

MATLAB® & Simulink®

Release Notes for R2011b

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Release Notes for R2011b

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Revision History

September 2011 Online only

New for Release 2011b

General Release Notes for R2011b

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Highlights of R2011b

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What’s New in Release 2011b

Release 2011b includes new features in MATLAB® and Simulink®, one new product, and updates and bug fixes to 83 other products. Subscribers to MathWorks® Software Maintenance Service can download product updates. Visit the License Center to download products, activate software, and manage your license and user information.

MATLAB Product Family Highlights

- MATLAB: Startup Accelerator for faster startup on Windows®, read and write portions of arrays from MAT-files, and new spreadsheet import tool
- Parallel Computing Toolbox™: Increase in local workers from 8 to 12
- Image Processing Toolbox™: Parallel block processing (blockproc) of large images with Parallel Computing Toolbox
- Global Optimization Toolbox: Mixed-integer nonlinear programming in genetic algorithm solver
- Statistics Toolbox™: Lasso and elastic net for linear regression variable selection from high-dimensional data sets

- Financial Derivatives Toolbox™: Pricing and sensitivity calculations for sinking fund provisions, range bonds, and step up/down coupon bonds
- Data Acquisition Toolbox™: Measurement support for IEPE sensors
- Instrument Control Toolbox™: Bluetooth serial communication support
- Bioinformatics Toolbox™: NGS Browser for viewing multiple tracks of SAM- or BAM-formatted data
- Robust Control Toolbox™: Automatic tuning of arbitrary controller architectures

Simulink Product Family Highlights

- Simulink: Project manager for library, model component, script and MAT-file configuration management
- Simulink® Coder™: Concurrent execution on multicore processors for host-based targets and xPC Target™
- Embedded Coder™: Code coverage with LDRA Testbed® and function execution profiling for SIL and PIL testing
- Simulink® Fixed Point™: Autoscaling using derived signal ranges
- Simulink® Design Optimization™: Frequency-domain constraints for model optimization
- SimElectronics®: Semiconductor models with temperature-dependent behavior and configurable thermal ports
- SimEvents®: Faster discrete-event simulation and native hybrid system modeling with Simulink
- IEC Certification Kit: ISO 26262 support for Simulink® Design Verifier™ and Simulink® Verification and Validation™
- Simulink® Code Inspector™: A new product for automating source code reviews for safety standards

New Products

R2011b contains one new product.

Product Name	Description
Simulink Code Inspector	Automate source code reviews for safety standards

For details, see “New Products” on page 1-32.

R2011b Products with License-Related Changes

One product has license-related changes in R2011b.

For details, see “R2011b Products with License-Related Changes” on page 1-33.

Installation and Activation

See “Installation and Activation” on page 1-34 for information about changes to the installation and activation of MathWorks products.

System Requirements

See “System Requirements” on page 1-35 for information about System Requirements changes.

Summary of Changes to Each Product

See “Release Summary” on page 1-36 for a summary of what has changed for each product for R2011b, including whether the product has new features, bug fixes, and compatibility issues.

Summary of New Features

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MATLAB 7.13

Development Environment

- Startup Accelerator for faster MATLAB startup on Windows, especially on Windows XP, and for network installations
- Spreadsheet Import Tool that provides more options for selecting and loading mixed textual and numeric data
- Readability and navigation improvements to warning and error messages in the MATLAB command window
- Automatic variable and function renaming in the MATLAB Editor

Performance and Large Data Set Handling

- Increased performance in the MATLAB class system, especially for complex data structures
- `matfile` function to load or save portions of an array in a MAT-file

Mathematics

- `griddedInterpolant` object for more control, better performance, and memory efficiency in interpolation for gridded data

File I/O and External Interfacing

- MPEG-4 and MOV file support in VideoReader on Microsoft® Windows 7
- NetCDF 4.1.2 support that provides cache size control for increased performance with large chunked NetCDF files

- Exchange of multidimensional arrays and cell arrays directly between MATLAB and Microsoft .NET

For details, see the product-specific release notes.

