IBM CICS Transaction Gateway for Multiplatforms V7.1 delivers access to CICS containers and extended systems monitoring capabilities

At a glance

CICS Transaction Gateway (CICS TG) for Multiplatforms V7.1 provides important new capabilities:

- Extended CICS integration support, exploiting the new IP Interconnectivity (IPIC) for Distributed Program Link (DPL) provided in CICS Transaction Server (CICS TS) for z/OS V3.2
- Extensions to systems monitoring capabilities, including advanced system metrics, interval statistics, integration with CICS Performance Analyzer for z/OS (CICS PA), a transaction monitoring infrastructure, and advanced workload monitoring through the support of Extended Workload Management (EWLM)

Overview

CICS® Transaction Gateway (CICS TG) for Multiplatforms V7.1, a market-leading Java™ 2 Platform, Enterprise Edition (J2EE) connector, is production proven for over a thousand customers as a high-performing, security-rich, and scalable method of service-oriented architecture (SOA) access to CICS.

The new release of CICS TG for Multiplatforms V7.1 provides interoperation with the CICS Transaction Server for z/OS® (CICS TS) V3.2 channels and containers programming model. This allows J2EE applications to exchange large amounts of data with CICS programs, far exceeding the 32-KB limit that applies to COMMAREA-based interactions.

CICS TG for Multiplatforms V7.1 also delivers the following in the area of extended CICS integration:

- New deployment options for XA support, to enable two-phase commit from J2EE applications in WebSphere® Application server directly into CICS TS V3.2
- New deployment options for SSL support, to enable Java clients to use an encrypted connection directly into CICS TS V3.2

There are also a range of systems monitoring improvements, providing:

- Advanced system metrics providing enhanced problem determination and capacity planning capabilities
- A transaction monitoring infrastructure for end-to-end analysis of composite J2EE and CICS applications
- Support for Enterprise Workload Manager (EWLM) when using IP Interconnectivity (IPIC) connections to CICS TS V3.2, makes possible end-to-end workload monitoring of composite applications deployed in WebSphere Application Server and CICS TS
In addition extended interoperability is provided thought the support for use of the CICS TG with a number of 64-bit run-time operating environments.

Key prerequisites

Hardware requirements — Both the CICS TG for Multiplatforms V7.1 and the CICS Universal Client V7.1 run on any hardware capable of running the relevant operating system and prerequisite software. For more details, refer to the Hardware requirements section.

Operating systems — For details, refer to the Software requirements section.

Planned availability dates

• November 30, 2007 (electronic software delivery)
• December 7, 2007 (media and documentation)

Availability of programs with encryption algorithm in France is subject to French government approval.

Cryptography in this product is limited to password encryption, authentication or digital signature.

Description

CICS TG for Multiplatforms V7.1

CICS TG, a market-leading Java 2 Platform, Enterprise Edition (J2EE) connector, is production-proven for over a thousand customers as a high-performing, security-rich, and scalable method of SOA access to CICS. CICS TG:

• Delivers J2EE standards-based access to CICS applications, while requiring minimal changes to CICS and usually no changes to existing CICS applications
• Enables the rapid deployment of CICS applications as services in an enterprise-wide SOA
• Allows the reuse of existing CICS applications as services in comprehensive and sophisticated J2EE and Web services solutions hosted on powerful application servers such as WebSphere Application Server
• Allows CICS applications to be rapidly service-enabled by connecting them to new environments — such as the Enterprise Service Bus (ESB), the heart of an SOA

The strategic interface within CICS TG that enables this connectivity is the J2EE Connector Architecture (JCA) Common Client Interface (CCI), a core component of J2EE that defines a programming standard to all enterprise information systems (EISs). JCA is now a popular method of connectivity because of its ease of implementation and high qualities of service. Using Java Servlets or Enterprise JavaBeans (EJB) components, the ECI can be utilized to allow access to CICS COMMAREA-based applications. A choice of TCP/IP or SSL connectivity options is supported.

Enhancements in CICS TG for Multiplatforms V7.1

CICS TG for Multiplatforms V7.1 provides significant enhancements over previous releases in three principle areas:

• Extended CICS integration
• Advanced systems monitoring
• Extended interoperation

Extended CICS integration

CICS TG V7.1 now exploits the IPIC for DPL provided in CICS TS V3.2. This new CICS intercommunication protocol is part of a multi-release cross product initiative, introduced by CICS TS V3.2. Use of IPIC connections through the CICS TG provides the following benefits:

Channels as modern-day COMMAREAs — Interoperation with the CICS TS V3 channels and containers programming model provides an improved method of exchanging data with CICS programs, in amounts that far exceed the 32-KB limit that applies to COMMAREAs and...
Additionally provides an optimized and more structured data interface. Support is provided from both the JCA ECI resource adapter and the CICS TG base classes.

