CICS Transaction Server for z/OS, Version 2 Release 2

IBM

Investing in the future of e-business.

e business software

Combine the reliability and security of CICS software with the flexibility of Java technology.

Successful businesses have leveraged the Internet evolution and embraced Java™ technology to take advantage of opportunities for e-business and reach customers in an emerging global marketplace. The Web continues to offer innovative ways to connect to trading partners and suppliers, tap into new markets and build lasting customer relationships. And developers have helped establish Java technology as a predominant e-business building block, pushing the "write once, run anywhere" promise of reduced programming costs and faster time to market closer to reality.

But there's still a lot of uncharted territory in e-business, and adopting unproven technologies can be risky. To help you develop a winning business strategy that increases market-share and capitalizes on new revenue sources, IBM supports cutting-edge technologies and builds on the strength and reliability of IBM CICS® software to significantly enhance IBM CICS Transaction Server for z/OS™. The latest version—IBM CICS Transaction Server for z/OS, Version 2 Release 2—offers a complete solution to boost profitability, improve customer satisfaction and give your growing e-business a jump on the competition.

CICS Transaction Server for z/OS combines the strength of CICS software with the flexibility of Java technology to meet the demands of rapid e-business development. Around-the-clock reliability allows you to quickly and easily create new Web applications and convert existing ones. Securely and reliably manage tens of thousands of connected users. And scale to dynamically meet growing customer demand—on and off peak usage times.

Enhanced Java technology support

Enterprise JavaBeans Specification, Version 1.1 defines the model for you to develop reusable Java server components that can be used in any application server to provide services and interfaces. CICS Transaction Server for z/OS offers support for session beans conforming to the Java 2 Platform, Enterprise Edition (J2EE) Enterprise JavaBeans (EJB) specification.

EJB specification support includes:

- *IBM Developer Kit for OS/390®, Java 2 Technology Edition*
- *Enhanced CORBA support*
- *The CICS Connector for CICS/390*
- *Enhancements to CICS exploitation of TCP/IP*
- *Java Naming and Directory Interface (JNDI)*
- *Implementation of EJB security role authorization*
- *IBM CICSPlex® System Manager for EJB components*

With support for EJB, Version 1.1 standard, CICS Transaction Server allows you to use Java technologies at the enterprise level. So you can extend existing IT investments and deploy new Java applications across your entire enterprise as it grows. CICS Transaction Server provides a runtime environment where requests for EJB services are mapped to existing or enhanced CICS services. By writing EJB code that gives Java clients access to your current CICS applications and data, you can extend the power of existing CICS system-based programs. And, with CICS system security and integrity as a foundation, your developers can concentrate on turning sound business logic into dynamic e-business applications. Responsibility for underlying transactions is effectively removed from programmers, so they aren't distracted from their primary tasks—developing and deploying Java applications.

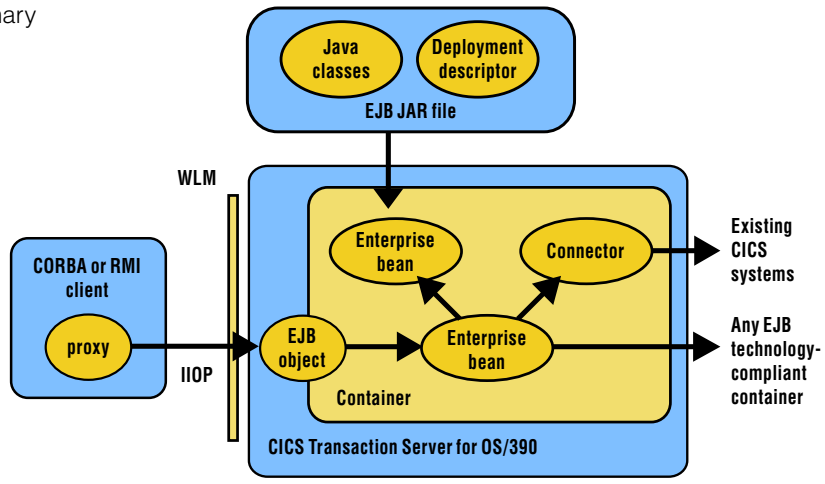
Efficient execution of CICS applications

CICS Transaction Server offers improved support for the IBM Developer Kit for OS/390, Java 2 Technology Edition, enabling you to run a Java application in a CICS region under the control of an IBM OS/390 Java Virtual Machine (JVM). The JVM environment is optimized for applications written initially in Java code—but also calls applications written in the other CICS system-supported languages—and accommodates efficient execution of CICS transactions.

