EDA Simulator Link™ DS Release Notes

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Summary by Version

This table provides quick access to what's new in each version. For clarification, see "Using Release Notes" on page 1.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V2.0 (R2008b)	Yes Details	No	Bug Reports	Printable Release Notes: PDF Current product documentation
V1.0 (R2008a)	Yes Details	No	Bug Reports	No

Using Release Notes

Use release notes when upgrading to a newer version to learn about:

- New features

- Changes

- Potential impact on your existing files and practices

Review the release notes for other MathWorks™ products required for this product (for example, MATLAB® or Simulink®) for enhancements, bugs, and compatibility considerations that also might impact you.

If you are upgrading from a software version other than the most recent one, review the release notes for all interim versions, not just for the version you are installing. For example, when upgrading from V1.0 to V1.2, review the release notes for V1.1 and V1.2.

What's in the Release Notes

New Features and Changes

- New functionality

- Changes to existing functionality

Version Compatibility Considerations

When a new feature or change introduces a reported incompatibility between versions, the **Compatibility Considerations** subsection explains the impact.

Compatibility issues reported after the product is released appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so you should also review the fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

The MathWorks offers a user-searchable Bug Reports database so you can view Bug Reports. The development team updates this database at release time and as more information becomes available. This includes provisions for any known workarounds or file replacements. Information is available for bugs existing in or fixed in Release 14SP2 or later. Information is not available for all bugs in earlier releases.

Access Bug Reports using your MathWorks Account.

Version 2.0 (R2008b) EDA Simulator Link™ DS Software

This table summarizes what's new in V2.0 (R2008b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	Printable Release Notes: PDF Current product documentation

New features and changes introduced in this version are:

- "Automatically Calculate a Timescale Factor " on page 3

- "Cosimulate Mixed-Language Designs (Verilog and VHDL) with MATLAB" on page 4

- "Improve Simulation Speed with Tip in New Best Practices Appendix" on page 4

- "Use Same M-Function for Multiple HDL Instances (Beta)" on page 5

Automatically Calculate a Timescale Factor

The new Automatic Timescale button on the Timescales Pane assists you in calculating an initial timescale. The software scales all sample times to be a multiple of the HDL simulator resolution limit (tick) and allows you to approve the calculated timescale (by not making any changes) or reject it (by entering your own timescale).
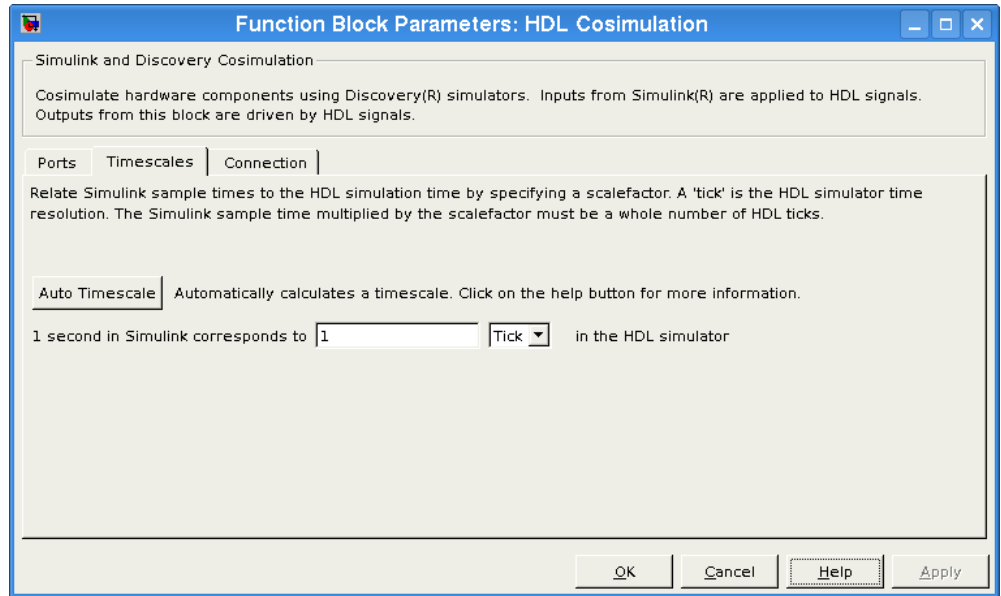
See "Timescales Pane" in the HDL Cosimulation block reference.