Simulink 7.8

Project Management

- Simulink Projects tool that finds, manages, and shares all the required files of your project
- Standardized ways to initialize and shut down projects and access common operations
- Integration with Subversion, an external source control tool
- Change sets for viewing and labeling modified files for peer review workflows
- Model Reference rebuild algorithm enhancements that simplify workflows under configuration management

Component-Based Modeling

- Enable Port input at root level of models
- Continuous states in For Each Subsystem block for efficient modeling of system-of-systems
- Modeling of concurrent execution effects for multicore embedded systems
- Lockable library links that enable control of editing by end users
- Model reference accelerator mode build process for reduced memory usage by libraries

Data Management

- Specification of design ranges for individual signals in a bus for improved model checking and analysis

- Display of design ranges on signals to enhance model inspection

Block Enhancements

- Delay block that supports variable delay length, external reset, initial condition port, circular buffers, and state attributes
- Boolean output data type for the Edge Detection blocks in the Logic and Bit Operations library
- Explicit specification of intermediate data type for Sqrt and Reciprocal Sqrt blocks
- Single-precision floating point in the Discrete Zero-Pole block
- Array of bus signals in Data Type Duplicate block and all unit delay blocks in the Additional Discrete library

Performance

- Accelerator mode support for models with algebraic loops
- Model Explorer list view that improves performance when displaying large data sets

User Interface Enhancements

- Freeze columns in Model Explorer that keep the type and name of an object always visible
- Report generation and an API for comparing signals and simulation runs for Simulation Data Inspector tool
- Built-in block masks that provide custom icons and dialogs using the Mask Editor
- Graphical property editor for setting Scope block colors and line properties

For details, see the product-specific release notes.

Aerospace Blockset 3.8

- Efficient C code generation for all blocks through code reuse functionality of Simulink Coder

For details, see the product-specific release notes.

Bioinformatics Toolbox 4.0

- NGS Browser for viewing and investigating multiple tracks of SAM- or BAM-formatted data and feature annotations
- Objects and methods for managing GFF and GTF feature annotations
- NGS workflow demos including ChIP-Seq and RNA-Seq
- BioMap object for indexed access to both SAM- and BAM-formatted files

For details, see the product-specific release notes.

Communications System Toolbox 5.1

- Turbo code Simulink blocks and MATLAB System objects
- Hardware reset for Viterbi Decoder block
- GPU implementations of Viterbi Decoder, AWGN Channel, PSK Modulator, Block Interleaver, Block Deinterleaver (requires Parallel Computing Toolbox)
- Variable sizing for APP, OSTBC, CRC, Turbo Encoder and Decoder, Error Rate Calculator blocks
- Variable sizing for puncturing for Viterbi Decoder block

For details, see the product-specific release notes.

Computer Vision System Toolbox 4.1

- SURF feature detection, extraction, and matching
- Stereo disparity map function

- Conventions for indexing, spatial coordinates, and representation of geometric transforms that provide improved interoperability with Image Processing Toolbox
- Support for reading compressed AVI files on Linux® and Mac®

For details, see the product-specific release notes.

Control System Toolbox 9.2

- Formula-based specification of summing junctions and vector signal naming for `sumblk` and `connect` commands

For details, see the product-specific release notes.

Curve Fitting Toolbox 3.2

- Single interactive tool for fitting curves and surfaces
- Zoom and pan for surfaces in Curve Fitting Tool

For details, see the product-specific release notes.

Data Acquisition Toolbox 3.0

- Support for counters and timers expanded on National Instruments® devices using session-based interface
- Support for IEPE measurements expanded on National Instruments devices using session-based interface
- 64-bit support for 150 additional National Instruments devices via the session-based interface

For details, see the product-specific release notes.

Datafeed Toolbox 4.2

- Support for SIX Telekurs™ data service provider
- Performance improvements for Bloomberg® intraday and historical data

For details, see the product-specific release notes.

DO Qualification Kit 1.5

- Qualification artifacts for R2011b release of supported verification products

For details, see the product-specific release notes.

DSP System Toolbox 8.1

- API to create custom System objects in MATLAB
- Audio weighting filters and arbitrary group delay filter support in MATLAB and Simulink
- Equiripple design enhancements for several filter responses in MATLAB and Simulink, including arbitrary magnitude, highpass, bandpass, bandstop, and differentiator
- Allpole Filter block for Simulink
- Non-power-of-two transform length and FFTW library support for FFT blocks and System objects

For details, see the product-specific release notes.

