COBOL like you've never seen it

VisualAge™ for COBOL for OS/2®

Highlights

- ***Provide a year 2000 solution for your COBOL legacy code.***
- ***Use Remote Edit/Compile/ Debug to develop host applications without the tedium of explicitly downloading all your files from the host.***
- ***Rapidly create graphical user interfaces (GUIs) using IBM's visual development tool.***
- ***Streamline COBOL application development using an integrated suite of visual development tools.***
- ***Use object-oriented (OO) programming to improve your development efficiency and promote code reuse.***
- ***Develop truly portable COBOL applications on OS/2* and Windows** 95/NT and deploy them in client-server environments.***
- ***Move your legacy COBOL code to today's technology.***

The Quick Way to Build GUIs

Visual development tools have set the productivity standard for rapid application development, and the visual development tools in VisualAge for COBOL furnish an easy way to give your end users the benefits of intuitive application GUIs. For example, VisualAge for COBOL provides GUI parts (such as buttons and list boxes) that you drag from a palette and drop in the desired location to quickly create dialog boxes or windows.

Because the visual tools generate COBOL code, your new components integrate easily with COBOL program logic to form a complete application.

VisualAge for COBOL is the Future

Combining object-oriented technology with a comprehensive set of visual programming tools, IBM VisualAge for COBOL for OS/2* (VisualAge for COBOL) brings advanced IBM technology for rapid application development to the desktop. This leading-edge development system is ideal for expanding your COBOL programming and information-sharing capabilities in client-server environments.

Remote Edit/Compile/Debug lets you work with local and remote files seamlessly. Files that reside on the host are just as easy to access as those on your workstation, eliminating the complexity of manually downloading files.

MQSeries* makes it much easier to develop cross-platform applications. You concentrate on the business logic of your application, while VisualAge for COBOL handles the cross-platform connections and communications.

With the addition of IBM COBOL support for **WIndows 95** and **Windows NT****, you can develop COBOL programs on OS/2, Windows 95, and Windows NT; then run them on workstation and host sytems.

VisualAge for COBOL for OS/2 supports native embedded SQL statements for Oracle** and Sybase** databases. It uses **Open Database Connectivity (ODBC)**, letting you access data from a variety of databases and file systems that support the OBDC interface.

While you are using VisualAge for COBOL to tackle the OO, graphic, cross-platform, client/server applications of the future, you can also use it to solve some old problems as well.

Use VisualAge for COBOL to help change code that is date sensitive and may not accurately handle dates following the year 1999. VisualAge for COBOL provides help with both new code and legacy code. When you write new programs, use intrinsic functions to define 4-digit years. For legacy code, use VisualAge for COBOL, Professional Edition, to help locate and understand year 2000 code problems, and use the editor, compiler, and debug tool to address them.

Visual Builder for new COBOL code

With VisualAge for COBOL, you don't need to learn a new programming language to create full-scale graphical applications.

VisualAge for COBOL includes a graphical debug tool that works with variables, expressions, registers, stacks, storage, multithreading, and breakpoints. The debug tool gives assorted views of assembly source files.

A programmable, language-sensitive editor offers capabilities such as syntax highlighting and language-element help. A performance analyzer helps you understand and tune your programs by monitoring the programs and creating a graphical program-by-program trace. VisualAge for COBOL provides an integrated development environment that includes WorkFrame/2, a tool that also supports IBM VisualAge C++* for OS/2 and IBM PL/I for OS/2.

