gssync

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Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

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Chapter 3

Class Index

3.1 Class List

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

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gs::RunOnSysC::AsyncJob 7
gs::global_pause 8
gs::InLineSync 9
gs::RunOnSysC 9
gs::semaphore 11
gs::tlm_quantumkeeper_extended 11
gs::tlm_quantumkeeper_multi_quantum 12
gs::tlm_quantumkeeper_multi_rolling 12
gs::tlm_quantumkeeper_multithread 13
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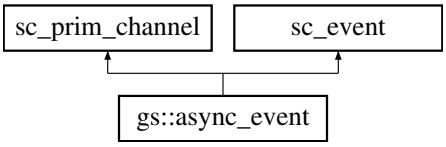
Chapter 4

Class Documentation

4.1 gs::async_event Class Reference

Inheritance diagram for gs::async_event:



Public Member Functions

- **async_event** (bool start_attached=true)
- void **async_notify** ()
- void **notify** (sc_core::sc_time delay=sc_core::sc_time(sc_core::SC_ZERO_TIME))
- void **async_attach_suspending** ()
- void **async_detach_suspending** ()
- void **enable_attach_suspending** (bool e)

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/async_event.h

4.2 gs::RunOnSysC::AsyncJob Class Reference

Public Types

- using **Ptr** = std::shared_ptr< AsyncJob >

Public Member Functions

- **AsyncJob** (std::function< void()> &&job)
- **AsyncJob** (std::function< void()> &job)
- **AsyncJob** (const AsyncJob &)=delete
- void **operator()** ()
- void cancel ()

  Cancel a job.
- void **wait** ()
- bool **is_cancelled** () const

4.2.1 Member Function Documentation

4.2.1.1 cancel()

```
void gs::RunOnSysC::AsyncJob::cancel ( )  [inline]
```

Cancel a job.

Cancel a job by setting m_cancelled to true and by resetting the task. Any waiter will then be unblocked immediately.

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/runonsysc.h

4.3 gs::global_pause Class Reference

Public Member Functions

- **global_pause** (const global_pause &)=delete
- void **suspendable** ()
- void **unsuspendable** ()
- void **unsuspend_all** ()
- void **suspend_all** ()
- bool **attach_suspending** (sc_core::sc_prim_channel *p)
- bool **detach_suspending** (sc_core::sc_prim_channel *p)
- void **async_wakeup** ()

Static Public Member Functions

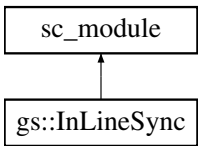
- static global_pause & **get** ()

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/pre_suspending_sc↩_support.h
- /home/thomas/Documents/GreenSocs/build-lib/libgssync/src/pre_suspending_sc_support.cc

4.4 gs::InLineSync Class Reference

Inheritance diagram for gs::InLineSync:



Public Member Functions

- **SC_HAS_PROCESS** (InLineSync)
- **InLineSync** (const sc_core::sc_module_name &name)
- void **b_transport** (tlm::tlm_generic_payload &trans, sc_core::sc_time &delay)
- void **get_direct_mem_ptr** (tlm::tlm_generic_payload &trans, tlm::tlm_dmi &dmi_data)
- void **transport_dgb** (tlm::tlm_generic_payload &trans)
- void **invalidate_direct_mem_ptr** (sc_dt::uint64 start_range, sc_dt::uint64 end_range)

Public Attributes

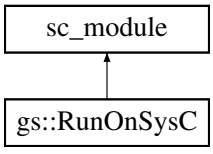
- tlm_utils::simple_target_socket< InLineSync > **target_socket**
- tlm_utils::simple_initiator_socket< InLineSync > **initiator_socket**

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/inlinesync.h

4.5 gs::RunOnSysC Class Reference

Inheritance diagram for gs::RunOnSysC:



Classes

- class AsyncJob

Public Member Functions

- **RunOnSysC** (const sc_core::sc_module_name &n=sc_core::sc_module_name("run-on-sysc"))
- void cancel_pendings ()

  Cancel all pending jobs.
- void cancel_all ()

  Cancel all pending and running jobs.
- void **end_of_simulation** ()
- void **fork_on_systemc** (std::function< void()> job_entry)
- bool run_on_sysc (std::function< void()> job_entry, bool wait=true)

  Run a job on the SystemC kernel thread.

