#) [BDir::setSort](#) ([int](#) *on*)

Set alpha sort on/off.

#### 6.8.3.7 [BString](#) BDir::entryName ([BIter](#) *i*)

Get filename.

#### 6.8.3.8 `struct stat` BDir::entryStat ([BIter](#) *i*)

Get file stats.

#### 6.8.3.9 `struct stat64` BDir::entryStat64 ([BIter](#) *i*)

Get file stats 64.

### 6.8.4 Member Data Documentation

#### 6.8.4.1 [BError](#) BDir::oerror [private]

#### 6.8.4.2 [BString](#) BDir::odirname [private]

#### 6.8.4.3 [BString](#) BDir::owild [private]

#### 6.8.4.4 `int` BDir::osort [private]

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

- [BDir.h](#)
- [BDir.cpp](#)

## 6.9 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 delimited string.*
- [BString](#) [getName](#) ()  
*Get the name.*
- [BString](#) [getValue](#) ()  
*Get the value.*
- void [setLine](#) ([BString](#) line)  
*Set name and value from white space delimited 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.*

### Private Attributes

- [BString](#) [oname](#)
- [BString](#) [ovalue](#)

#### 6.9.1 Detailed Description

Manipulate a name value pair.

## 6.9.2 Constructor & Destructor Documentation

### 6.9.2.1 BEntry::BEntry ()

### 6.9.2.2 BEntry::BEntry (BString name, BString value)

Set name and value.

### 6.9.2.3 BEntry::BEntry (BString line)

Set name and value from white space delimited string.

## 6.9.3 Member Function Documentation

### 6.9.3.1 BString BEntry::getName ()

Get the name.

### 6.9.3.2 BString BEntry::getValue ()

Get the value.

### 6.9.3.3 void BEntry::setLine (BString line)

Set name and value from white space delimited string.

### 6.9.3.4 void BEntry::setName (BString name)

Set the name.

### 6.9.3.5 void BEntry::setValue (BString value)

Set the value.

### 6.9.3.6 BString BEntry::line ()

Return name and value as padded single string.

### 6.9.3.7 void BEntry::print ()

Print name and value.

## 6.9.4 Member Data Documentation

**6.9.4.1** [BString BEntry::oname](#) [private]

**6.9.4.2** [BString BEntry::ovalue](#) [private]

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

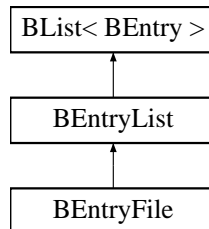
- [BEntry.h](#)
- [BEntry.cpp](#)

## 6.10 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.*

### Private Attributes

- [BString ofilename](#)
- [BString ocomments](#)

### 6.10.1 Detailed Description

File of Entries.

## 6.10.2 Constructor & Destructor Documentation

### 6.10.2.1 BEntryFile::BEntryFile ()

### 6.10.2.2 BEntryFile::BEntryFile ([BString](#) *filename*)

Opens entryfile.

### 6.10.2.3 BEntryFile::~~BEntryFile ()

## 6.10.3 Member Function Documentation

### 6.10.3.1 int BEntryFile::open ([BString](#) *filename*)

Opens entryfile.

### 6.10.3.2 int BEntryFile::read ()

Reads entry file and builds list.

### 6.10.3.3 int BEntryFile::write ()

Writes list to entryfile.

### 6.10.3.4 int BEntryFile::writeList ([BEntryList](#) & *l*)

Writes specified list to file.

### 6.10.3.5 void BEntryFile::clear () [virtual]

Clears current list.

Reimplemented from [BEntryList](#).

## 6.10.4 Member Data Documentation

### 6.10.4.1 [BString](#) BEntryFile::ofilename [private]

### 6.10.4.2 [BString](#) BEntryFile::ocomments [private]

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

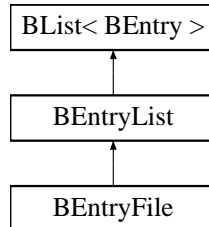
- [BEntry.h](#)
- [BEntry.cpp](#)

## 6.11 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.*

## Private Attributes

- [BIter](#) `olastPos`

### 6.11.1 Detailed Description

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

### 6.11.2 Constructor & Destructor Documentation

#### 6.11.2.1 BEntryList::BEntryList ()

### 6.11.3 Member Function Documentation

#### 6.11.3.1 int BEntryList::isSet ([BString](#) *name*)

1 if name is in list and value is set

#### 6.11.3.2 [BEntry](#) \* BEntryList::find ([BString](#) *name*)

Returns entry if name is found otherwise NULL.

#### 6.11.3.3 [BString](#) BEntryList::findValue ([BString](#) *name*)

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

#### 6.11.3.4 int BEntryList::setValue ([BString](#) *name*, [BString](#) *value*)

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

#### 6.11.3.5 int BEntryList::setValueRaw ([BString](#) *name*, [BString](#) *value*)

Raw setting of value without looking up existing entry.

#### 6.11.3.6 void BEntryList::deleteEntry ([BString](#) *name*)

Deletes the entry.

#### 6.11.3.7 void BEntryList::print ()

Print list.

#### 6.11.3.8 [BString](#) BEntryList::getString ()

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

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

Insert item before item.

Reimplemented from [BList< BEntry >](#).

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

Delete specified item.

Reimplemented from [BList< BEntry >](#).

**6.11.3.11 void BEntryList::clear () [virtual]**

Clear the list.

Reimplemented from [BList< BEntry >](#).

Reimplemented in [BEntryFile](#).

**6.11.4 Member Data Documentation****6.11.4.1 BIter BEntryList::olastPos [private]**

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

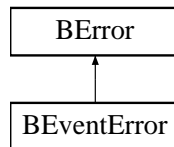
- [BEntry.h](#)
- [BEntry.cpp](#)

## 6.12 BError Class Reference

Error return class.

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

Inheritance diagram for BError::



### Public Types

- enum `Type` { `NONE` = 0, `ERROR` = 1 }

### Public Member Functions

- `BError` (int errNo=`NONE`, `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 & setError` (`BString` errStr="")  
*Set error type ERROR with optional message.*
- `BString getString` () const  
*Get error message.*
- int `getErrorNo` () const  
*Get The error number.*
- `operator int` () const  
*Return error number.*

### Private Attributes

- int `oerrNo`
- `BString` `oerrStr`

### 6.12.1 Detailed Description

Error return class.

### 6.12.2 Member Enumeration Documentation

#### 6.12.2.1 enum **BError::Type**

Enumerator:

*NONE*

*ERROR*

### 6.12.3 Constructor & Destructor Documentation

#### 6.12.3.1 **BError::BError** (int *errNo* = NONE, **BString** *errStr* = " ")

Create object.

#### 6.12.3.2 **BError::BError** (**BString** *errStr*)

Create with error set and error string.

### 6.12.4 Member Function Documentation

#### 6.12.4.1 **BError** **BError::copy** ()

Return an independant copy.

#### 6.12.4.2 **BError** & **BError::set** (int *errNo*, **BString** *errStr* = " ")

Set error number and message.

#### 6.12.4.3 **BError** & **BError::setError** (**BString** *errStr* = " ")

Set error type ERROR with optional message.

#### 6.12.4.4 **BString** **BError::getString** () const

Get error message.

#### 6.12.4.5 int **BError::getErrorNo** () const

Get The error number.

#### 6.12.4.6 BError::operator int () const

Return error number.

### 6.12.5 Member Data Documentation

6.12.5.1 int [BError::oerrNo](#) [private]

6.12.5.2 [BString BError::oerrStr](#) [private]

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

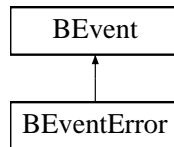
- [BError.h](#)
- [BError.cpp](#)

## 6.13 BEvent Class Reference

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

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

Inheritance diagram for BEvent::



### Public Member Functions

- [BEvent](#) (uint32\_t type)
- virtual [~BEvent](#) ()
- uint32\_t [getType](#) ()
- virtual [BError](#) [getBinary](#) (void \*data, uint32\_t &size)
- virtual [BError](#) [setBinary](#) (void \*data, uint32\_t &size)

### Private Attributes

- uint32\_t [otype](#)  
*The event type.*

#### 6.13.1 Detailed Description

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

#### 6.13.2 Constructor & Destructor Documentation

**6.13.2.1** [BEvent::BEvent](#) (uint32\_t type)

**6.13.2.2** [BEvent::~~BEvent](#) () [virtual]

#### 6.13.3 Member Function Documentation

**6.13.3.1** uint32\_t [BEvent::getType](#) ()

**6.13.3.2** [BError](#) [BEvent::getBinary](#) (void \* data, uint32\_t & size) [virtual]

Reimplemented in [BEventError](#).

**6.13.3.3** [BError](#) [BEvent::setBinary](#) (void \* data, uint32\_t & size) [virtual]

Reimplemented in [BEventError](#).

## 6.13.4 Member Data Documentation

### 6.13.4.1 `uint32_t BEvent::otype` [private]

The event type.

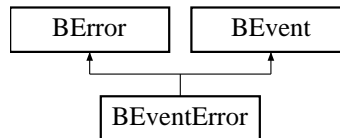
The documentation for this class was generated from the following files:

- [BEvent.h](#)
- [BEvent.cpp](#)

## 6.14 BEventError Class Reference

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

Inheritance diagram for BEventError::



### Public Member Functions

- [BEventError](#) (int errNo=NONE, [BString](#) errStr="")
- [BError](#) [getBinary](#) (void \*data, uint32\_t &size)
- [BError](#) [setBinary](#) (void \*data, uint32\_t &size)

### 6.14.1 Constructor & Destructor Documentation

**6.14.1.1** [BEventError::BEventError](#) (int *errNo* = NONE, [BString](#) *errStr* = "")

### 6.14.2 Member Function Documentation

**6.14.2.1** [BError](#) [BEventError::getBinary](#) (void \**data*, uint32\_t &*size*) [virtual]

Reimplemented from [BEvent](#).

**6.14.2.2** [BError](#) [BEventError::setBinary](#) (void \**data*, uint32\_t &*size*) [virtual]

Reimplemented from [BEvent](#).

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

- [BEvent.h](#)
- [BEvent.cpp](#)

## 6.15 BEventInt 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 <BEvent.h>
```

### Public Member Functions

- [BEventInt \(\)](#)
- [~BEventInt \(\)](#)
- [BError sendEvent \(int event\)](#)  
*Send an event.*
- [BError getEvent \(int &event, int timeOutUs=-1\)](#)  
*Receive the event.*
- [int getFd \(\)](#)

### Private Attributes

- [int ofds \[2\]](#)  
*File descriptors for pipe.*

### 6.15.1 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.

### 6.15.2 Constructor & Destructor Documentation

#### 6.15.2.1 BEventInt::BEventInt ()

#### 6.15.2.2 BEventInt::~~BEventInt ()

### 6.15.3 Member Function Documentation

#### 6.15.3.1 BError BEventInt::sendEvent (int event)

Send an event.

#### 6.15.3.2 BError BEventInt::getEvent (int & event, int timeOutUs = -1)

Receive the event.

### 6.15.3.3 int BEventInt::getFd ()

## 6.15.4 Member Data Documentation

### 6.15.4.1 int [BEventInt::ofds](#)[2] [private]

File descriptors for pipe.

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

- [BEvent.h](#)
- [BEvent.cpp](#)

## 6.16 BEventPipe 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 <BEvent.h>
```

### Public Member Functions

- [BEventPipe \(\)](#)
- [~BEventPipe \(\)](#)
- [BError sendEvent \(BEvent \\*event\)](#)  
*Send an event.*
- [BError getEvent \(BEvent \\*event, int timeOutUs=-1\)](#)  
*Receive the event.*
- [int getReceiveFd \(\)](#)  
*returns the receive file descriptor for the poll system call*

### Private Attributes

- [int ofds \[2\]](#)  
*File descriptors for pipe.*

### 6.16.1 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.

### 6.16.2 Constructor & Destructor Documentation

#### 6.16.2.1 BEventPipe::BEventPipe ()

#### 6.16.2.2 BEventPipe::~~BEventPipe ()

### 6.16.3 Member Function Documentation

#### 6.16.3.1 BError BEventPipe::sendEvent (BEvent \* event)

Send an event.

#### 6.16.3.2 BError BEventPipe::getEvent (BEvent \* event, int timeOutUs = -1)

Receive the event.

### 6.16.3.3 int BEventPipe::getReceiveFd ()

returns the receive file descriptor for the poll system call

## 6.16.4 Member Data Documentation

### 6.16.4.1 int BEventPipe::ofds[2] [private]

File descriptors for pipe.

