

MATLAB[®] Builder[™] NE Release Notes

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MATLAB® Builder™ NE Release Notes

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R2014a

Faster packaging of compiled libraries	2
--	---

R2013b

Automatic download of version- and platform-specific MATLAB Compiler Runtime from MathWorks website	4
Toolstrip-style user interface for MATLAB Compiler app	4
Customizable installers for deployed applications and libraries, including graphics, splash screen, and icons ..	4

R2013a

Bug Fixes

R2012b

MWArray API Documentation	8
---------------------------------	---

R2012a

MATLAB Compiler Runtime (MCR) Now Available for Web Download	10
Changes in MCR User Data Interface Arguments for Compiling Parallel Computing Toolbox Applications ...	10
Support Updates for Microsoft Visual Studio Versions ...	10

Supported Microsoft .NET Framework Versions	11
---	----

R2011b

Support for Managed Extensibility Framework (MEF) ...	14
Faster Installation of MATLAB Compiler Runtime (MCR) with Improved MCR Installer	14
Support for Graphics Processing Unit (GPU) in Parallel Computing Toolbox Applications	14
Autodetection of Log-in Privileges When Registering COM Components	14
COM Support for MCR Options -nojvm and -logfile ...	15

R2011a

Local Worker Support for Parallel Computing Toolbox Applications	18
Type-Safe Automatic Conversions to and from Native .NET, COM and MATLAB Data Types	18
Windows Communication Foundation (WCF) with Web or Enterprise Service-Oriented Architecture (SOA)	18
Passing of .NET Objects Directly to and from a Compiled MATLAB Function	19
Administrative Rights No Longer Needed to Deploy COM Components	19
Examples Now Compatible with Microsoft Visual Studio 2008	19

R2010bSP1

Bug Fixes

R2010b

Include the MCR Installer from a Link on Your Local Network	24
Support for Microsoft Visual Studio 2010 Added	24
Special Instructions for Compiling C# or VB.NET Code Using a 32-Bit Assembly on Windows 64 Systems	24

R2010a

Native Data Types Available for Cell Arrays and Data Structures	26
Deployment Tool Now Available from Command Line	26
New Video Demo Available	26
Support for .NET Framework Versions 3.0 and 3.5	26

R2009b

Redesigned Deployment Tool GUI	28
Memory Management Reliability, Performance Improved for Hosted Applications	28
Alternate Graphic Renderers Now Available	28
Enhanced Auto-Generated Documentation	28
New Format for Deployment Tool Projects	28

R2009a

Reduced MCR Size Saves on Transfer Time	32
Customized readme.txt Produced with Each Compilation	32
Specify Run-Time Options to the MATLAB Compiler Runtime (MCR)	32

R2008b

.NET Components Now Available for Remoting to Distributed .NET Frameworks	34
Web Deployment of MATLAB Figures Available	34
CTF Archives Now Embedded in a Single Binary Executable for Convenient Deployment of .NET and COM Components	34
Applications Created with Parallel Computing Toolbox Now Able to Be Compiled	34
Support Dropped for .NET Framework Version 1.1 in R2008b	34
Warning Results When Running Figure-Generating Applications or Printing with -nojvm Flag	35
MWException Replaced by .NET Exception Class	35
Same Name Class Objects Shared Between MCR Instances Do Not Work Correctly	35

R2008a

Improved Error Diagnostics Available	38
Support Being Dropped for .NET Framework Version 1.1 in R2008b	38
MATLAB Application Deployment Web Example Guide Available	38

R2007b

Functions Being Removed	40
-------------------------------	----

R2007a

Support Added for Win64	42
Issues with the Microsoft Windows Vista Operating System	42
Unsupported MATLAB Data Types	43

R2006b

New User Interface	46
Support for Shared Assemblies	46
Support for Nested Namespaces	46
Support for .NET Framework Version	46
Additional Support for Microsoft Visual Studio .NET Users	47
Known Issues	47

R2006a

Introducing MATLAB Builder for .NET	50
---	----

R2014a

Version: 4.2.1

New Features: Yes

Bug Fixes: Yes

Faster packaging of compiled libraries

Compatibility Considerations: Yes

MATLAB® Compiler™ uses an new dependency resolution function that is faster.

Compatibility Considerations

The new dependency resolution function requires that p-code being used in a compiled function has an associated `.m` file containing the original source for the p-code.

