

# Micro Focus Studio™ for ISVs

Micro Focus Studio for ISVs provides a complete environment for constructing, extending and modernizing applications and components for multiple platforms including Windows and multiple versions of UNIX and Linux.

## Benefits

- Deliver new features to market quickly through the extension of existing application code
- Deliver an open and agile solution through XML and Web services
- Gain portability with support for all major Windows, UNIX and Linux platforms
- Increase productivity with contemporary development environment
- Deliver contemporary graphical or web user interface.

## Overview

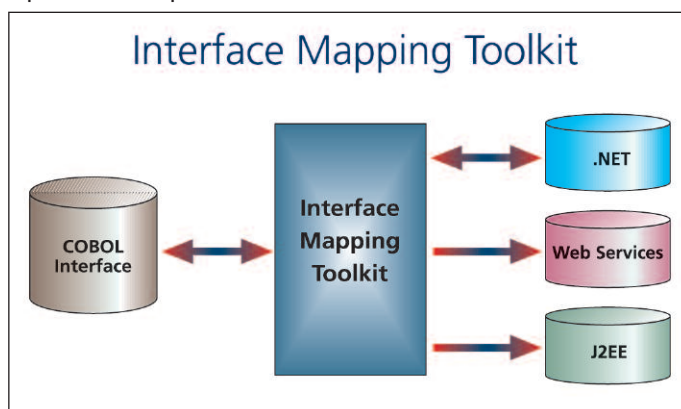
Micro Focus Studio™ for ISVs provides a highly productive development environment for enterprise application engineers to create, maintain and extend COBOL applications and other legacy assets for deployment on a wide range of contemporary platforms. Whether you need to reuse and extend existing applications or create new COBOL code, with Micro Focus Studio for ISVs you can unlock the value of COBOL assets leveraging existing interfaces and extending them to a Service Oriented Architecture (SOA), through .NET, Web services or J2EE.

The capabilities of Micro Focus Studio for ISVs are delivered through the combination of Micro Focus Net Express® and Micro Focus Server Express™. Micro Focus Studio for ISVs supports the needs of developers creating applications for resale on multiple platforms by including, as standard, a license for all Server Express UNIX and Linux platforms. Applications developed with Micro Focus Studio for ISVs can be deployed on Windows, UNIX or Linux with Micro Focus Server™. By upgrading the version of Net Express included with your Micro Focus Studio to Net Express with .NET you can also add the capability to create using Visual Studio 2008 COBOL applications and contemporary user interfaces to be deployed into the .NET Framework.

## Building Enterprise COBOL Components and Services

### Interface Mapping Toolkit

Using the Interface Mapping Toolkit an existing COBOL program interface can be exposed as a Web service, EJB or COM component supporting the reuse and extension of COBOL assets. The interface presented to the Interface Mapping Toolkit can be tailored and narrowed to present the appropriate functionality for the users of the service, for example, some fields may be deleted and set to default values before an existing program is exposed as a Web service. The mapping created for each Service Definition by the Interface Mapping Toolkit may be re-imported later for subsequent updates as required.



## Direct COBOL Web Services

Using Micro Focus support for direct COBOL Web services, a COBOL Web service can be created, consumed and deployed without requiring any third-party software. Direct COBOL Web services created with the Interface Mapping Toolkit can be deployed with Micro Focus Server, which acts as a SOAP Server for Web services. Web service COBOL client support builds a template COBOL client program from a WSDL file or a Micro Focus mapping file supporting the consumption of industry standard web services from COBOL.

## Using COBOL with Java and J2EE

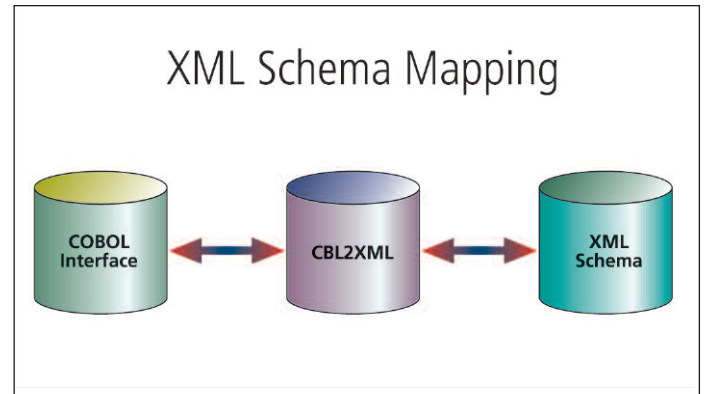
With Micro Focus Studio support for COBOL/Java interoperability, mixed COBOL and Java applications can be easily created without having to code complex low-level interfaces. When an EJB is created by the Interface Mapping Toolkit and deployed in conjunction with Micro Focus Server, COBOL assets can be accessed in a J2EE-compliant manner from major Java Application Servers such as IBM WebSphere, Oracle Application Server, JBoss and BEA WebLogic.

