



SPECADOR

Documentation Generator

- For e, SystemVerilog, Verilog, Verilog-AMS and VHDL

Well organized documentation in no time

Sub-Modules ▾

```
wb_interface : uart_wb
regs : uart_regs
↳ transmitter : uart_transmitter
  ↳ fifo_tx : uart_fifo
    ↳ raminfr#(fifo_pointer_w, fifo_width, fifo_depth)
↳ i_uart_sync_flops : uart_sync_flops
↳ receiver : uart_receiver
  ↳ fifo_rx : uart_fifo#(11)
    ↳ raminfr#(fifo_pointer_w, 8, fifo_depth)
dbg : uart_debug_if
```

Instances ▾

```
apb_subsystem_top : apb_subsystem_top
↳ i_apb_subsystem : apb_subsystem_0
  ↳ i_oc_uart0 : uart_top
  ↳ i_oc_uart1 : uart_top
```

Flow Diagram ▶

BENEFITS

- Generates well-organized and effective documentation, even from limited source code comments.
- Integrates easily into existing development flows allowing design and verification groups to automate the documentation process.
- Keeps the generated documentation in sync with the source code, saving time and reducing maintenance costs.
- Enhances IP packaging.
- Simplifies and encourages documenting the source code.

OVERVIEW

Specador is a tool that automatically generates accurate HTML documentation from comments inserted in the source code. It works in batch mode (command line) and uses dedicated language parsers.

The tool enables design and verification engineers to effortlessly generate and maintain proper and well-organized documentation. With Specador, users can generate meaningful documentation of a design or verification environment even from poorly documented source code, because Specador compiles the code and generates cross-linked class inheritance trees, design hierarchies, and diagrams.

AMIQ's documentation generator can be easily integrated into existing development flows. The documentation is always in sync with the source code, thus eliminating meticulous and problematic tasks like maintaining diagrams or updating lists of ports or functions to reflect the current revision number.

Specador is especially useful for packaging IPs, either for the IP providers or for those using an IP-oriented flow in their company.

Specador recognizes both Javadoc and Natural Docs syntax, which can be used to write the documentation comments as desired, in order to enhance the readability of the HTML output.

Users have the ability to search in the documentation generated with Specador

UVM 1.2 - Public API

class uvm_pkg :: uvm_component

Constructor 3 Struts 1 Variables 6 Functions 13 Tasks 13 Inheritance Diagram Collaboration Diagram Direct Associations Diagram

Class Reference

- Base
- Reporting
- Recording
- Factory
- Phasing
- User Defined Phasing
- Configuration and Resources
- Synchronization
- Containers
- TLM
- TLM1
- TLM2
- Components
- Comparators
- Sequences
- Sequences
- Macros
- Policies
- Data Access Policies
- Register Layer
- Command Line Processor
- Globals
- TX
- README.txt
- release-notes.txt
- LICENSE.txt
- NOTICE.txt

Class Hierarchy

```

class uvm_void
class uvm_object extends uvm_void
class uvm_report_object extends uvm_object
class uvm_component extends uvm_report_object

```

The uvm_component class is the root base class for UVM components. In addition to the features inherited from uvm_object and uvm_report_object, uvm_component provides the following interfaces:

Hierarchy: provides methods for searching and traversing the component hierarchy.

Phasing: defines a phased test flow that all components follow, with a group of standard phase methods and an API for custom phases and multiple independent phasing domains to mirror DPI behavior e.g. power.

Reporting: provides a convenience interface to the uvm_report_handler. All messages, warnings, and errors are processed through this interface.

Transaction recording: provides methods for recording the transactions produced or consumed by the component to a transaction database (vendor specific).

Factory: provides a convenience interface to the uvm_factory. The factory is used to create new components and other objects based on type-wide and instance-specific configuration.

The uvm_component is automatically seeded during construction using UVM seeding, if enabled. All other objects must be manually reseeded, if appropriate. See uvm_object::reseed for more information.

Constructor

```

new (string name, uvm_component parent)

```

Creates a new component with the given leaf instance name and handle to its parent. If the component is a top-level component (i.e. it is created in a static module or interface, parent should be null.

The component will be inserted as a child of the parent object, if any. If parent already has a child by the given name, an error is produced.

If parent is null, then the component will become a child of the implicit top-level component, uvm_top.

All classes derived from uvm_component must call super.new(name,parent). New

Schematic Diagram

Collaboration Diagram

Documentation generated with Specador

FEATURES

- Language awareness – the documentation is organized by language-specific concepts, including both relationship and structural information. For example, there are dedicated categories for packages, classes, entities or structs and one can easily explore the class inheritance, design hierarchy or entity architectures.
- Cross-linked documentation – allows users to easily jump from the function documentation to one of its arguments.
- Hyperlinked diagrams – Specador includes diagrams such as Schematic and State Machine HDL Diagrams or Inheritance and Collaboration UML Class Diagrams in the HTML output. The diagrams are hyperlinked and in consequence, one can click on a class in a diagram and jump to the chapter where it is documented.
- Review-oriented sections – Specador generates sections that aggregate information, for example coverage or checking aspects.
- Quick search – users can search the documentation by class or module name.
- Enhanced readability of the HTML output – because Specador recognizes the Javadoc and Natural Docs syntax, users can beautify the HTML output by using attributes like bold, italic, and lists.
- Documentation control – allows users to control what documentation they generate. For example, they can filter out entire packages or private APIs. One may not want to expose an internal API, hence one has the option to select what API subset will be documented.
- Additional embedded or linked documentation – one can easily embed other HTML documentation, add additional menus in the table of contents, or add links to MS Word and PDF documents and extra screenshots.
- Scalability – Specador automatically creates cross-links to pre-generated documentation of other IPs or projects.

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