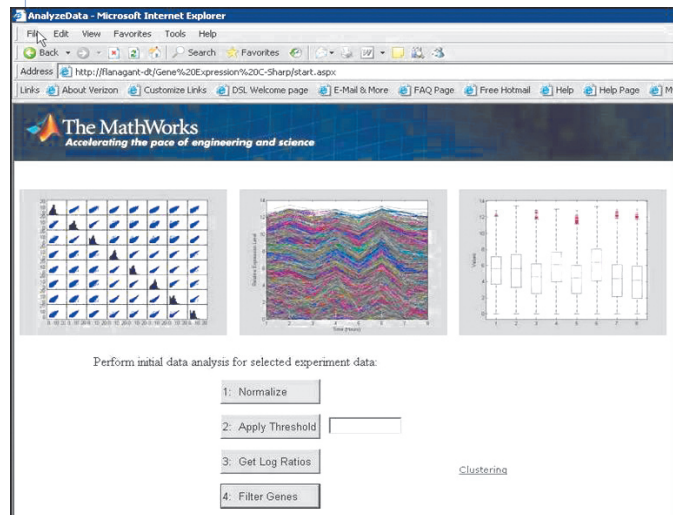# MATLAB® Builder™ NE 2.2

Deploy MATLAB® code as .NET and COM components

MATLAB® Builder™ NE (for Microsoft® .NET framework) lets you integrate MATLAB® applications into your organization's programs by creating MATLAB based .NET or COM components that can be deployed royalty-free on desktop machines or Web servers. The MATLAB Builder NE product creates the components by encrypting MATLAB functions and generating a .NET or COM wrapper around them.
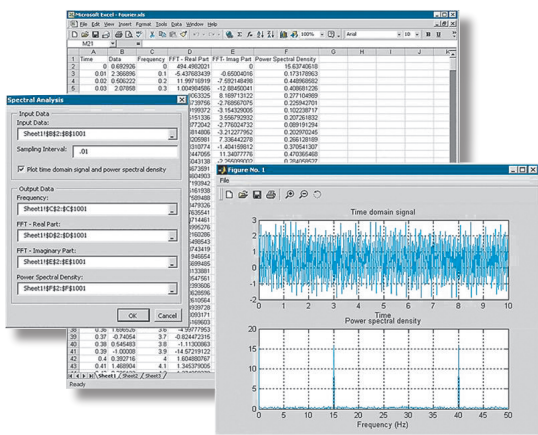
You can reference MATLAB based .NET or COM components the same way as any other .NET assembly or COM object for easy integration with existing applications. You can call your .NET assembly from C#, VB.NET, or any other Common Language Specification (CLS)-compliant language. A COM object can be called from any COM-compliant technology, such as Visual Basic®, ASP, and Excel®. The components created by the builder run against the MATLAB® Compiler™ Runtime (MCR), which is the full set of shared libraries that support MATLAB. The MCR is provided with MATLAB® Compiler™ for distribution with the .NET or COM components. Components created in MATLAB and the MCR can both be deployed royalty-free.
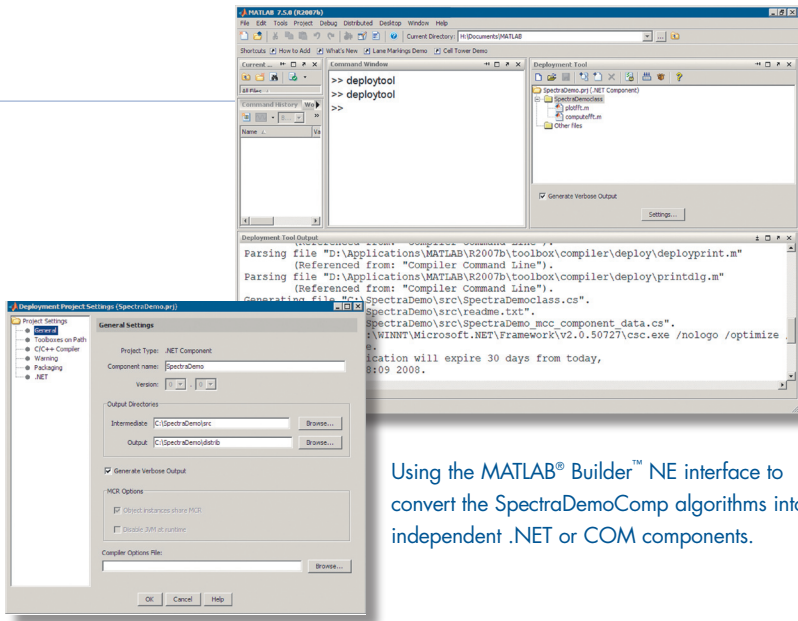
KEY FEATURES