## Using COBOL with XML

With Micro Focus Studio it is now very easy to create, consume or update XML documents from COBOL. Based on COBOL File Handling syntax, you can Open, Read and Write XML documents in a familiar and trouble-free way. Specific syntax extensions provide mechanisms to handle dynamic XML documents, map XML tags to COBOL data names, and process XML concepts such as name spaces and attributes. A W3C compliant XML Schema can be mapped and narrowed to and from a COBOL interface using the COBOL/XML conversion tool (CBL2XML).

## Production Debugging and Diagnostics Tools

- FaultFinder Utility – designed to diagnose the problem if applications fail in production by providing a snapshot at the time of the abnormal termination
- Profiler Utility – creates a report analyzing the performance of a COBOL application



- Enterprise Server™ – maintains a Trace File for problem diagnosis
- The Consolidated Tracing Facility (CTF) – enables you to quickly and easily produce diagnostic information detailing the operation of key Micro Focus software components. CTF also provides a number of library routines that allow user applications to produce tracing information themselves. Trace events output by user applications will be interleaved with events output by the Micro Focus components.

## Developing Cross-Platform Applications for Windows, UNIX and Linux

### Powerful COBOL Development Environments

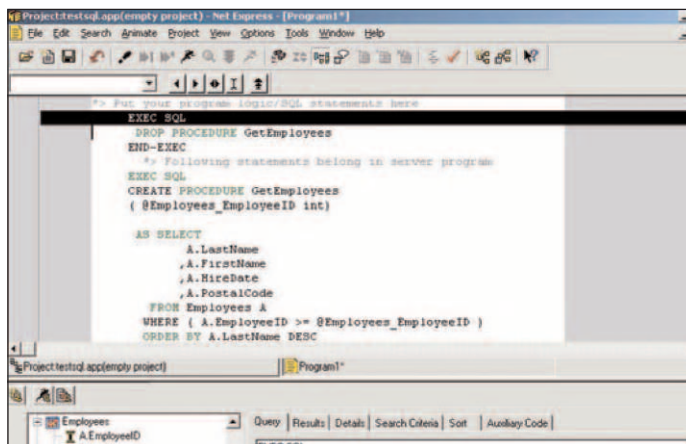
For applications to be deployed on Windows (outside of the .NET Framework), UNIX or Linux, Micro Focus Studio includes the sophisticated Net Express IDE that incorporates a complete suite of application development tools and wizards. Powerful project handling capabilities simplify the edit, compile and debug cycle, and an editor tailored to the needs of COBOL programmers makes it easy to modify code. In addition character tools are provided in Server Express for editing and debugging directly on UNIX/Linux. A state-of-the-art COBOL compiler combines the creation of high performance native code optimized for specific platforms

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with object oriented COBOL support, internalization capabilities and extensive COBOL dialect support including OSVS, VSC2, COB370 and subsequent dialects.

## Data Access

COBOL SQL programs can be rapidly built using the OpenESQL Assistant to build SQL statements through a point-and-click interface and insert these into the COBOL source code at the appropriate point. OpenESQL transparently translates embedded SQL statements into ODBC API calls providing cross-platform COBOL SQL that is portable across different database systems. This means that you can use any data source for which an ODBC driver is available or



*OpenESQL Assistant enables programmers to quickly prototype and test SQL statements through a point-and-click interface.*

alternatively Micro Focus Studio also supports native access to DB2, as well as integrated support for precompilers from Oracle and Sybase. COBOL File handling delivers high performance data access supporting data file sizes in terabytes and provides the scalability for large data intensive server applications.

## Test Coverage

It may often be difficult to verify that subsequent testing has actually exercised the changes made when code changes

are implemented to complex applications. The Test Coverage utility supports the COBOL developer in unit testing application changes and the QA department in 'White-Box' testing. Test Coverage traces and records the execution of a COBOL program line-by-line for single or cumulative program runs, supporting the creation of a text or HTML report displaying program execution and highlighting untested code blocks.

## Cross Development for UNIX or Linux

Programmers can develop applications on the PC, utilizing the advanced development tools in the Net Express component of Micro Focus Studio, while enjoying the benefits of a UNIX/Linux production environment.

- UNIX Application Import Wizard quickly and easily imports a UNIX/Linux application into a Net Express project while UNIX Publish allows you to transfer the application project to a UNIX/Linux server, create the make file and rebuild it with a single step
- Remote Debugging allows you to use Net Express Animator® to remotely debug a UNIX/Linux application published to Server Express.

## Server Express on UNIX and Linux

Server Express provides a COBOL development and test environment which installs and runs upon the Unix or Linux platform itself. Server Express includes full COBOL compilation, SQL and ISAM support, character tooling for editing, debugging, screen painting and more, as well as a version of the Interface Mapping Toolkit.

## Creating, Extending and Reusing COBOL in Microsoft .NET

The Net Express version included with Micro Focus Studio for ISVs can be upgraded to Net Express with .NET adding functionality to use Visual Studio 2008 to develop and extend .NET applications in COBOL.

## Delivering COBOL into the .NET Framework

Net Express® with .NET provides a highly productive, functionally rich development and analysis environment for the creation, reuse, extension, analysis and maintenance of COBOL applications deployed on Windows. Net Express with .NET elevates COBOL to a 'first class citizen' within the Microsoft .NET Framework.