Object-Oriented COBOL

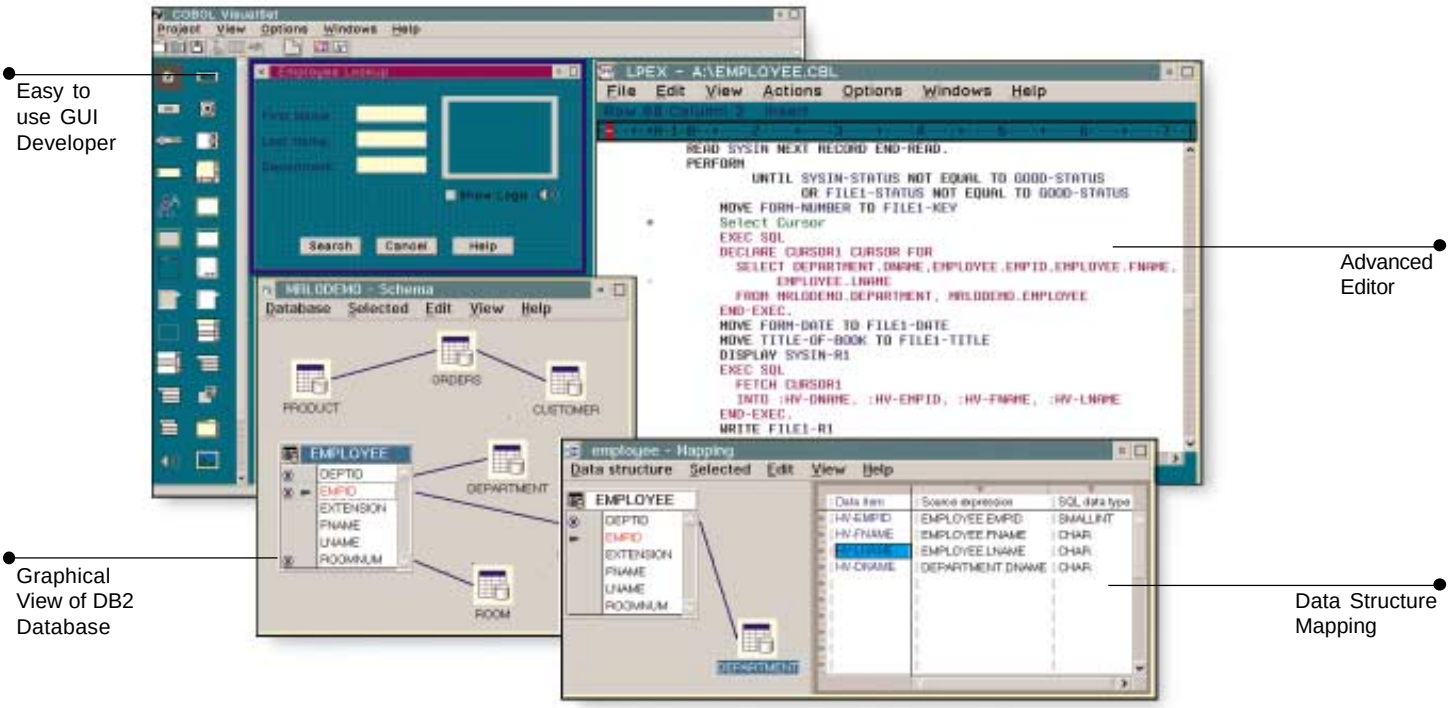
The object-oriented (OO) capabilities in VisualAge for COBOL enable you to create mission-critical object-oriented business applications. This optional OO programming allows you to encapsulate data and methods into objects that you can use again and again, rather than develop new code.

The OO language extensions in VisualAge for COBOL are based on the emerging ISO and ANSI COBOL standards and are a natural syntax extension to COBOL — not a new language.

