



CICS Transaction Server for z/OS V3.2 delivers significant innovation for application connectivity, application reuse, and service management

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At a glance

CICS TS V3.2 delivers a wide range of new capabilities, which are grouped in three areas:

- **CICS application connectivity.** New Web services capabilities include support for security specifications and large message size optimizations. Communication is introduced between CICS regions over TCP/IP for Distributed Program Link. There are enhancements for HTTP and TCP/IP workloads.
- **CICS application reuse.** Enhancements to channels and containers include 64-bit exploitation. Integrated translator support is provided for C/C++.
- **CICS service management.** Improvements include easier management of program libraries; support for enterprise-wide workload management; enhancements to CICSplex System Manager and its Web user interface; and threadsafe enhancements. Larger capacities are introduced for shared data tables and VSAM entry sequenced data sets; there are improvements to monitoring and statistics.

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Overview

CICS® is a modern transactional application server designed to execute demanding mixed-language application workloads, and to enable those applications easily to be integrated with enterprise solutions. CICS Transaction Server for z/OS® (CICS TS) V3.2 provides open standards-based connectivity, enabling CICS applications to be integrated within a service-oriented architecture (SOA), while preserving the long-established CICS qualities of security, reliability, data integrity, and optimal application responsiveness.

The major new functions in CICS TS V3.2 fall into three main areas:

Application connectivity — New Web services capabilities include support for recent standards, interoperability profiles, and the ability to send large amounts of binary data efficiently. The ability to interconnect CICS regions over TCP/IP for Distributed Program Link (DPL) allows exploitation of System z™ IP networking, and provides an alternative to Systems Network Architecture (SNA). All CICS TCP/IP workloads benefit from simple and robust systems and workload management facilities.

Application reuse — Enhancements to the efficiency of deploying Web services into CICS include handling a wider range of programming

language and XML data types and attributes, and improvements to performance and diagnostics. Applications will now automatically utilize 64-bit storage for data held in containers, providing for improved scalability and performance. The CICS integrated translator is now supported by the z/OS XL C/C++ compiler, delivering more comprehensive development and debug capabilities.

Service management — Online management of program libraries makes it easier to maintain continuous system availability while bringing new or changed applications into production. Support for Enterprise Workload Manager (EWLM) makes possible end-to-end workload monitoring in heterogeneous environments. Potential for performance enhancements is offered by making threadsafe the core APIs for accessing local and RLS VSAM files, journals, WebSphere® MQ, and system autoinstalled Global User Exits. There is improved management of Java™ workloads. The CICSplex® SM Web User Interface has new help and map capabilities and usability enhancements.

Larger amounts of data can now be stored in shared data tables (>2 GB) and VSAM entry sequenced data set (ESDS) files (>4 GB). Improvements to monitoring and statistics facilities include more precise timing data and compression of monitoring records. The default internal trace table size has been increased for better problem diagnosis. The limit on the number of CICS regions supported in a sysplex is increased by enabling a CICS region to join a named XCF group.

Key prerequisites

CICS TS V3.2 requires z/OS (5694-A01) V1.7, or later.

Planned availability date

June 29, 2007

Open Beta program: A Beta version of the product will be made available, free of charge. It will remain available for download until June 29, 2007, and it can be used until August 31, 2007. For more information, visit

<http://www.ibm.com/software/htp/cics/tserver/v32/openbeta>

Description

Refer to the Functions delivered in CICS TS V3.2 section for a full description of the content of CICS TS V3.2. Also, information concerning the support for CICS TS V3.2 by System z Tools is described in this section.

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 CICS publications are also provided in PDF format; this is accessible using Acrobat Reader 6.0.

Section 508 of the U.S. Rehabilitation Act

CICS Transaction Server for z/OS V3.2 is capable as of June 29, 2007, when used in accordance with the associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via

http://www-3.ibm.com/able/product_accessibility/index.html

Product positioning

CICS TS and WebSphere Application Server are strategic middleware products that interoperate well using new technologies such as Web services, to support SOA environments. They exploit and complement z/OS qualities of service, such as high availability and scalability at low cost per transaction, with excellent security. In combination, WebSphere Application Server and CICS TS support almost any mission-critical solution.