EDA Simulator Link 3.4

- FPGA-in-the-Loop (FIL) simulation available through the HDL Workflow Advisor in Simulink® HDL Coder™
- Unlimited-sized vector input and output ports for FIL

- Model reference and variable step solver support in FPGA-in-the-Loop simulations

For details, see the product-specific release notes.

Embedded Coder 6.1

- Static code metrics in code generation report
- Support for AUTOSAR schema version 3.2, sensor and actuator components, and single XML file generation
- LDRA Testbed® code coverage and function execution profiling for SIL and PIL testing
- Wind River® VxWorks® 6.8 target using makefiles
- User interface for authoring and managing code replacement libraries, including SIMD and Intel® IPP
- Saturation control of Stateflow® data
- Code efficiency improvements for switch blocks sharing common conditions
- MISRA C® compliance improvements for Stateflow state activity comparisons

For details, see the product-specific release notes.

Filter Design HDL Coder 2.9

- HDL code generation for digital-up and digital-down converter System objects
- Multiplier pipelining extended to serial implementations
- Serial implementations for IIR Filter (Direct form II second order sections)

For details, see the product-specific release notes.

Financial Derivatives Toolbox 5.8

- Pricing and sensitivity for step-up and step-down coupon bonds with callable/puttable features
- Pricing and sensitivity for bonds with sinking fund provisions
- Pricing and sensitivity for range bonds

For details, see the product-specific release notes.

Financial Toolbox 4.1

- Portfolio optimization with Sharpe ratio maximization and one-way turnover constraints
- Forecasting and stress testing of corporate default rates demo
- Cash flow and time mapping for bond portfolios with variable coupon rates and variable face values
- Transition probability functions for credit quality thresholds, nonsquare matrices, and user-defined ratings

For details, see the product-specific release notes.

Fixed-Income Toolbox 2.2

- Diebold Li model for yield curve demo
- Prepayment modeling for mortgage-backed securities demo

For details, see the product-specific release notes.

Fixed-Point Toolbox 3.4

- Added functions to instrument fixed-point code and report results: `buildInstrumentedMex`, `showInstrumentationResults`, `clearInstrumentationResults`
- Fixed-Point support for `atan2`, `cos`, `mod`, `qr`, and `sin` MATLAB functions

- Added fixed-point arithmetic functions: `cordicabs`, `cordicangle`, `cordicatan2`, `cordiccart2pol`, `fixed.Quantizer`, `fixed.accumpos`, `fixed.accumneg`, and `fixed.aggregateType`
- Toolbox supported by MATLAB® Compiler™ for deployment

For details, see the product-specific release notes.

Global Optimization Toolbox 3.2

- Mixed-integer nonlinear programming in genetic algorithm solver

For details, see the product-specific release notes.

IEC Certification Kit 2.0

- ISO® 26262 tool qualification by TÜV SÜD of R2011b versions of Embedded Coder, Simulink Design Verifier, Simulink Verification and Validation, and Polyspace® products
- IEC 61508 tool certification by TÜV SÜD of R2011b versions of Embedded Coder, Simulink® PLC Coder™, Simulink Design Verifier, Simulink Verification and Validation, and Polyspace products
- Certification artifacts and software tool validation tests for Simulink Verification and Validation product
- Additional Embedded Coder software tool validation tests

For details, see the product-specific release notes.

Image Acquisition Toolbox 4.2

- Support for GigE Vision interface standard on Mac
- Image Acquisition Tool disk logging that supports additional codecs
- Support for additional QImaging® devices on Windows

For details, see the product-specific release notes.

Image Processing Toolbox 7.3

- Parallel execution option for block processing of large images
- `bwdistgeodesic` function for the geodesic distance transform of a binary image
- `graydist` function for the gray-weighted distance transform of a grayscale image
- `imapplymatrix` function for applying linear combination to image color channels
- Performance enhancements in `imhist` and `rgb2gray` functions

For details, see the product-specific release notes.

Instrument Control Toolbox 3.0

- Support for Bluetooth® serial protocol
- `oscilloscope` function for simplified oscilloscope control and waveform acquisition

For details, see the product-specific release notes.

Mapping Toolbox 3.4

- `contourcbar` function that creates color bar for filled contour displays
- Support for Web Map Service 1.3.0

For details, see the product-specific release notes.

MATLAB Builder EX 2.1 (for Microsoft Excel)

- Faster installation of MATLAB Compiler Runtime (MCR)
- Simplified component registration through automatic detection of user privileges

For details, see the product-specific release notes.

