Optimization Toolbox Release Notes

Contents

Summary by Version

This table provides quick access to what's new in each version. For clarification, see "About 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 V3.1 (R2006b)	Yes Details	Yes Summary	Bug Reports Includes fixes	Printable Release Notes: PDF Current product documentation
V3.0.4 (R2006a)	No	No	Bug Reports Includes fixes	None
V3.0.3 (R14SP3)	Yes Details	No	Bug Reports Includes fixes	None

About Release Notes

Use release notes when upgrading to a newer version to learn about new features and changes, and the potential impact on your existing files and practices. Release notes are also beneficial if you use or support multiple versions.

If you are not upgrading from the most recent previous version, review 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 New Features and Changes, Version Compatibility Considerations, and Bug Reports for V1.1 and V1.2.

New Features and Changes

These include

- New functionality
- Changes to existing functionality

- Changes to system requirements (complete system requirements for the current version are at the MathWorks Web site)
- Any version compatibility considerations associated with each new feature or change

Version Compatibility Considerations

When a new feature or change introduces a known incompatibility between versions, its description includes a **Compatibility Considerations** subsection that details the impact. For a list of all new features and changes that have compatibility impact, see the "Compatibility Summary for Optimization Toolbox" on page 9.

Compatibility issues that become known after the product has been released are added to Bug Reports at the MathWorks Web site. Because bug fixes can sometimes result in incompatibilities, also review fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

MathWorks Bug Reports is a user-searchable database of known problems, workarounds, and fixes. The MathWorks updates the Bug Reports database as new problems and resolutions become known, so check it as needed for the latest information.

Access Bug Reports at the MathWorks Web site using your MathWorks Account. If you are not logged in to your MathWorks Account when you link to Bug Reports, you are prompted to log in or create an account. You then can view bug fixes and known problems for R14SP2 and more recent releases.

The Bug Reports database was introduced for R14SP2 and does not include information for prior releases. You can access a list of bug fixes made in prior versions via the links in the summary table.

Related Documentation at Web Site

Printable Release Notes (PDF). You can print release notes from the PDF version, located at the MathWorks Web site. The PDF version does not support links to other documents or to the Web site, such as to Bug Reports. Use the browser-based version of release notes for access to all information.

Product Documentation. At the MathWorks Web site, you can access complete product documentation for the current version and some previous versions, as noted in the summary table.

Version 3.1 (R2006b) Optimization Toolbox

This table summarizes what's new in Version 3.1 (R2006b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes — Details labeled as **Compatibility Considerations**, below. See also Summary.	Bug Reports Includes fixes	None

New features and changes introduced in this version are

New Optimization Tool

The Optimization Tool is a graphical user interface (GUI) for performing common optimization tasks with the Optimization Toolbox. Using the `optimtool`, you can do the following:

- Select a solver and define your optimization problem.
- Set and inspect optimization options and their default values.
- Run problems and visualize results.
- Import and export problem definitions, algorithm options, and results between the MATLAB workspace and the Optimization Tool.
- Automatically generate M-code to capture, automate, and recreate your problem.
- Access built-in help.

Plot Functions Option Added

You can now specify the `PlotFcns` option in the `optimset` function or using the Optimization Tool for use with an Optimization Toolbox solver. With this option, you can plot various measures of progress while the algorithm executes. You can select from several predefined plots, or you can write your own.

Output Function Option Enhanced to Accept Multiple Functions

You can now specify more than one output function in the `OutputFcn` option.

Changes to the Output Function

The output function input `x` and fields in the `optimValues` structure have the following changes that address bugs in previous releases:

- `residual` now returns the residual vector for `lsqnonlin` and `lsqcurvefit`.
- `resnorm` contains the sum of squares and has been added for `lsqnonlin` and `lsqcurvefit`. The previous field `fval` has been removed for these functions.
- `procedure` has been removed for `lsqnonlin`, `lsqcurvefit`, and `fsolve`.
- `x` now returns the expected shape and size for `fgoalattain` and `fminimax`.

Compatibility Considerations

The above changes to the input `x` and `optimValues` structure have the following compatibility considerations in the output function:

- If you have references to the `residual` in a previous version, note that the value of this field has changed for `lsqnonlin` and `lsqcurvefit`. This fixes the problem addressed by the bug report S-289285.
- Any references to `fval` for `lsqnonlin` and `lsqcurvefit` need to be updated to `resnorm`. This fixes the problem addressed by the bug report S-289285.
- Any references to `procedure` for `lsqnonlin` and `lsqcurvefit` need to be removed. This fixes the problem addressed by the bug report S-291974.

- Previously, for `fgoalattain` and `fminimax`, `x` returned a column vector with an additional last element. If you have references to the values for `x` in a previous version, the extra element must be removed and the output vector may need to be reshaped. This fixes the problem addressed by the bug report S-315658.

Version 3.0.4 (R2006a) Optimization Toolbox

This table summarizes what's new in Version 3.0.4 (R2006a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	Bug Reports Includes fixes	None

Version 3.0.3 (R14SP3) Optimization Toolbox

This table summarizes what's new in Version 3.0.3 (R14SP3):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports Includes fixes	None

New features and changes introduced in this version are

Notify Parameter Added to Display Option for Five Functions

You can now set the optimization option `Display` to `'notify'` for the functions `fmincon`, `fminunc`, `fminimax`, `fgoalattain`, and `fseminf`. When `Display` is set to `'notify'`, the output is displayed only if the function does not converge.

Compatibility Summary for Optimization Toolbox

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
Latest Version V3.1 (R2006b)	See the **Compatibility Considerations** subheading for each of these new features or changes: • "Changes to the Output Function" on page 5
V3.0.4 (R2006a)	None
V3.0.3 (R14SP3)	None