- WebSphere Application Server is the premier Java 2 Enterprise Edition (J2EE) and Web services-based application server. It is available on the broadest number of platforms (including z/OS and Linux™) and provides a robust, proven environment for Java applications.
- CICS TS provides the base for the majority of mainframe applications today and excels in the execution of high-volume business applications. It supports the development of modern applications in the most popular business languages, COBOL, PL/I, C/C++, and Java, as well as functioning as a Web services-based application server, leveraging existing investments and skills, while exploiting new technologies.

These products are fundamental to the SOA environment, and CICS continues to enhance its ability to enable CICS-based applications to be exposed as loosely-coupled components within an SOA, enabling them to be exposed as Web services. The function delivered in CICS TS V3.2 should be seen as an extension to capability delivered in CICS TS V3.1, and a major advance over the SOAP for CICS feature delivered on CICS TS V2. Along with the provision of optimized transports, improved interoperability, and better security integration for this new workload, CICS TS V3.2 delivers the qualities of service expected for a CICS function.

For customers requiring tightly-coupled inbound connectivity from J2EE application servers into CICS TS, the CICS Transaction Gateway (CICS TG) is a production-proven and market-leading J2EE connector, providing a high-performing, security-rich, and scalable method of SOA access to CICS. 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 On Demand Business. For further details on the latest enhancements provided in CICS TG V7.0, refer to the product announcements in the Reference information section.

TXSeries™ for Multiplatforms is a distributed CICS Online Transaction Processing (OLTP) environment for business-critical applications written in enterprise programming languages. TXSeries can act as a gateway to CICS TS by handling terminal concentration, protocol conversion, or intelligent business logic locally, which can increase the performance of CICS TS and protect it from client-originated disruption. TXSeries is the ideal deployment environment for high-performance, distributed transactional applications that integrate well into your mixed-language, multiplatform SOA solution. TXSeries for 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.

CICS TS V3 continues on the road established in CICS TS V2 by enabling enhancement of existing applications, and construction of new applications, using contemporary programming languages, constructs, and tools. It provides for programming interfaces and tools, which promote the construction of new mixed-language transactional applications that are natural and intuitive to the application implementers.

The CICSplex System Manager (CICSplex SM) is an integrated part of CICS TS. Its role is to reduce the complexity of management of CICS systems by presenting them as a simple and integrated whole. It integrates all the major CICS management functions into one interface. It cooperates with IBM Tivoli® products to meet the need to integrate management and automation of CICS with z/OS and the network. This release continues the strategic themes for enterprise management of integration, simplification, monitoring, and automation. Through the CICSplex SM Web User Interface, which continues to be enhanced, CICS TS has a modern intuitive interface for all aspects of CICS system management, rendering the TSO End User Interface unnecessary.

CICS TS V3.2 delivers important new functionality that can help you to build flexible and agile application systems that will enable your business to be more responsive to the changing needs of your customers and partners. To help you to reap immediate benefit from these advanced capabilities, the IBM System z Tools portfolio is keeping pace, and all key products will either support CICS TS 3.2 without change or will deliver enabling PTFs or new releases, in most cases providing Day 1 support.

System z Tools help you to modernize and transform existing CICS applications whether your goal is to develop and deploy new workloads to leverage the unique performance, availability, security, and cost benefits of System z; to increase your responsiveness to business requirements by modernizing your mainframe platform; or to optimize management of your IT environment, reducing cost and complexity while improving governance and compliance.

To help you to transform your CICS TS into your SOA hub on System z, the IBM System z Tools deliver support right across the life cycle whether you are building new or reusing existing applications. For CICS application developers, WebSphere Developer for System z (WDz) provides a single integrated development environment (IDE) for all supported languages and architectural styles, whether you are creating new CICS applications from scratch or are wrapping, refactoring, or otherwise reusing your CICS application assets.

Developers can also use CICS Performance Analyzer for z/OS (CICS PA) to understand the performance of new or changed CICS applications and to identify performance improvements including the benefits of running applications in threadsafe mode prior to deployment. This helps to get the most benefit from your CICS application investments with reduced risk. CICS Interdependency Analyzer for z/OS (CICS IA), WebSphere Studio Asset Analyzer, and Asset Transformation Workbench (ATW) help you to understand the structure of your most complex applications, for example, to determine which programs can most easily be refactored as Web services. WebSphere Host Access Transformation Services (HATS), on the other hand, enables developers to expose existing 3270 applications as Web services.