Support for serial reuse of a JVM for multiple transactions helps eliminate initialization costs. The JVM is reinitialized before it is reused by the next Java program to help eliminate interference between serial applications or between programs originating from different end users. CICS systems support a set of preinitialized JVM instances within each address space. And you can manage a pool of JVMs to optimize throughput and to allow Java classes to be replaced—without a CICS system restart. To help improve system performance, the JVM environment automatically discards Java application objects at program termination—instead of requiring the garbage collection mechanism to execute.

Enhanced CORBA Support

CICS Transaction Server supports full CORBA, Version 2.1 application programming interface (API) to provide the necessary infrastructure for EJB component development. With enhanced support for outbound Internet Inter-Orb Protocol (IIOP) requests from Java applications and support for distributed transactions, CICS Transaction Server offers greater component portability and improved application development productivity than previous versions.



CICS connector for CICS Transaction Server

The CICS connector allows a Java program or EJB component to communicate with an existing CICS application. In each case, developers use a CICS system-specific API or IBM Common Connector Framework (CCF) client-side API to code the Java program using the CICS connector.

The CICS connector for CICS OS/390 is part of the IBM CCF API. The IBM CCF architecture defines the way a Java program interacts with an application server. Application development tools, such as IBM VisualAge® for Java Enterprise Access Builder (EAB), can provide universal tooling, regardless of the type of application server accessed. Create EJB components that can communicate with existing CICS applications written in traditional CICS system-supported languages. Build EJB modules to enable Java client application programmers—who might have little or no knowledge of CICS systems—to add CICS functionality to their applications. And enable developers to make their applications available to Java client applications, applets and servlets on a variety of platforms including IBM AIX®, IBM OS/2®, Microsoft® Windows NT®, Sun Solaris operating environment, IBM OS/390 and IBM z/OS.

Unlike JCICS classes for a similar function, the code generated by CICS Connector for CICS Transaction Server is portable to CICS or non-CICS Java environments and can use VisualAge for Java tooling. The CICS connector is compatible with CICS Transaction Gateway, Version 3 as well as newer versions. Command beans generated by VisualAge for Java that use the CCF interface are binary portable to run under CICS Transaction Server and use the CICS connector. Other beans that use the underlying Java enterprise connector interface (ECI) can also be migrated to the CICS Transaction Server.

Provide naming function to Java applications

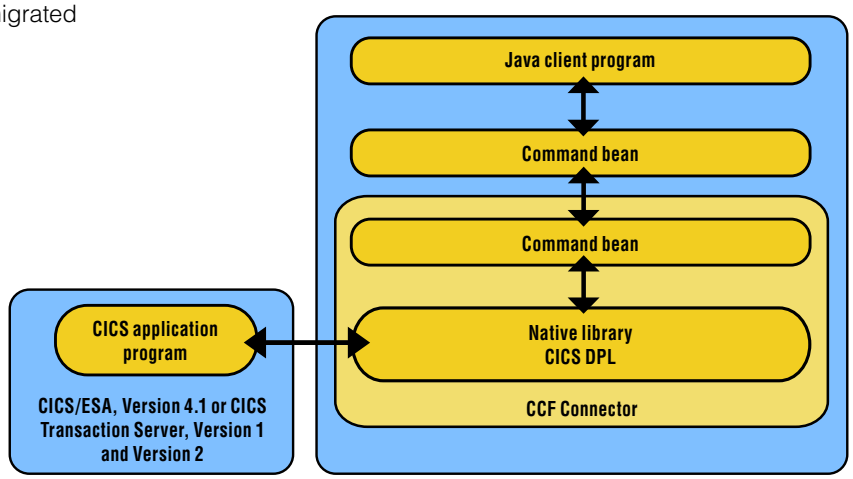
The JNDI API is specified in the Java programming language to provide directory and naming function to Java applications. With CICS support for the EJB, Version 1.1 standard, the JNDI API enables beans and other Java programs running under CICS to look up a name or to locate and invoke an external EJB component.