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

- [BEvent.h](#)
- [BEvent.cpp](#)

## 6.17 BFile Class Reference

File operations class.

```
#include <BFile.h>
```

### Public Member Functions

- [BFile](#) ()  
• [BFile](#) ([BString](#) name, [BString](#) mode)  
*Create opened specifed file.*
- [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 close](#) ()  
*Close file.*
- [BError error](#) ()  
*Returns current error state.*
- FILE \* [getFd](#) ()  
*File descriptor.*
- int [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).*
- int [write](#) (const void \*buf, int nbytes)  
*Write to file.*
- int [writeString](#) (const [BString](#) &str)  
*Write string to file.*
- int [seek](#) (int pos, int whence)

*Set seek position.*

- `int printf (const char *fmt,...)`  
*Formatted print into the file.*
- `BFile & operator= (const BFile &file)`

## Private Attributes

- `FILE * ofile`
- `BString ofileName`
- `BString omode`
- `BError oerror`

## 6.17.1 Detailed Description

File operations class.

## 6.17.2 Constructor & Destructor Documentation

### 6.17.2.1 BFile::BFile ()

### 6.17.2.2 BFile::BFile (BString name, BString mode)

Create opened specifed file.

### 6.17.2.3 BFile::BFile (const BFile &file)

Create opened specified file.

### 6.17.2.4 BFile::~~BFile ()

## 6.17.3 Member Function Documentation

### 6.17.3.1 BError BFile::open (BString name, BString mode)

Open file.

### 6.17.3.2 BError BFile::open (FILE \*file)

Assign object to opened file handle.

### 6.17.3.3 BError BFile::close ()

Close file.

**6.17.3.4 BError BFile::error ()**

Returns current error state.

**6.17.3.5 FILE \* BFile::getFd ()**

File descriptor.

**6.17.3.6 int BFile::length ()**

File size in bytes.

**6.17.3.7 int BFile::setVBuf (char \* *buf*, int *mode*, size\_t *size*)**

Set stream buffering options.

**6.17.3.8 int BFile::read (void \* *buf*, int *nbytes*)**

Read from file.

**6.17.3.9 int BFile::readString (BString & *str*)**

Read string. (ref fgets).

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

Write to file.

**6.17.3.11 int BFile::writeString (const BString & *str*)**

Write string to file.

**6.17.3.12 int BFile::seek (int *pos*, int *whence*)**

Set seek position.

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

Formatted print into the file.

#### 6.17.3.14 [BFile](#) & [BFile::operator=](#) (const [BFile](#) & *file*)

### 6.17.4 Member Data Documentation

6.17.4.1 `FILE* BFile::ofile` [private]

6.17.4.2 `BString BFile::ofilename` [private]

6.17.4.3 `BString BFile::omode` [private]

6.17.4.4 `BError BFile::oerror` [private]

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

- [BFile.h](#)
- [BFile.cpp](#)

## 6.18 BIter Class Reference

Iterator for [BList](#).

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

### Public Member Functions

- [BIter](#) (void \*i=0)
- [operator void \\*](#) ()
- [int operator==](#) (const [BIter](#) &i)

### Private Attributes

- void \* [oi](#)

#### 6.18.1 Detailed Description

Iterator for [BList](#).

#### 6.18.2 Constructor & Destructor Documentation

**6.18.2.1** [BIter::BIter](#) (void \* *i* = 0) [inline]

#### 6.18.3 Member Function Documentation

**6.18.3.1** [BIter::operator void \\*](#) () [inline]

**6.18.3.2** [int BIter::operator==](#) (const [BIter](#) & *i*) [inline]

#### 6.18.4 Member Data Documentation

**6.18.4.1** void\* [BIter::oi](#) [private]

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

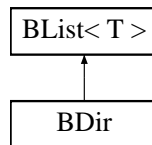
- [BList.h](#)

## 6.19 BList< T > Class Template Reference

Template based list class.

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

Inheritance diagram for BList< T >::



### 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)  
*Iterator for pos item in list.*
- int [position](#) ([BIter](#) i)  
*Postition in list item with iterator i.*
- unsigned int [number](#) ()

*Number of items in list.*

- `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 first item.*
- `void push (const T &i)`  
*Push item onto list.*
- `T pop ()`  
*Pop item from list deleting item.*
- `void queueAdd (const T &i)`  
*Add item to end of list.*
- `T queueGet ()`  
*Get item from front of list deleting item.*

- void `append` (const `BList`< T > &l)  
*Append list to 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[ ]` (`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`

## Private Member Functions

- virtual `Node` \* `nodeCreate` ()

## Classes

- class `Node`

### 6.19.1 Detailed Description

`template<class T> class BList< T >`

Template based list class.

### 6.19.2 Member Typedef Documentation

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

Prototype for sorting function.

### 6.19.3 Constructor & Destructor Documentation

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

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

**6.19.3.3** `template<class T> BList< T >::~~BList () [virtual]`

### 6.19.4 Member Function Documentation

**6.19.4.1** `template<class T> void BList< T >::start (BIter & i) const`

Iterator to start of list.

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

Iterator for start of list.

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

Iterator for end of list.

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

Iterator for end of list.

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

Iterator for next item in list.

**6.19.4.6** `template<class T> void BList< T >::prev (BIter & i)`

Iterator for previous item in list.

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

Iterator for pos item in list.

**6.19.4.8** `template<class T> int BList< T >::position (BIter i)`

Postition in list item with iterator i.

**6.19.4.9** `template<class T> unsigned int BList< T >::number ()`

Number of items in list.

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

True if iterator refers to last item.

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

Get first item in list.

**6.19.4.12** `template<class T> T & BList< T >::rear ()`

Get last item in list.

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

Get item specified by iterator in list.

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

Get item specified by iterator in list.

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

Append item to list.

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

Insert item before item.

Reimplemented in [BEntryList](#).

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

Insert item after item.

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

Clear the list.

Reimplemented in [BDir](#), [BEntryList](#), and [BEntryFile](#).

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

Delete specified item.

Reimplemented in [BEntryList](#).

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

Delete last item.

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

Delete first item.

**6.19.4.22** `template<class T> void BList< T >::push (const T & i)`

Push item onto list.

**6.19.4.23** `template<class T> T BList< T >::pop ()`

Pop item from list deleting item.

**6.19.4.24** `template<class T> void BList< T >::queueAdd (const T & i)`

Add item to end of list.

**6.19.4.25** `template<class T> T BList< T >::queueGet ()`

Get item from front of list deleting item.

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

Append list to list.

**6.19.4.27** `template<class T> void BList< T >::swap (BIter i1, BIter i2)`

Swap two items in list.

**6.19.4.28** `template<class T> void BList< T >::sort ()`

Sort list based on get(i) values.

**6.19.4.29** `template<class T> void BList< T >::sort (SortFunc func)`

Sort list based on Sort func.

**6.19.4.30** `template<class T> BList< T > & BList< T >::operator= (const BList< T > & l)`**6.19.4.31** `]`

`template<class T> T & BList< T >::operator[] (int i)`

**6.19.4.32** ]

```
template<class T> const T & BList< T >::operator[] (int i) const
```

**6.19.4.33** ]

```
template<class T> T & BList< T >::operator[] (BIter i)
```

**6.19.4.34** ]

```
template<class T> const T & BList< T >::operator[] (BIter i) const
```

**6.19.4.35** `template<class T> BList< T > BList< T >::operator+ (const BList< T > &l) const`

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

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

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

**6.19.4.39** `template<class T> BList< T >::Node * BList< T >::nodeCreate ()` [private, virtual]

**6.19.5 Member Data Documentation**

**6.19.5.1** `template<class T> Node* BList< T >::onodes` [protected]

**6.19.5.2** `template<class T> unsigned int BList< T >::olength` [protected]

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

- [BList.h](#)
- [BList\\_func.h](#)

## 6.20 BList< T >::Node Class Reference

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

### Public Member Functions

- [Node](#) (const T &i)

### Public Attributes

- [Node](#) \* [next](#)
- [Node](#) \* [prev](#)
- T [item](#)

```
template<class T> class BList< T >::Node
```

### 6.20.1 Constructor & Destructor Documentation

6.20.1.1 `template<class T> BList< T >::Node::Node (const T & i) [inline]`

### 6.20.2 Member Data Documentation

6.20.2.1 `template<class T> Node* BList< T >::Node::next`

6.20.2.2 `template<class T> Node* BList< T >::Node::prev`

6.20.2.3 `template<class T> T BList< T >::Node::item`

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

- [BList.h](#)

## 6.21 BMutex Class Reference

Mutex class.

```
#include <BMutex.h>
```

### Public Member Functions

- [BMutex](#) ()
- [BMutex](#) (const [BMutex](#) &mutex)
- [~BMutex](#) ()
- int [lock](#) ()  
*Set lock, wait in necessary.*
- int [unlock](#) ()  
*Unlock the lock.*
- int [tryLock](#) ()  
*Test the lock.*
- [BMutex](#) & [operator=](#) (const [BMutex](#) &mutex)

### Private Attributes

- pthread\_mutex\_t [omutex](#)

### 6.21.1 Detailed Description

Mutex class.

### 6.21.2 Constructor & Destructor Documentation

#### 6.21.2.1 BMutex::BMutex ()

#### 6.21.2.2 BMutex::BMutex (const [BMutex](#) & mutex)

#### 6.21.2.3 BMutex::~~BMutex ()

### 6.21.3 Member Function Documentation

#### 6.21.3.1 int BMutex::lock ()

Set lock, wait in necessary.

#### 6.21.3.2 int BMutex::unlock ()

Unlock the lock.

### 6.21.3.3 int BMutex::tryLock ()

Test the lock.

### 6.21.3.4 [BMutex](#) & BMutex::operator= (const [BMutex](#) & *mutex*)

## 6.21.4 Member Data Documentation

### 6.21.4.1 pthread\_mutex\_t [BMutex::omutex](#) [private]

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

- [BMutex.h](#)
- [BMutex.cpp](#)

## 6.22 BNameValue< T > Class Template Reference

```
#include <BNameValue.h>
```

### Public Member Functions

- [BNameValue \(\)](#)
- [BNameValue \(BString name, const T &value\)](#)
- [BString getName \(\)](#)
- [T & getValue \(\)](#)

### Private Attributes

- [BString oname](#)
- [T ovalue](#)

```
template<class T> class BNameValue< T >
```

#### 6.22.1 Constructor & Destructor Documentation

6.22.1.1 `template<class T> BNameValue< T >::BNameValue \(\) [inline]`

6.22.1.2 `template<class T> BNameValue< T >::BNameValue \(BString name, const T & value\) [inline]`

#### 6.22.2 Member Function Documentation

6.22.2.1 `template<class T> BString BNameValue< T >::getName \(\) [inline]`

6.22.2.2 `template<class T> T& BNameValue< T >::getValue \(\) [inline]`

#### 6.22.3 Member Data Documentation

6.22.3.1 `template<class T> BString BNameValue< T >::oname [private]`

6.22.3.2 `template<class T> T BNameValue< T >::ovalue [private]`

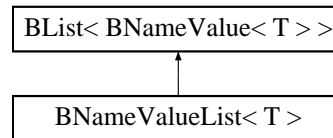
The documentation for this class was generated from the following file:

- [BNameValue.h](#)

## 6.23 BNameValueList< T > Class Template Reference

```
#include <BNameValue.h>
```

Inheritance diagram for BNameValueList< T >::



### Public Member Functions

- T \* [find](#) ([BString](#) name)

```
template<class T> class BNameValueList< T >
```

### 6.23.1 Member Function Documentation

6.23.1.1 `template<class T> T* BNameValueList< T >::find (BString name) [inline]`

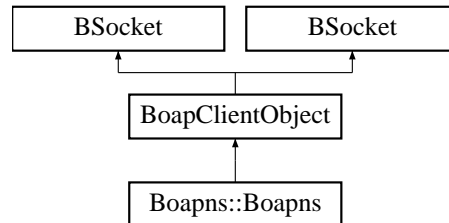
The documentation for this class was generated from the following file:

- [BNameValue.h](#)

## 6.24 BoapClientObject Class Reference

```
#include <BoapSimple.h>
```

Inheritance diagram for BoapClientObject::



### Public Member Functions

- [BoapClientObject](#) (BString name="")
- [BError connectService](#) (BString name)
- [BError disconnectService](#) ()
- [BString getServiceName](#) ()
- [BError ping](#) (BUInt32 &apiVersion)
- [BError setConnectionPriority](#) ([BoapPriority](#) priority)
- void [setMaxLength](#) (BUInt32 maxLength)
- [BoapClientObject](#) (BString name)
- [BError connectService](#) (BString name)

### Protected Member Functions

- [BError pingLocked](#) (BUInt32 &apiVersion)
- [BError checkApiVersion](#) ()
- [BError performSend](#) ([BoapPacket](#) &tx)
- [BError performRecv](#) ([BoapPacket](#) &rx)
- [BError performCall](#) ([BoapPacket](#) &tx, [BoapPacket](#) &rx)
- [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



## 6.24.1 Constructor & Destructor Documentation

6.24.1.1 **BoapClientObject::BoapClientObject** (**BString** *name* = " ")

