ALTOVA®
mapforce® 2007

Give your
data direction

Altova® MapForce® 2007 is the premier data integration and Web services implementation tool with the power to map any combination of XML, database, flat file, EDI, and/or Web service, then convert data on-the-fly or generate code to use in your own data integration or Web services applications.

Visual data integration and Web services implementation

Today, the ability to seamlessly exchange information between internal business units, customers, and partners is vital for success; yet most organizations store and exchange information using a variety of dissimilar technologies, such as Web services, EDI systems, flat files, databases, and XML applications.

Custom data integration applications and Web services are two modern solutions that allow organizations to unify these disparate data formats to enjoy the cost and competitive advantages of

seamless information exchange. MapForce 2007 uniquely lets you develop mappings between data formats in an intuitive, visual manner, then auto-generates the stylesheets or program code required to implement your custom data integration and Web services applications server-side.

The MapForce design paradigm means that you can create data integration and Web services applications visually – without having to write a single line of code.

MapForce includes the following functionality:

>> Integrating any combination of XML, database, flat file, EDI, and/or Web service via a graphical user interface

>> Integrating flat file data using MapForce FlexText, an extremely versatile graphical utility for parsing structured text files and incorporating legacy data in mapping designs

>> Using existing Web services as a source, target, or data processing function in any mapping

>> Auto-generating XSLT 1.0, XSLT 2.0, XQuery, Java, C++, or C# to implement data integration projects

>> Building Web services via a graphical interface

>> Auto-generating Java and C# code to implement Web services

>> Executing, viewing, and saving the output of mappings

>> Processing and filtering data with an extensive library of built-in and user-defined functions

>> Creating and saving complex data processing functions via the powerful visual function builder

>> Organizing and managing related mappings and Web services files in the MapForce project view, then generating code project-wide

>> Accessing the MapForce user interface and functions in your own applications via OLE or ActiveX control
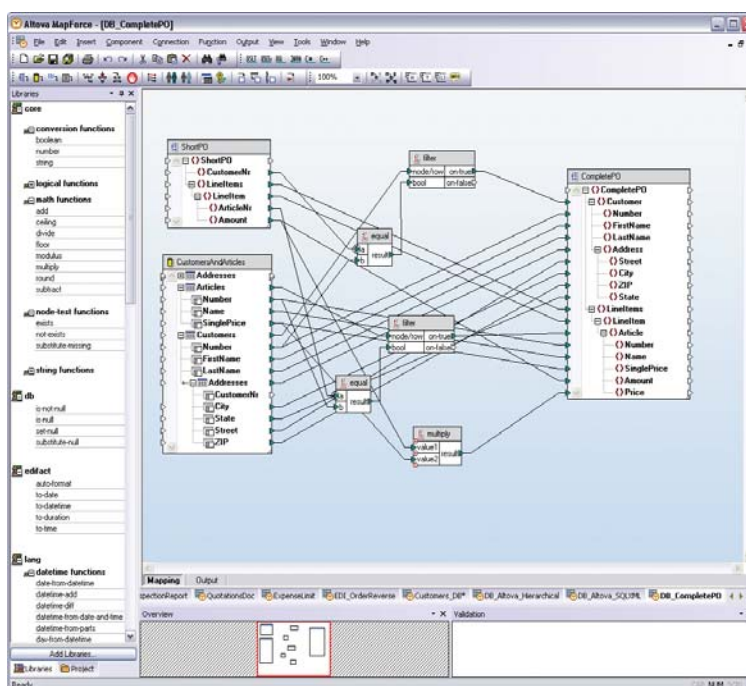
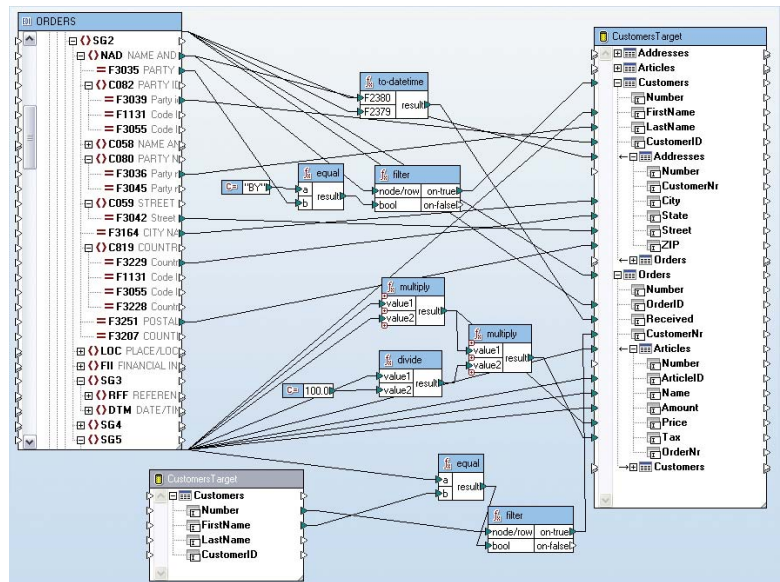
Graphical data mapping in MapForce