R2013b

Version: 4.2

New Features: Yes

Bug Fixes: Yes

Automatic download of version- and platform-specific MATLAB Compiler Runtime from MathWorks website

The MATLAB Compiler apps generate a platform specific installer that will automatically download and install the proper MATLAB Compiler Runtime if it is needed.

Toolstrip-style user interface for MATLAB Compiler app

The MATLAB Compiler apps use a toolstrip for commonly used interface components and required input fields.

Customizable installers for deployed applications and libraries, including graphics, splash screen, and icons

The MATLAB Compiler apps have fields for supplying custom graphics, icons, developer profile details, and version numbers to the generated installer.

R2013a

Version: 4.1.3

New Features: No

Bug Fixes: Yes

R2012b

Version: 4.1.2

New Features: No

Bug Fixes: Yes

MWArray API Documentation

Auto-generated Ndoc documentation for MWArray is now included with the product in the *matlabroot*\help\dotnetbuilder folder, where *matlabroot* represents your MATLAB installation folder.

R2012a

Version: 4.1.1

New Features: Yes

Bug Fixes: Yes

MATLAB Compiler Runtime (MCR) Now Available for Web Download

The MATLAB Compiler Runtime (MCR) is now available for downloading from the Web to simplify the distribution of your applications or components created with the MATLAB Compiler.

Direct your end users to the MATLAB Compiler product page to download the MCR, as opposed to redistributing or packaging it with your applications or components.

Changes in MCR User Data Interface Arguments for Compiling Parallel Computing Toolbox Applications **Compatibility Considerations: Yes**

Parallel Computing Toolbox™ configurations are now referred to as *parallel profiles*, as of R2012a.

See Profiles in Compiled Applications in the Parallel Computing Toolbox Release Notes for complete information.

Compatibility Considerations

Compatibility Considerations

The older MCR User Data Interface argument `ParallelConfigurationFile` and `MAT` files will still be supported until Parallel Computing Toolbox documentation states otherwise, but note that if you use the `ParallelConfigurationFile` argument, you must supply a configuration `.mat` file, rather than a profile `.settings` file. If the `ParallelProfile` argument is used, a configuration `.mat` file or a profile `.settings` file can be used.

Support Updates for Microsoft Visual Studio Versions **Compatibility Considerations: Yes**

Support for versions of Microsoft® Visual Studio® is changing.

Compatibility Considerations

Use this table to plan for migration to a supported version of Microsoft Visual Studio.

Microsoft Visual Studio Version	What Happens When You Attempt to Use This Version in R2012a	What Happens When You Attempt to Use This Version in R2012b
Microsoft Visual Studio 2010 Express, for 32-bit or 64-bit architectures	Not Available	Not Available
Microsoft Visual C++® 2008 for 32-bit or 64-bit architectures	Warns	Not Available

Supported Microsoft .NET Framework Versions

Information relating to supported versions of Microsoft .NET Framework will no longer be found in the MATLAB Builder™ NE User's Guide due to their frequency of change.

MATLAB Builder NE supports the following versions of Microsoft .NET Framework.

- 2.0
- 3.0
- 3.5
- 4.0 (Managed Extensibility Framework (MEF) Plug-Ins feature only)

R2011b

Version: 4.1

New Features: Yes

Bug Fixes: Yes

Support for Managed Extensibility Framework (MEF)

This release introduces support for Managed Extensibility Framework (MEF). Using MEF, available through a Type-Safe Interface, you minimize costly application recoding by extending your software design through flexible metadata. MEF offers plug-in implementation that can be used with little user modification for Microsoft .NET Framework 4.0.

See Managed Extensibility Framework (MEF) Plug-Ins for more information.

Faster Installation of MATLAB Compiler Runtime (MCR) with Improved MCR Installer

The Application Deployment products now feature faster installation of the MATLAB Compiler Runtime (MCR) through improved MCR Installer technology. In addition to improved performance, the new installer provides a common interface for all platforms.

Support for Graphics Processing Unit (GPU) in Parallel Computing Toolbox Applications

MATLAB Compiler generated executables and components now benefit from better performance when used with Parallel Computing Toolbox applications. The improvement is due to support of the Graphics Processing Unit (GPU) feature.

For more information, see GPU Computing in the Parallel Computing Toolbox User's Guide, as well as the Parallel Computing Toolbox examples in the deployment user's guides for additional information about compiling your deployable application with GPU.

Autodetection of Log-in Privileges When Registering COM Components

MATLAB Builder NE now detects user privileges when registering your COM component, simplifying the process in many cases.

See Add-in and COM Component Registration in the User's Guide for details.