6.24.1.2 **BoapClientObject::BoapClientObject** (**BString** *name*)

## 6.24.2 Member Function Documentation

6.24.2.1 **BError** **BoapClientObject::connectService** (**BString** *name*)

6.24.2.2 **BError** **BoapClientObject::disconnectService** ()

6.24.2.3 **BString** **BoapClientObject::getServiceName** ()

6.24.2.4 **BError** **BoapClientObject::ping** (**BUInt32** & *apiVersion*)

6.24.2.5 **BError** **BoapClientObject::setConnectionPriority** (**BoapPriority** *priority*)

6.24.2.6 **void** **BoapClientObject::setMaxLength** (**BUInt32** *maxLength*)

6.24.2.7 **BError** **BoapClientObject::pingLocked** (**BUInt32** & *apiVersion*) [protected]

6.24.2.8 **BError** **BoapClientObject::checkApiVersion** () [protected]

6.24.2.9 **BError** **BoapClientObject::performSend** (**BoapPacket** & *tx*) [protected]

6.24.2.10 **BError** **BoapClientObject::performRecv** (**BoapPacket** & *rx*) [protected]

6.24.2.11 **BError** **BoapClientObject::performCall** (**BoapPacket** & *tx*, **BoapPacket** & *rx*)  
[protected]

6.24.2.12 **BError** **BoapClientObject::connectService** (**BString** *name*)

6.24.2.13 **BError** **BoapClientObject::performSend** (**BoapPacket** & *tx*) [protected]

6.24.2.14 **BError** **BoapClientObject::performRecv** (**BoapPacket** & *rx*) [protected]

6.24.2.15 **BError** **BoapClientObject::performCall** (**BoapPacket** & *tx*, **BoapPacket** & *rx*)  
[protected]

## 6.24.3 Member Data Documentation

6.24.3.1 **BString** **BoapClientObject::oname** [protected]

6.24.3.2 **BUInt32** **BoapClientObject::oapiVersion** [protected]

6.24.3.3 **BoapPriority** **BoapClientObject::opriority** [protected]

6.24.3.4 **BoapService** **BoapClientObject::oservice** [protected]

6.24.3.5 **int** **BoapClientObject::oconnected** [protected]

6.24.3.6 **BUInt32** **BoapClientObject::omaxLength** [protected]

6.24.3.7 **BoapPacket** **BoapClientObject::otx** [protected]

6.24.3.8 **BoapPacket** **BoapClientObject::orx** [protected]

6.24.3.9 **BMutex** **BoapClientObject::olock** [protected]

- [Boap.h](#)
- [BoapSimple.h](#)
- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.25 Boapns::BoapEntry Class Reference

```
#include <BoapnsD.h>
```

### Public Member Functions

- [BoapEntry \(\)](#)
- [BoapEntry \(BString pname, BString phostName, BList< BString > paddressList, UInt32 pport, UInt32 pservice\)](#)

### Public Attributes

- [BString name](#)
- [BString hostName](#)
- [BList< BString > addressList](#)
- [UInt32 port](#)
- [UInt32 service](#)

### 6.25.1 Constructor & Destructor Documentation

#### 6.25.1.1 Boapns::BoapEntry::BoapEntry ()

#### 6.25.1.2 Boapns::BoapEntry::BoapEntry ([BString pname](#), [BString phostName](#), [BList< BString > paddressList](#), [UInt32 pport](#), [UInt32 pservice](#))

### 6.25.2 Member Data Documentation

#### 6.25.2.1 [BString Boapns::BoapEntry::name](#)

#### 6.25.2.2 [BString Boapns::BoapEntry::hostName](#)

#### 6.25.2.3 [BList<BString> Boapns::BoapEntry::addressList](#)

#### 6.25.2.4 [UInt32 Boapns::BoapEntry::port](#)

#### 6.25.2.5 [UInt32 Boapns::BoapEntry::service](#)

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

- [BoapnsD.h](#)
- [BoapnsD.cc](#)

## 6.26 BoapFuncEntry Class Reference

```
#include <BoapSimple.h>
```

### Public Member Functions

- [BoapFuncEntry](#) (int cmd, [BoapFunc](#) func)
- [BoapFuncEntry](#) (int cmd, [BoapFunc](#) func)

### Public Attributes

- [UInt32](#) ocmd
- [BoapFunc](#) ofunc

### 6.26.1 Constructor & Destructor Documentation

**6.26.1.1** [BoapFuncEntry::BoapFuncEntry](#) (int *cmd*, [BoapFunc](#) *func*)

**6.26.1.2** [BoapFuncEntry::BoapFuncEntry](#) (int *cmd*, [BoapFunc](#) *func*)

### 6.26.2 Member Data Documentation

**6.26.2.1** [UInt32](#) [BoapFuncEntry::ocmd](#)

**6.26.2.2** [BoapFunc](#) [BoapFuncEntry::ofunc](#)

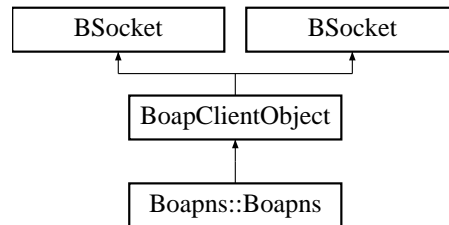
The documentation for this class was generated from the following files:

- [Boap.h](#)
- [BoapSimple.h](#)
- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.27 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)

### 6.27.1 Constructor & Destructor Documentation

6.27.1.1 [Boapns::Boapns::Boapns](#) ([BString](#) name = "")

### 6.27.2 Member Function Documentation

6.27.2.1 [BError](#) [Boapns::Boapns::getVersion](#) ([BString](#) & version)

6.27.2.2 [BError](#) [Boapns::Boapns::getEntryList](#) ([BList](#)< [BoapEntry](#) > & entryList)

6.27.2.3 [BError](#) [Boapns::Boapns::getEntry](#) ([BString](#) name, [BoapEntry](#) & entry)

6.27.2.4 [BError](#) [Boapns::Boapns::addEntry](#) ([BoapEntry](#) entry)

6.27.2.5 [BError](#) [Boapns::Boapns::delEntry](#) ([BString](#) name)

6.27.2.6 [BError](#) [Boapns::Boapns::getNewName](#) ([BString](#) & name)

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

- [BoapnsC.h](#)

## 6.28 BoapPacket Class Reference

```
#include <BoapSimple.h>
```

### Public Member Functions

- [BoapPacket](#) ()
- [~BoapPacket](#) ()
- [int](#) [resize](#) (int size)
- [BError](#) [setData](#) (void \*data, int nbytes)
- [int](#) [nbytes](#) ()
- [char \\*](#) [data](#) ()
- [int](#) [peekHead](#) ([BoapPacketHead](#) &head)
- [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](#) ([Int64](#) v)
- [int](#) [push](#) ([UInt64](#) v)
- [int](#) [push](#) (const [BString](#) &v)
- [int](#) [push](#) ([Double](#) v)
- [int](#) [push](#) (const [BError](#) &v)
- [int](#) [push](#) ([UInt32](#) nBytes, const void \*data, char \*swapType="l")
- [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](#) ([Int64](#) &v)
- [int](#) [pop](#) ([UInt64](#) &v)
- [int](#) [pop](#) ([BString](#) &v)
- [int](#) [pop](#) ([Double](#) &v)
- [int](#) [pop](#) ([BError](#) &v)
- [int](#) [pop](#) ([UInt32](#) nBytes, void \*data, char \*swapType="l")
- [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)

## Private Member Functions

- void [copyWithSwap](#) (void \*dst, const void \*src, UInt32 nBytes, char \*swapType)
- void [updateLen](#) ()
- void [updateLen](#) ()

## Private Attributes

- int [osize](#)
- int [onbytes](#)
- char \* [odata](#)
- int [opos](#)
- char \* [odata](#)



## 6.28.1 Constructor & Destructor Documentation

6.28.1.1 `BoapPacket::BoapPacket ()`

6.28.1.2 `BoapPacket::~~BoapPacket ()`

6.28.1.3 `BoapPacket::BoapPacket ()`

6.28.1.4 `BoapPacket::~~BoapPacket ()`

## 6.28.2 Member Function Documentation

6.28.2.1 `int BoapPacket::resize (int size)`

6.28.2.2 `BError BoapPacket::setData (void * data, int nbytes)`

6.28.2.3 `int BoapPacket::nbytes ()`

6.28.2.4 `char * BoapPacket::data ()`

6.28.2.5 `int BoapPacket::peekHead (BoapPacketHead & head)`

6.28.2.6 `int BoapPacket::pushHead (BoapPacketHead & head)`

6.28.2.7 `int BoapPacket::push (Int8 v)`

6.28.2.8 `int BoapPacket::push (UInt8 v)`

6.28.2.9 `int BoapPacket::push (Int16 v)`

6.28.2.10 `int BoapPacket::push (UInt16 v)`

6.28.2.11 `int BoapPacket::push (Int32 v)`

6.28.2.12 `int BoapPacket::push (UInt32 v)`

6.28.2.13 `int BoapPacket::push (Int64 v)`

6.28.2.14 `int BoapPacket::push (UInt64 v)`

6.28.2.15 `int BoapPacket::push (const BString & v)`

6.28.2.16 `int BoapPacket::push (Double v)`

6.28.2.17 `int BoapPacket::push (const BError & v)`

6.28.2.18 `int BoapPacket::push (UInt32 nBytes, const void * data, char * swapType = "1")`

6.28.2.19 `int BoapPacket::popHead (BoapPacketHead & head)`

6.28.2.20 `int BoapPacket::pop (Int8 & v)`

6.28.2.21 `int BoapPacket::pop (UInt8 & v)`

6.28.2.22 `int BoapPacket::pop (Int16 & v)`

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6.28.2.23 `int BoapPacket::pop (UInt16 & v)`

6.28.2.24 `int BoapPacket::pop (Int32 & v)`

6.28.2.25 `int BoapPacket::pop (UInt32 & v)`

- [Boap.h](#)
- [BoapSimple.h](#)
- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.29 BoapPacketHead Struct Reference

```
#include <BoapSimple.h>
```

### Public Attributes

- [UInt32 type](#)
- [UInt32 length](#)
- [UInt32 service](#)
- [UInt32 cmd](#)
- [BoapType type](#)
- [BoapService service](#)
- [UInt32 reserved](#) [12]

### 6.29.1 Member Data Documentation

**6.29.1.1**   [UInt32 BoapPacketHead::type](#)

**6.29.1.2**   [UInt32 BoapPacketHead::length](#)

**6.29.1.3**   [UInt32 BoapPacketHead::service](#)

**6.29.1.4**   [UInt32 BoapPacketHead::cmd](#)

**6.29.1.5**   [BoapType BoapPacketHead::type](#)

**6.29.1.6**   [BoapService BoapPacketHead::service](#)

**6.29.1.7**   [UInt32 BoapPacketHead::reserved](#)[12]

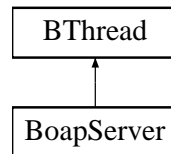
The documentation for this struct was generated from the following files:

- [Boap.h](#)
- [BoapSimple.h](#)

## 6.30 BoapServer Class Reference

```
#include <BoapSimple.h>
```

Inheritance diagram for BoapServer::



### Public Types

- enum { **NOTHEADS** = 0, **THREADED** = 1 }

### Public Member Functions

- **BoapServer** ()
- **~BoapServer** ()
- **BError** **init** (**BString** boapNsHost="", int threaded=0, int isBoapns=0)
- **BError** **run** (int inThread=0)
- **BError** **processEvent** (**BoapPacket** &rx)
- **BError** **addObject** (**BoapServiceObject** \*object)
- **BError** **process** (**BoapServerConnection** \*conn, **BoapPacket** &rx, **BoapPacket** &tx)
- **BError** **sendEvent** (**BoapPacket** &tx)
- **BSocket** & **getSocket** ()
- **BSocket** & **getEventSocket** ()
- **BError** **processEvent** (int fd)
- **BString** **getHostName** ()
- void **clientGone** (**BoapServerConnection** \*client)
- int **getConnectionsNumber** ()
- **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** ()

### Private Member Functions

- void \* **function** ()

## Private Attributes

- int `othreaded`
- int `oisBoapns`
- `Boapns::Boapns * oboapns`
- `BList< BoapServerConnection * > oclients`
- `BEventInt oclientGoneEvent`
- `BList< BoapServiceEntry > oservices`
- `BPoll opoll`
- `BSocket onet`
- `BSocket onetEvent`
- `BSocketAddressINET onetEventAddress`
- `BString ohostName`
- int `oboapNs`
- `BoapPacket orx`
- `BoapPacket otx`
- `BList< BoapServiceEntry > oservices`

## 6.30.1 Member Enumeration Documentation

### 6.30.1.1 anonymous enum

Enumerator:

*NOTTHREADS*

*THREADED*

## 6.30.2 Constructor & Destructor Documentation

6.30.2.1 **BoapServer::BoapServer ()**

6.30.2.2 **BoapServer::~~BoapServer ()**

6.30.2.3 **BoapServer::BoapServer ()**

## 6.30.3 Member Function Documentation

6.30.3.1 **BError** **BoapServer::init** (**BString** *boapNsHost* = "", *int threaded* = 0, *int isBoapns* = 0)

6.30.3.2 **BError** **BoapServer::run** (*int inThread* = 0)

6.30.3.3 **BError** **BoapServer::processEvent** (**BoapPacket** & *rx*)

6.30.3.4 **BError** **BoapServer::addObject** (**BoapServiceObject** \* *object*)

6.30.3.5 **BError** **BoapServer::process** (**BoapServerConnection** \* *conn*, **BoapPacket** & *rx*, **BoapPacket** & *tx*)

6.30.3.6 **BError** **BoapServer::sendEvent** (**BoapPacket** & *tx*)

6.30.3.7 **BSocket** & **BoapServer::getSocket** ()

6.30.3.8 **BSocket** & **BoapServer::getEventSocket** ()

6.30.3.9 **BError** **BoapServer::processEvent** (*int fd*)

6.30.3.10 **BString** **BoapServer::getHostName** ()

6.30.3.11 **void** **BoapServer::clientGone** (**BoapServerConnection** \* *client*)

6.30.3.12 **int** **BoapServer::getConnectionsNumber** ()

6.30.3.13 **void** \* **BoapServer::function** () [private, virtual]

Reimplemented from **BThread**.