Integrate Enterprise Data

Custom data integration applications allow for the exchange of information in disparate formats by converting data in one format to conform to the requirements and structure of another format. MapForce 2007 allows you to visually design mappings to integrate any combination of today's most prevalent data types: XML, data-

bases, flat files, EDI, and Web services. You can map these in any combination, and multiple sources and multiple targets are supported. Then, MapForce will instantly convert data for one-time integration projects, or it will auto-generate code for use in a customized application.

XML/database/flat file/EDI/Web services mapping capabilities include:

>> Designing intricate mappings visually using drag-and-drop functionality

>> Viewing and navigating large mappings via an overview window

>> Mapping one or more sources to one or multiple targets

>> Performing multi-stage mappings

>> Filtering, processing, and transforming data

>> Converting data automatically

>> Organizing related mappings in projects

>> Auto-generating XSLT 1.0, XSLT 2.0, XQuery, Java, C#, or C++ to implement mappings programmatically

A data mapping project in MapForce

When you load two or more data structures in the design pane, MapForce 2007 represents their hierarchical structure graphically, and you map them by dragging connecting lines between source(s) and target(s) and inserting data processing rules.

>> XML mapping support is based on XML Schema.

>> Database mapping support includes accessing database views and systems tables in any relational database.

>> EDI mapping support includes the hundreds of messages covered by the two most popular EDI standards: UN/EDIFACT and ANSI X12.

>> Flat file mapping support includes CSV, tab delimited, or fixed width text files. Flat file support is also provided through the versatile FlexText™ parsing utility.

Since the structure of flat files often varies from application to application, MapForce FlexText is an invaluable tool for simplifying complex flat file data integration projects. FlexText is a graphical

utility for parsing structured text files and incorporating legacy data in mapping designs. With its easy-to-use GUI, you can open an existing flat file and extract the portions of the file you want to expose to the MapForce mapping interface. FlexText produces a template that is then loaded into MapForce, where the individual items can be mapped to any combination of XML, database, EDI, flat file, and Web services data. You can reuse the same template for multiple text files and in multiple mappings.
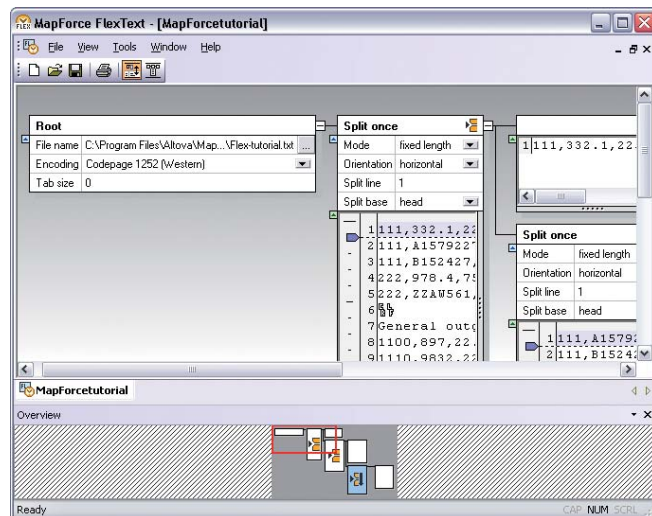
As you create a mapping in MapForce, an extensible library of data processing functions is available for filtering and processing data before returning it to target data structure(s), and the MapForce visual function builder helps you create and save complex functions for use in other data mappings. (See "Filter and Process Data" below for more information on these features.)

In addition, you can connect to and use existing Web services as building blocks inside your mappings. Easily insert a Web service by specifying the location of its WSDL definition, then select the operation you require. MapForce fills in the WSDL call settings based on details in the WSDL file, and you can even enter user-name and password authentication details if required.