MATLAB Builder JA 2.2.3 (for JAVA language)

- Faster installation of MATLAB Compiler Runtime (MCR)

For details, see the product-specific release notes.

MATLAB Builder NE 4.1 (for Microsoft .NET Framework)

- Support for MEF (.NET Framework 4.0 only), reducing code and simplifying component design
- Simplified COM component registration through automatic detection of user privileges
- Faster installation of MATLAB Compiler Runtime (MCR)

For details, see the product-specific release notes.

MATLAB Coder 2.1

- Code generation support for matrix deletion syntax
- Code generation support for `deal` and `structfun` functions

For details, see the product-specific release notes.

MATLAB Compiler 4.16

- Faster installation of MATLAB Compiler Runtime (MCR)

For details, see the product-specific release notes.

MATLAB Distributed Computing Server 5.2

- GPU computing enhancements: random number generation on GPUs, more GPU-enabled MATLAB functions, and improved `arrayfun` function for GPU computing applications in MATLAB
- Increase in the number of local workers (from 8 to 12) supported by Parallel Computing Toolbox and by MATLAB Compiler generated executables from parallel applications
- `inv`, `sort`, `meshgrid`, `ndgrid`, `linspace`, and `logspace` functions available for distributed arrays
- Job monitor tool on MATLAB desktop for tracking jobs launched via Parallel Computing Toolbox
- Point-and-click launch of MATLAB scripts for execution in batch mode from MATLAB desktop

For details, see the product-specific release notes.

MATLAB Report Generator 3.11

- Full-page images available in Axes Snapshot and Figure Snapshot components for PDF format
- Option for displaying a legal notice, report creation date, and copyright in the Title Page component for both Microsoft Word and PDF formats

For details, see the product-specific release notes.

Model Predictive Control Toolbox 4.0

- C code generation improvements for all targets with MPC Controller block
- Faster QP solver algorithm for improving MPC Controller performance
- Run-time weight tuning and constraint softening for MPC Controller block
- Run-time monitoring of MPC controller performance to detect when an optimal solution could not be found
- `review` command for diagnosing issues with MPC controller parameters that could lead to run-time failures

For details, see the product-specific release notes.

Model-Based Calibration Toolbox 4.3

- 64-bit Windows support
- Efficient candidate test-set generation through improved warnings and suggestions

For details, see the product-specific release notes.

OPC Toolbox 3.1

- 64-bit Windows support

For details, see the product-specific release notes

Optimization Toolbox 6.1

- Performance improvements in `fsolve` trust-region-dogleg and `fmincon` interior-point
- Derivative estimation using central finite differences in `fsolve`, `lsqcurvefit`, and `lsqnonlin` solvers

For details, see the product-specific release notes.

Parallel Computing Toolbox 5.2

- GPU computing enhancements: random number generation on GPUs, more GPU-enabled MATLAB functions, and improved arrayfun function for GPU computing applications in MATLAB
- Increase in the number of local workers (from 8 to 12) supported by Parallel Computing Toolbox and by MATLAB Compiler generated executables from parallel applications
- inv, sort, meshgrid, ndgrid, linspace, and logspace functions available for distributed arrays
- Job monitor tool on MATLAB desktop for tracking jobs launched via Parallel Computing Toolbox
- Point-and-click launch of MATLAB scripts for execution in batch mode from MATLAB desktop

For details, see the product-specific release notes.

Phased Array System Toolbox 1.1

- Constant gamma clutter modeling
- Phase-coded waveform support
- Spectrum weighting for matched filters
- Triangular lattice modeling for uniform rectangular arrays

For details, see the product-specific release notes.

Polyspace Server for Ada 6.2

- Identification in Polyspace metrics of verification result differences in consecutive runs

For details, see the product-specific release notes.

Polyspace Client for C/C++ 8.2

- Support for MISRA-C:2004 Technical Corrigendum 1
- Variable range in data dictionary

For details, see the product-specific release notes.

Polyspace Server for C/C++ 8.2

- Identification in Polyspace metrics of verification result differences in consecutive runs

For details, see the product-specific release notes.

Polyspace Model Link SL 5.8

- Polyspace verification configuration integrated in Simulink configuration set
- Support for 16-bit cross compiler
- Code generation options that check for optimal code verification

For details, see the product-specific release notes.

