

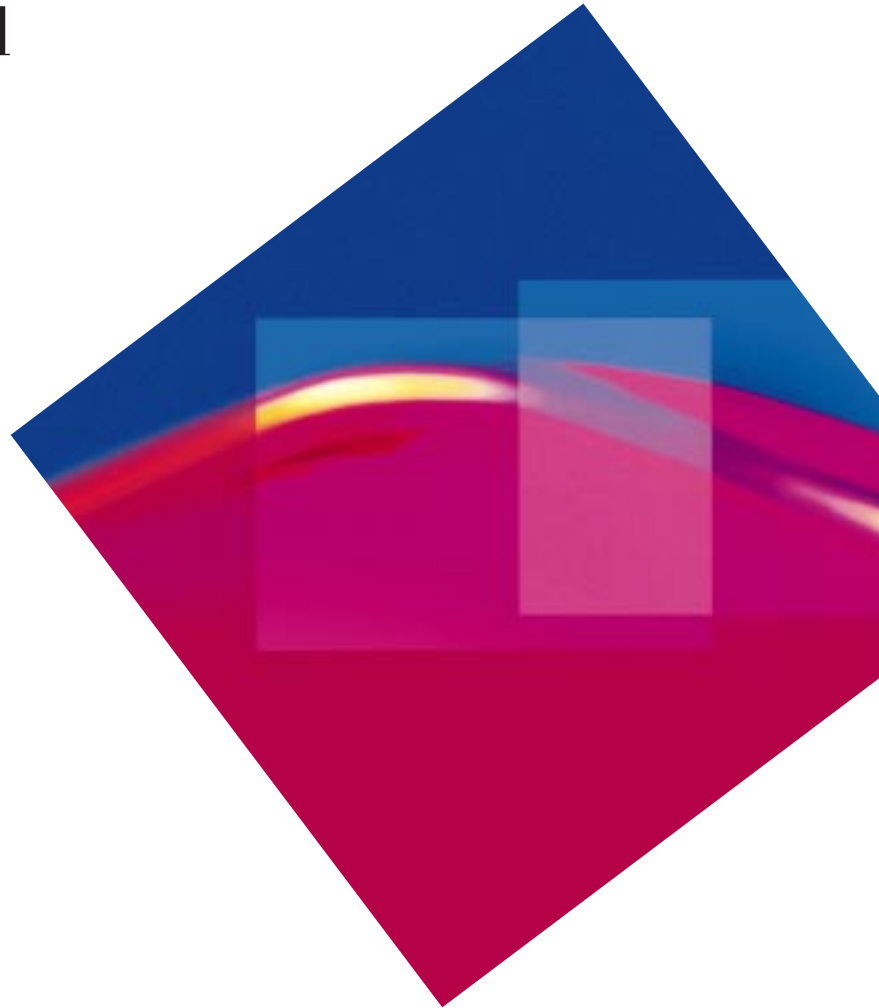


CICS for OS/390 and Application enabling

What's new in CICS Transaction Server for OS/390 V1.3

If you're an application developer or manager, you'll find a particularly powerful set of productivity tools. You can:

- Reduce costs by increasing productivity with visual AD tools and JavaBeans**
- Shorten time to market and lower production costs through new object-oriented interfaces for C++ and Java,** to reuse existing data and processes
- Take maximum advantage of the Internet with extensive support for Java
- Improve business efficiency by constructing IT processes that match business processes. CICS* business transaction services (BTS) is an entirely new set of services for the creation of long-lived business transactions.
- Help user productivity by providing the intuitive look and feel of a GUI.



Application enablement

Information technology departments are typically a business overhead, so they are vulnerable to the usual business pressures: to reduce costs and to make better use of existing investments. But, at the same time, they are expected to help the enterprise become more competitive by exploiting the new ways of doing electronic business, or e-business.

CICS recognizes these pressures, and has developed sets of tools to help reconcile these two conflicting requirements. One set of tools is for doing more with your CICS investments, using less effort; and the other gives economical access to the new age technologies needed for doing e-business.

- If you work with traditional CICS COBOL and PL1 programs, you want to build applications based on efficient and productive reuse of your existing code. For developers like you, CICS is providing CICS BTS, an entirely new set of services for the creation of long-lived business transactions. BTS enables remote method invocation CORBA-initiated transactions to behave like the pseudo-conversational model. BTS will bring the same productivity, plus a design capability for construction of components that more closely reflect the business process
- If you're a new technology developer, you want to exploit Web and Internet technologies to extend your business' reach to market. CICS support for the Java language keeps CICS developers at the leading edge of technology, and makes it easy to exploit business opportunities on the Internet. For developers like you, CICS is providing industry-accepted programming models:
 - Object oriented (OO) programming techniques using either C++ and Java
 - Object management group (OMG) – CORBA inter-operability protocol IIOP
 - JavaBeans component model.