System z Tools support the IBM Service Management initiative to help you to optimize your IT infrastructure and key service management processes such as those defined by the IT Infrastructure Library (ITIL). For example, CICS PA and Tivoli OMEGAMON® XE for CICS on z/OS can work together to provide detailed CICS metrics that help to diagnose performance-related problems within the problem management process, and to provide performance trend information for the capacity management process. CICS Batch Application Control for z/OS (CICS BAC) and File Manager for z/OS provide automation and flexibility to the task of sharing CICS resources with batch systems, thus helping to improve system availability.

The need for governance and compliance is a requirement in business, but recent regulatory legislation such as the Sarbanes-Oxley Act has made it even more relevant to the business of IT. IBM System z Tools can help you to implement compliance-related initiatives. For example, CICS Configuration Manager for z/OS (CICS CM) can be used to automate and manage CICS configuration changes in a controlled and authorized manner, and CICS VSAM Recovery for z/OS (CICS VR) can help you to maintain the integrity of your VSAM data.

For further details on IBM System z tools for CICS, refer to the IBM System z tools for CICS section.

CICS Seminars

IBM offers free tailored CICS seminars delivered by CICS technical experts, at your own location and with the opportunity to choose the topics and time. Given to a mixture of personnel involving operations, development, and strategy, this can provide an effective discussion on how CICS can deliver real value to your business. Ask your IBM Account Team to contact:

cicssem@uk.ibm.com

Statement of direction

IBM intends to deliver, on CICS TS V3.2, further enhancements to WS-Security.

IBM intends to deliver, on CICS TS V3.2, support for the IBM 31-bit SDK for z/OS, Java 2 Technology Edition, V5.

IBM intends to deliver a new release of the CICS Transaction Gateway that will continue the focus on increased ease of integration for CICS applications within an SOA, and will provide significant enhancements in two key value areas:

- Extended networking support, including interoperability with the channels and containers programming model. This will enable Java applications to exchange large amounts of data (greater than 32 KB) with CICS applications that use the containers and channels APIs, and will also support EWLM over JCA for improved end-to-end workload monitoring. These capabilities will require the use of the new IP Interconnectivity for DPL provided in CICS TS V3.2.
- Enhanced systems monitoring capability and integration with other systems management

tools.

IBM intends to deliver a new release of CICS Interdependency Analyzer for z/OS, which will provide support for modernizing key CICS applications for deployment in an SOA. It will do this by identifying candidate applications that are suitable for exposure as Web services.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

Consulting and services

IBM Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our WebSphere lab-based services and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, IBM Services extends our reach through IBM Business Partners to provide an unmatched portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support any critical business need.

For information on IBM Global Services, visit

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To learn more about IBM Software Services, visit

<http://www.ibm.com/developerworks/websphere/services/>

To locate an IBM Business Partner, visit

<http://www.ibm.com/software/solutions/isv>

Reference information

For information on CICS Transaction Gateway for Multiplatforms V7.0 and CICS Universal Client V7.0, refer to [206-303](#), dated November 21, 2006.

For information on CICS Transaction Gateway for z/OS V7.0, refer to [206-297](#), dated November 21, 2006.

For information on IBM 31-bit SDK for z/OS, Java 2 Technology Edition, V5, refer to [205-300](#), dated November 22, 2005.

For information on TXSeries for Multiplatforms V6.1, refer to [206-267](#), dated October 24, 2006.

For information on the CICS Service Flow Feature of CICS TS V3.1, refer to [205-303](#), dated November 22, 2005.

For information on WebSphere Developer for System z V7.0, refer to [206-320](#), dated December 5, 2006.

For information on CICS Configuration Manager for z/OS V1.2, refer to [206-097](#), dated May 2, 2006.

For information on WebSphere Host Access Transformation Services V7.0, refer to [207-032](#), dated February 27, 2007.

For information on CICS Online Transmission Time Optimizer for z/OS V1.2, refer to [206-187](#), dated August 1, 2006.

For information on CICS Performance Analyzer for z/OS V2.1, refer to [207-053](#), dated March 27, 2007.