COM Support for MCR Options -nojvm and -logfile

The MCR options -nojvm (which can substantially improve performance of deployed applications) and -logfile (which allows specification of a user-chosen logfile name) are now available for COM components.

See MCR Options for more information.

R2011a

Version: 4.0

New Features: Yes

Bug Fixes: Yes

Local Worker Support for Parallel Computing Toolbox Applications

MATLAB Compiler and the builders now support local workers in Parallel Computing Toolbox applications.

For information about this feature, see *Use a Local Cluster* for general information on Local Workers. Also, see the *Parallel Computing Toolbox User's Guide* for information about working with compilable PCT applications.

Type-Safe Automatic Conversions to and from Native .NET, COM and MATLAB Data Types

It is now possible to avoid manual data conversion to and from `MWArray` data types by implementing a type-safe API that allows you to work exclusively with native .NET types.

For detailed examples and information about creating and implementing a type-safe interface, see *Type-Safe Interfaces, WCF, and MEF in the MATLAB Builder NE User's Guide*.

In addition, support for this feature has been added under the Windows Communication Foundation programming model. See “Windows Communication Foundation (WCF) with Web or Enterprise Service-Oriented Architecture (SOA)” on page 18 for details.

Windows Communication Foundation (WCF) with Web or Enterprise Service-Oriented Architecture (SOA)

Support for the Windows Communication Foundation programming model has been added for the type-safe interfaces feature.

Using WCF, available for Microsoft .NET Framework 3.5 and higher, allows you to achieve a greater degree of protocol portability and flexibility when developing Web services—beyond what is supported by SOAP.

For details about implementing a type-safe interface using WCF, see Windows Communications Foundation (WCF)TM-Based Components.

Passing of .NET Objects Directly to and from a Compiled MATLAB Function

You can now pass .NET objects, by reference, to compiled MATLAB functions with assurance that the objects are fully accessible by the MATLAB .NET interface.

See Object Passing by Reference for complete information about the new class (MWObjectArray) that enables this functionality.

Administrative Rights No Longer Needed to Deploy COM Components

When you deploy a COM component, using the functionality originally supported by MATLAB COM Builder, you have the option of specifying that the component be registered to the current user of the computer, rather than administrator (the previous default). See Add-In and COM Component Registration in the MATLAB COM Builder part of the MATLAB Builder NE User's Guide for details.

Examples Now Compatible with Microsoft Visual Studio 2008

The examples in *matlabroot*\toolbox\dotnetbuilder\Examples now feature code compliant for building with Microsoft Visual Studio 2008.

R2010bSP1

Version: 3.2.1

New Features: No

Bug Fixes: Yes

R2010b

Version: 3.2

New Features: Yes

Bug Fixes: Yes

Include the MCR Installer from a Link on Your Local Network

This feature lets you add a link to an MCR Installer residing on a local area network. Adding this link allows you to invoke the installer over the network, as opposed to copying the installer physically into each deployable package.

See Packaging (Optional) in the MATLAB Compiler User's Guide, or in your respective Builder product User's Guide, for more details.

Support for Microsoft Visual Studio 2010 Added

This release adds support for Microsoft Visual Studio software on both 32-bit and 64-bit systems. See the Installation and Configuration chapter in the *MATLAB Compiler User's Guide* for more information.

Special Instructions for Compiling C# or VB.NET Code Using a 32-Bit Assembly on Windows 64 Systems **Compatibility Considerations: Yes**

Use of the Any CPU generic is not recommended when running a 32-bit .NET assembly on a Windows 64 system because of MEX-file compatibility considerations.

Compatibility Considerations

When you compile C# or VB.Net code on Windows 64, using a 32-bit MATLAB Builder NE assembly, change the platform target. Use x86 instead of Any CPU in the **Build** properties of Microsoft Visual Studio.

Alternatively, invoke the C# or Microsoft Visual Basic® compiler with `/platform:x86`.

R2010a

Version: 3.1

New Features: Yes

Bug Fixes: Yes

Native Data Types Available for Cell Arrays and Data Structures

MATLAB Programmers now have the option of using native .NET data types for cell array and data structure handling. These native types provide data in a more useful, easy-to-process output. See [Using the Native .NET API: Cell and Struct Example](#) for more information about using the feature with MATLAB Builder NE.

Deployment Tool Now Available from Command Line

You can now invoke the Deployment Tool GUI from the command line. See [Using the Deployment Tool GUI from the Command Line](#) for more information.

New Video Demo Available

Watch a video about deploying applications using MATLAB Builder NE.