Facilitate deployment of EJB components

A workstation-based tool—Application Assembly Tool (AAT)—is introduced in CICS Transaction Server, Version 2 Release 2 for Windows NT or Windows® 2000 operating environments. With AAT, you can build Java Runtime Environment (JRE) technology-ready Java Archive (JAR) files, define their contents and edit them indirectly by editing the deployment descriptor. Then, AAT can help generate code required to run your JAR files in an EJB environment.

Strong system management capabilities

CICS Transaction Server continues to provide strong system management capabilities through support of the EJB standard. IBM CICSPlex System Manager presents a single point of control and single system view to manage CICS system resources. You can view the attributes of new EJB component-related CICS system resources, and a browser interface is provided to access CICS system resources in this environment. This approach allows you to continue using existing operational procedures when using EJB components. CICSPlex System Manager also provides dynamic workload balancing of EJB components by extending the distributed routing program model and includes workload separation and failure management facilities for invoking EJB programs.



Enhancements for CICS procedural programming

Beyond rich Java technology support, CICS Transaction Server improves or adds new support for CICS procedural programming capabilities, including:

- *Integrated CICS Translator for COBOL and PL/I applications. Includes language environment–conforming compilers to translate EXEC CICS commands during program compilation–instead of before compilation, as with earlier versions of CICS Transaction Server*
- *CICS COBOL and PL/I XML application capability. Parses XML documents directly in CICS COBOL and PL/I applications. Uses the XML Enabler for COBOL and PL/I to enhance existing high-performance CICS transactions written in COBOL and PL/I by supporting XML document interchange.*
- *3270 bridge. Allows a 3270 transaction to be driven using client ECI, host EXCI calls and DPL or LINK, as earlier versions enabled 3270 applications to map their output to HTML data through the CICS Web bridge. Includes a load module scanner function to scan a load library containing CICS programs, to evaluate whether those programs can work under the CICS 3270 bridge.*

Improved network connectivity

Using your current investment in CICS skills, you can evolve your e-business at a pace that best suits your needs. CICS Transaction Server, Version 2 Release 2 offers improved network connectivity to further help you get your e-business up and running quickly and easily.

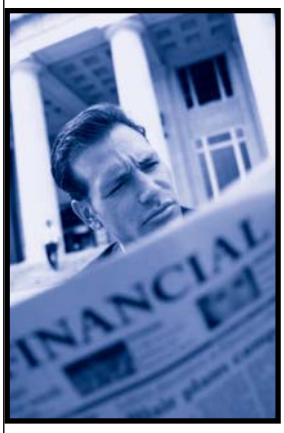
- *ECI over TCP/IP. Allows customers to use TCP/IP to connect directly to CICS/ESA® regions–instead of using TCP/62–without gateways or client- or server-side application changes; accommodates two-tier operation.*
- *Exploitation of TCP/IP services. Provides enhancements for user applications initiated by TCP/IP services for HTTP and IIOP. Includes outbound socket support, allowing CICS Transaction Server to initiate an IP connection; persistent sockets support for reuse of sockets by subsequent tasks; task sockets support to allow sockets to remain alive for the lifetime of the task; and shared sockets support to enable reuse of sockets by a collection of tasks.*
- *IBM VTAM® alias facility. Enables CICS Transaction Server to use a logical unit (LU) alias for auto-installed terminals and workstations, which ensures unique names in a CICSPlex that comprise terminal-owning and application-owning regions; helps avoid duplicate network names in shared CICS regions; improves connectivity and interoperability; and helps make integration of multiple regions and enterprises easier.*
- *Dynamic domain name systems (DNS) registration. Improves the resource definition options and operator interfaces that allow CICS TCP/IP services to register with OS/390 workload manager to take part in DNS connection optimization.*

Improved application availability

Programmers who are developing CICS applications have a rich collection of facilities and tools to choose from. With this release, CICS Transaction Server, offers additional functionality, maintaining the CICS reputation for high availability.