- 6.30.3.14 **BError** BoapServer::init (int *boapNs* = 0)
- 6.30.3.15 **BError** BoapServer::run ()
- 6.30.3.16 **BError** BoapServer::processEvent (**BoapPacket** & *rx*)
- 6.30.3.17 **BError** BoapServer::addObject (**BoapServiceObject** \* *object*)
- 6.30.3.18 **BError** BoapServer::process (int *fd*)
- 6.30.3.19 **BError** BoapServer::sendEvent (**BoapPacket** & *tx*)
- 6.30.3.20 **BSocket**& BoapServer::getSocket ()
- 6.30.3.21 **BSocket**& BoapServer::getEventSocket ()
- 6.30.3.22 **BError** BoapServer::processEvent (int *fd*)
- 6.30.3.23 **BString** BoapServer::getHostName ()

## 6.30.4 Member Data Documentation

- 6.30.4.1 int **BoapServer::othreaded** [private]
- 6.30.4.2 int **BoapServer::oisBoapns** [private]
- 6.30.4.3 **Boapns::Boapns\*** **BoapServer::oboapns** [private]
- 6.30.4.4 **BList<BoapServerConnection\*>** **BoapServer::oclients** [private]
- 6.30.4.5 **BEventInt** **BoapServer::oclientGoneEvent** [private]
- 6.30.4.6 **BList<BoapServiceEntry>** **BoapServer::oservices** [private]
- 6.30.4.7 **BPoll** **BoapServer::opoll** [private]
- 6.30.4.8 **BSocket** **BoapServer::onet** [private]
- 6.30.4.9 **BSocket** **BoapServer::onetEvent** [private]
- 6.30.4.10 **BSocketAddressINET** **BoapServer::onetEventAddress** [private]
- 6.30.4.11 **BString** **BoapServer::ohostName** [private]
- 6.30.4.12 int **BoapServer::oboapNs** [private]
- 6.30.4.13 **BoapPacket** **BoapServer::orx** [private]
- 6.30.4.14 **BoapPacket** **BoapServer::otx** [private]
- 6.30.4.15 **BList<BoapServiceEntry>** **BoapServer::oservices** [private]

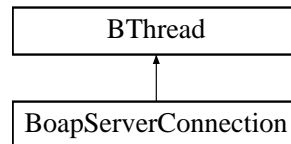
The documentation for this class was generated from the following files:

- [Boap.h](#)
- [BoapSimple.h](#)
- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.31 BoapServerConnection Class Reference

```
#include <Boap.h>
```

Inheritance diagram for BoapServerConnection::



### Public Member Functions

- `BoapServerConnection` (`BoapServer` &`boapServer`, `int fd`)
- `BError` `process` ()
- `BSocket` & `getSocket` ()
- `void` `setMaxLength` (`BUInt32` `maxLength`)

### Private Member Functions

- `void *` `function` ()

### Private Attributes

- `BoapServer` & `oboapServer`
- `BSocket` `osocket`
- `BoapPacket` `orx`
- `BoapPacket` `otx`
- `BUInt32` `omaxLength`

#### 6.31.1 Constructor & Destructor Documentation

6.31.1.1 `BoapServerConnection::BoapServerConnection` (`BoapServer` & `boapServer`, `int fd`)

#### 6.31.2 Member Function Documentation

6.31.2.1 `BError` `BoapServerConnection::process` ()

6.31.2.2 `BSocket` & `BoapServerConnection::getSocket` ()

6.31.2.3 `void` `BoapServerConnection::setMaxLength` (`BUInt32` `maxLength`)

6.31.2.4 `void *` `BoapServerConnection::function` () [`private`, `virtual`]

Reimplemented from `BThread`.

### 6.31.3 Member Data Documentation

**6.31.3.1** [BoapServer& BoapServerConnection::oboapServer](#) [private]

**6.31.3.2** [BSocket BoapServerConnection::osocket](#) [private]

**6.31.3.3** [BoapPacket BoapServerConnection::orx](#) [private]

**6.31.3.4** [BoapPacket BoapServerConnection::otx](#) [private]

**6.31.3.5** [BUInt32 BoapServerConnection::omaxLength](#) [private]

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

- [Boap.h](#)
- [Boap.cpp](#)

## 6.32 BoapServiceEntry Class Reference

```
#include <BoapSimple.h>
```

### Public Member Functions

- [BoapServiceEntry](#) ([BoapService](#) service=0, [BoapServiceObject](#) \*object=0)
- [BoapServiceEntry](#) ([BoapService](#) service=0, [BoapServiceObject](#) \*object=0)

### Public Attributes

- [BoapService](#) oservice
- [BoapServiceObject](#) \* oobject
- [BoapServiceObject](#) \* oobject

### 6.32.1 Constructor & Destructor Documentation

**6.32.1.1** [BoapServiceEntry::BoapServiceEntry](#) ([BoapService](#) service = 0, [BoapServiceObject](#) \* object = 0) [inline]

**6.32.1.2** [BoapServiceEntry::BoapServiceEntry](#) ([BoapService](#) service = 0, [BoapServiceObject](#) \* object = 0) [inline]

### 6.32.2 Member Data Documentation

**6.32.2.1** [BoapService](#) [BoapServiceEntry::oservice](#)

**6.32.2.2** [BoapServiceObject](#)\* [BoapServiceEntry::oobject](#)

**6.32.2.3** [BoapServiceObject](#)\* [BoapServiceEntry::oobject](#)

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

- [Boap.h](#)
- [BoapSimple.h](#)

## 6.33 BoapServiceObject Class Reference

```
#include <BoapSimple.h>
```

### Public Member Functions

- [BoapServiceObject](#) ([BoapServer](#) &server, [BString](#) name="")
- virtual [~BoapServiceObject](#) ()
- [BError](#) setName ([BString](#) name)
- [BError](#) sendEvent ([BString](#) signalName, [Int32](#) arg)
- virtual [BError](#) processEvent ([BString](#) objectName, [BString](#) name, [Int32](#) 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
- [BoapServer](#) & oserver
- [BList](#)< [BoapFuncEntry](#) > ofuncList



### 6.33.1 Constructor & Destructor Documentation

6.33.1.1 **BoapServiceObject::BoapServiceObject** (**BoapServer** & *server*, **BString** *name* = "")

6.33.1.2 **BoapServiceObject::~~BoapServiceObject** () [virtual]

6.33.1.3 **BoapServiceObject::BoapServiceObject** (**BoapServer** & *server*, **BString** *name*)

6.33.1.4 **virtual BoapServiceObject::~~BoapServiceObject** () [virtual]

### 6.33.2 Member Function Documentation

6.33.2.1 **BError** **BoapServiceObject::setName** (**BString** *name*)

6.33.2.2 **BError** **BoapServiceObject::sendEvent** (**BString** *signalName*, **Int32** *arg*)

6.33.2.3 **BError** **BoapServiceObject::processEvent** (**BString** *objectName*, **BString** *name*, **Int32** *arg*)  
[virtual]

6.33.2.4 **BString** **BoapServiceObject::name** ()

6.33.2.5 **BError** **BoapServiceObject::doPing** (**BoapServerConnection** \* *conn*, **BoapPacket** & *rx*,  
**BoapPacket** & *tx*)

6.33.2.6 **BError** **BoapServiceObject::doConnectionPriority** (**BoapServerConnection** \* *conn*,  
**BoapPacket** & *rx*, **BoapPacket** & *tx*)

6.33.2.7 **BError** **BoapServiceObject::process** (**BoapServerConnection** \* *conn*, **BoapPacket** & *rx*,  
**BoapPacket** & *tx*)

6.33.2.8 **BError** **BoapServiceObject::processEvent** (**BoapPacket** & *rx*) [virtual]

6.33.2.9 **BError** **BoapServiceObject::sendEvent** (**BoapPacket** & *tx*) [protected]

6.33.2.10 **BError** **BoapServiceObject::sendEvent** (**BString** *signalName*, **Int32** *arg*)

6.33.2.11 **virtual BError** **BoapServiceObject::processEvent** (**BString** *objectName*, **BString** *name*,  
**Int32** *arg*) [virtual]

6.33.2.12 **BString** **BoapServiceObject::name** ()

6.33.2.13 **BError** **BoapServiceObject::process** (**BoapPacket** & *rx*, **BoapPacket** & *tx*)

6.33.2.14 **virtual BError** **BoapServiceObject::processEvent** (**BoapPacket** & *rx*) [virtual]

6.33.2.15 **BError** **BoapServiceObject::sendEvent** (**BoapPacket** & *tx*) [protected]

### 6.33.3 Member Data Documentation

6.33.3.1 **BoapServer** & **BoapServiceObject::oserver** [protected]

6.33.3.2 **BString** **BoapServiceObject::oname** [protected]

6.33.3.3 **BUInt32** **BoapServiceObject::oapiVersion** [protected]

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6.33.3.4 **BList<BoapFuncEntry>** **BoapServiceObject::ofuncList** [protected]

6.33.3.5 **BoapServer** & **BoapServiceObject::oserver** [protected]

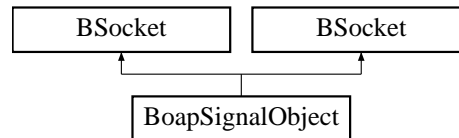
6.33.3.6 **BList<BoapFuncEntry>** **BoapServiceObject::ofuncList** [protected]

- [Boap.h](#)
- [BoapSimple.h](#)
- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.34 BoapSignalObject Class Reference

```
#include <BoapSimple.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](#)

### 6.34.1 Constructor & Destructor Documentation

6.34.1.1 [BoapSignalObject::BoapSignalObject \(\)](#)

6.34.1.2 [BoapSignalObject::BoapSignalObject \(\)](#)

### 6.34.2 Member Function Documentation

6.34.2.1 [BError BoapSignalObject::performSend \(BoapPacket & tx\)](#) [protected]

6.34.2.2 [BError BoapSignalObject::performSend \(BoapPacket & tx\)](#) [protected]

### 6.34.3 Member Data Documentation

6.34.3.1 [BoapPacket BoapSignalObject::otx](#) [protected]

6.34.3.2 [BoapPacket BoapSignalObject::orx](#) [protected]

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

- [Boap.h](#)
- [BoapSimple.h](#)

- [Boap.cpp](#)
- [BoapSimple.cc](#)

## 6.35 BObject Class Reference