Support for .NET Framework Versions 3.0 and 3.5

In addition to supporting Microsoft .NET Framework 2.0, MATLAB Builder NE now also supports versions 3.0 and 3.5.

R2009b

Version: 3.0.2

New Features: Yes

Bug Fixes: Yes

Redesigned Deployment Tool GUI

The new Deployment Tool (deploytool) interface features intuitive task-based navigation, a cancellable progress dialog, fast loading of previously-created projects, and ability to add supporting files as folders. The GUI also features new context sensitive help.

Memory Management Reliability, Performance Improved for Hosted Applications

Several enhancements have increased the reliability and performance of memory management in hosted applications such as ASP.NET and Microsoft Windows® services. As a result, previous manual methods of memory management have been deprecated in this release.

Alternate Graphic Renderers Now Available

Graphic renderers Z-Buffer and OpenGL are now available for invocation. See Supported Renderers for WebFigures for more information.

Enhanced Auto-Generated Documentation

Compiled Components now feature expanded MWArray API documentation. This documentation is of particular interest to the .NET developer who is integrating components produced by MATLAB Builder NE into enterprise Windows environments. See Enhanced XML Documentation Files for more information.

New Format for Deployment Tool Projects **Compatibility Considerations: Yes**

As of this release, deployment projects are being created in a new file format.

Compatibility Considerations

If you have projects that were created with the Deployment Tool prior to R2009b, those projects will continue to work. However, projects created or changed in R2009b cannot be opened in previous versions of Deployment Tool (deploytool). Recreate old projects with Deployment Tool to ensure they function properly.

R2009a

Version: 3.0.1

New Features: Yes

Bug Fixes: Yes

Reduced MCR Size Saves on Transfer Time

MCR copying and transfer time has been improved by 50% following a reduction in the file's contents. The change will not reduce processor time or memory consumption since the deleted files were not loaded into RAM.

Customized readme.txt Produced with Each Compilation

An enhanced version of the `readme.txt` file, which is generated with each successful compilation, is now customized to include specific instructions about MATLAB Builder NE deployment requirements.

Specify Run-Time Options to the MATLAB Compiler Runtime (MCR)

You can now specify run-time options `-nojvm` and `-logfile` to the MATLAB Compiler Runtime (MCR). For more information about this feature, see MCR Run-Time Options in the product User's Guide.

R2008b

Version: 3.0

New Features: Yes

Bug Fixes: Yes

.NET Components Now Available for Remoting to Distributed .NET Frameworks

.NET components can now be created that are ready for interfacing with distributed .NET Frameworks. For more information, see .NET Remoting in the MATLAB Builder NE User's Guide.

Web Deployment of MATLAB Figures Available

Manipulation of MATLAB figures over the Web is now available through implementation of the Web Figures feature. For more information, see Web Deployment of Figures and Images in the MATLAB Builder NE User's Guide.

CTF Archives Now Embedded in a Single Binary Executable for Convenient Deployment of .NET and COM Components

As of R2008b, CTF data is now automatically embedded directly in .NET and COM components by default for convenient deployment of applications. See MCR Component Cache and CTF Archive Embedding and Embedded CTF Archives in the MATLAB Builder NE User's Guide.

Applications Created with Parallel Computing Toolbox Now Able to Be Compiled

MATLAB applications that make use of the Parallel Computing Toolbox (PCT) are now able to be compiled. Resulting executables and components can scale to multicore and multiprocessing environments using MATLAB Distributed Computing Server™. See Supplying Cluster Profiles for Parallel Computing Toolbox Applications in the MATLAB Builder NE User's Guide.

Support Dropped for .NET Framework Version 1.1 in R2008b

MATLAB Builder NE no longer supports Microsoft .NET Framework 1.1.

Warning Results When Running Figure-Generating Applications or Printing with -nojvm Flag

Compatibility Considerations: Yes

As of R2008b, running a figure-generating application or printing with the -nojvm option results in a warning message. In some cases, figure rendering may succeed, and in other cases it may not.

Compatibility Considerations

MATLAB graphics functions dependent on Java, such as graphics passed with -R -nojvm, will not result in displayable graphics.

In a future release, the -nojvm option will no longer support figure-generating or printing and will be removed.

MWException Replaced by .NET Exception Class

In order to better support the .NET Remoting feature (see .NET Remoting) in this release, the MWException thrown by an error in the generated component or an in the encapsulated MATLAB code is being replaced by the .NET Exception class. You should modify your code accordingly to test for a standard .NET Exception rather than MWException.

