VPI_BINARY_FILE_IO

1.0

Generated by Doxygen 1.9.1

Chapter 1

Data Structure Documentation

1.1 s_process_data Struct Reference

`#include <binary_file_io.h>`

Data Fields

- PLI_INT32 error
- PLI_INT32 num_ab_val_pairs
- PLI_INT32 array_byte_size
- char * p_file_name
- struct s_ringBuffer * p_ringbuffer
- FILE * p_file
- pthread_t thread
- vpiHandle systf_handle
- vpiHandle arg2_handle

1.1.1 Field Documentation

1.1.1.1 arg2_handle

`vpiHandle s_process_data::arg2_handle`

1.1.1.2 array_byte_size

`PLI_INT32 s_process_data::array_byte_size`

1.1.1.3 error

```
PLI_INT32 s_process_data::error
```

1.1.1.4 num_ab_val_pairs

```
PLI_INT32 s_process_data::num_ab_val_pairs
```

1.1.1.5 p_file

```
FILE* s_process_data::p_file
```

1.1.1.6 p_file_name

```
char* s_process_data::p_file_name
```

1.1.1.7 p_ringbuffer

```
struct s_ringBuffer* s_process_data::p_ringbuffer
```

1.1.1.8 systf_handle

```
vpiHandle s_process_data::systf_handle
```

1.1.1.9 thread

```
pthread_t s_process_data::thread
```

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

- binary_file_io.h

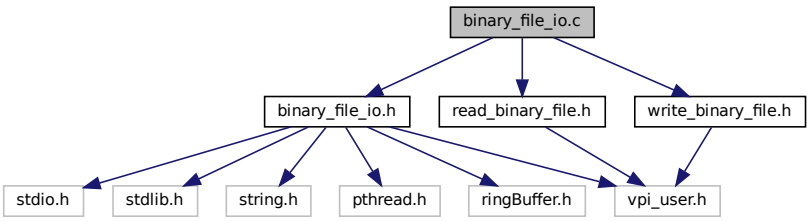
Chapter 2

File Documentation

2.1 binary_file_io.c File Reference

```
#include "binary_file_io.h"
#include "read_binary_file.h"
#include "write_binary_file.h"
```

Include dependency graph for binary_file_io.c:



Functions

- PLI_INT32 binary_end_compile_cb (p_cb_data data)

  BINARY FILE END COMPILE CALLBACK.
- PLI_INT32 binary_end_sim_cb (p_cb_data data)

  BINARY FILE END SIM CALLBACK.
- PLI_INT32 binary_sizetf (PLI_BYTE8 *user_data)

  Returns the size, in bits, of the function return type.
- PLI_INT32 binary_compiletf (PLI_BYTE8 *user_data)

  Compile time call, check the arguments for validity.
- void read_binary_reg_systf (void)

  Setup read_binary_file function.
- void write_binary_reg_systf (void)

  Setup write_binary_file function.

Variables

- void(* vlog_startup_routines [ ])(void)

  register the new file functions

2.1.1 Function Documentation

2.1.1.1 binary_compiletf()

```
PLI_INT32 binary_compiletf (
             PLI_BYTE8 * user_data )
```

Compile time call, check the arguments for validity.

2.1.1.2 binary_end_compile_cb()

```
PLI_INT32 binary_end_compile_cb (
             p_cb_data data )
```

BINARY FILE END COMPILE CALLBACK.

2.1.1.3 binary_end_sim_cb()

```
PLI_INT32 binary_end_sim_cb (
             p_cb_data data )
```

BINARY FILE END SIM CALLBACK.

2.1.1.4 binary_sizetf()

```
PLI_INT32 binary_sizetf (
             PLI_BYTE8 * user_data )
```

Returns the size, in bits, of the function return type.

2.1.1.5 read_binary_reg_systf()

```
void read_binary_reg_systf (
             void  )
```

Setup read_binary_file function.

2.1.1.6 write_binary_reg_systf()

```
void write_binary_reg_systf (
             void  )
```

Setup write_binary_file function.

2.1.2 Variable Documentation

2.1.2.1 vlog_startup_routines

```
void(* vlog_startup_routines[])(void) (
             void  )
```

Initial value:

```
= {
  read_binary_reg_systf,
  write_binary_reg_systf,
  0
}
```