```
#include <BObject.h>
```

### Public Member Functions

- [BObject](#) ()
- virtual [~BObject](#) ()
- virtual [BError](#) [getBinary](#) (BDataBuf &buf)
- virtual [BError](#) [setBinary](#) (BDataBuf &buf)
- virtual [BString](#) [getString](#) ()
- virtual [BError](#) [setString](#) ([BString](#) str)
- virtual [BMemberList](#) [getMemberList](#) ()
- virtual [BError](#) [addMember](#) ([BString](#) name, [BObject](#) \*object)
- virtual void [printIt](#) ()
- virtual BType & [getType](#) ()

### Static Public Member Functions

- static [BObject](#) \* [createObj](#) ()

### Static Public Attributes

- static BType [otype](#)

## 6.35.1 Constructor & Destructor Documentation

6.35.1.1 **BObject::BObject** ()

6.35.1.2 **BObject::~~BObject** () [virtual]

## 6.35.2 Member Function Documentation

6.35.2.1 **BError** **BObject::getBinary** (BDataBuf & *buf*) [virtual]

6.35.2.2 **BError** **BObject::setBinary** (BDataBuf & *buf*) [virtual]

6.35.2.3 **BString** **BObject::getString** () [virtual]

6.35.2.4 **BError** **BObject::setString** (**BString** *str*) [virtual]

6.35.2.5 **BMemberList** **BObject::getMemberList** () [virtual]

6.35.2.6 **BError** **BObject::addMember** (**BString** *name*, **BObject** \* *object*) [virtual]

6.35.2.7 **void** **BObject::printIt** () [virtual]

6.35.2.8 **BType** & **BObject::getType** () [virtual]

6.35.2.9 **BObject** \* **BObject::createObj** () [static]

## 6.35.3 Member Data Documentation

6.35.3.1 **BType** **BObject::otype** [static]

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

- [BObject.h](#)
- [BObject.cc](#)

## 6.36 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 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.*
- int [getPollFdsNum](#) ()
- [PollFd \\*](#) [getPollFds](#) ()
- void [clear](#) ()

### Private Member Functions

- int [nextFd](#) (int i)

### Private Attributes

- int [ofdsNum](#)  
*The number of FD's in list.*
- [PollFd \\*](#) [ofds](#)  
*The list of poll fd's.*
- int [ofdsNext](#)  
*The next list entry for round robin polling.*

#### 6.36.1 Detailed Description

This class provides an interface for polling a number of file descriptors. It uses round robin polling.

## 6.36.2 Member Typedef Documentation

### 6.36.2.1 typedef struct pollfd [BPoll::PollFd](#)

## 6.36.3 Constructor & Destructor Documentation

### 6.36.3.1 [BPoll::BPoll](#) ()

### 6.36.3.2 [BPoll::~~BPoll](#) ()

## 6.36.4 Member Function Documentation

### 6.36.4.1 void [BPoll::append](#) (int *fd*, int *events* = POLLIN|POLLERR|POLLHUP|POLLNVAL)

Append a file descriptor to polling list.

### 6.36.4.2 void [BPoll::delFd](#) (int *fd*)

Remove a file descriptor from polling list.

### 6.36.4.3 [BError](#) [BPoll::doPoll](#) (int & *fd*, int *timeoutUs* = -1)

Perform polling operation.

### 6.36.4.4 int [BPoll::getPollFdsNum](#) ()

### 6.36.4.5 [BPoll::PollFd](#) \* [BPoll::getPollFds](#) ()

### 6.36.4.6 void [BPoll::clear](#) ()

### 6.36.4.7 int [BPoll::nextFd](#) (int *i*) [private]

## 6.36.5 Member Data Documentation

### 6.36.5.1 int [BPoll::ofdsNum](#) [private]

The number of FD's in list.

### 6.36.5.2 [PollFd](#)\* [BPoll::ofds](#) [private]

The list of poll fd's.

### 6.36.5.3 int [BPoll::ofdsNext](#) [private]

The next list entry for round robin polling.

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

- [BPoll.h](#)

- [BPoll-1.cpp](#)
- [BPoll.cpp](#)

## 6.37 BRefData Class Reference

Referenced data storage.

```
#include <BRefData.h>
```

### Public Member Functions

- [BRefData](#) ()
- [BRefData](#) (int len)
- [BRefData](#) (const [BRefData](#) &refData)
- [~BRefData](#) ()
- [BRefData](#) \* [copy](#) ()
- [BRefData](#) \* [addRef](#) ()
- int [deleteRef](#) ()
- int [refCount](#) ()
- char \* [data](#) ()
- int [len](#) ()
- void [setLen](#) (int len)
- [BRefData](#) & [operator=](#) ([BRefData](#) &refData)

### Private Attributes

- void \* [oData](#)
- int [oLen](#)
- int [oSize](#)
- int [oRefCount](#)

#### 6.37.1 Detailed Description

Referenced data storage.

## 6.37.2 Constructor & Destructor Documentation

6.37.2.1 `BRefData::BRefData ()`

6.37.2.2 `BRefData::BRefData (int len)`

6.37.2.3 `BRefData::BRefData (const BRefData & refData)`

6.37.2.4 `BRefData::~~BRefData ()`

## 6.37.3 Member Function Documentation

6.37.3.1 `BRefData * BRefData::copy ()`

6.37.3.2 `BRefData * BRefData::addRef ()`

6.37.3.3 `int BRefData::deleteRef ()`

6.37.3.4 `int BRefData::refCount () [inline]`

6.37.3.5 `char* BRefData::data () [inline]`

6.37.3.6 `int BRefData::len () [inline]`

6.37.3.7 `void BRefData::setLen (int len)`

6.37.3.8 `BRefData & BRefData::operator= (BRefData & refData)`

## 6.37.4 Member Data Documentation

6.37.4.1 `void* BRefData::oData [private]`

6.37.4.2 `int BRefData::oLen [private]`

6.37.4.3 `int BRefData::oSize [private]`

6.37.4.4 `int BRefData::oRefCount [private]`

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

- [BRefData.h](#)
- [BRefData.cpp](#)

## 6.38 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.*

### Private Attributes

- int [ofd](#)
- int [orate](#)

#### 6.38.1 Detailed Description

Realtime clock.

#### 6.38.2 Constructor & Destructor Documentation

##### 6.38.2.1 [BRtc::BRtc](#) ()

##### 6.38.2.2 [BRtc::~~BRtc](#) ()

#### 6.38.3 Member Function Documentation

##### 6.38.3.1 [BError](#) [BRtc::init](#) (int *rate*)

Setup interrupt rate.

##### 6.38.3.2 void [BRtc::wait](#) (int *delayUs*)

Wait specified uS.

#### 6.38.4 Member Data Documentation

##### 6.38.4.1 int [BRtc::ofd](#) [private]

##### 6.38.4.2 int [BRtc::orate](#) [private]

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

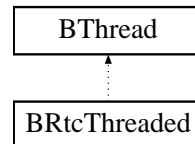
- [BRtc.h](#)
- [BRtc.cpp](#)

## 6.39 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.*

### Private Member Functions

- void \* [function](#) ()

### Private Attributes

- [BRtc orte](#)
- int [orate](#)
- [BCond ocond](#)

#### 6.39.1 Detailed Description

Threaded real time clock.

#### 6.39.2 Constructor & Destructor Documentation

##### 6.39.2.1 BRtcThreaded::BRtcThreaded ()

##### 6.39.2.2 BRtcThreaded::~~BRtcThreaded ()

#### 6.39.3 Member Function Documentation

##### 6.39.3.1 [BError](#) BRtcThreaded::init (int rate)

Setup interrupt rate.

### 6.39.3.2 void BRtcThreaded::wait (int *delayUs*)

Wait specified uS.

### 6.39.3.3 void \* BRtcThreaded::function () [private, virtual]

Reimplemented from [BThread](#).

## 6.39.4 Member Data Documentation

### 6.39.4.1 [BRtc](#) BRtcThreaded::ortc [private]

### 6.39.4.2 int BRtcThreaded::orate [private]

### 6.39.4.3 [BCond](#) BRtcThreaded::ocond [private]

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

- [BRtc.h](#)
- [BRtc.cpp](#)

## 6.40 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\)](#)

### Private Attributes

- `pthread_rwlock_t` [olock](#)

#### 6.40.1 Detailed Description

thread read-write locks

#### 6.40.2 Constructor & Destructor Documentation

##### 6.40.2.1 [BRWLock::BRWLock \(\)](#)

##### 6.40.2.2 [BRWLock::BRWLock \(const \[BRWLock\]\(#\) & \*rwlock\*\)](#)

##### 6.40.2.3 [BRWLock::~~BRWLock \(\)](#)

#### 6.40.3 Member Function Documentation

##### 6.40.3.1 [int \[BRWLock::rdLock \\(\\)\]\(#\)](#)

Set lock, wait if necessary.

**6.40.3.2 int BRWLock::tryRdLock ()**

Test the lock.

**6.40.3.3 int BRWLock::wrLock ()**

Set lock, wait if necessary.

**6.40.3.4 int BRWLock::tryWrLock ()**

Test the lock.

**6.40.3.5 int BRWLock::unlock ()**

Unlock the lock.

**6.40.3.6 [BRWLock](#) & BRWLock::operator= (const [BRWLock](#) & *rwlock*)****6.40.4 Member Data Documentation****6.40.4.1 pthread\_rwlock\_t [BRWLock::olock](#) [private]**

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

- [BRWLock.h](#)
- [BRWLock.cpp](#)

## 6.41 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)

### Private Attributes

- sem\_t [osema](#)

#### 6.41.1 Detailed Description

Sempahore class.

#### 6.41.2 Constructor & Destructor Documentation

6.41.2.1 [BSema::BSema](#) (int *value* = 0)

6.41.2.2 [BSema::BSema](#) (const [BSema](#) & *sema*)

6.41.2.3 [BSema::~~BSema](#) ()

#### 6.41.3 Member Function Documentation

6.41.3.1 int [BSema::post](#) ()

Post condition.

**6.41.3.2** `int BSema::wait ()`

Wait for contition.

**6.41.3.3** `int BSema::timedWait (int timeUs)`

Wait for condition with timeout.

**6.41.3.4** `int BSema::tryWait ()`

Test for the condition.

**6.41.3.5** `int BSema::getValue () const`**6.41.3.6** `BSema & BSema::operator= (const BSema & sema)`**6.41.4** **Member Data Documentation****6.41.4.1** `sem_t BSema::osema` [private]

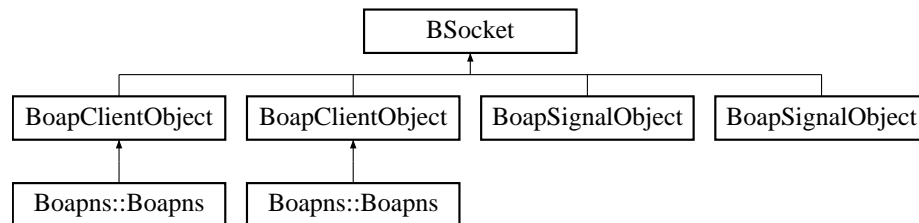
The documentation for this class was generated from the following files:

- [BSema.h](#)
- [BSema.cpp](#)

## 6.42 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 ()`
- `BError init (NType type)`
- `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 recv (void *buf, BSize maxbytes, BSize &nbytesRecv, int flags=0)`
- `BError recvFrom (BSOCKETAddress &address, void *buf, BSize maxbytes, BSize &nbytesRecv, int flags=0)`
- `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)`

## Private Attributes

- int `osocket`

## 6.42.1 Member Enumeration Documentation

### 6.42.1.1 enum `BSocket::NType`

Enumerator:

*STREAM*

*DGRAM*

### 6.42.1.2 enum `BSocket::Priority`

Enumerator:

*PriorityLow*

*PriorityNormal*

*PriorityHigh*



## 6.42.2 Constructor & Destructor Documentation

6.42.2.1 `BSocket::BSocket ()`

6.42.2.2 `BSocket::BSocket (int fd)`

6.42.2.3 `BSocket::BSocket (NType type)`

6.42.2.4 `BSocket::~~BSocket ()`

## 6.42.3 Member Function Documentation

6.42.3.1 `BError BSocket::init (NType type)`

6.42.3.2 `int BSocket::getFd ()`

6.42.3.3 `BError BSocket::bind (const BSocketAddress & add)`

6.42.3.4 `BError BSocket::connect (const BSocketAddress & add)`

6.42.3.5 `BError BSocket::shutdown (int how)`

6.42.3.6 `BError BSocket::close ()`

6.42.3.7 `BError BSocket::listen (int backlog = 5)`

6.42.3.8 `BError BSocket::accept (int & fd)`

6.42.3.9 `BError BSocket::accept (int & fd, BSocketAddress & address)`

6.42.3.10 `BError BSocket::send (const void * buf, BSize nbytes, BSize & nbytesSent, int flags = 0)`

6.42.3.11 `BError BSocket::sendTo (const BSocketAddress & address, const void * buf, BSize nbytes, BSize & nbytesSent, int flags = 0)`

6.42.3.12 `BError BSocket::recv (void * buf, BSize maxbytes, BSize & nbytesRecv, int flags = 0)`

6.42.3.13 `BError BSocket::recvFrom (BSocketAddress & address, void * buf, BSize maxbytes, BSize & nbytesRecv, int flags = 0)`

6.42.3.14 `BError BSocket::setSockOpt (int level, int optname, void * optval, unsigned int optlen)`

6.42.3.15 `BError BSocket::getSockOpt (int level, int optname, void * optval, unsigned int * optlen)`

6.42.3.16 `BError BSocket::setReuseAddress (int on)`

6.42.3.17 `BError BSocket::setBroadCast (int on)`

6.42.3.18 `BError BSocket::setPriority (Priority priority)`

6.42.3.19 `BError BSocket::getMTU (uint32_t & mtu)`

6.42.3.20 `BError BSocket::getAddress (BSocketAddress & address)`

## 6.42.4 Member Data Documentation

Generated on Tue Nov 27 09:20:18 2007 for LibBeamApi by Doxygen

6.42.4.1 `int BSocket::osocket` [private]

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

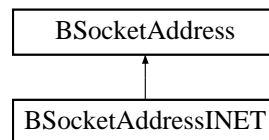
- [BSocket.h](#)
- [BSocket.cpp](#)

## 6.43 BSocketAddress Class Reference

Socket Address.

