GARCH Toolbox™ Release Notes

Contents

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 V2.4 (R2008a)	Yes Details	No	No	Printable Release Notes: PDF Current product documentation
V2.3.2 (R2007b)	Yes Details	No	No	No
V2.3.1 (R2007a)	No	No	No	No
V2.3 (R2006b)	Yes Details	No	No	No
V2.2 (R2006a)	Yes Details	No	No	No
V2.1 (R14SP3)	Yes Details	Yes Summary	No	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 2.4 (R2008a) GARCH Toolbox™ Software

This table summarizes new features in V2.4 (R2008a).

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

New features and changes follow.

Support for Monte Carlo Simulation of Stochastic Differential Equations

The GARCH Toolbox™ software now allows you to model dependent financial and economic variables, such as interest rates and equity prices, via Monte Carlo simulation of multivariate diffusion processes. For more information, see "Monte Carlo Simulation of Stochastic Differential Equations" in the GARCH Toolbox documentation.

Version 2.3.2 (R2007b) GARCH Toolbox™ Software

This table summarizes new features in V2.3.2 (R2007b).

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

New features and changes follow.

Changes to garchsim

The garchsim function previously allowed you to specify the State argument as either a scalar or a time-series matrix of standardized, independent, identically distributed disturbances to drive the output Innovations in a time-series process. The State argument must now be a time-series matrix. See the State input argument on the garchsim reference page for more information.

Version 2.3.1 (R2007a) GARCH Toolbox™ Software

This table summarizes new features in V2.3.1 (R2007a).

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

There are no new features or changes in this version.

Version 2.3 (R2006b) GARCH Toolbox™ Software

This table summarizes new features in V2.3 (R2006b).

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

New features and changes follow.

- "Data Preprocessing" on page 6
- "Demos" on page 6

Data Preprocessing

A new Hodrick-Prescott filter, `hpfilter`, separates time series into trend and cyclical components

Demos

A new demo uses the `hpfilter` function to reproduce the results in Hodrick and Prescott's original paper on U.S. business cycles

Version 2.2 (R2006a) GARCH Toolbox™ Software

This table summarizes new features in V2.2 (R2006a).

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

New features and changes follow.

- "User's Guide" on page 7
- "Statistical Functions" on page 7

User's Guide

A new chapter in the *GARCH Toolbox™ User's Guide* explains how to conduct Dickey-Fuller and Phillips-Perron unit root tests with the new statistical functions in the toolbox.

Statistical Functions

Version 2.2 of the GARCH Toolbox software has six new functions. All of them support the ability to conduct univariate unit root tests on time-series data. Three functions support augmented Dickey-Fuller unit root tests. The remaining three support Phillips-Perron unit root tests.

Dickey-Fuller Unit Root Tests

Function	Purpose
dfARDTest	Augmented Dickey-Fuller unit root test based on AR model with drift.
dfARTest	Augmented Dickey-Fuller unit root test based on zero drift AR model.
dfTSTest	Augmented Dickey-Fuller unit root test based on trend stationary AR model.

Phillips-Perron Unit Root Tests

Function	Purpose
ppARDTest	Phillips-Perron unit root test based on AR(1) model with drift.
ppARTest	Phillips-Perron unit root test based on zero drift AR(1) model.
ppTSTest	Phillips-Perron unit root test based on trend stationary AR(1) model.

Version 2.1 (R14SP3) GARCH Toolbox™ Software

This table summarizes what's new in V2.1 (R14SP3):

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

New features and changes follow.

Changes to garchsim

A change introduced in V2.1 of the GARCH Toolbox™ software concerns user-specified noise processes. The garchsim function now allows you to provide a time-series matrix of standardized, i.i.d. disturbances to drive the output Innovations in a time-series process. In previous versions, you could only provide a state that was used to generate a random noise process. See the State input argument on the garchsim reference page for more information.

Compatibility Considerations

garchsim argument Is renamed. In V2.1, the garchsim argument Seed is renamed to State for consistency with the MATLAB® rand and randn functions. The name change, in itself, introduces no backward incompatibilities. The following topic explains a related change.

garchsim defaults to current random number generator state. In V2.0.1 of the GARCH Toolbox software, thegarchsim function used the initial random number generator state, 0, if you did not specify a value for the Seed argument. The Seed argument corresponded to the rand and randn state value.

In V2.1, if you do not specify a value for the State (formerly Seed) argument, garchsim uses the current state of rand and randn, rather than the initial state. Use the commands s = rand('state') and s = randn('state') to determine the current state of these random number generators. For more information, see the rand and randn reference pages.

Compatibility Summary for GARCH Toolbox™ 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.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V2.4 (R2008a)	None
V2.3.2 (R2007b)	None
V2.3.1 (R2007a)	None
V2.3 (R2006b)	None
V2.2 (R2006a)	None
V2.1 (R14SP3)	See the **Compatibility Considerations** subheading for each of these new features and changes: • "Changes to garchsim" on page 9