For information on CICS VSAM Recovery for z/OS V4.2, refer to [207-052](#), dated March 27, 2007.

For information on WebSphere Application Server V6.1, refer to [206-076](#), dated April 11, 2006.

For information on WebSphere Application Server for z/OS V6.1, refer to [206-077](#), dated April 11, 2006.

For information on Enterprise PL/I for z/OS V3.6, refer to [206-273](#), dated October 24, 2006.

For information on Fault Analyzer for z/OS V7.1, refer to [206-223](#), dated September 12, 2006.

For information on Debug Tool Utilities and Advanced Functions for z/OS V7.1, refer to [206-223](#), dated September 12, 2006.

For information on Application Performance Analyzer for z/OS V7.1, refer to [206-223](#), dated September 12, 2006.

For information on File Manager for z/OS V7.1, refer to [206-223](#), dated September 12, 2006.

CICS Web Pages: For up-to-date information on CICS, refer to

<http://www.ibm.com/software/ts/cics/>

For the latest information on CICS TS V3.2, refer to

<http://www.ibm.com/software/ts/cics/v3/>

You can search for terms, phrases, error codes, or APAR numbers on the CICS support page, at

<http://www.ibm.com/cics/support/>

CICS SupportPacs: For CICS SupportPacs, go to the CICS SupportPacs Home Page, at

<http://www-1.ibm.com/support/docview.wss?rs=1083&uid=swg27007241>

The following new SupportPacs in support of CICS TS have been introduced since the announcement of CICS TS V3.1:

- **CA8J** Generate Basic Authentication headers for a CICS HTTP client. Category 2, introduced November 8, 2006
- **CA1N** CICS TS — Support for the WebSphere Service Registry and Repository. Category 2, introduced September 29, 2006
- **CH1B** CICS JVM Application Isolation Utility. Category 2, introduced May 8, 2006
- **CS1G** CPSMUTIL — CICSplex SM batch utility program. Category 2, introduced February 2, 2006
- **CA71** CICS Web Services Assistant for Windows™. Category 3, introduced December 19, 2005
- **CH1A** Load Module Analyzer — uses include OS/VS COBOL & Additional Floating Point. Category 2, introduced November 18, 2005

CICS Service Flow Feature of CICS TS V3.1

New capability delivered January 2007: WebSphere Developer for System z V7.0 was shipped in January 2007. From this time, the Service Flow Modeler shipped as part of CICS Service Flow Feature for CICS TS V3.1, which is a subset of WebSphere Developer for System z, was upgraded to the V7.0 level.

For more information on WebSphere Developer for System z V7.0, refer to [206-320](#), dated December 5, 2006.

At the same time, an upgrade to the Service Flow Runtime was also delivered, and was made available through the service channel by PTF UQ20322 for APAR PK32131. This level of Service Flow Runtime contains the following enhancements, which correspond to the new facilities introduced in WebSphere Developer for System z V7.0:

- Ability for a service flow to invoke an external Web service
- Ability to use the channel and container features of CICS when providing input to and receiving a response from a service flow to enable exchange of quantities of structured information greater than 32K in size

- PL/I support in the New Project wizard, and an importer for PL/I modules
- Ability to view System z Database Application Generator applications in the Enterprise Service Tools Project Explorer
- Remote browse support for file or PDS selection
- Improvements in references to ESQL modules and mapping routines
- Improvements in default screen recognition criteria, and project level preferences for screen recognition defaults
- Improvements in deployment and management of files and artifacts
- Enhanced BIDI and DBCS support
- Ease-of-use

Migrating to the latest level of CICS Service Flow Feature of CICS TS V3.1

- Customers who already have the CICS Service Flow Feature of CICS TS V3.1, and move up to the latest level of service on the Service Flow Runtime (PTF and APAR as above), can continue to use the Service Flow Modeler at the level they already have.
- Customers who move to the new level of Service Flow Modeler (at the WebSphere Developer for System z V7.0 level), for example by re-ordering the feature, must also move to the latest level of Service Flow Runtime.

However, it will not be possible on CICS TS V3.1 to move to the level of CICS Service Flow Feature that will be provided with CICS TS V3.2. Customers wishing to use this level of CICS Service Flow Feature will have to migrate to CICS TS V3.2. Refer to the Compatibility section for further information.