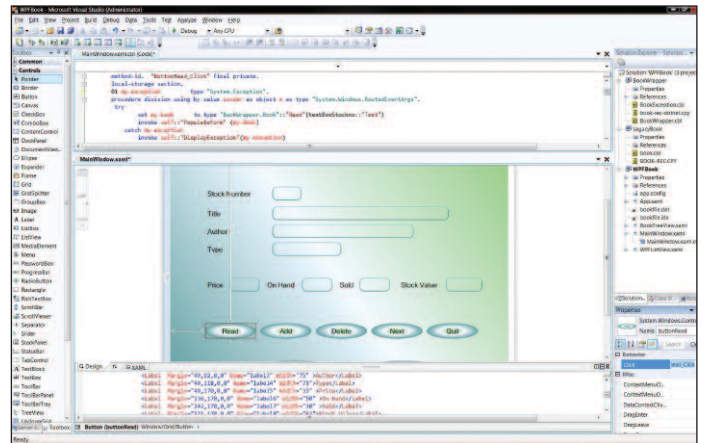
Existing procedural (non object-oriented) code can be reused in the .NET Framework without the need to re-architect it as object oriented code. Using Net Express with .NET, COBOL applications will compile to MSIL (Microsoft Intermediate Language) and execute in conjunction with the Microsoft CLR (Common Language Runtime).

COBOL applications therefore have access to the functionality of the .NET Framework while at the same time existing assets can be reused and extended. Net Express with .NET combined with Visual Studio 2008 provides the capability to target multiple versions of the .NET Framework 2.0, 3.0 and 3.5 and both managed and verifiable code COBOL applications can be deployed either as 32- or 64-bit applications.

## Highly Productive COBOL Development with Visual Studio 2008

Net Express integrates with and extends Microsoft Visual Studio 2008, combining the ease-of-use and familiarity of Visual Studio with the power and usability of COBOL, to deliver a strategic development environment including:

- Ability to easily build, customize and maintain Visual Studio COBOL projects, create solutions combining COBOL projects and those in Microsoft languages
- Net Express with .NET includes the Microsoft Visual Studio 2008 Shell or alternatively adds COBOL support to your own Visual Studio 2008 (all editions except Express Editions)
  - Pre-supplied COBOL project types for common types of COBOL applications such as console or Web applications
  - New additional COBOL templates in Net Express with .NET reduce the development time for your new applications and modules by supplying the building-blocks to kick-start new applications



*Windows Presentation Framework development in Net Express with .NET*

- COBOL Class Browser capability through the Visual Studio Class View facilitates rapid effective COBOL Object Oriented development
- COBOL language colorization, Watch Windows, breakpoints and more when coding and debugging COBOL applications with Visual Studio
- When invoked from a C# or VB.NET test client the Code Coverage feature of Visual Studio Team Edition can be utilized with COBOL applications.
- The same Visual Studio IDE can be used to build and seamlessly debug composite applications consisting of COBOL, Visual C#, Visual Basic®, .NET and all other languages supported by Visual Studio 2008.

## Build Truly Contemporary .NET Graphical and Web User Interfaces in COBOL

Contemporary .NET graphical or Web user interfaces can now be built in COBOL providing the option to build a complete .NET application including user interface, business logic and data access in COBOL. Net Express with .NET allows you rapidly create Windows Presentation Framework (WPF) applications and to paint COBOL WPF Forms using the Visual Studio 2008 WPF Painter.

WPF Forms combine a truly contemporary look and feel for COBOL applications including 2D/3D graphics and

multimedia capability with a strategic separation of presentation and business logic and the ability to define interfaces using the declarative XML based screen definition (.XAML) without complex procedural programming. The Visual Studio Form Designer can also be used to paint and automatically generate COBOL Windows Forms or Webform Screens, generated Windows Forms can be hosted within WPF applications.

## Windows Communication Foundation (WCF) and Web services Support

COBOL Project Templates make it easy to extend COBOL business logic to SOA by building Windows Communication Foundation (WCF) applications in COBOL. WCF facilitates the creation of connected systems by providing capabilities to support the creation of secure, reliable and distributed applications that integrate across platforms and interoperate with existing applications. By adding a web reference COBOL applications running under .NET, programmers can access any other standards conforming Web service written in .NET, Java or in COBOL.

## Technical Specifications

- Windows Server 2008, Windows Vista, Windows Server™ 2003, Windows® XP or Windows 2000
- Server Express provides support for many UNIX and Linux platforms.

For the latest platform details, see UNIX Product Matrix at

<http://supportline.microfocus.com/productreleaselevels/unix.asp>

For full technical specifications, please see the products section on [www.microfocus.com](http://www.microfocus.com)

## About Micro Focus

Micro Focus, a member of the FTSE 250, provides innovative software that allows companies to dramatically improve the business value of their enterprise applications. Micro Focus Enterprise Application Modernization and Management software enables customers' business applications to respond rapidly to market changes and embrace modern architectures with reduced cost and risk. For additional information please visit [www.microfocus.com](http://www.microfocus.com)

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