Enhanced DB2 facilities

IBM DB2® facilities enhance the CICS DB2 Attachment Facility to exploit the CICS open transaction environment (OTE) function. When CICS Transaction Server connects to IBM DB2, Version 6.1 or higher, the attachment facility executes using CICS open task control blocks (TCB) and uses DB2 function to move DB2 connections and threads between TCBs. CICS system-based DB2 applications coded to threadsafe standards, and defined to CICS as threadsafe, can benefit from reduced TCB switching. For threadsafe applications making heavy use of the EXEC Structured Query Language (SQL) command, the reduced TCB switching helps improve performance.



The new DB2 group attach facility allows a CICS user to exploit the DB2 facility where the name can be specified as a DB2 data-sharing group instead of an explicit DB2 subsystem name; each group can contain one or more DB2 subsystems. This simplifies Application Owning Region cloning within a sysplex and helps ensure greater availability.

CICS Transaction Server, Version 2 Release 2 introduces a new resource manager interface (RMI) purge option. This allows the writer of a task-related user exit (TRUE) to specify whether—before calling it—the RMI should defer purge and stop runaway. With it, you can recover faster from system stalls because applications waiting in DB2 can be purged from the CICS system. In previous versions, only force-purge was supported.

Enhanced support for CICS data-sharing servers

CICS data-sharing servers add auto-restart support for all three types of CICS data-sharing servers—temporary storage, coupling facility data tables and named counters—using the OS/390 Automatic Restart Manager. This enables the servers to wait during startup for the coupling facility structure to become available if the initial connection fails. CICS coupling facility servers allow automatic rebuild of coupling facility structures for CICS servers and exploit the Cross-System Extended Services (XES) system-managed rebuild support included with z/OS. The system-managed coupling facility structure-duplexing helps ensure that CICS Transaction Server can continue to operate in the event of a coupling facility failure.

Sign-on retention for automatic session recovery

In the past, CICS Transaction Server support for VTAM persistent sessions meant that CICS Transaction Server recovered only the terminal session and not the user's sign-on status if a failure occurred. Users had to sign on again after recovering the session. New function with CICS Transaction Server, Version 2 Release 2 records the sign-on status of CICS Transaction Server users at sign-on and sign-off, and signs on automatically for the user at reconnection after a CICS Transaction Server or VTAM failure.

System management enhancements

CICSPlex System Management Remote Managed Application Space (RMAS) Agent for Windows allows management of CICS on the Windows NT or Windows 2000 platform in IBM TXSeries™, Version 4.3. The RMAS agent provides operations, realtime analysis, FEPI BAS support and the ability to target IBM CICS for Windows NT for dynamic workload management from CICS Transaction Server.

The communication component of CICSPlex System Management provides transportation of requests and their responses across the CICSPlex to cope with a changing network topology across multiple protocols. Other enhancements provide increased resilience and availability of the communication component. And improvements to storage management, including a new dynamic storage algorithm, help reduce the likelihood of a short on storage (SOS) condition and shorten reaction time when events occur.

CICS Transaction Server allows you to scale as your business evolves. Support for Java technology to EJB components means you can extend your existing, proven core applications to new audiences and create new business opportunities. Reuse of existing application logic helps reduce application development costs and saves time and effort in solution testing. And you can exploit your existing skills base while benefiting from new technology. Your risk is reduced as you gain competitive advantage in an ever-changing global marketplace.

For more information

To learn more about how CICS Transaction Server for z/OS can help your business, visit:

ibm.com/software/cics

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