Real-Time Windows Target 3.8

- Support for National Instruments PXIe-6251 and PXIe-6259 I/O boards

For details, see the product-specific release notes.

RF Toolbox 2.9

- Intermediate frequency planning tool for mixers

- Transmission line S-parameter to RLGC conversion
- `rationalfit` function improvements for data-centric models

For details, see the product-specific release notes.

Robust Control Toolbox 4.0

- `looptune` command for automated tuning of fixed-structure control systems to meet bandwidth, stability margin, tracking, and disturbance rejection requirements
- Control system tuning for Simulink models with `looptune` or `hinfstruct` commands using `sITunable` interface (with Simulink® Control Design™)

For details, see the product-specific release notes.

SimBiology 4.0

- Parameter estimation performance and robustness enhancements
- Covariate modeling for nonlinear mixed-effect models
- Standard errors for nonlinear regression, including nonlinear mixed-effect models
- Sensitivity analysis for models with discontinuities

For details, see the product-specific release notes.

SimDriveline 2.1

- Rotational and translational detent blocks
- Flexible shaft block
- Run-time diagnostics added to Generic Engine and Variable Ratio Transmission blocks

- Additional parameterization options in Torque Converter block
- Variable name improvements for data logging of SimDriveline™ models

For details, see the product-specific release notes.

SimElectronics 2.0

- Optional thermal ports available for semiconductor blocks
- Operational Transconductance Amplifier block
- Push-Pull Output block that provides behavioral representation of a CMOS complementary output stage
- Enhanced H-Bridge block with improved load dependency modeling and additional freewheeling option
- DC Motor block support for no-load current data for rotor damping

For details, see the product-specific release notes.

SimEvents 4.0

- Enhanced modeling syntax that clearly differentiates event-driven from time-driven components
- Opt-in upgrade workflow that helps migrate models to leverage enhanced modeling syntax
- Entity and signal animation enabling better insight into event-based execution
- Simulation speed and memory performance improvements that scale to support large models
- Simulink Math and Logic libraries enabled for event-driven computations

- Integration of MATLAB algorithms and control logic into discrete-event models using MATLAB Function block and Stateflow charts
- Event Filter blocks that can be combined with Atomic Subsystem blocks to define custom event-triggered computational components

For details, see the product-specific release notes.

SimHydraulics 1.10

- Gate Valve block

For details, see the product-specific release notes.

SimPowerSystems 5.5

- Requires Simscape™
- Blocks for connecting SimPowerSystems™ and Simscape circuits
- Support for Simscape Editing Modes
- Library accessible under the Simscape Library node

For details, see the product-specific release notes.

SimRF 3.1

- Reduced model startup time
- Noise-modeling feature improvements, including global noise temperature and frequency-dependent noise source
- Output option for real passband signals
- More accurate high-frequency modeling in S-parameter block
- S-parameter fit visualization in S-parameter block

For details, see the product-specific release notes.

Simscape 3.6

- User-defined simulation diagnostics in the Simscape language
- Asynchronous Sample & Hold block in Foundation library for modeling discrete and event-based behaviors
- Specialized simulator for linear systems, reducing number of states and accelerating simulation

For details, see the product-specific release notes.

Simulink 3D Animation 6.0

- VR Source Block for streaming data from 3D scene into Simulink
- Global coordinates available for global reading of positions and orientations for vrnode objects
- Scene templates representing earth, roads, sea, and terrains for jump-starting 3D scene development
- Enhanced 3D World Editor that includes colored triad for better VRML coordinate axes representation with improved VRML script editing
- Components library in 3D World Editor that includes new sensing objects, such as push buttons, toggle buttons, and 2D setpoint area
- Full-screen toggle button in Simulink® 3D Animation™ viewer for switching between default and full-screen modes

For details, see the product-specific release notes.

Simulink Coder 8.1

- Concurrent execution and host targeting support for multicore processors
- Model semantics support, including tunable table size, integer delay, and enabled model reference
- Code size and speed optimizations, including more parameter pooling and fewer fixed-point shifts

- Code Generation Advisor objective setting for execution efficiency
- Complex signal type in Trigonometric Function block

For details, see the product-specific release notes.