Cosimulate Mixed-Language Designs (Verilog and VHDL) with MATLAB

EDA Simulator Link™ DS software now supports mixed-language HDL models (models with both Verilog and VHDL components) for both MATLAB and Simulink, allowing you to cosimulate VHDL and Verilog signals simultaneously. Both MATLAB and Simulink software can access components in different languages at any level. See "Hardware Description Language (HDL) Support".

Improve Simulation Speed with Tip in New Best Practices Appendix

This new section contains tips for analyzing and improving cosimulation performance. Future releases will include additional new Best Practices. See "EDA Simulator Link DS Best Practices".

Use Same M-Function for Multiple HDL Instances (Beta)

This release adds new argument, *use_instance_obj,* to the MATLAB functions `matlabcp` and `matlabtb`. This feature replaces the iport, oport, tnext, tnow, and portinfo arguments of the M-function definition with an *HDL instance object* passed to the function as an argument. With this feature, `matlabcp` and `matlabtb` M-function callbacks get the HDL instance object passed in to hold state, provide read/write access protection for signals, and allow you to add state as needed.

With this feature you gain the following advantages:

- You can use the same M-function to represent behavior for different instances of the same module in HDL without need for one-off wrapper functions.

- You no longer need special "portinfo" argument on first invocation.

- You no longer need to use persistent or global variables.

- You will receive better feedback and protections on reading/writing of signals.

- You can use object fields to identify the instance path and whether the call comes from a component or test bench function.

- You can use the field *argument* to pass user-defined arguments from the `matlabcp` or `matlabtb` instantiation on the HDL side to the M-function callbacks.

The new argument, -use_instance_obj, is identical for both `matlabcp` and `matlabtb`. See `matlabcp` and `matlabtb` for documentation regarding this beta function argument.

The MathWorks encourages you to use this new feature and provide feedback.

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Version 1.0 (R2008a) EDA Simulator Link™ DS Software

This table summarizes what's new in V1.0 (R2008a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	No

Introduction to EDA Simulator Link™ DS Software

EDA Simulator Link DS software integrates the MATLAB and Simulink products into your integrated circuit development flow. It lets you cosimulate and verify hardware description language (HDL) code using Synopsys Discovery platform simulators.

EDA Simulator Link DS Release 1.0 includes these features:

- Cosimulate Verilog and/or VHDL code with MATLAB and Simulink

- Mixed-language support with MATLAB through the use of wrappers of the Top-level language around the other HDL blocks

- MATLAB component capability, enabling execution of MATLAB code inside a top-level HDL entity. MATLAB runs as a placeholder for "to-be-coded" HDL

- Frame-based simulation, providing accelerated verification (with the Signal Processing Blockset, available separately)

- User-selectable communication modes between MATLAB or Simulink and Discovery, providing shared memory (for fastest performance) and TCP/IP sockets (for fast performance and versatility)

- Multiple simulation options from one Simulink model, including connection of multiple Simulink HDL cosimulation blocks to one or more Discovery simulators

- Multiple simulation options from MATLAB, including connection of multiple MATLAB components or test benches to one or more MATLAB servers

- Interactive or batch mode cosimulation, debugging, testing, and verification of HDL code from MATLAB

For More Information

See the *EDA Simulator Link™ DS User's Guide* for comprehensive information on the EDA Simulator Link DS software.

Compatibility Summary for EDA Simulator Link™ DS Software

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
New Version **V2.0 (R2008b)**	None
V1.0 (R2008a)	None