Same Name Class Objects Shared Between MCR Instances Do Not Work Correctly

If the same class name is used in two or more separate MCR instances within the same process, the object will not work correctly. This bug impacts all component based targets: C/C++ shared libraries, COM/.Net targets, and Java targets. This bug does not affect standalone executables. This is due to a bug in the MATLAB Object System and is being addressed.

R2008a

Version: 2.2.2

New Features: Yes

Bug Fixes: Yes

Improved Error Diagnostics Available

You can receive enhanced error reporting information by using `mstack` traces. See *Enhanced Error Diagnostics Using mstack Trace* in the MATLAB Builder NE User's Guide documentation for details.

Support Being Dropped for .NET Framework Version 1.1 in R2008b

MATLAB Builder NE will no longer support Microsoft .NET Framework 1.1 in R2008b. Please plan accordingly.

MATLAB Application Deployment Web Example Guide Available

A new publication, the *MATLAB Application Deployment Web Example Guide*, is now available from the MATLAB Compiler, MATLAB Builder NE, and MATLAB Builder JA roadmap pages.

The guide provides full examples of common tasks performed by the MATLAB programmer, IT specialist, and others who play significant roles in deploying MATLAB applications to the Web.

R2007b

Version: 2.2.1

New Features: No

Bug Fixes: Yes

Functions Being Removed

Compatibility Considerations: Yes

The following functions were removed in R2007b:

Function Being Removed	What Happens When You Run the Function?	Use This Instead	Compatibility Considerations
buildmcr	Errors	MCRInstaller.exe (Windows), MCRInstaller.bin (UNIX), MCRInstaller.dmg (Mac)	See Distribute MATLAB Code Using the MATLAB Compiler Runtime (MCR) in the MATLAB Compiler User's Guide documentation.
comtool	Undefined Function Error	deploytool	Migrate to deploytool.
dotnettool	Undefined Function Error	deploytool	Migrate to deploytool.
mxltool	Undefined Function Error	deploytool	Migrate to deploytool.
opennb1	Undefined Function Error	deploytool	Migrate to deploytool.
openmx1	Undefined Function Error	deploytool	Migrate to deploytool.
opencb1	Undefined Function Error	deploytool	Migrate to deploytool.

R2007a

Version: 2.2

New Features: Yes

Bug Fixes: Yes

Support Added for Win64

Support has been added for the Windows 64-bit operating system.

Issues with the Microsoft Windows Vista Operating System

The following are known issues with Windows Vista™ as of this release. To resolve these issues, ensure you are logged in as Administrator.

- With User Account Control (UAC) enabled, a standard user is not able to write to a folder in the `c:\Program Files` folder. See the MATLAB Release Notes for more details regarding this issue.
- With User Account Control (UAC) enabled, a standard user is not able to register DLLs. When `mbuild -setup` attempts to register `mwcomutil.dll`, the following errors are displayed:

```
Trying to update options file:
  C:\Users\qe\AppData\Roaming\MathWorks\MATLAB\R2007a\compopts.bat
From template:
  C:\PROGRA-1\MATLAB\R2007a\bin\win64\mbuildopts\msvc80comp.bat

Done . . .

--> "C:\PROGRA-1\MATLAB\R2007a\bin\win64\mwregsvr C:\PROGRA-1\MATLAB\R2007a\bin\
win64\mwcomutil.dll"

Error: DllRegisterServer in C:\PROGRA-1\MATLAB\R2007a\bin\win64\mwcomutil.dll
failed
Undefined subroutine &mexsetup::expire called at C:\PROGRA-1\MATLAB\R2007a\bin\
mexsetup.pm line 839.
```

This is also the case when MATLAB Builder for Excel invokes `mbuild` in an attempt to register DLLs after a compilation completes.

- The following message is displayed when MATLAB Builder for .NET, attempts to install a DLL into the Global Assembly Cache from a network location:

```

Unhandled Exception: System.IO.FileLoadException: could not load file or assembly
'GACInstaller, Version=1.0.2568.30711, Culture=neutral, PublicKeyToken=null' or
one of its dependencies. Failed to grant permission to execute. (Exception from
HRESULT: 0x80131418)
File name: 'GACInstaller, Version=1.0.2568.30711, Culture=neutral,
PublicKeyToken=null' --> System.Security.Policy.PolicyException: Execution
permission cannot be acquired.
    at System.Security.SecurityManager.ResolvePolicy(Evidence evidence,
PermissionSet reqdPset, PermissionSet optPset, PermissionSet denyPset,
PermissionSet& denied, Boolean checkExecutionPermission)
    at System.Security.SecurityManager.ResolvePolicy(Evidence evidence,
PermissionSet reqdPset, PermissionSet optPset, PermissionSet denyPset,
PermissionSet& denied, Int32& securitySpecialFlags, Boolean
checkExecutionPermission)

```

- Printing from a compiled application is not currently available with Microsoft Windows Vista. The following message is displayed if you attempt to print on systems with the Microsoft Windows Vista 32-bit operating system installed:

```

PrintImage Error
StartPage failed with error 6: The handle is invalid.