Simulink Control Design 3.4

- Redesigned graphical tool for improved linear analysis workflows
- Interactive frequency response estimation and validation of linearization results
- Optimization of model parameters to meet design requirements specified by Model Verification blocks (with Simulink Design Optimization)
- Automatic tuning of PID Controller blocks in a referenced model
- `sITunable` interface for tuning control systems to meet bandwidth, stability margin, tracking, and disturbance rejection requirements (with Robust Control Toolbox)

For details, see the product-specific release notes.

Simulink Design Optimization 2.0

- Redesigned graphical tool and commands for improved response optimization workflows
- Formulation and solving of response optimization problems without adding blocks to the model
- Optimization of Simulink model parameters to meet frequency-domain requirements
- Custom constraints and cost functions for optimizing model response

- Optimization of model parameters to meet design requirements specified by Model Verification blocks
- Assertion detection in Check Custom Bounds, Check Step Response Characteristics, and Check Against Reference blocks during time-domain model verification

For details, see the product-specific release notes.

Simulink Design Verifier 2.1

- Signal range computation and violation detection
- Test generation for additional math functions and lookup table configurations
- Analysis results for trigger and enable ports for Model blocks

For details, see the product-specific release notes.

Simulink Fixed Point 7.0

- Range analysis that provides derived minimums and maximums for all signals
- Automatic scaling recommendations based on derived ranges
- Automatic word length recommendations
- Fixed-Point Tool simplified management, including run naming and shortcuts
- Fixed-Point Tool integration with Fixed-Point Advisor
- Code efficiency improvements and user controls for floating-point conversion

For details, see the product-specific release notes.

Simulink HDL Coder 2.2

- FPGA-in-the-Loop (FIL) simulation available through the HDL Workflow Advisor
- RAM-based implementation for persistent variables in MATLAB Function block
- Block mask parameters generated as generics in VHDL or as parameters in Verilog
- Oversampling, streaming, and resource sharing that optionally generate multiple clocks
- Hierarchical distributed pipelining that preserves original system hierarchy

For details, see the product-specific release notes.

Simulink Report Generator 3.11

- Full-page image option for PDF format available in Look-Up Table, Scope Snapshot, Stateflow Snapshot, System Snapshot, and To Workspace Plot components
- Filtering criteria for System Filter component extended with new option to include custom MATLAB code
- Filtering options for variable properties available either through class properties or custom MATLAB function for Simulink Workspace Variable component

For details, see the product-specific release notes.

Simulink Verification and Validation 3.2

- Requirements link storage and management outside the model file
- Condition and MCDC coverage for the Simulink If block
- Requirements reports that include complete text of requirement description and specific IBM® Rational® DOORS® object attributes

- Procedure API to control order of Model Advisor checks and suggested model modifications
- Inclusion of Model Advisor Check Input Parameters in the generated report

For details, see the product-specific release notes.

Stateflow 7.8

- Chart property to control saturation for arithmetic operations
- User interface enhancements for logging states and data that improve consistency with Simulink
- Control of default case generation for switch statements in generated code (requires Embedded Coder software)
- Detection of state inconsistency errors at compile time instead of run time
- Modeling of persistent output data with Mealy charts

For details, see the product-specific release notes.

Statistics Toolbox 7.6

- Lasso and elastic net regularization for shrinkage estimation and variable selection with linear regression
- Linear and quadratic discriminant analysis object, compatible with the classification framework
- Nearest neighbor searching for points within a fixed distance
- `datasample` function for weighted or unweighted sampling of data, with or without replacement

For details, see the product-specific release notes.

Symbolic Math Toolbox 5.7

- Opening and editing MuPAD[®] program files in MATLAB Editor

- Options for specifying common algebraic assumptions to simplify results in `dsolve`, `expand`, `int`, `simple`, `simplify`, and `solve` functions
- MATLAB symbolic functions for computing vector gradients (`gradient`), Hessian matrices (`hessian`), and products of series (`symprod`), as well as normalizing expressions (`simplifyFraction`)
- MATLAB symbolic functions for computing complementary error function (`erfc`), polygamma function (`psi`), and Wright omega function (`wrightOmega`)
- `read` function for defining custom MuPAD functions (`.mu` files) in MATLAB

For details, see the product-specific release notes.