When your mapping is complete, you can view and save the output or generate code to implement the mapping server-side (see "View output and generate code" below).

MapForce 2007 is the first retail-priced data integration tool to support all major relational databases and programming languages. With its visual design paradigm and automatic code generation, it represents a cost-effective, user-friendly way to integrate XML, database, flat file, EDI, and Web services technologies quickly and easily.

Supported databases:

>> **Microsoft® Access®**
>> **Microsoft® SQL Server**
>> **MySQL®**
>> **Oracle®**
>> **Sybase®**
>> **IBM® DB2®**
>> **Any ADO/ODBC database**

*FlexText interface for parsing flat files*

Implement Web services

The powerful graphical data integration capabilities described above are also applied to building Web services in MapForce. Web services are software components that allow applications written in different programming languages and running on different platforms to seamlessly exchange data via XML-based messages. Despite the advantages of Web services for exchanging information between disparate systems, writing the code to implement them by hand can be complicated, time consuming, and error-prone. Altova MapForce 2007 removes this limitation by allowing you to build Web services visually. Then it auto-generates the program code required to implement a service on a server.

The MapForce Web services implementation capabilities include:

>> Building Web services graphically via an intuitive mapping interface

>> Connecting XML, database, flat file, EDI, and Web service source data to new Web services operations

>> Processing and filtering data with an extensive library of functions

>> Viewing the results of Web services transactions

>> Auto-generating Java or C# program code to implement a Web service server-side

>> Organizing and managing Web services operations with a handy project view

To build a Web service, you simply load an existing WSDL (Web Services Description Language) file in the MapForce project view and create a mapping for each operation by dragging connecting lines between data sources and WSDL operations. Supported data sources include XML, databases, flat files, EDI, and Web services,
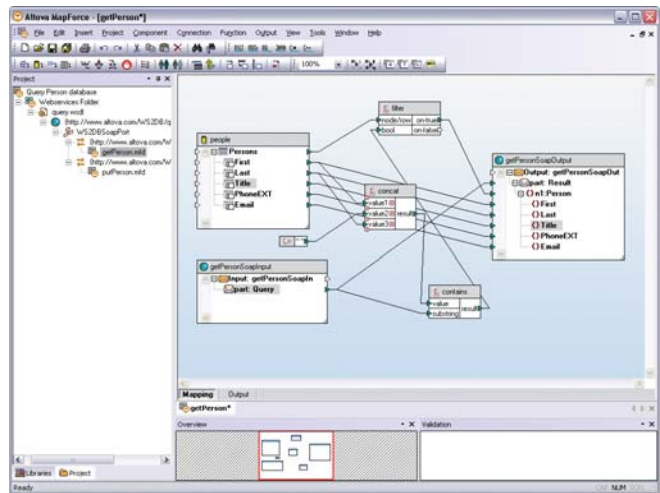
A Web services mapping design in MapForce

and you can map these in any combination to and from the operations in your WSDL. As with any data mapping, an extensible library of data processing functions is available for filtering and processing data before returning it to the output schema.

As you're working, you can view the result of any operation by clicking the Output tab in the MapForce design pane. This helps test your operations to ensure they return the desired results.

Once you've created mappings for the operations in the WSDL file, you can generate code for a single operation – or for the entire WSDL project.

Now, instead of writing the hundreds to thousands of lines of code required to implement each Web services transaction, you can define mappings visually and let MapForce generate the code all at once. Code that used to take hours or days to write is now auto-generated in a matter of seconds. Visual design in MapForce removes the complexity from Web services development, allowing you to build standards-conformant Web services applications more quickly than ever before.

Filter and process data

As you are building a mapping, you may want to define rules for filtering and processing data before returning it to the mapping target. You can choose functions from the extensive MapForce function library, import your own function libraries, and create and save complex functions using the unique visual function builder. Simply select the function you need from the library and drag it onto the mapping design, where it is represented as a box with ports for connecting the appropriate data elements.

The MapForce visual function builder allows you to combine multiple separate functions into one function that returns a single result. Then, you can save the new function for use in future mapping projects. This easy-to-use utility enables the efficient re-use of functions and saves a considerable amount of time by allowing you to automate repetitive tasks. The visual function builder all but eliminates the need to write functions in other programming languages.