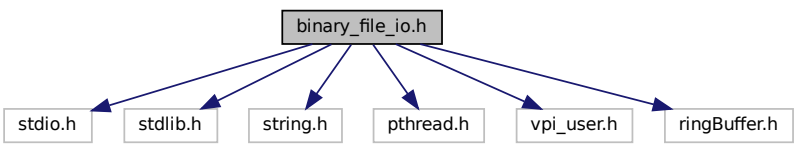
register the new file functions

2.2 binary_file_io.h File Reference

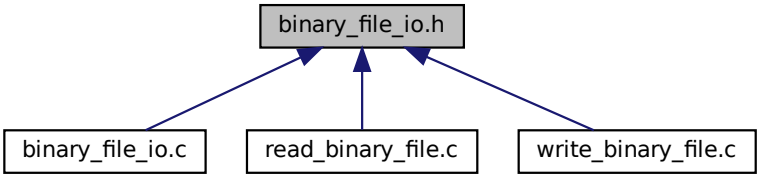
Functions to write raw binary files properly in verilog.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <pthread.h>
#include <vpi_user.h>
#include "ringBuffer.h"
```

Include dependency graph for binary_file_io.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct s_process_data

Macros

- #define BUFFSIZE (1 << 23)
- #define DATACHUNK (1 << 21)
- #define READ_NAME "$read_binary_file"
- #define WRITE_NAME "$write_binary_file"

Functions

- PLI_INT32 binary_end_compile_cb (p_cb_data data)

  BINARY FILE END COMPILE CALLBACK.
- PLI_INT32 binary_end_sim_cb (p_cb_data data)

  BINARY FILE END SIM CALLBACK.
- PLI_INT32 binary_sizetf (PLI_BYTE8 *user_data)

  Returns the size, in bits, of the function return type.

2.2.1 Detailed Description

Functions to write raw binary files properly in verilog.

Author

Jay Convertino(johnathan.convertino.1@us.af.mil)

Date

2023-20-1

2.2.2 Macro Definition Documentation

2.2.2.1 BUFFSIZE

```
#define BUFFSIZE (1 << 23)
```

2.2.2.2 DATACHUNK

```
#define DATACHUNK (1 << 21)
```

2.2.2.3 READ_NAME

```
#define READ_NAME "$read_binary_file"
```

2.2.2.4 WRITE_NAME

```
#define WRITE_NAME "$write_binary_file"
```

2.2.3 Function Documentation

2.2.3.1 binary_end_compile_cb()

```
PLI_INT32 binary_end_compile_cb (
            p_cb_data data )
```

BINARY FILE END COMPILE CALLBACK.

2.2.3.2 binary_end_sim_cb()

```
PLI_INT32 binary_end_sim_cb (
            p_cb_data data )
```

BINARY FILE END SIM CALLBACK.

2.2.3.3 binary_sizetf()

```
PLI_INT32 binary_sizetf (
            PLI_BYTE8 * user_data )
```

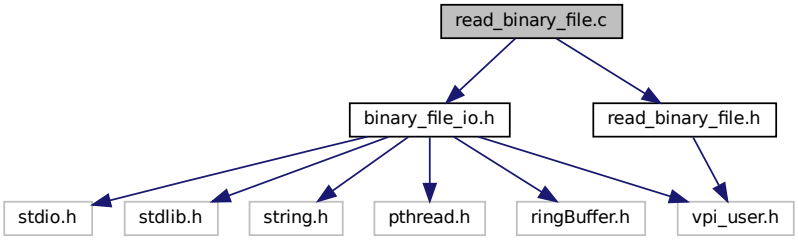
Returns the size, in bits, of the function return type.

2.3 read_binary_file.c File Reference

Functions to read raw binary files properly in verilog.

```
#include "binary_file_io.h"
#include "read_binary_file.h"
```

Include dependency graph for read_binary_file.c:



Functions

- void * read_thread (void *data)

  READ BINARY FILE THREAD TO FILL RINGBUFFER.
- PLI_INT32 read_binary_start_sim_cb (p_cb_data data)

  READ BINARY FILE START SIM CALLBACK.
- PLI_INT32 read_binary_calltf (PLI_BYTE8 *user_data)

  Called by the simulator, each time it is requested.

2.3.1 Detailed Description

Functions to read raw binary files properly in verilog.

Author

Jay Convertino(johnathan.convertino.1@us.af.mil)

Date

2022-12-19

2.3.2 Function Documentation

2.3.2.1 read_binary_calltf()

```
PLI_INT32 read_binary_calltf (
            PLI_BYTE8 * user_data )
```

Called by the simulator, each time it is requested.

read_binary_calltf is a callback for the read_binary_file function.

2.3.2.2 read_binary_start_sim_cb()

```
PLI_INT32 read_binary_start_sim_cb (
             p_cb_data data )
```

READ BINARY FILE START SIM CALLBACK.

2.3.2.3 read_thread()

```
void* read_thread (
             void * data )
```

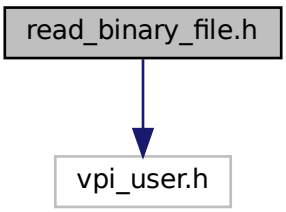
READ BINARY FILE THREAD TO FILL RINGBUFFER.

2.4 read_binary_file.h File Reference

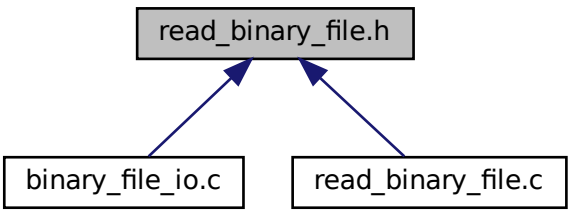
Functions to write raw binary files properly in verilog.