Protected Member Functions

- void **jobs_handler** ()
- void **cancel_pendings_locked** ()

Protected Attributes

- std::thread::id **m_thread_id**
- std::queue< AsyncJob::Ptr > **m_async_jobs**
- AsyncJob::Ptr **m_running_job**
- std::mutex **m_async_jobs_mutex**
- async_event **m_jobs_handler_event**

4.5.1 Member Function Documentation

4.5.1.1 cancel_all()

```
void gs::RunOnSysC::cancel_all ( )  [inline]
```

Cancel all pending and running jobs.

@detail Cancel all the pending jobs and the currently running job. The callers will be unblocked if they are waiting for the job. Note that if the currently running job is resumed, the behaviour is undefined. This method is meant to be called after simulation has ended.

4.5.1.2 cancel_pendings()

```
void gs::RunOnSysC::cancel_pendings ( )  [inline]
```

Cancel all pending jobs.

@detail Cancel all the pending jobs. The callers will be unblocked if they are waiting for the job.

4.5.1.3 run_on_sysc()

```
bool gs::RunOnSysC::run_on_sysc (
            std::function< void()> job_entry,
            bool wait = true )  [inline]
```

Run a job on the SystemC kernel thread.

Parameters

in	*job_entry*	The job to run
in	*wait*	If true, wait for job completion

Returns

true if the job has been succesfully executed or if `wait` was false, false if it has been cancelled (see `RunOnSysC::cancel_all`).

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/runonsysc.h

4.6 gs::semaphore Class Reference

Public Member Functions

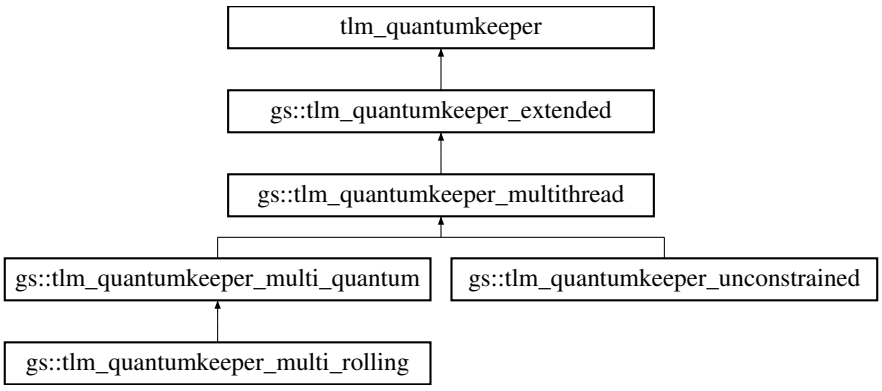
- void **notify** ()
- void **wait** ()
- bool **try_wait** ()

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/semaphore.h

4.7 gs::tlm_quantumkeeper_extended Class Reference

Inheritance diagram for gs::tlm_quantumkeeper_extended:



Public Member Functions

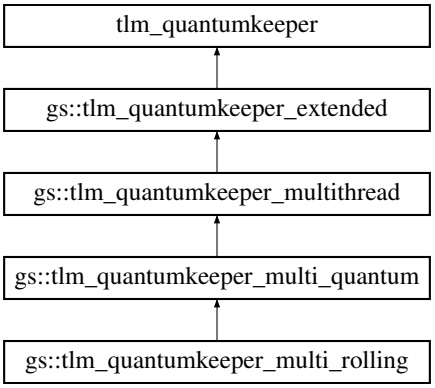
- virtual sc_core::sc_time **time_to_sync** ()
- virtual void **stop** ()
- virtual void **start** (std::function< void()> job=nullptr)
- virtual SyncPolicy::Type **get_thread_type** () const
- virtual bool **need_sync** ()
- virtual bool **need_sync** () const override
- virtual void **run_on_systemc** (std::function< void()> job)