Vehicle Network Toolbox 1.5

- 64-bit Window support for Vector and Kvaser CAN interface hardware
- CAN Message Replay and Logging Simulink blocks
- Additional CAN message filtering capabilities at the command line
- Support for additional CAN interface devices from Kvaser

For details, see the product-specific release notes.

Wavelet Toolbox 4.8

- Interactive tool for FFT-based continuous wavelet transform (CWT) and inverse CWT
- MATLAB code generation tool for 1-D and 2-D discrete wavelet and wavelet packet denoising and compression
- Linear scale inverse continuous wavelet transform (CWT)
- Demo showcasing FFT-based Continuous Wavelet Transform (CWT)

For details, see the product-specific release notes.

xPC Target 5.1

- Customizable concurrent execution on target computers using multicore processors
- Support for Intel Core™ i5 and Intel Core™ i7 Processors as multicore targets
- Triggering and Region of Interest support in Camera Link® Interface Standard blocks
- Data storage and transfer using USB drives and sticks
- Host-target communication using USB Ethernet adapters

For details, see the product-specific release notes.

New Products

R2011b contains one new product.

Product Name	Description
Simulink Code Inspector	Automate source code reviews for safety standards

Simulink Code Inspector 1.0

Simulink Code Inspector automatically compares generated code with its source model to satisfy code-review objectives in DO-178 and other high-integrity standards. The code inspector systematically examines blocks, parameters, and settings in a model to determine whether they are structurally equivalent to operations, operators, and data in the generated code. Simulink Code Inspector provides detailed model-to-code and code-to-model traceability analysis. It generates structural equivalence and traceability reports that you can submit to certification authorities to satisfy DO-178 software coding verification objectives.

Key Features

- Structural equivalence analysis and reports
- Bidirectional traceability analysis and reports
- Compatibility checker to restrict model, block, and coder usage to operations typically used in high-integrity applications
- Tool independence from Simulink code generators

For details, see the product-specific release notes.

R2011b Products with License-Related Changes

One product has license-related changes in R2011b. To use the latest version of the product, you must have a subscription to MathWorks Software Maintenance Service (SMS) as of R2011b.

SimPowerSystems

As of R2011b, SimPowerSystems requires Simscape.

If you are:	
Subscribed to SMS as of R2011b for SimPowerSystems	Your license will be updated to include Simscape 3.6 at no initial cost. It will appear on future SMS renewal invoices.
Not Subscribed to SMS as of R2011b for SimPowerSystems	Your license will be updated to include Simscape 3.6 at no initial cost. You will need to renew your SMS subscription to access the updated product.

Installation and Activation

In this section...
“License File Verification Now Performed for Network Licenses by MathWorks Licensing Daemon” on page 1-34
“Installer Now Uses System Proxy Settings by Default on Windows Systems” on page 1-34

License File Verification Now Performed for Network Licenses by MathWorks Licensing Daemon

For Concurrent and Network Named User license options, the MathWorks vendor daemon (MLM.exe) automatically verifies the integrity of the License File before starting the license manager, on all supported platforms. License verification occurs when the license manager starts and when a License File reread operation occurs. This verification helps reduce noncompliance issues related to network license management. If the License File fails verification, the license manager does not start and you cannot use MATLAB.

The MathWorks vendor daemon writes messages to the log file, indicating success or failure of the verification, including any error messages.

Installer Now Uses System Proxy Settings by Default on Windows Systems

The installer and activation applications now use the system proxy settings by default on Windows systems. This makes it easier to connect to MathWorks during installation and activation.

System Requirements

There are no major system requirements changes for R2011b.

For more information on system requirements, visit [Platforms & Requirements](#).

Release Summary

An asterisk (*) after a product name indicates the product has had a Web release since R2011a.

Product (Links to Release Notes)	New Features	Bug Fixes	Compatibility Considerations
MATLAB	Yes	Yes	Yes
Simulink	Yes	Yes	Yes
Aerospace Blockset™	Yes	Yes	Yes
Aerospace Toolbox	No	Yes	Yes
Bioinformatics Toolbox *	Yes	Yes	Yes
Communications System Toolbox™	Yes	Yes	Yes
Computer Vision System Toolbox™	Yes	Yes	Yes
Control System Toolbox™	Yes	No	Yes
Curve Fitting Toolbox™	Yes	No	Yes
Data Acquisition Toolbox	Yes	Yes	No
Database Toolbox™	Yes	Yes	Yes
Datafeed Toolbox™	Yes	Yes	Yes
DO Qualification Kit	Yes	Yes	No
DSP System Toolbox™	Yes	Yes	Yes
Econometrics Toolbox™	Yes	No	Yes
EDA Simulator Link™	Yes	Yes	Yes
Embedded Coder	Yes	Yes	Yes
Filter Design HDL Coder™	Yes	Yes	Yes
Financial Derivatives Toolbox	Yes	Yes	Yes
Financial Toolbox™	Yes	Yes	Yes
Fixed-Income Toolbox™	Yes	Yes	Yes