- Packages MATLAB® algorithms into .NET or COM components

- Enables royalty-free desktop and Web deployment of independent .NET or COM components

- Supports automatic conversion between .NET and COM data and MATLAB array data

A Web application for analyzing gene expression data. The application uses MATLAB® functions converted into a .NET assembly by MATLAB® Builder™ NE to perform calculations and produce graphs.

fft function for spectral analysis developed in MATLAB® and converted to a COM object using MATLAB® Builder™ NE. The Visual Basic® application uses data from an Excel® file and processes it using this COM object.

The MathWorks™

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Using the MATLAB® Builder™ NE interface to convert the SpectraDemoComp algorithms into independent .NET or COM components.

Working with MATLAB® Builder™ NE

Together, MATLAB, MATLAB Compiler, and MATLAB Builder NE enable you to develop applications using MATLAB and then deploy them as components in .NET or COM environments. You can use the high-level, matrix-optimized language and the built-in math, graphics, and data analysis functions to rapidly prototype, develop, and test your applications. Once the applications are complete, you can use the builder to automatically package them as components and integrate them in .NET or COM applications.

The builder encrypts MATLAB code and wraps it to be referenced as a standard .NET or COM component. You can integrate the component with existing CLS- or COM-compliant code for desktop or Web deployment. By changing the application in MATLAB and then rebuilding the component, you can modify the MATLAB based component at any time.

To deploy your component, you first install the MCR (provided with MATLAB Compiler) on target machines. The MCR is the full set of shared libraries required for executing MATLAB based components. It provides complete support for all features of the MATLAB language and most related toolboxes.

Building and Packaging Components

The Deployment Tool is a graphical user interface (GUI) that comes with MATLAB deployment products. It lets you build your M-files into a .NET assembly or a COM object and then package the component for deployment to a different computer.

From the GUI you can:

- Select the type of component to build, either .NET or COM

- Add M- and MEX-files to serve as externally visible methods of your component

- Add supporting files, including the MCR, to be packaged with your component

- Save compilation and packaging preferences

- Automatically collect and package the files to deploy the component

Accessing .NET or COM Components

After instantiating a class from the component created from a MATLAB based component, you can access the class methods just as you access the methods of any other COM or .NET class. The builder includes data conversion classes that let you marshal data between the COM or .NET data types and the MATLAB array type and format MATLAB array data for output.

Deploying .NET or COM Components

You can integrate a MATLAB based .NET or COM component into an existing .NET or COM application by installing the component, its supporting archive file, and the MCR on the target machine. Your components and the MCR can be distributed royalty-free.

Required Products

MATLAB®
MATLAB® Compiler™

Related Products

MATLAB® Builder™ EX. Deploy MATLAB code as Microsoft® Excel® add-ins

MATLAB® Builder™ JA. Deploy MATLAB code as Java™ classes

For more information on related products, visit
www.mathworks.com/products/netbuilder

Platform and System Requirements

For platform and system requirements, visit
www.mathworks.com/products/netbuilder ∎

Resources

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