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

BP Attachment for Announcement Letter 207-051

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=207-051>

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Functions delivered in CICS TS V3.2

This new release of CICS® TS V3 adds many enhancements. Most of these, following on from those introduced in CICS TS V3.1, are grouped within three principal themes:

- CICS application connectivity
- CICS application reuse
- CICS service management

CICS application connectivity

A range of new functions is provided that meet the demands of customers to provide increased maturity in the Web services implementation, including support for new standards, and to enable the use of a consistent IP network infrastructure for CICS-to-CICS connectivity.

Support for WSDL 2.0: CICS TS V3.2 introduces support for the latest level of the Web Services Description Language (WSDL), WSDL 2.0, which is currently being finalized by the World Wide Web Consortium (W3C). WSDL 2.0 ensures that CICS will interoperate with modern tools, infrastructure and service components in the SOA environment.

WSDL 2.0 has clarified the role of WSDL and made it much simpler. In particular, it has clarified the role of WSDL to that of defining resources rather than defining service compositions. The W3C Working Group determined the role of service composition was better dealt with by choreography and orchestration. Another change is the elimination of the message construct. Now operation definitions refer to XML Schema element declaration instead. There has been further clarification of message exchange patterns: the definition of the pattern now indicates the order of the messages in addition to the source and destination. These, together with other changes, make WSDL 2.0 a more usable service description language than WSDL 1.1.

WSDL 2.0 presents a component model for describing resources, rather than the data actually being exchanged. As such users will need to migrate to WSDL 2.0 tooling to generate implementation code. The CICS Web Services Assistant has been enhanced to support both WSDL 1.1 and 2.0.

See also the statement Support for WSDL 2.0 in the Compatibility section.

Web services support for MTOM and XOP: Support is introduced in CICS TS V3.2 for the SOAP Message Transmission Optimization Mechanism (MTOM) and XML-binary Optimized Packaging (XOP) specifications from the W3C. Together these specifications, often referred to as MTOM/XOP, optimize the transmission of binary information, such as photographs or scanned signatures, within SOAP messages.

The MTOM specification defines a method for optimizing SOAP messages by separating out binary data, and sending it in separate binary attachments using a Multipurpose Internet Mail Extensions (MIME) Multipart/Related message. This type of MIME message is called an MTOM message, and significantly reduces the size of the SOAP message, and so optimizes its transmission efficiency and greatly reduces message parsing processing time. The XOP specification defines an implementation for optimizing SOAP messages that use MTOM.

CICS TS V3.2 supports these specifications in both Web service requester and provider pipelines.

Support for WS-I Basic Profile 1.1 and Simple SOAP Binding Profile 1.0: The Web Services Interoperability Organization (WS-I) promoted the Basic Profile (BP) 1.1 and Simple Soap Binding Profile (SSBP) 1.0 specifications to final material in 2004, and has published an updated set of compliance guidelines to help with adherence to Web services standards. CICS TS V3.2 is compliant with these guidelines, providing enhanced interoperation in an SOA environment. This compliance also applies to CICS TS V3.1.

Support for the WS-Trust specification in WS-Security: CICS TS V3.2 provides support for the WS-Trust February 2005 specification.

In larger enterprises or in collaboration between enterprises, it can be cumbersome for Web service providers to build a chain of direct trust to all possible clients. In addition, the Web service requester may not support the same security mechanisms as the Web service provider. For example, the requester may only support Kerberos and the provider X.509 certificates. Unless the Web service requester and provider are in the same security domain, the security tokens must be vouched for by a third party who is trusted by both the requester and provider. In the WS-Security model, this trusted third party is a Security Token Service (STS).

The WS-Trust specification provides a standard way to address these interoperability and management issues by using a STS. A STS can exchange or issue security tokens to requesters of a Web service or validate security tokens for the Web service itself. WS-Trust defines the SOAP protocols for interacting with a STS.

