

MATLAB® Builder™ JA 2

Deploy MATLAB® code as Java™ classes

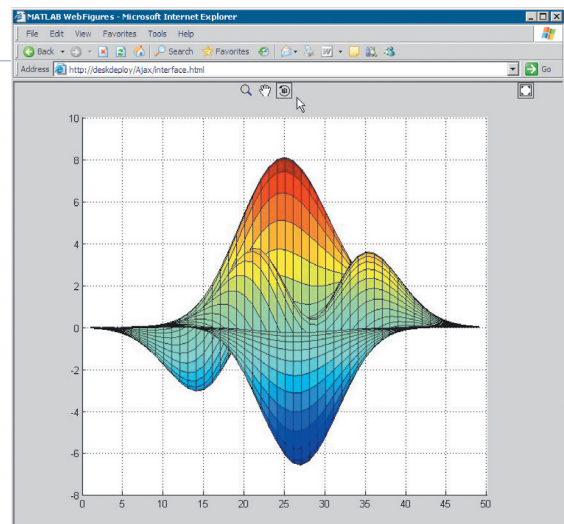
MATLAB® Builder™ JA lets you integrate MATLAB® applications into your organization's Java™ programs by creating MATLAB based Java classes that can be deployed royalty-free on desktop machines or Web servers. The MATLAB Builder JA product creates the Java classes by encrypting MATLAB functions and generating a Java wrapper around them.

You can reference MATLAB based Java classes the same way as any other Java class, for easy integration into servlets or JavaServer Pages (JSP). The Java classes 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 Java classes. Both the Java classes created in MATLAB and the MCR can be deployed royalty-free.

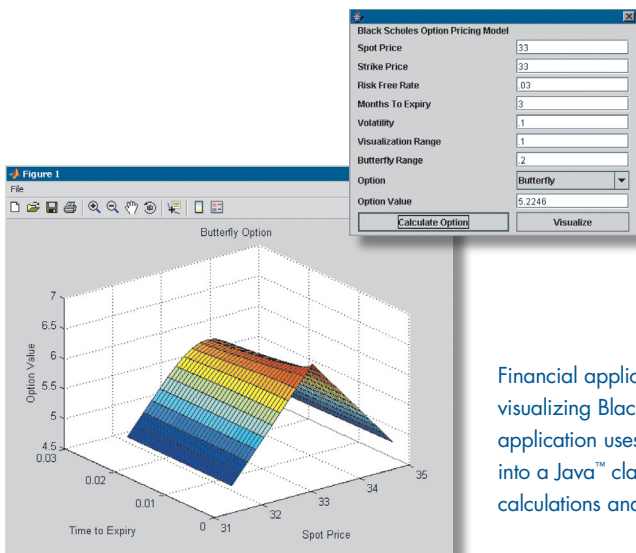
For Web-based applications, the builder provides AJAX-based zoom, pan, and rotate controls for figures created in MATLAB. The builder also provides an API for automatically converting between Java and MATLAB data types.

KEY FEATURES

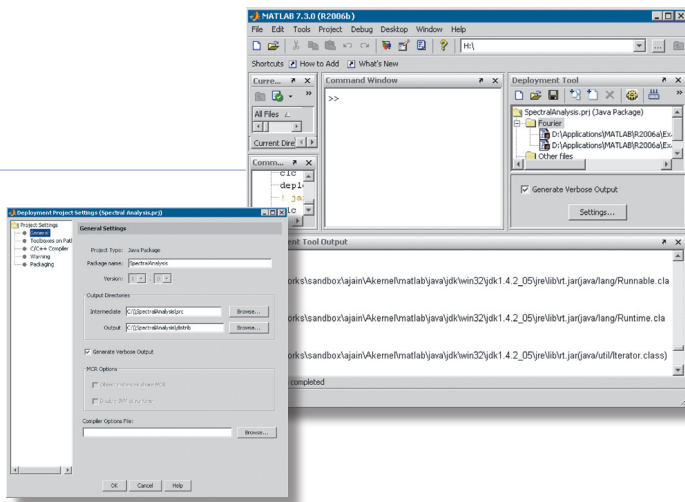
- Packages MATLAB® applications as Java™ classes for integration with Java programs
- Enables royalty-free desktop and Web deployment of independent Java classes
- Supports automatic conversion between Java data types and MATLAB array data
- Provides client-side controls for Web graphics



Java™ Web application for visualizing a surface plot of the MATLAB® peaks function. The builder's framework for handling Web figures provides the zoom, pan, and rotate icons, letting the end user manipulate the image.



Financial application for calculating and visualizing Black-Scholes option value. The application uses MATLAB® functions converted into a Java™ class by the builder to perform calculations and produce graphs.



Using MATLAB® Builder™ JA graphical user interface to convert the M-file `plotfft.m` into a Java™ component called `SpectralAnalysis`, with a class called `Fourier`.

Working with MATLAB® Builder™ JA

Together, MATLAB, MATLAB Compiler, and MATLAB Builder JA enable you to develop applications using MATLAB and then deploy them as components in Java programs. You can use the high-level, matrix-optimized MATLAB language and 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 Java classes and integrate them in Java applications.

The builder encrypts MATLAB code and wraps it in Java code that can be referenced as a standard Java class. You can integrate the Java class with existing Java 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 Java class, 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 that comes with MATLAB Compiler. It lets you build your MATLAB applications into Java classes and then package the component for deployment.

From the graphical user interface you can:

- Add M-files 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 Components

After instantiating a Java class from a MATLAB based component, you can access your MATLAB functions as Java methods. Java data types passed to MATLAB functions are automatically converted to MATLAB data types. Data conversion classes are also provided for manually converting data and managing output data.

Deploying Java™ Components Based on MATLAB®

You can integrate a MATLAB based Java class into an existing Java infrastructure by installing the class and the MCR on the target machine. For Web applications that use JSP technology or servlets, the builder provides AJAX-based zoom, pan, and rotate controls for figures created in MATLAB. Using the builder's Remote Method Invocation (RMI) interface, you can also run your class as a persistent service, or spread your processing across multiple processes. Java classes created with the builder can be distributed at no additional charge.

Required Products

MATLAB®
MATLAB® Compiler™

Related Products

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

MATLAB® Builder™ NE. Deploy MATLAB® code as .NET and COM components

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

Platform and System Requirements

For platform and system requirements, visit www.mathworks.com/products/javabuilder ■

Resources

VISIT
www.mathworks.com

TECHNICAL SUPPORT
www.mathworks.com/support

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