```
#include <BSocket.h>
```

Inheritance diagram for BSocketAddress::



### Public Types

- typedef 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
- [BSocketAddress](#) & [operator=](#) (const [BSocketAddress](#) &add)
- [operator](#) const [SockAddr](#) \* () const
- int [operator==](#) (const [BSocketAddress](#) &add) const
- int [operator!=](#) (const [BSocketAddress](#) &add) const

### Private Attributes

- int [olen](#)
- [SockAddr](#) \* [oaddress](#)

#### 6.43.1 Detailed Description

Socket Address.

## 6.43.2 Member Typedef Documentation

6.43.2.1 typedef struct sockaddr [BSocketAddress::SockAddr](#)

## 6.43.3 Constructor & Destructor Documentation

6.43.3.1 [BSocketAddress::BSocketAddress \(\)](#)

6.43.3.2 [BSocketAddress::BSocketAddress \(const \[BSocketAddress\]\(#\) & add\)](#)

6.43.3.3 [BSocketAddress::BSocketAddress \(\[SockAddr\]\(#\) \\* address, int len\)](#)

6.43.3.4 [BSocketAddress::~~BSocketAddress \(\)](#)

## 6.43.4 Member Function Documentation

6.43.4.1 [BError](#) [BSocketAddress::set \(\[SockAddr\]\(#\) \\* address, int len\)](#)

6.43.4.2 const [BSocketAddress::SockAddr](#) \* [BSocketAddress::raw \(\)](#) const

6.43.4.3 int [BSocketAddress::len \(\)](#) const

6.43.4.4 [BSocketAddress](#) & [BSocketAddress::operator= \(const \[BSocketAddress\]\(#\) & add\)](#)

6.43.4.5 [BSocketAddress::operator](#) const [SockAddr](#) \* () const [inline]

6.43.4.6 int [BSocketAddress::operator== \(const \[BSocketAddress\]\(#\) & add\)](#) const

6.43.4.7 int [BSocketAddress::operator!= \(const \[BSocketAddress\]\(#\) & add\)](#) const

## 6.43.5 Member Data Documentation

6.43.5.1 int [BSocketAddress::olen](#) [private]

6.43.5.2 [SockAddr](#)\* [BSocketAddress::oaddress](#) [private]

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

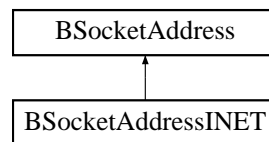
- [BSocket.h](#)
- [BSocket.cpp](#)

## 6.44 BSocketAddressINET Class Reference

IP aware socket address.

```
#include <BSocket.h>
```

Inheritance diagram for BSocketAddressINET::



### Public Types

- typedef 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.*

### 6.44.1 Detailed Description

IP aware socket address.

### 6.44.2 Member Typedef Documentation

6.44.2.1 `typedef struct sockaddr_in BSocketAddressINET::SockAddrIP`

### 6.44.3 Member Function Documentation

6.44.3.1 **BError** BSocketAddressINET::set (**BString** *hostName*, `uint32_t` *port*)

6.44.3.2 **BError** BSocketAddressINET::set (`uint32_t` *address*, `uint32_t` *port*)

6.44.3.3 **BError** BSocketAddressINET::set (**BString** *hostName*, **BString** *service*, **BString** *type*)

6.44.3.4 `void` BSocketAddressINET::setPort (`uint32_t` *port*)

6.44.3.5 `uint32_t` BSocketAddressINET::address ()

Returns socket ip address.

6.44.3.6 `uint32_t` BSocketAddressINET::port ()

Returns socket port.

6.44.3.7 **BString** BSocketAddressINET::getString ()

Return string version of address <ip>:<port>.

6.44.3.8 **BString** BSocketAddressINET::getHostName () [static]

Get this hosts network name.

6.44.3.9 **BList**< `uint32_t` > BSocketAddressINET::getIpAddresses () [static]

Get a list of all the IP addresses of this host.

6.44.3.10 **BList**< **BString** > BSocketAddressINET::getIpAddressList () [static]

Get a list of all the IP addresses of this host under hostname.

6.44.3.11 **BList**< **BString** > BSocketAddressINET::getIpAddressListAll () [static]

Get a list of all the IP addresses of this host looking at physical interfaces.

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

- [BSocket.h](#)

- [BSocket.cpp](#)

## 6.45 BString Class Reference

```
#include <BString.h>
```

### Public Member Functions

- [BString](#) ()
- [BString](#) (const [BString](#) &string)
- [BString](#) (const char \*str)
- [BString](#) (char ch)
- [BString](#) (int v)
- [BString](#) (unsigned int v)
- [BString](#) (long v)
- [BString](#) (unsigned long long)
- [BString](#) (double v)
- virtual [~BString](#) ()
- [BString copy](#) ()  
*Return an independant copy.*
- virtual void [strChanged](#) ()
- int [len](#) () const  
*Length of string.*
- const char \* [retStr](#) () const  
*Ptr to char\* representation.*
- char \* [retStrDup](#) () const  
*Ptr to newly malloc'd char\*.*
- int [retInt](#) () const  
*Return string as a int.*
- double [retDouble](#) () const  
*Return string as a double.*
- 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 delimited patterns.*
- [BString add](#) (const [BString](#) &str) const  
*Add two strings.*
- [BString & truncate](#) (int len)  
*Truncate to length len.*

- [BString](#) & [pad](#) (int len)  
*Pad to length len.*
- [BString](#) & [toUpper](#) ()  
*Convert to uppercase.*
- [BString](#) & [toLower](#) ()  
*Convert to lowercase.*
- void [removeNL](#) ()  
*Remove if present NL from last char.*
- [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.*
- void [printf](#) (const char \*fmt,...)  
*Formatted print into the string.*
- int [find](#) (char ch) const  
*Find ch in string searching forwards.*
- int [findReverse](#) (char ch) const  
*Find ch in string searching backwards.*
- [BList](#)< [BString](#) > [getTokenList](#) ([BString](#) separators)  
*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.*
- [BString](#) [field](#) (int field) const

- char \*\* fields ()
- 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+ (int i) const
- BString operator+ (unsigned int i) const
- BString operator+ (unsigned long long i) const
- operator const char \* () const

## Static Public Member Functions

- static BString convert (char ch)  
*Converts char to string.*
- static BString convert (int value)  
*Converts int to string.*
- static BString convert (unsigned int value)  
*Converts uint to string.*
- static BString convert (long value)  
*Converts long to string.*
- static BString convert (double value)  
*Converts double to string.*
- static BString convert (unsigned long long value)  
*Converts u long long to string.*
- static BString convertHex (int value)  
*Converts int to string as hex value.*
- static BString convertHex (unsigned int value)  
*Converts uint to string as hex value.*

## Protected Attributes

- [BRefData](#) \* *ostr*

## Private Member Functions

- void [Init](#) (const char \**str*)
- int [inString](#) (int *pos*) const
- int [isSpace](#) (char *ch*) const

## 6.45.1 Constructor & Destructor Documentation

### 6.45.1.1 [BString::BString](#) ()

### 6.45.1.2 [BString::BString](#) (const [BString](#) & *string*)

### 6.45.1.3 [BString::BString](#) (const char \* *str*)

### 6.45.1.4 [BString::BString](#) (char *ch*)

### 6.45.1.5 [BString::BString](#) (int *v*)

### 6.45.1.6 [BString::BString](#) (unsigned int *v*)

### 6.45.1.7 [BString::BString](#) (long *v*)

### 6.45.1.8 [BString::BString](#) (unsigned long *long*)

### 6.45.1.9 [BString::BString](#) (double *v*)

### 6.45.1.10 [BString::~~BString](#) () [virtual]

## 6.45.2 Member Function Documentation

### 6.45.2.1 [BString](#) [BString::convert](#) (char *ch*) [static]

Converts char to string.

### 6.45.2.2 [BString](#) [BString::convert](#) (int *value*) [static]

Converts int to string.

### 6.45.2.3 [BString](#) [BString::convert](#) (unsigned int *value*) [static]

Converts uint to string.

### 6.45.2.4 [BString](#) [BString::convert](#) (long *value*) [static]

Converts long to string.

**6.45.2.5 BString BString::convert (double *value*) [static]**

Converts double to string.

**6.45.2.6 BString BString::convert (unsigned long long *value*) [static]**

Converts u long long to string.

**6.45.2.7 BString BString::convertHex (int *value*) [static]**

Converts int to string as hex value.

**6.45.2.8 BString BString::convertHex (unsigned int *value*) [static]**

Converts uint to string as hex value.

**6.45.2.9 BString BString::copy ()**

Return an independant copy.

**6.45.2.10 void BString::strChanged () [virtual]****6.45.2.11 int BString::len () const**

Length of string.

**6.45.2.12 const char \* BString::retStr () const**

Ptr to char\* representation.

**6.45.2.13 char \* BString::retStrDup () const**

Ptr to newly malloc'd char\*.

**6.45.2.14 int BString::retInt () const**

Return string as a int.

**6.45.2.15 double BString::retDouble () const**

Return string as a double.

**6.45.2.16 int BString::compare (const BString & *string*) const**

Compare strings.

**6.45.2.17** `int BString::compareWild (const BString & string) const`

Compare string to string with wildcards.

**6.45.2.18** `int BString::compareWildExpression (const BString & string) const`

Compare string to space delimited patterns.

**6.45.2.19** `BString BString::add (const BString & str) const`

Add two strings.

**6.45.2.20** `BString & BString::truncate (int len)`

Truncate to length len.

**6.45.2.21** `BString & BString::pad (int len)`

Pad to length len.

**6.45.2.22** `BString & BString::toUpper ()`

Convert to uppercase.

**6.45.2.23** `BString & BString::toLower ()`

Convert to lowercase.

**6.45.2.24** `void BString::removeNL ()`

Remove if present NL from last char.

**6.45.2.25** `BString BString::subString (int start, int len) const`

Returns substring.

**6.45.2.26** `int BString::del (int start, int len)`

Delete substring.

**6.45.2.27** `int BString::insert (int start, BString str)`

Insert substring.

**6.45.2.28 void BString::printf (const char \**fmt*, ...)**

Formatted print into the string.

**6.45.2.29 int BString::find (char *ch*) const**

Find *ch* in string searching forwards.

**6.45.2.30 int BString::findReverse (char *ch*) const**

Find *ch* in string searching backwards.

**6.45.2.31 BList< BString > BString::getTokenList (BString *separators*)**

Break string into tokens.

**6.45.2.32 BString BString::removeSeparators (BString *separators*)**

Remove any char from separators from string.

**6.45.2.33 BString BString::pullToken (BString *terminators*)**

Pull token from start of string.

**6.45.2.34 BString BString::pullSeparators (BString *separators*)**

Pull separators from start of string.

**6.45.2.35 BString BString::pullWord ()**

Pull a word out of the head of the string.

**6.45.2.36 BString BString::pullLine ()**

Pull a line out of the head of the string.

**6.45.2.37 BString BString::field (int *field*) const****6.45.2.38 char \*\* BString::fields ()****6.45.2.39 BString & BString::operator= (const BString & *string*)****6.45.2.40 ]**

char & BString::operator[] (int *pos*)

- 6.45.2.41 `int BString::operator==(const BString & s) const` `[inline]`
- 6.45.2.42 `int BString::operator==(const char * s) const` `[inline]`
- 6.45.2.43 `int BString::operator>(const BString & s) const` `[inline]`
- 6.45.2.44 `int BString::operator>(const char * s) const` `[inline]`
- 6.45.2.45 `int BString::operator<(const BString & s) const` `[inline]`
- 6.45.2.46 `int BString::operator<(const char * s) const` `[inline]`
- 6.45.2.47 `int BString::operator>=(const BString & s) const` `[inline]`
- 6.45.2.48 `int BString::operator<=(const BString & s) const` `[inline]`
- 6.45.2.49 `int BString::operator!=(const BString & s) const` `[inline]`
- 6.45.2.50 `int BString::operator!=(const char * s) const` `[inline]`
- 6.45.2.51 `BString BString::operator+(const BString & s) const` `[inline]`
- 6.45.2.52 `BString BString::operator+(const char * s) const` `[inline]`
- 6.45.2.53 `BString BString::operator+=(const BString & s)` `[inline]`
- 6.45.2.54 `BString BString::operator+=(const char * s)` `[inline]`
- 6.45.2.55 `BString BString::operator+(char ch) const` `[inline]`
- 6.45.2.56 `BString BString::operator+(int i) const` `[inline]`
- 6.45.2.57 `BString BString::operator+(unsigned int i) const` `[inline]`
- 6.45.2.58 `BString BString::operator+(unsigned long long i) const` `[inline]`
- 6.45.2.59 `BString::operator const char * () const` `[inline]`
- 6.45.2.60 `void BString::Init(const char * str)` `[private]`
- 6.45.2.61 `int BString::inString(int pos) const` `[private]`
- 6.45.2.62 `int BString::isSpace(char ch) const` `[private]`

### 6.45.3 Member Data Documentation

- 6.45.3.1 `BRefData* BString::ostr` `[protected]`

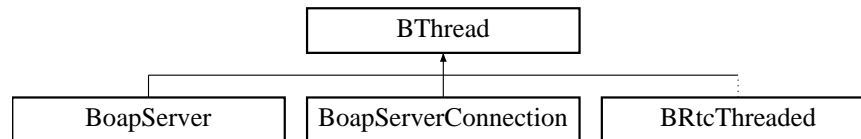
The documentation for this class was generated from the following files:

- [BString.h](#)
- [BString.cpp](#)

## 6.46 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](#) ()

### Static Private Member Functions

- static void \* [startFunc](#) (void \*)

### Private Attributes

- pthread\_t [othread](#)
- size\_t [ostackSize](#)
- int [opolicy](#)
- int [opriority](#)
- int [orunning](#)
- void \* [oresult](#)

## 6.46.1 Constructor & Destructor Documentation

6.46.1.1 **BThread::BThread ()**

6.46.1.2 **BThread::~~BThread ()** [virtual]

## 6.46.2 Member Function Documentation

6.46.2.1 **int BThread::setInitPriority (int *policy*, int *priority*)**

6.46.2.2 **int BThread::setInitStackSize (size\_t *stackSize*)**

6.46.2.3 **int BThread::start ()**

6.46.2.4 **void \* BThread::result ()**

6.46.2.5 **int BThread::running ()**

6.46.2.6 **int BThread::setPriority (int *policy*, int *priority*)**

6.46.2.7 **int BThread::cancel ()**

6.46.2.8 **void \* BThread::waitForCompletion ()**

6.46.2.9 **pthread\_t BThread::getThread ()**

6.46.2.10 **void \* BThread::function ()** [virtual]

Reimplemented in [BoapServerConnection](#), [BoapServer](#), and [BRtcThreaded](#).

6.46.2.11 **void \* BThread::startFunc (void \*)** [static, private]

## 6.46.3 Member Data Documentation

6.46.3.1 **pthread\_t BThread::othread** [private]

6.46.3.2 **size\_t BThread::ostackSize** [private]

6.46.3.3 **int BThread::opolicy** [private]

6.46.3.4 **int BThread::opriority** [private]

6.46.3.5 **int BThread::orunning** [private]

6.46.3.6 **void\* BThread::oresult** [private]

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

- [BThread.h](#)
- [BThread.cpp](#)

## 6.47 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.*

### Static Private Member Functions

- static double [getTime](#) ()

### Private Attributes

- [BMutex](#) olock
- unsigned int [onum](#)
- double [ostartTime](#)
- double [oendTime](#)
- double [oaverage](#)
- double [opeak](#)

#### 6.47.1 Detailed Description

Stopwatch style timer.

## 6.47.2 Constructor & Destructor Documentation

### 6.47.2.1 BTimer::BTimer ()

### 6.47.2.2 BTimer::~~BTimer ()

## 6.47.3 Member Function Documentation

### 6.47.3.1 void BTimer::start ()

Start timer.

### 6.47.3.2 void BTimer::stop ()

Stop timer.

### 6.47.3.3 void BTimer::clear ()

Clear timer.

### 6.47.3.4 double BTimer::getElapsedTime ()

Returns the elapsed time from the last start.

### 6.47.3.5 void BTimer::add ([BTimer](#) & *timer*)

Add two timers.

### 6.47.3.6 double BTimer::average ()

Average time is duration between [start\(\)](#) and [stop\(\)](#) / number of stops.

### 6.47.3.7 double BTimer::peak ()

Peak time.

**6.47.3.8** `double BTimer::getTime ()` [static, private]

## 6.47.4 Member Data Documentation

**6.47.4.1** `BMutex BTimer::olock` [private]

**6.47.4.2** `unsigned int BTimer::onum` [private]

**6.47.4.3** `double BTimer::ostartTime` [private]

**6.47.4.4** `double BTimer::oendTime` [private]

**6.47.4.5** `double BTimer::oaverage` [private]

**6.47.4.6** `double BTimer::opeak` [private]

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

- [BTimer.h](#)
- [BTimer.cpp](#)

## 6.48 BUrl Class Reference

Basic access to a Url.