Java application support

Java is already the language of choice for client applications, but server applications written in Java are catching up fast. CICS will support Java applications and JavaBeans, so you can either wrap existing CICS programs in Java, or develop new CICS applications and components (Beans) using CICS-provided JCICS foundation classes. Whichever approach you choose, the CICS Java interface will be under the control of CORBA IIOP.

Application programs may be developed and compiled using a standard Java compiler, such as VisualAge* for Java, on a workstation or in the MVS* UNIX** System Services (USS) environment on OS/390*. CICS runs the compiled bytecode interpretively using an OS/390 Java Virtual Machine hosted within the CICS execution environment.

Alternatively, the compiled bytecode can be processed by VisualAge's high performance Java compiler under OS/390, creating an object file in an MVS PDSE library. CICS then loads the program from the PDSE and executes it within an Integrated Language Environment (ILE) run-unit.

The simple CICS Java interface will enable the use of visual application development tools and technology for building applications that make use of Beans, accessing existing CICS applications and data from Java programs. IBM Visual Age for Java has been extended to enable applications using the JCICS classes to be developed on a workstation running Windows NT** 4.0 within the integrated development environment (IDE), exported to the host CICS environment via MVS USS, and debugged interactively from the workstation.

As well as enabling exploitation of the Web and the Internet, CICS support for Java provides more clear business benefits that include real programming productivity improvements, integration of different platforms with write-once-run-anywhere, and reuse of business processes encapsulated within Java objects and Beans.

Object methods

CICS TS 1.3 has new OO interfaces for C++ which give you the choice of writing CICS applications using either the traditional CICS command-level API or the CICS OO API, based on the CICS C++ or Java foundation classes. You can create business objects as wrappers around existing CICS applications, since CICS applications written in either C++ or Java can reuse other CICS applications written in any language, using normal CICS services such as Dynamic Program Link.

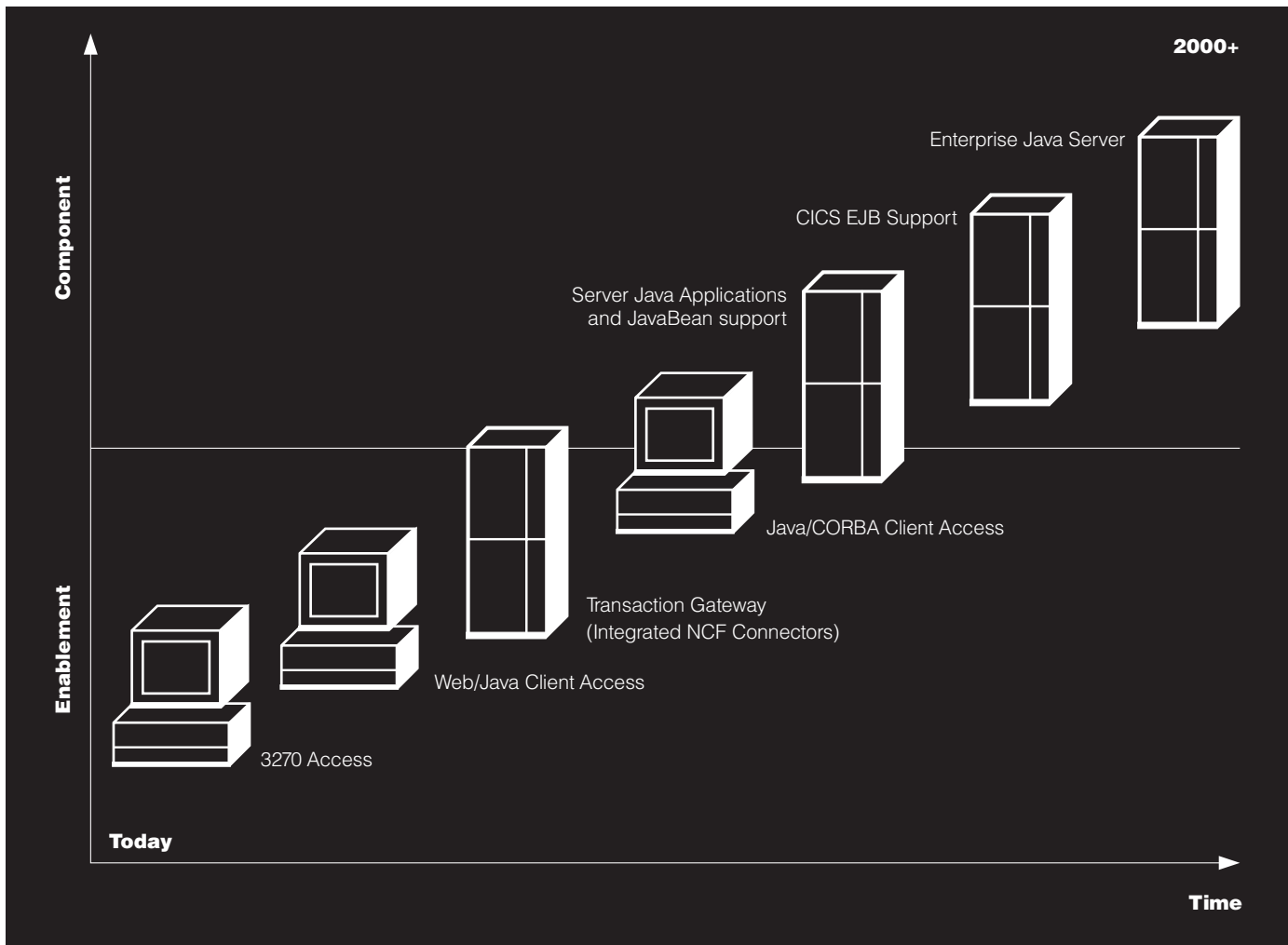
CICS base classes are supplied for C++, and incorporate performance enhancements. They may be invoked directly by your applications written in C++, and do not require compilation or pre-processing by the CICS translator.