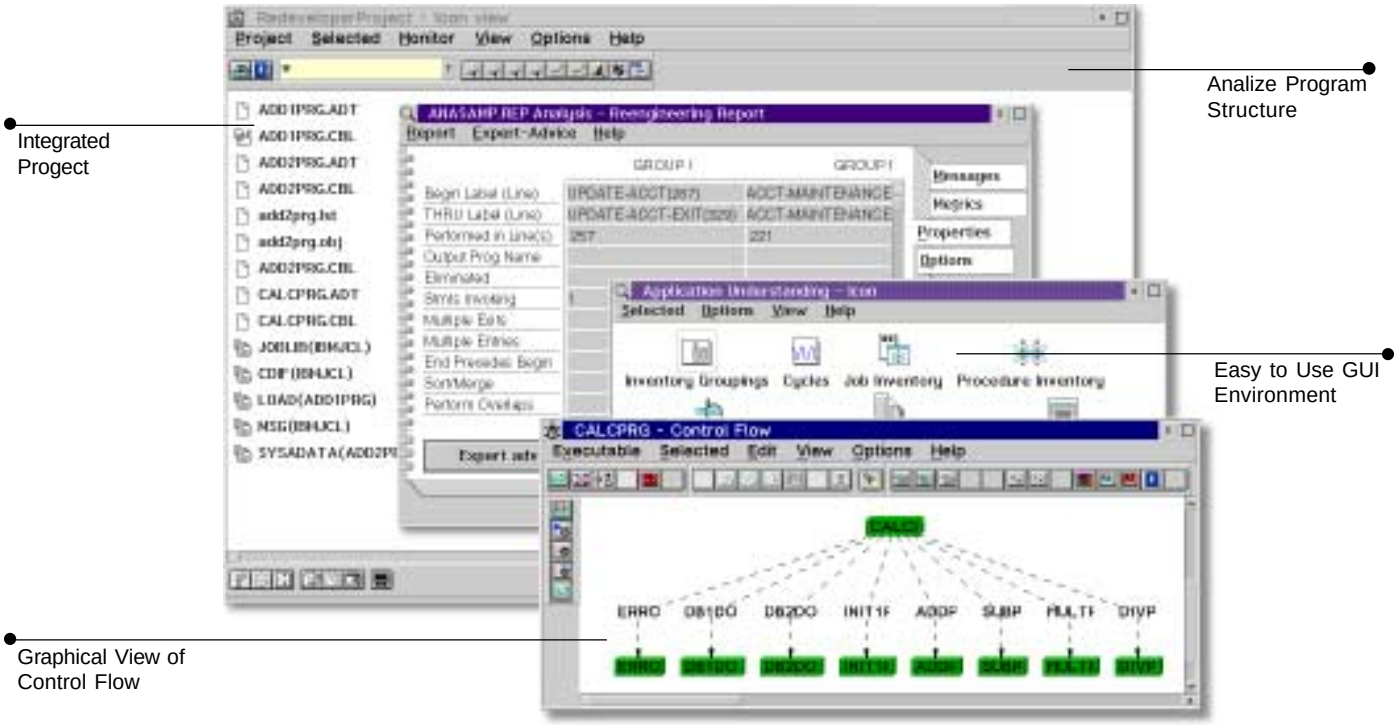
VisualAge for COBOL creates language-neutral objects that can operate with objects created in other OO languages, ensuring the utility of your objects for a long time to come. IBM provides language neutrality by implementing the Object Management Group's Common Object Request Broker Architecture (CORBA) standard in its System Object Model (SOM) technology. VisualAge for COBOL features "Direct-to-SOM" capability as do IBM COBOL Set for AIX and IBM COBOL for MVS & VM.

Better Access to Your Data and Transactions

Key to any client-server strategy is the ability to access data and transactions anywhere in your enterprise. VisualAge for COBOL supports local and remote access to DB2*, CICS*, and VSAM* and remote access to IMS* via CICS. For high performance, it supports a new, local file system. Cross-platform data access is straight forward because the industry-standard communications protocols are supported.



Tools to help you with your COBOL



For help with data access, you can take advantage of dialogs that provide visual assistance for mapping relational database fields to COBOL data structures and for generating DB2 SQL statements. Other dialogs assist you in generating calls that evoke CICS transactions using ECI, thus reducing the knowledge required and avoiding mistakes that can occur in coding complex interfaces. VisualAge for COBOL supports native, embedded SQL statements for Oracle and Sybase; it uses Open Database Connectivity (ODBC) to let you access any database that uses the ODBC interface.

Equally important to client-server success is a consistent language implementation on every platform. IBM provides that support with COBOL technology you can trust. With VisualAge for COBOL, you can leverage your host applications and databases, whether your applications are fully ported to new environments or reengineered to create graphical client-server applications.

Reenergize Your Legacy COBOL Code

Modernize your legacy COBOL code to today's technology. Using Redeveloper, you can reengineer existing programs to produce applications that are better understood, better documented and easier to maintain. As a part of VisualAge for COBOL, Professional, Redeveloper aids in the maintenance and reuse of your existing inventory of COBOL code.