CICS support for WS-Trust includes the following functions:

- Provides standard protocols and standard interfaces (in WSDL) for communication with an STS

- Supports CICS as requester interacting with STS (push model)
- Supports CICS as provider interacting with STS (pull model)
- Supports Tivoli® Federated Identity Manager (TFIM) as the STS authentication broker
- Supports a user-defined list of trusted STSs

IP interconnectivity for DPL: As part of a multirelease initiative, CICS TS V3.2 introduces a new TCP/IP-based intercommunication protocol as an alternative to that provided via ISC or MRO, allowing Distributed Program Link (DPL) requests to be routed between CICS TS V3.2 regions over a TCP/IP network. This IP Interconnectivity for DPL function offers similar capabilities to those provided using ISC or MRO intercommunication protocols, including transactional syncpointing, security controls, and support for the exchange of either COMMAREAs or channels and containers. In addition, CICS offers SSL encryption and authentication support for this IP interconnectivity protocol.

Customers will be able to continue to use their existing connection definitions to route work within the sysplex using MRO and between systems using ISC over SNA. For DPL workloads they will be able to replace their existing SNA-based ISC intercommunication with IP interconnectivity, providing for network simplification, and the exploitation of System z™ networking enhancements including gigabit OSA-Express, and the HiperSockets facility provided by IBM Communications Server. MRO, ISC, and IP Interconnectivity networks and definitions will be able to coexist, and a migration utility is provided to assist in migrating CICS Connection® resources to the new IPCONN definitions that will be required.

See also the Statement of direction for information concerning exploitation of IP interconnectivity by the CICS Transaction Gateway.

Enhanced TCP/IP management and control: As new capabilities are introduced for IP interconnectivity, CICS TS V3.2 also introduces management and control facilities that allow work passing in and out of regions over a TCP/IP network to be monitored and managed. Work arriving into a CICSplex® now has point-of-entry information recorded with it. Users are then permitted to customize and extend this data to allow each request to be uniquely identified for tracking purposes. They can also extract information relating to a request at the point of entry and store this for offline analysis. In addition, CICS and the TCP/IP stack now also exchange information whenever CICS acquires a socket, such that the relationship between the stack and a CICS region is recorded, making it easier to track the progress of work items between these products.

The management and control facilities provide a consistent view of work passing between CICS regions and as such enable the use of CICSplex SM, or of other equivalent tools, to:

- View the TCP/IP network across the CICSplex
- View TCP/IP connections from clients connected over the following transports: SOAP over HTTP, HTTP, or IIOP
- Monitor TCP/IP network resources being used by a CICS region
- View the work passing in and out of a CICS region over TCP/IP
- Identify bottlenecks or blockages in the system
- Reconfigure the regions for improved throughput
- Locate tasks that have stalled, and then permit them to be forced to complete or roll back

Monitoring data, containing point of origin information, can also be collected and stored so that it can be examined offline at a later time, enabling, for example, the diagnosis of connectivity and other problems, or capacity planning work. CICSplex SM offers new interfaces to analyze this information.

Updates for CICS Web Support: Improvements are made to the CICS support for HTTP transport infrastructure. Additional functions include improvements to security for CICS Web Support. Where CICS is acting as a server, basic authentication, client certificate authentication and resource level security are provided for delivery of static content using URIMAP definitions. As a client, samples are provided showing how to manage basic authentication passwords using LDAP and TFIM. A range of enhancements improves usability, including support for containers on Web APIs. This allows Web API commands in converter programs, and conversion options on all Web API commands. The document API now has UTF-8 support, a new DELETE verb, and allows newcopy and caching of document templates.

Also introduced is the extension of the Web API commands to use containers. Changes are made to the container API (introduced in CICS TS V3.1) to allow character string code pages on commands as an alternative to coded character set identifier (CCSID) code pages. This means that the user application does not have to switch between code page formats when working with the container and Web API.

Further enhancements are provided to improve serviceability and maintainability. The new capability for writing Web recovery code in the Web error program User Replaceable Modules (URM) allows:

- The issuing of EXEC CICS Web commands
- The processing of errors encountered during delivery of static content (URIMAP)
- The processing of errors encountered when the application is acting as an HTTP client

CICS application reuse

A range of new capabilities grouped under this theme includes enhancements to channels and containers, and improvements to C/C++ support.

Enhancements to data mapping and to WSDL in Web services: CICS TS V3.2 includes enhancements to the technology that maps the body of SOAP messages into an application's interface binary format, and vice versa. This makes it easier to reuse or develop CICS applications as Web service provider and requesters.