Product (Links to Release Notes)	New Features	Bug Fixes	Compatibility Considerations
Fixed-Point Toolbox™	Yes	No	Yes
Fuzzy Logic Toolbox™	No	Yes	No
Gauges Blockset™	No	Yes	No
Global Optimization Toolbox	Yes	No	Yes
IEC Certification Kit	Yes	No	No
Image Acquisition Toolbox™	Yes	Yes	Yes
Image Processing Toolbox	Yes	Yes	Yes
Instrument Control Toolbox	Yes	No	No
Mapping Toolbox™	Yes	Yes	Yes
MATLAB® Builder™ EX	Yes	Yes	No
MATLAB Builder JA	Yes	Yes	No
MATLAB Builder NE	Yes	Yes	No
MATLAB® Coder™	Yes	Yes	No
MATLAB Compiler	Yes	Yes	Yes
MATLAB® Distributed Computing Server™	Yes	Yes	Yes
MATLAB® Report Generator™	Yes	Yes	No
Model Predictive Control Toolbox™	Yes	No	No
Model-Based Calibration Toolbox™	Yes	No	No
Neural Network Toolbox™	No	Yes	No
OPC Toolbox™	Yes	Yes	No
Optimization Toolbox™	Yes	Yes	Yes
Parallel Computing Toolbox	Yes	Yes	Yes
Partial Differential Equation Toolbox™ (no release notes)	No	Yes	No
Phased Array System Toolbox™	Yes	No	Yes

Product (Links to Release Notes)	New Features	Bug Fixes	Compatibility Considerations
Polyspace® Client™ for C/C++	Yes	Yes	Yes
Polyspace® Server™ for C/C++	Yes	Yes	Yes
Polyspace Client for Ada	Yes	Yes	Yes
Polyspace Server for Ada	Yes	Yes	Yes
Polyspace Model Link™ SL	Yes	Yes	No
Polyspace Model Link TL	No	No	No
Polyspace UML Link™ RH	No	No	No
Real-Time Windows Target™	Yes	Yes	No
RF Toolbox™	Yes	Yes	Yes
Robust Control Toolbox	Yes	No	Yes
Signal Processing Toolbox™	Yes	No	Yes
SimBiology®	Yes	Yes	Yes
SimDriveline	Yes	No	Yes
SimElectronics	Yes	No	Yes
SimEvents	Yes	No	Yes
SimHydraulics®	Yes	No	No
SimMechanics™	No	Yes	No
SimPowerSystems	Yes	Yes	Yes
SimRF™	Yes	Yes	Yes
Simscape	Yes	Yes	No
Simulink 3D Animation	Yes	No	No
Simulink Code Inspector	Yes	No	No
Simulink Coder	Yes	Yes	Yes
Simulink Control Design	Yes	No	No
Simulink Design Optimization	Yes	No	No

Product (Links to Release Notes)	New Features	Bug Fixes	Compatibility Considerations
Simulink Design Verifier	Yes	Yes	Yes
Simulink Fixed Point	Yes	Yes	Yes
Simulink HDL Coder	Yes	Yes	Yes
Simulink PLC Coder	No	Yes	Yes
Simulink® Report Generator™	Yes	Yes	No
Simulink Verification and Validation	Yes	Yes	Yes
Spreadsheet Link™ EX	No	No	No
Stateflow	Yes	Yes	Yes
Statistics Toolbox	Yes	Yes	Yes
Symbolic Math Toolbox™	Yes	Yes	Yes
System Identification Toolbox™	No	Yes	No
SystemTest™	No	Yes	No
Vehicle Network Toolbox™	Yes	No	Yes
Wavelet Toolbox™	Yes	No	Yes
xPC Target	Yes	Yes	Yes