Tools For Your Legacy Code

Redeveloper helps COBOL programmers:

- Understand how COBOL applications use shared resources.
- Understand COBOL program logic, control flow, data flow, and impact of code changes.
- Convert older COBOL programs to new levels of COBOL.
- Structure COBOL programs.

Advantages of Redeveloper

- *Leverages current COBOL resources* - Allows maintenance and redevelopment using current COBOL skills.
- *Faster developer turnaround* - Reduces time needed to analyze and understand legacy code and applications.
- *Lower maintenance and redevelopment costs* - Reduces programmer time and moves maintenance and redevelopment work to the workstation.
- *Exploits distributed processing* - Uses the power of the host for data gathering of host-based applications and the ease-of-use and convenience of the workstation for analysis, understanding, and conversions.
- *Integrated development environment* - Uses WorkFrame/2 to integrate the maintenance environment with the COBOL development environment.

Redeveloper Tools

- *Application Understanding* - Analyzes your JCL. Use Redeveloper to capture and study key data regarding your production environment from your inventory of JCL. Identify the programs and their data sets that may be impacted by proposed changes. Identify programs and files likely to have dates input that would be beyond the year 1999 and could impact program operation.
- *Program Conversion and Structuring* - No more unstructured code. Modernize your old code to the COBOL ANSI 85 standard. Structure unstructured code to produce programs that are easier to understand, update, and maintain. Eliminate dead code, reduce complexity of old code.
- *Program Understanding* - Learn what's really happening. Use Redeveloper to analyze your programs, trace control flow and data flow, identify potential trouble spots in your code, and identify data elements that need changing.

Technology You Know and Trust

VisualAge for COBOL has been developed and tested by IBM as part of the IBM COBOL family. This family of COBOL products provides consistent compiler technology to help leverage your programming efforts. You can develop programs on one platform and run them on many.

Working as a Team

Team-based technologies can help you keep your application development environment under control. To optimize your LAN environment and improve team productivity, you can use IBM's TeamConnection for OS/2 and TeamConnection DataAtlas for OS/2.

Use DataAtlas from one location to control and standardize data definitions for COBOL as well as PL/I, DB2, DB2/2*, IMS DB, Oracle and Sybase. Because DataAtlas allows you to generate and share a standard set of data descriptions, you get improved application consistency and maintainability. You can also create data models independently of your database implementation. Physical database design support helps you structure databases for optimal performance.

TeamConnection integrates library control and configuration management functions and object-oriented repository services. Use it for version control, configuration management, change management, and application building. TeamConnection increases your team's productivity by:

- Improving team communication and coordination.
- Saving important assets (COBOL source code and objects, for example) and asset-related information.
- Providing automated tools for easy access to that information.

VisualAge for COBOL Offerings

Currently, there are two offerings available for VisualAge for COBOL: Standard and Professional, for OS/2.

VisualAge for COBOL, Standard for OS/2, includes an application development environment complete with the compiler, editor, run-time, debug tool, visual GUI builder, OO programming extensions, and Windows 95 and NT support.

VisualAge for COBOL, Professional for OS/2, includes all the features of the Standard offering plus Redeveloper, which adds program understanding and structuring tools to an already powerful COBOL product. Redeveloper does not currently run in the Windows environment and is only available on OS/2.

Service and Education

IBM COBOL services and education are designed to make you self-sufficient with our COBOL products quickly and with a minimum of effort. From client-server configurations to OO programming, these COBOL offerings can extend your ability to use IBM COBOL effectively in every part of your enterprise.

Services range from assessing the application of COBOL products in your enterprise to developing proof-of-concept applications for you. They can supplement your in-house skills to help your staff rapidly exploit the new technology afforded by VisualAge for COBOL.

IBM COBOL education covers the subjects and techniques that will help enhance your productivity with IBM COBOL products on a daily basis.

More Information

For more information about the IBM COBOL Family, please contact your local IBM representative or IBM software reseller. You can also find the IBM COBOL Family on the World Wide Web: Start at the IBM Software Home Page (http://www.software.ibm.com), and search on the key word GoCOBOL.

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