```
#include <BUrl.h>
```

### Public Member Functions

- [BUrl \(\)](#)
- [~BUrl \(\)](#)
- [BError readString \(BString url, BString &str\)](#)

*Reads URL.*

### Static Private Member Functions

- static [size\\_t writeData](#) (void \*data, [size\\_t](#) size, [size\\_t](#) elSize, void \*stream)

### Private Attributes

- [BString ores](#)

### Static Private Attributes

- static [int oinit](#)

### 6.48.1 Detailed Description

Basic access to a Url.

### 6.48.2 Constructor & Destructor Documentation

#### 6.48.2.1 BUrl::BUrl ()

#### 6.48.2.2 BUrl::~~BUrl ()

### 6.48.3 Member Function Documentation

#### 6.48.3.1 [BError](#) BUrl::readString ([BString](#) url, [BString](#) & str)

Reads URL.

**6.48.3.2** `size_t BUrl::writeData (void * data, size_t size, size_t elSize, void * stream)` [static, private]

## 6.48.4 Member Data Documentation

**6.48.4.1** `int BUrl::oinit` [static, private]

**6.48.4.2** `BString BUrl::ores` [private]

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

- [BUrl.h](#)
- [BUrl.cpp](#)



## Chapter 7

# LibBeamApi File Documentation

### 7.1 BArray.h File Reference

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

#### Classes

- class [BArray< T >](#)

#### Defines

- #define [BArray\\_H 1](#)

#### 7.1.1 Define Documentation

##### 7.1.1.1 #define BArray\_H 1

## 7.2 BBuffer.cpp File Reference

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

### Defines

- #define [SIZE](#) 1024

### 7.2.1 Define Documentation

#### 7.2.1.1 #define SIZE 1024

## 7.3 BBuffer.h File Reference

```
#include <stdint.h>
```

### Classes

- class [BBuffer](#)

### Defines

- #define [BBUFFER\\_H](#) 1

### 7.3.1 Define Documentation

#### 7.3.1.1 #define BBUFFER\_H 1

## 7.4 BCond.cpp File Reference

```
#include <BCond.h>
#include <sys/time.h>
#include <stdio.h>
```

## 7.5 BCond.h File Reference

```
#include <pthread.h>
```

### Classes

- class [BCond](#)

### Defines

- #define [BCOND\\_H](#) 1

### 7.5.1 Define Documentation

#### 7.5.1.1 #define BCOND\_H 1

## 7.6 BCondInt.cpp File Reference

```
#include <BCondInt.h>
#include <sys/time.h>
#include <stdio.h>
#include <errno.h>
```

## 7.7 BCondInt.h File Reference

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

### Classes

- class [BCondValue](#)  
*Thread conditional value.*
- class [BCondInt](#)  
*Thread conditional integer.*
- class [BCondBool](#)  
*Thread conditional boolean.*
- class [BCondWrap](#)

### Defines

- #define [BCONDINT\\_H](#) 1

#### 7.7.1 Define Documentation

##### 7.7.1.1 #define BCONDINT\_H 1

## 7.8 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](#)

### 7.8.1 Function Documentation

**7.8.1.1** static int wild (const dirent \*e) [static]

### 7.8.2 Variable Documentation

**7.8.2.1** [BString wildString](#) [static]

## 7.9 BDir.h File Reference

```
#include <BList.h>
#include <BString.h>
#include <BError.h>
#include <sys/stat.h>
```

### Classes

- class [BDir](#)  
*File system directory class.*

### Defines

- #define [BDIR\\_H](#) 1

#### 7.9.1 Define Documentation

##### 7.9.1.1 #define BDIR\_H 1

## 7.10 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>
```

## 7.11 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.*

## 7.12 BError.cpp File Reference

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

## 7.13 BError.h File Reference

```
#include <BString.h>
```

### Classes

- class [BError](#)  
*Error return class.*

### Defines

- #define [BERROR\\_H](#) 1

#### 7.13.1 Define Documentation

##### 7.13.1.1 #define BERROR\_H 1

## 7.14 BEvent.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <BEvent.h>
#include <BPoll.h>
```

## 7.15 BEvent.h File Reference

```
#include <stdint.h>
```

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

### Classes

- class [BEvent](#)

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

- class [BEventError](#)

- class [BEventPipe](#)

*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 [BEventInt](#)

*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.*

### Defines

- #define [BEvent\\_H](#) 1

### Enumerations

- enum [BEventType](#) { [BEventTypeNone](#), [BEventTypeInt](#), [BEventTypeError](#) }

#### 7.15.1 Define Documentation

##### 7.15.1.1 #define [BEvent\\_H](#) 1

#### 7.15.2 Enumeration Type Documentation

##### 7.15.2.1 enum [BEventType](#)

Enumerator:

*[BEventTypeNone](#)*

*[BEventTypeInt](#)*

*[BEventTypeError](#)*

## 7.16 BFile.cpp File Reference

```
#include <BFile.h>
#include <sys/stat.h>
#include <string.h>
#include <stdarg.h>
#include <errno.h>
```

### Defines

- #define [STRBUF](#) 10240

#### 7.16.1 Define Documentation

##### 7.16.1.1 #define STRBUF 10240

## 7.17 BFile.h File Reference

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

### Classes

- class [BFile](#)  
*File operations class.*

### Defines

- #define [BFILE\\_H](#) 1

#### 7.17.1 Define Documentation

##### 7.17.1.1 #define BFILE\_H 1

## 7.18 BList.h File Reference

```
#include <BList_func.h>
```

### Classes

- class [BIter](#)  
*Iterator for [BList](#).*
- class [BList< T >](#)  
*Template based list class.*
- class [BList< T >::Node](#)

### Defines

- #define [BLIST\\_H](#) 1

#### 7.18.1 Define Documentation

##### 7.18.1.1 #define BLIST\_H 1

## 7.19 BList\_func.h File Reference

```
#include <stdlib.h>  
#include <stdio.h>  
#include <memory.h>
```

## 7.20 BMutex.cpp File Reference

```
#include <BMutex.h>
```

### Defines

- #define [MDEBUG](#) 0

#### 7.20.1 Define Documentation

##### 7.20.1.1 #define MDEBUG 0

## 7.21 BMutex.h File Reference

```
#include <pthread.h>
```

### Classes

- class [BMutex](#)  
*Mutex class.*

### Defines

- #define [BMUTEX\\_H](#) 1

#### 7.21.1 Define Documentation

##### 7.21.1.1 #define BMUTEX\_H 1

## 7.22 BNameValue.h File Reference

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

### Classes

- class [BNameValue< T >](#)
- class [BNameValueList< T >](#)

### Defines

- #define [BNAMEVALUE\\_H](#) 1
- #define [TEMPLATE\\_NEW](#) 1

#### 7.22.1 Define Documentation

**7.22.1.1** [#define BNAMEVALUE\\_H](#) 1

**7.22.1.2** [#define TEMPLATE\\_NEW](#) 1

## 7.23 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>
```

### Defines

- #define [DEBUG](#) 0
- #define [APIVERSION\\_TEST](#) 1
- #define [dprintf](#)(fmt, a...)
- #define [IS\\_BIG\\_ENDIAN](#) 1

### Functions

- static void [swap8](#) (char \*d, char \*s)
- static void [swap16](#) (char \*d, char \*s)
- static void [swap32](#) (char \*d, char \*s)
- static void [swap64](#) (char \*d, char \*s)

### Variables

- const int [boapPort](#) = 12000

*The default BOAP connection port.*

- const int [roundSize](#) = 256

### 7.23.1 Define Documentation

7.23.1.1 `#define APIVERSION_TEST 1`

7.23.1.2 `#define DEBUG 0`

7.23.1.3 `#define dprintf(fmt, a...)`

7.23.1.4 `#define IS_BIG_ENDIAN 1`

### 7.23.2 Function Documentation

7.23.2.1 `static void swap16 (char * d, char * s)` [inline, static]

7.23.2.2 `static void swap32 (char * d, char * s)` [inline, static]

7.23.2.3 `static void swap64 (char * d, char * s)` [inline, static]

7.23.2.4 `static void swap8 (char * d, char * s)` [inline, static]

### 7.23.3 Variable Documentation

7.23.3.1 `const int boapPort = 12000`

The default BOAP connection port.