By using OO techniques in the design and development of your CICS applications, not only can you reflect the business model more accurately and make rapid changes to any mission critical application, but you can improve your programming productivity through greater reuse of application components.

CICS business transaction services

CICS BTS provides a significant new programming model for building Business Transactions that closely reflect a business process, while greatly simplifying the task of building complex e-business solutions. There is no compromise on traditional CICS reliability, integrity, performance, scalability and availability.

A CICS business transaction is generally a long-lived transaction consisting of many actions, each implemented as one or more CICS transactions. CICS BTS controls the overall progress of the business transaction, managing interrelationships, ordering, parallel execution, commit scope, and recovery/restart. A business transaction can have an indefinite lifetime, spanning restarts of the CICS system. Existing CICS transactions can be reused as an activity within a CICS business transaction.



CICS Clients connectivity

A business transaction is implemented as a control program that expresses a set of rules and actions within a business process. Activities can be implemented sequentially or in parallel, or in any combination, and persistent data can be passed between activities. Both control programs and activities can be implemented in any programming language supported by CICS, including Rexx, C++, Java, COBOL and PL/1. Procedural and Object Oriented programming interfaces for CICS Business Transactions are supplied.

CICS BTS is implemented as a set of APIs, exclusive to CICSTS, that extend the current CICS APIs to make it easier to model, control and execute complex business transactions. The programming model enables the building of business transaction objects that best reflect business processes, while enabling business transaction reuse and reintegration techniques to address the most demanding business issues. You can focus on the development of business logic, without needing to worry about complex support infrastructures.

Business transactions are treated essentially the same as any CICS transaction. They can be invoked from the same sources, including CICS Clients, remote CICS systems and Web browsers; they can be distributed across a S/390* Sysplex; and they can be defined, monitored, managed and controlled using CICS services, including CICSplex* SM, and are enabled for workload separation and workload balancing across a sysplex.

More application support

CICS TS is undertaking a long-term enhancement to its underlying infrastructure in order to make available to CICS applications the MVS and UNIX System Services provided by OS/390 but currently barred from the CICS programmer's repertoire. This undertaking will take several releases and in this release no new function is made directly available to the application programmer. However the initial changes to the infrastructure provide the underlying support for running the MVS Java Virtual Machine as a CICS transaction.

New support for 16-character temporary storage queue names makes it easier to generate unique queue names. The flexibility that this brings to user application programs will overcome earlier limitations with conventional 8-character TS queue names and generating sysplex-wide unique TS queue names.



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Information for decision makers

The next stage in the evolution of CICS TS as the enterprise e-business server of choice is to provide enterprise JavaBeans support. Enterprise JavaBeans is a set of extensions to the Beans component architecture that will give the attributes of CICS transactions to components. All the advantages of JavaBeans will be combined with the proven performance and scalability of transaction processing systems. Enterprise JavaBeans for CICS is planned to be available in 1999.

More information about CICS Transaction Server and other CICS products can be found at www.software.ibm.com/cics/