Extended XA support — Deployment options when using XA support with the CICS ECI resource adapter are expanded to the CICS TG on distributed systems when using in local mode. This feature enables J2EE applications to invoke CICS applications within the scope of a two-phase commit transaction using the XA capabilities of CICS TS for z/OS V3.2.

Extended Secure Sockets Layer/Transport Layer Security support — Options for secure intercommunication are enhanced through the exploitation of the CICS TS V3.2 support for SSL/TLS, when using a local CICS TG on any supported platform. This feature enables Java clients to use an encrypted connection to a CICS TS V3.2 system, providing for secure transmission of data and optionally for authentication using X509 certificates.

CICS TG continues to provide optimized interconnectivity from a wide variety of clients into all CICS systems supported by IBM. CICS TG V7.1 will provide the following enhancements to network connectivity:

- TCP/IP network optimizations — TCP/IP network optimizations are provided to improve response times for Java clients connecting to CICS through the Gateway daemon.

- Simplified SNA configuration — Support for fully qualified SNA partner LU names, provides for easier configuration of SNA clients in an APPN® network, simplifying the migration of TCP62 connections to Enterprise Extender for customers who continue to require APPC interconnectivity in a TCP/IP network.

Advanced systems monitoring

CICS TG V7.1 now provides enhanced facilities for capacity planning and problem determination within the Gateway daemon. Use of CICS TG V7.1 provides the following benefits:

- Advanced system metrics — Advanced capacity planning, throughput and availability metrics will be provided for the Gateway daemon on all platforms. This function allows systems administrators and capacity planners to analyze system utilization metrics and to perform on-line problem determination. New statistics will include network usage statistics for EXCI and IPIC connections to CICS, usage of critical system resources including region storage and JVM heap, and analysis of response times and network throughput. If necessary, these values can be used to take action to reduce the need for planned outages or prevent the occurrence of unplanned downtime. These statistics are made available through the extended ctgadmin command-based system administration interface and the external statistical API.

- Interval statistics — A mechanism will be provided to reset statistics using a configurable interval. This will allow analysis of trends and peak usage, enhancing the ability to perform capacity planning and performance monitoring.

- Transaction monitoring — A new request monitoring exit infrastructure is provided in the CICS TG for use in both local and remote Gateway scenarios. This infrastructure enables Independent Software Vendors (ISVs) to develop transaction monitoring solutions for on-line transaction tracking and off-line auditing. The exit infrastructure is provided in both the Java client and the Gateway daemon and reports response times and additional key information about all ECI-based requests as they flow through the CICS TG components.

- Advanced workload monitoring — As part of the exploitation of CICS TS V3.2 IPIC, support is provided for EWLM over IPIC connections to CICS TS for z/OS V3.2. EWLM is the IBM implementation of the Application Response Measurement (ARM) standard from The Open Group. EWLM extends the capabilities of z/OS Workload Management (WLM) services to all members of the IBM eServer® family, making possible end-to-end workload monitoring in heterogeneous environments such as a WebSphere Application Server and CICS TS for z/OS environment. Additionally IPIC requests originating in a JCA resource adapter automatically contain point-of-entry information, enabling CICSPlex® SM (or equivalent CICS monitoring tools) to perform problem determination and off-line analysis of requests as they enter and flow across a CICSPlex.

Extended interoperation

Improved interoperability is provided through support for use of the CICS TG with the following 64-bit run-time operating environments:

- Windows® 2003 and Vista 64-bit operating systems
- Linux™ on Intel® with 64-bit kernels
- HP-UX on Itanium IA64 hardware
For further details on hardware and software environment supported refer to the Software requirements section.

In addition the CICS TG on all platforms now provides support for changing the system time, providing for improved interoperability with 3rd party time synchronization software.

**CICS Universal Client for Multiplatforms V7.1**

CICS Universal Client V7.1 delivers simple and low-cost integration with CICS from Microsoft® Windows, Linux, and UNIX® systems. It provides access from a single user workstation to the tried and trusted transactional capabilities of CICS TS TXSeries™ CICS servers.

CICS Universal Client communicates with CICS servers through External Call Interface (ECI), External Programming Interface (EPI), and External Security Interface (ESI). ECI helps optimize client and server operation and improve programmer flexibility by keeping business logic on the server and presentation logic on the client. EPI enables the client to programmatically interact with 3270 data-stream-based transactions. There are also 3270 emulation capabilities that enable a workstation to function as a 3270 display or printer for CICS applications. ESI enables appropriate user applications to verify that a password corresponds to an existing user ID, and allows passwords to be changed to facilitate better user ID and password management.

Programming interfaces are provided in C/C++, COM (for Visual Basic or Visual Basic Script support), and COBOL. It delivers TCP/IP, TCP62, and SNA LU6.2 networking options to connect to your CICS systems.