7.23.3.2 `const int roundSize = 256`

## 7.24 Boap.h File Reference

```
#include <stdint.h>
#include <BPoll.h>
#include <BSocket.h>
#include <BThread.h>
#include <BError.h>
#include <BEvent.h>
#include <BMutex.h>
#include <BTypes.h>
```

### Namespaces

- namespace [Boapns](#)

### Classes

- struct [BoapPacketHead](#)
- class [BoapPacket](#)
- class [BoapClientObject](#)
- class [BoapSignalObject](#)
- class [BoapServiceEntry](#)
- class [BoapServerConnection](#)
- class [BoapServer](#)
- class [BoapFuncEntry](#)
- class [BoapServiceObject](#)

### Typedefs

- typedef [UInt32](#) [BoapService](#)
- typedef [BError](#)([BoapServiceObject](#)::\*) [BoapFunc](#) ([BoapServerConnection](#) \*conn, [BoapPacket](#) &rx, [BoapPacket](#) &tx)

### Enumerations

- enum [BoapType](#) {  
    [BoapTypeRpc](#), [BoapTypeRpcReply](#), [BoapTypeSignal](#), [BoapTypeRpc](#),  
    [BoapTypeSignal](#) }
- enum [BoapPriority](#) { [BoapPriorityLow](#), [BoapPriorityNormal](#), [BoapPriorityHigh](#) }

### Variables

- const [UInt32](#) [BoapMagic](#) = 0x424F4100

## 7.24.1 Typedef Documentation

7.24.1.1 typedef **BError**(BoapServiceObject::\*) **BoapFunc**(BoapServerConnection \*conn, BoapPacket &rx, BoapPacket &tx)

7.24.1.2 typedef **UInt32** **BoapService**

## 7.24.2 Enumeration Type Documentation

7.24.2.1 enum **BoapPriority**

Enumerator:

*BoapPriorityLow*

*BoapPriorityNormal*

*BoapPriorityHigh*

7.24.2.2 enum **BoapType**

Enumerator:

*BoapTypeRpc*

*BoapTypeRpcReply*

*BoapTypeSignal*

*BoapTypeRpc*

*BoapTypeSignal*

## 7.24.3 Variable Documentation

7.24.3.1 const **UInt32** **BoapMagic** = 0x424F4100

## 7.25 BoapnsC.cc File Reference

```
#include <BoapnsC.h>
```

### Namespaces

- namespace [Boapns](#)

### Functions

- [Boapns::Boapns](#) (BString name)
- [BError Boapns::getVersion](#) (BString &version)
- [BError Boapns::getEntryList](#) (BList< BoapEntry > &entryList)
- [BError Boapns::getEntry](#) (BString name, BoapEntry &entry)
- [BError Boapns::addEntry](#) (BoapEntry entry)
- [BError Boapns::delEntry](#) (BString name)
- [BError Boapns::getNewName](#) (BString &name)

## 7.26 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>
```

### Namespaces

- namespace [Boapns](#)

### Classes

- class [Boapns::Boapns](#)

### Defines

- #define [BOAPNSC\\_H](#) 1

### Variables

- const [BUInt32](#) [Boapns::apiVersion](#) = 0

#### 7.26.1 Define Documentation

##### 7.26.1.1 #define BOAPNSC\_H 1

## 7.27 BoapnsD.cc File Reference

```
#include <BoapnsD.h>
```

### Namespaces

- namespace [Boapns](#)

## 7.28 BoapnsD.h File Reference

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

### Namespaces

- namespace [Boapns](#)

### Classes

- class [Boapns::BoapEntry](#)

### Defines

- #define [BOAPNSD\\_H](#) 1

#### 7.28.1 Define Documentation

##### 7.28.1.1 #define BOAPNSD\_H 1

## 7.29 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>
```

### Defines

- #define [DEBUG](#) 0
- #define [dprintf](#)(fmt, a...)

### Variables

- const int [roundSize](#) = 256

#### 7.29.1 Define Documentation

##### 7.29.1.1 #define [DEBUG](#) 0

##### 7.29.1.2 #define [dprintf](#)(fmt, a...)

#### 7.29.2 Variable Documentation

##### 7.29.2.1 const int [roundSize](#) = 256

## 7.30 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](#), [BoapTypeRpc](#),  
    [BoapTypeSignal](#) }

### 7.30.1 Typedef Documentation

7.30.1.1 typedef **BError**(BoapServiceObject::\*) **BoapFunc**(BoapPacket &rx, BoapPacket &tx)

7.30.1.2 typedef uint32\_t **BoapService**

7.30.1.3 typedef double **Double**

7.30.1.4 typedef int16\_t **Int16**

7.30.1.5 typedef int32\_t **Int32**

7.30.1.6 typedef int8\_t **Int8**

7.30.1.7 typedef uint16\_t **UInt16**

7.30.1.8 typedef uint32\_t **UInt32**

7.30.1.9 typedef uint8\_t **UInt8**

### 7.30.2 Enumeration Type Documentation

7.30.2.1 enum **BoapType**

Enumerator:

*BoapTypeRpc*

*BoapTypeRpcReply*

*BoapTypeSignal*

*BoapTypeRpc*

*BoapTypeSignal*

## 7.31 BObject.cc File Reference

```
#include <stdio.h>
#include <ctype.h>
#include <memory.h>
#include <string.h>
#include <BObject.h>
#include <iostream>
```

### Defines

- #define [DEBUG](#) 0

#### 7.31.1 Define Documentation

##### 7.31.1.1 #define DEBUG 0

## 7.32 BObject.h File Reference

```
#include <BType.h>
#include <BDataBuf.h>
#include <BString.h>
#include <BNameValue.h>
#include <BList.h>
#include <BError.h>
```

### Classes

- class [BObject](#)

### Defines

- #define [BOBJECT\\_H](#) 1

### Typedefs

- typedef [BNameValue](#)< [BObject](#) \* > [BMember](#)
- typedef [BNameValueList](#)< [BObject](#) \* > [BMemberList](#)

#### 7.32.1 Define Documentation

##### 7.32.1.1 #define [BOBJECT\\_H](#) 1

#### 7.32.2 Typedef Documentation

##### 7.32.2.1 typedef [BNameValue](#)<[BObject](#)\*> [BMember](#)

##### 7.32.2.2 typedef [BNameValueList](#)<[BObject](#)\*> [BMemberList](#)

### 7.33 BPoll-1.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <BPoll.h>
```

## 7.34 BPoll.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <BPoll.h>
```

## 7.35 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.*

### Defines

- #define [BPOLL\\_H](#) 1

#### 7.35.1 Define Documentation

##### 7.35.1.1 #define BPOLL\_H 1

## 7.36 BRefData.cpp File Reference

```
#include <stdlib.h>
#include <string.h>
#include <BRefData.h>
```

### Defines

- #define [DEBUG](#) 0
- #define [CHUNK](#) 16

### 7.36.1 Define Documentation

#### 7.36.1.1 #define [CHUNK](#) 16

#### 7.36.1.2 #define [DEBUG](#) 0

## 7.37 BRefData.h File Reference

### Classes

- class [BRefData](#)  
*Referenced data storage.*

### Defines

- `#define BREFDATA\_H 1`

#### 7.37.1 Define Documentation

##### 7.37.1.1 `#define BREFDATA_H 1`

## 7.38 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>
```

## 7.39 BRtc.h File Reference

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

### Classes

- class [BRtc](#)  
*Realtime clock.*
- class [BRtcThreaded](#)  
*Threaded real time clock.*

## 7.40 BRWLock.cpp File Reference

```
#include <BRWLock.h>
```

## 7.41 BRWLock.h File Reference

```
#include <pthread.h>
```

### Classes

- class [BRWLock](#)  
*thread read-write locks*

### Defines

- #define [BRWLOCK\\_H](#) 1

#### 7.41.1 Define Documentation

##### 7.41.1.1 #define BRWLOCK\_H 1

## 7.42 BSema.cpp File Reference

```
#include <BSema.h>  
#include <errno.h>  
#include <sys/time.h>
```

## 7.43 BSema.h File Reference

```
#include <semaphore.h>
```

### Classes

- class [BSema](#)  
*Sempahore class.*

### Defines

- #define [BSEMA\\_H](#) 1

#### 7.43.1 Define Documentation

##### 7.43.1.1 #define BSEMA\_H 1

## 7.44 BSocket.cpp File Reference

```
#include <stdlib.h>
#include <unistd.h>
#include <stdio.h>
#include <errno.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <net/if.h>
#include "BSocket.h"
```

### Defines

- #define [IP\\_MTU](#) 14

#### 7.44.1 Define Documentation

##### 7.44.1.1 #define IP\_MTU 14

## 7.45 BSocket.h File Reference

```
#include <BString.h>
#include <BError.h>
#include <BTypes.h>
#include <stdint.h>
#include <sys/types.h>
#include <sys/prctl.h>
```

### Classes

- class [BSocketAddress](#)  
*Socket Address.*
- class [BSocketAddressINET](#)  
*IP aware socket address.*
- class [BSocket](#)

### Defines

- #define [BSOCKET\\_H](#) 1

#### 7.45.1 Define Documentation

##### 7.45.1.1 #define BSOCKET\_H 1

## 7.46 BString.cpp File Reference

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <stdarg.h>
#include <ctype.h>
#include "BString.h"
```

### Defines

- #define [DEBUG](#) 0
- #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)

#### 7.46.1 Define Documentation

7.46.1.1 #define [DEBUG](#) 0

7.46.1.2 #define [MINUS](#) '-'

7.46.1.3 #define [STRIP](#) 0x7f

#### 7.46.2 Function Documentation

7.46.2.1 static int [gmatch](#) (const char \*s, const char \*p) [static]

7.46.2.2 std::ostream& [operator<<](#) (std::ostream &o, [BString](#) &s)

7.46.2.3 std::istream& [operator>>](#) (std::istream &i, [BString](#) &s)

## 7.47 BString.h File Reference

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

### Classes

- class [BString](#)

### Defines

- #define [BSTRING\\_H](#) 1

### Functions

- std::ostream & [operator<<](#) (std::ostream &o, [BString](#) &s)
- std::istream & [operator>>](#) (std::istream &i, [BString](#) &s)

#### 7.47.1 Define Documentation

##### 7.47.1.1 #define BSTRING\_H 1

#### 7.47.2 Function Documentation

##### 7.47.2.1 std::ostream& operator<< (std::ostream & o, [BString](#) & s)

##### 7.47.2.2 std::istream& operator>> (std::istream & i, [BString](#) & s)

## 7.48 BThread.cpp File Reference

```
#include <BThread.h>
#include <unistd.h>
#include <errno.h>
#include <sys/types.h>
```

## 7.49 BThread.h File Reference

```
#include <pthread.h>
```

### Classes

- class [BThread](#)

### Defines

- #define [BTHREAD\\_H](#) 1

### 7.49.1 Define Documentation

#### 7.49.1.1 #define BTHREAD\_H 1

## 7.50 BTimer.cpp File Reference

```
#include <BTimer.h>  
#include <sys/time.h>
```

## 7.51 BTimer.h File Reference

```
#include <BMutex.h>
```

### Classes

- class [BTimer](#)  
*Stopwatch style timer.*

## 7.52 BTypes.h File Reference

```
#include <stdint.h>
#include <sys/types.h>
#include <vector>
```

### Defines

- #define [BTYPES\\_H](#) 1

### Typedefs

- 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 [BFloat](#)
- typedef double [BDouble](#)
- typedef size\_t [BSize](#)
- typedef uint32\_t [BUInt](#)
- typedef std::vector< float > [BArrayFloat](#)
- typedef std::vector< double > [BArrayDouble](#)
- 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 int64\_t [Int64](#)
- typedef uint64\_t [UInt64](#)
- typedef float [Float](#)
- typedef double [Double](#)



### 7.52.1 Define Documentation

7.52.1.1 `#define BTYPES_H 1`

### 7.52.2 Typedef Documentation

7.52.2.1 `typedef std::vector<double> BArrayDouble`

7.52.2.2 `typedef std::vector<float> BArrayFloat`

7.52.2.3 `typedef double BDouble`

7.52.2.4 `typedef float BFloat`

7.52.2.5 `typedef int16_t BInt16`

7.52.2.6 `typedef int32_t BInt32`

7.52.2.7 `typedef int64_t BInt64`

7.52.2.8 `typedef int8_t BInt8`

7.52.2.9 `typedef size_t BSize`

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7.52.2.23 `typedef uint64_t UInt64`

7.52.2.24 `typedef uint8_t UInt8`

## 7.53 BUrl.cpp File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <memory.h>
#include <BUrl.h>
#include <curl/curl.h>
```

## 7.54 BUrl.h File Reference

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

### Classes

- class [BUrl](#)  
*Basic access to a Url.*

### Defines

- #define [BURL\\_H](#) 1

#### 7.54.1 Define Documentation

##### 7.54.1.1 #define BURL\_H 1

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