MapForce function libraries pane

View output and generate code

The built-in MapForce Engine allows you to execute any mapping and view the output with one click. The output of the MapForce Engine can be saved as the result of a one-time mapping, or it can be used for previewing sample results, which significantly simplifies the process of designing and testing complex mapping projects.

Then, with just one more click, MapForce can auto-generate the software code required to programmatically marshal data from the source(s) to the target(s) for use in customized data integration applications or Web services.

Code for implementing data integration applications is available in:

>> XSLT 1.0 (XML-to-XML mappings)

>> XSLT 2.0 (XML-to-XML mappings)

>> XQuery (XML-to-XML mappings)

>> Java

>> C#

>> C++

To accommodate today's prevalent Web services platforms, Web services code generation is available in:

>> Java

>> C#

MapForce is the industry's first and only product to let you choose between XSLT 1.0, XSLT 2.0, XQuery, Java, C#, and C++ code-generation – all from the same mapping design.
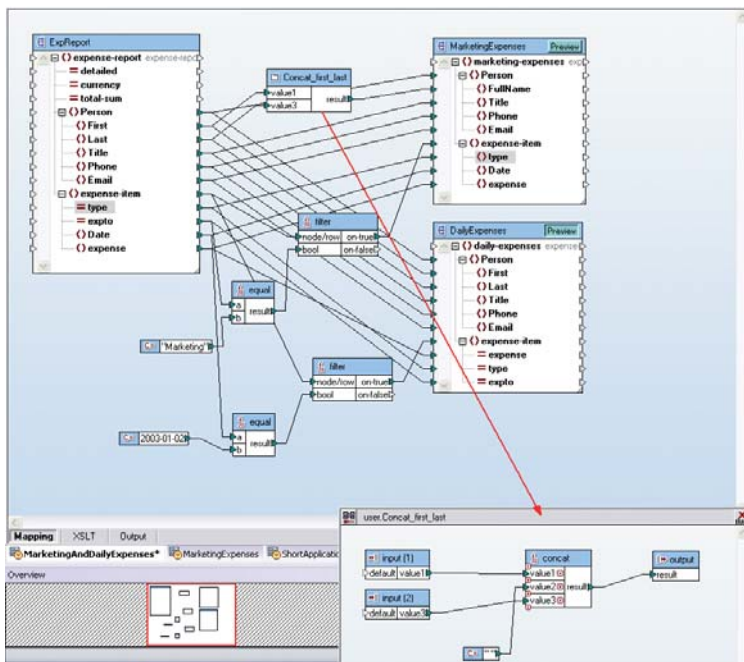
MapForce visual function builder

MapForce-generated code is standards-compliant and completely royalty-free, and it can be used in your applications without the need for deployment adapters or additional software licenses.

With all this power and its exceptionally low price, MapForce compares very favorably against unwieldy, server-based enterprise application integration (EAI) and enterprise service bus (ESB) products, which may sell for ten or twenty times its price.

Ordering Information

MapForce 2007 is available in Enterprise, Professional, and Standard editions in both English and German language versions. It is supported on Windows NT, 2000, and XP.

You may download a free 30-day trial of MapForce 2007 at **www.altova.com/download.**
To purchase a permanent license, please visit the Altova Online Shop at **shop.altova.com.**

MapForce 2007 is also available as part of the specially priced Altova XML Suite 2007, a compelling set of the world's leading XML development tools. The Altova Enterprise XML Suite 2007 includes Enterprise Editions of Altova XMLSpy®, MapForce®, and StyleVision®, plus SemanticWorks™, SchemaAgent™, and DiffDog®. The Altova Professional XML Suite 2007 includes Professional Editions of Altova XMLSpy, MapForce, and StyleVision.

About Altova

Altova accelerates application development and data management projects with software and solutions that enhance productivity and maximize results. As an innovative, customer-focused company and the creator of XMLSpy and other leading XML, data management, UML, and Web services tools, Altova is the choice of over 2.5 million clients worldwide, including virtually every Fortune 500 company. Enabling customers ranging from vast development teams in the world's largest organizations to progressive one-person shops, Altova's line of software tools fulfills a broad spectrum of business needs. Altova is an active member of the World Wide Web Consortium (W3C) and Object Management Group (OMG) and is committed to delivering standards-based platform-independent solutions that are powerful, affordable, and easy to use. Altova was founded in 1992 and has headquarters in Beverly, Massachusetts and Vienna, Austria. Visit Altova on the Web at **www.altova.com.**