Single user licences of CICS Universal Client should be considered by anybody looking to distribute single-user, low-cost CICS access across the enterprise. CICS Universal Client V7.1 delivers the following enhancements over previous versions:

**Other enhancements**

Clock changes

CICS TG now supports changes to system time while running.

**Enhancements in CICS Universal Client V7.1**

Simplified SNA configuration

Support for fully qualified SNA partner LU names, provides easier configuration of SNA clients in an APPN network, simplifying the migration of TCP62 connections to Enterprise Extender for customers who continue to require APPC interconnectivity in a TCP/IP network.

**Accessibility by people with disabilities**

The following features support use by people with disabilities:

- Operation by keyboard alone
- Optional font enlargement and high-contrast display settings
- Ability to run with screen readers and screen magnifiers for use by people with visual impairment
- Communication of all information independently of color

The Information Center is accessible to people with visual, physical, or hearing impairment.

All functions can be performed without the use of a mouse.

Text descriptions are provided for all diagrams, which can be read by a screen reader.

The publications documents are also provided in PDF format. This is accessible using Acrobat Reader 6.0, or later.

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


**IPLA and Subscription and Support considerations**

IPLA licenses can be transferred from one machine to another within, but not limited to an enterprise. You may aggregate the capacity for all the processors the product is operated on to achieve a more economic price. This will result in a single Proof of Entitlement (PoE). It is your responsibility to manage the distribution of Value Units within the limits of the entitlement of the
Subscription and Support must cover the same capacity as the product license entitlement. Subscription and Support will be available in the country in which the agreement is made.

Product positioning

One of the key attributes of an SOA is its ability to reuse existing program assets. For many organizations, their key existing program assets are CICS-based applications. CICS TG allows CICS applications to be rapidly service-enabled by connecting them to new environments, such as the ESB, the heart of an SOA. To enable comprehensive composite-application-serving infrastructures, CICS TG provides connectivity from WebSphere SOA foundation servers to CICS TS for z/OS.

The strategic interface within CICS TG that enables this is the JCA adapter, a core component of J2EE that defines a programming standard to all EISs. JCA is a popular method of J2EE connectivity because of its ease of implementation and high qualities of service. JCA provides delegated management of connections, transactions, and security that are transparent to application developers. In a managed environment, like that of WebSphere Application Server, system contracts enable these management capabilities. They help to make the JCA a robust solution for integrating COMMAREA- or container-based CICS applications with J2EE applications running in WebSphere Application Server.

Tightly coupled connectivity solutions such as JCA, along with other J2EE standard services such as Java Message Service (JMS) and Java Database Connectivity (JDBC), can coexist with loosely coupled Web services to take advantage of the agility of an SOA.

Choosing the right deployment platform for your gateway is important. CICS TG V7.1 currently supports the following platforms:

- z/OS
- AIX®
- Linux on Intel, POWER™ or IBM System z™
- Microsoft Windows
- Sun Solaris on the SPARC platform
- HP-UX on RISC or Itanium platforms

Connectivity is provided on these platforms from all supported WebSphere Application Server environments to all supported CICS servers. The qualities of service of CICS TG are highest when deploying on the z/OS platform. The comparison of the qualities of service delivered on each platform and in each configuration is discussed in the publication, Integrating WebSphere Application Server and CICS TS using the Java Connector Architecture (G224-7218).

TXSeries for Multiplatforms is a distributed CICS Online Transaction Processing (OLTP) environment for business critical applications written in enterprise programming languages, and CICS TG is the strategic connector between TXSeries CICS servers and WebSphere Application Servers. TXSeries is the ideal deployment environment for high-performance, distributed transactional applications that integrate well into your mixed-language, multiplatform SOA solution. TXSeries or Multiplatforms V6.1 extends and enhances the next generation of distributed CICS across a number of platforms. For further details on TXSeries for Multiplatforms V6.1, refer to its announcement in the Reference information section.

System z Tools help to modernize and transform existing CICS applications whether the goal is to develop and deploy new workloads to leverage the unique performance, availability, security, and cost benefits of System z; to increase responsiveness to business requirements and by modernizing the mainframe platform; or to optimize management of the IT environment, reducing cost and complexity while improving governance and compliance. To help transform CICS TS into a SOA hub on System z, System z Tools deliver support across the life cycle whether building new or reusing existing applications.

Developers can now use CICS PA to understand the performance of new or changed CICS applications and to identify performance improvements including the runtime analysis of the CICS TG on z/OS. This will get the most benefit from your CICS application investments with reduced risk. In addition IBM Tivoli® OMEGAMON® XE for CICS TG can be used together with IBM Tivoli OMEGAMON XE for CICS to provide detailed metrics that help to diagnose performance-related problems within the problem management process, and to provide performance trend information for the capacity management process.
Reference information

Refer to Software Announcement ZP07-0466, dated November 6, 2007.

Refer to Software Announcement ZP06-0404, dated October 24, 2006.

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