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/qk_extendedif.h

4.8 gs::tlm_quantumkeeper_multi_quantum Class Reference

Inheritance diagram for gs::tlm_quantumkeeper_multi_quantum:



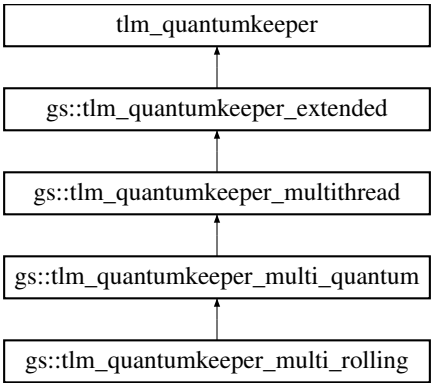
Additional Inherited Members

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/qkmulti-quantum.h

4.9 gs::tlm_quantumkeeper_multi_rolling Class Reference

Inheritance diagram for gs::tlm_quantumkeeper_multi_rolling:



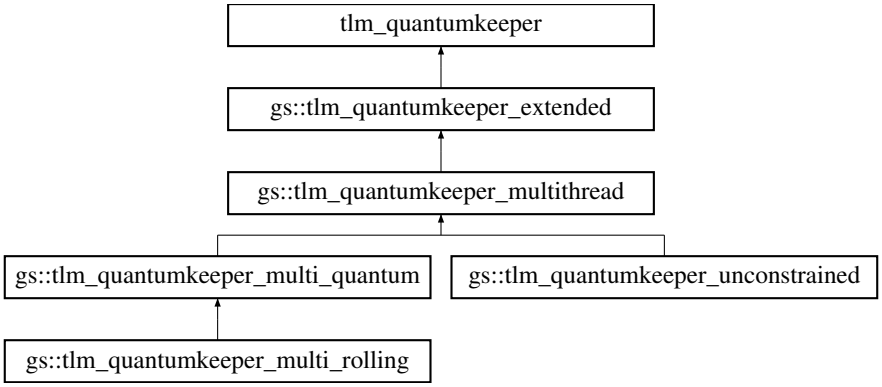
Additional Inherited Members

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/qkmulti-rolling.h

4.10 gs::tlm_quantumkeeper_multithread Class Reference

Inheritance diagram for gs::tlm_quantumkeeper_multithread:



Public Member Functions

- virtual SyncPolicy::Type **get_thread_type** () const override
- virtual void **start** (std::function< void()> job=nullptr) override
- virtual void **stop** () override
- virtual sc_core::sc_time **time_to_sync** () override
- void **inc** (const sc_core::sc_time &t) override
- void **set** (const sc_core::sc_time &t) override
- virtual void **sync** () override
- void **reset** () override
- sc_core::sc_time **get_current_time** () const override
- sc_core::sc_time **get_local_time** () const override
- virtual bool **need_sync** () override

Protected Types

- enum **jobstates** { **NONE**, **RUNNING**, **STOPPED** }

Protected Member Functions

- virtual bool **is_sysc_thread** () const

Protected Attributes

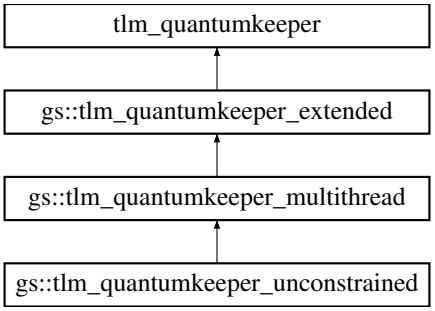
- enum gs::tlm_quantumkeeper_multithread::jobstates **status**
- async_event **m_tick**

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/qkmultithread.h
- /home/thomas/Documents/GreenSocs/build-lib/libgssync/src/qkmultithread.cc

4.11 gs::tlm_quantumkeeper_unconstrained Class Reference

Inheritance diagram for gs::tlm_quantumkeeper_unconstrained:



Additional Inherited Members

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

- /home/thomas/Documents/GreenSocs/build-lib/libgssync/include/greensocs/libgssync/qkmulti-unconstrained.h

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