```

Printing with Vista 64-bit installed results in an error message that lists a manifest as missing. Please check <http://www.mathworks.com/support/> for updates on these issues.

Unsupported MATLAB Data Types

The MATLAB Builder NE product does not support MATLAB object data types (for example, Time Series Objects) and most unsigned numeric types.

R2006b

Version: 2.1

New Features: Yes

Bug Fixes: Yes

New User Interface

Compatibility Considerations: Yes

This release of MATLAB Builder for .NET provides a new graphical user interface for creating and building projects. Issue the `deploytool` command in MATLAB to use the new GUI.

Compatibility Considerations

Projects built with the previous user interface cannot be used with the new interface. For the current release, you can still issue the `dotnettool` command to access projects from a previous release. The next release of MATLAB Builder for .NET will no longer support `dotnettool`, or projects from the previous user interface.

Support for Shared Assemblies

When you create a .NET component using the `mcc` command or the Deployment Tool, you can tell builder to create a shared assembly. Click **More Settings** in the Deployment Tool dialog box, and select **.NET Component** in the navigation pane.

Support for Nested Namespaces

MATLAB Builder for .NET now supports nested namespaces, which you can use to create a hierarchical naming structure for types.

Support for .NET Framework Version

Compatibility Considerations: Yes

You can now specify which version of the .NET Framework you want to use when compiling a component using the `mcc` command of the Deployment Tool. You can specify any of the following three values.

Version Value	Meaning
0.0	Use the latest supported version of the framework that is available on the system.
1.1	Use Version 1.1
2.0	Use Version 2.0

Compatibility Considerations

In previous releases, you can specify a version number when creating a .NET component, but the value was not used. In this release, the version numbers specify which version of the .NET Framework to use. Note also that the interpretation of version number with MATLAB Builder for .NET is different from COM Builder. In COM Builder, the version number specifies the version of the component being created.

Additional Support for Microsoft Visual Studio .NET Users

MWArray.dll Added to Reference Tab

MATLAB Builder for .NET now adds the `MWArray.dll` containing the data conversion classes to the list of .NET components accessible from the **Add Reference** tab in Microsoft Visual Studio .NET.

Sample Applications on Visual Studio .NET 2005

The set of sample applications in `matlabroot\toolbox\dotnetbuilder\Examples` now includes applications for Visual Studio .NET 2005, as well as for Visual Studio .NET 2003.

Known Issues

The following issue is known and a patch to fix the problem is available at the linked bug report.

Data Returned by ToArray Referencing Sparse Format May Be Corrupt

The data returned by calling `ToArray` on a `MWNumericArray` or `MWLogicalArray` object that references a MATLAB array stored in sparse format may be incorrect or corrupted. More information and a patch that corrects this issue may be found at the Customer Bug Reports area of the MathWorks Web site: <http://www.mathworks.com/support/bugreports/?product=MN&release=R2006b>. At the Bug Reports page, select **R2006b** in the Release list, and select **MATLAB Builder for .NET** in the Product list.

This bug does not affect normal (non-sparse) arrays, nor does it affect other methods of retrieving data from a sparse array, such as `get`, `getDouble`, and `getData`.

R2006a

Version: 2.0

New Features: No

Bug Fixes: No

Introducing MATLAB Builder for .NET

MATLAB Builder for .NET extends MATLAB Compiler with tools for automatically generating independent .NET assemblies or Common Object Model (COM) objects from your MATLAB algorithms.

These tools allow you to do the following:

- Convert your MATLAB algorithms into .NET or COM components via a graphics user interface
- Create .NET assemblies that can be called from C#, VB.NET, or any other CLS-compliant technology
- Create COM objects that can be called from Visual Basic, ASP, Microsoft Excel, or any other COM-compliant technology
- Support conversion between native .NET and COM data types and the MATLAB array data types, using data conversion classes
- Enable unlimited free desktop and Web deployment of independent components