```
#include <vpi_user.h>
```

Include dependency graph for read_binary_file.h:



This graph shows which files directly or indirectly include this file:



Functions

- PLI_INT32 read_binary_start_sim_cb (p_cb_data data)
  READ BINARY FILE START SIM CALLBACK.
- PLI_INT32 read_binary_calltf (PLI_BYTE8 *user_data)
  read_binary_calltf is a callback for the read_binary_file function.

2.4.1 Detailed Description

Functions to write raw binary files properly in verilog.

Author

Jay Convertino(johnathan.convertino.1@us.af.mil)

Date

2023-20-1

$read_binary_file takes 2 arguments. First the file name, next a register for data in size bytes. The function returns the number of bytes read. If it is a negative number, that indicates EOF.

2.4.2 Function Documentation

2.4.2.1 read_binary_calltf()

```
PLI_INT32 read_binary_calltf (
            PLI_BYTE8 * user_data )
```

read_binary_calltf is a callback for the read_binary_file function.

read_binary_calltf is a callback for the read_binary_file function.

2.4.2.2 read_binary_start_sim_cb()

```
PLI_INT32 read_binary_start_sim_cb (
              p_cb_data data )
```

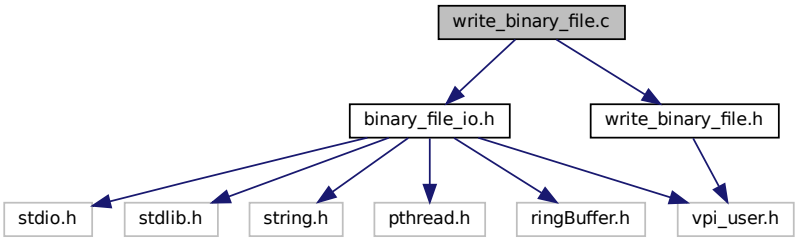
READ BINARY FILE START SIM CALLBACK.

2.5 write_binary_file.c File Reference

Functions to write raw binary files properly in verilog.

```
#include "binary_file_io.h"
#include "write_binary_file.h"
```

Include dependency graph for write_binary_file.c:



Functions

- void * write_thread (void *data)

  WRITE BINARY FILE THREAD TO EMPTY RINGBUFFER.
- PLI_INT32 write_binary_start_sim_cb (p_cb_data data)

  WRITE BINARY FILE START SIM CALLBACK.
- PLI_INT32 write_binary_calltf (PLI_BYTE8 *user_data)

  Called by the simulator, each time it is requested. TODO.

2.5.1 Detailed Description

Functions to write raw binary files properly in verilog.

Author

Jay Convertino(johnathan.convertino.1@us.af.mil)

Date

2023-20-1

2.5.2 Function Documentation

2.5.2.1 write_binary_calltf()

```
PLI_INT32 write_binary_calltf (
             PLI_BYTE8 * user_data )
```

Called by the simulator, each time it is requested. TODO.

2.5.2.2 write_binary_start_sim_cb()

```
PLI_INT32 write_binary_start_sim_cb (
             p_cb_data data )
```

WRITE BINARY FILE START SIM CALLBACK.

2.5.2.3 write_thread()

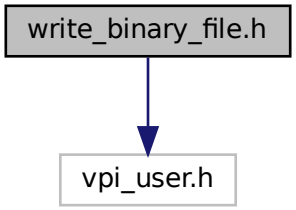
```
void* write_thread (
             void * data )
```

WRITE BINARY FILE THREAD TO EMPTY RINGBUFFER.

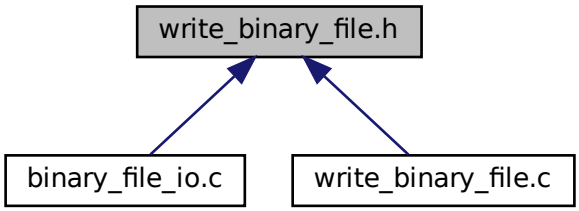
2.6 write_binary_file.h File Reference

Functions to write raw binary files properly in verilog.

`#include <vpi_user.h>`
Include dependency graph for write_binary_file.h:



This graph shows which files directly or indirectly include this file:



Functions

- PLI_INT32 write_binary_start_sim_cb (p_cb_data data)
  WRITE BINARY FILE START SIM CALLBACK.
- PLI_INT32 write_binary_calltf (PLI_BYTE8 *user_data)
  Called by the simulator, each time it is requested. TODO.

2.6.1 Detailed Description

Functions to write raw binary files properly in verilog.

Author

Jay Convertino(johnathan.convertino.1@us.af.mil)

Date

2023-20-1

2.6.2 Function Documentation

2.6.2.1 write_binary_calltf()

```
PLI_INT32 write_binary_calltf (
             PLI_BYTE8 * user_data )
```

Called by the simulator, each time it is requested. TODO.

2.6.2.2 write_binary_start_sim_cb()

```
PLI_INT32 write_binary_start_sim_cb (
             p_cb_data data )
```

WRITE BINARY FILE START SIM CALLBACK.

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