For example, CICS can now map the COBOL data types COMP-1 (float), COMP-2 (double), and Level-88 toleration, and delivers richer support for XML data types such as base64Binary. CICS now supports WSDL options such as "nillable" attributes, variable length character and byte arrays, and the data types float, double, list, and union.

CICS Web services are now easier to deploy using new resource definition attributes. For example, you can specify the transaction ID, user ID, and language codepage with which to run a Web service while continuing to take advantage of autoinstall for Web services-related resources. Improvements have been made to the performance and diagnostic information produced when processing Web services in both CICS and the Web Services Assistant.

Some of these enhancements have also been made available on CICS TS V3.1 in PTFs UK11615, UK11616, UK15764, and UK15767.

Java™ API for Web Services Assistant: A new Java API is delivered for invoking the Web Services Assistant, with standardized messages and support for its cross-platform support. This function has also been delivered on CICS TS V3.1 in PTFs UK09028 and UK09039.

64-bit support for channels and containers: CICS TS V3.2 can now make use of 64-bit storage for channels and containers, allowing greater amounts of data to be transferred between CICS programs while also freeing up scarce storage below the 2-GB boundary. The use of 64-bit storage, in particular for containers with larger amounts of data, has been shown to give an improved performance.

A number of new capabilities are introduced to CICS commands and messages to provide information about the availability and usage of 64-bit storage. In order to run CICS TS V3.2, a minimum of 2 GB of 64-bit storage for the region is recommended.

Optimized support for CCSID data conversion: A number of optimizations have been made to data conversion services in CICS that can give a significant performance enhancement. In particular, this is an advantage for conversions that would normally use the z/OS® Unicode conversion service, as used by the CICS Web Support and Web services.

C/C++ integrated translator: The z/OS XL C/C++ compiler and CICS TS will support the translation of CICS commands as an integrated part of the compiler process. This brings the following benefits:

- Program source files can now be stored in the zSeries® File System (zFS).
- Input source restrictions previously imposed by the CICS translator, such as mandatory use of particular columns, have been removed.
- Preprocessor statements are now evaluated.
- There is better integration with source line debug tools.

- The deployment process has been simplified, as the translation and compilation steps are combined.

The z/OS V1.7 XL C/C++ and z/OS V1.8 XL C/C++ compilers will provide an enabling PTF through their service channel during the third quarter of 2007. This support will apply for both CICS TS V3.1 and CICS TS V3.2.

Further codepage support in CICS translator for C: Support is added to the CICS stand-alone translator for C / C++ for the IBM-935 and IBM-1388 (Simplified Chinese) codepages. Changes have also been made to ensure that the compiler processes them correctly in a mixed codepage environment.

This support has also been added to:

- CICS TS V3.1 by PTFs UK19000 and UK18999 for APAR PK30627
- CICS TS V2.3 by PTFs UK18979 and UK18967 for APAR PK30621

Components transferred from WebSphere® MQ: The components to connect CICS and WebSphere MQ for z/OS have been enhanced and are now integrated with CICS TS V3.2.

The components transferred include the CICS-MQ adapter, the CICS-MQ trigger monitor, and the CICS-MQ bridge. The enhancements include:

- Exploitation of the CICS Open Transaction Environment (OTE). The components have been made threadsafe, and are enabled to use CICS open TCBs. Exploitation of OTE will benefit threadsafe applications using WebSphere MQ. For multiple WebSphere MQ requests, TCB switching can be avoided, resulting in a saving of CPU and an increase in overall throughput, because applications can now run on multiple open TCBs and avoid bottlenecking.
- Improved diagnostics, including use of CICS facilities for system trace, dump formatting, and messages
- Improved statistical information, including the use of connections between CICS and WebSphere MQ, and the type and success of calls made. This information has also been made available within the CICSplex SM Web User Interface.

Note that the CICS-MQ adapter and CICS-MQ trigger monitor shipped in CICS TS must be used in place of the components shipped in WebSphere MQ, and they can be used with all supported levels of WebSphere MQ for z/OS. Also, the CICS-MQ bridge shipped in CICS TS is for use with WebSphere MQ for z/OS V6.0, or later. However, for use with WebSphere MQ for z/OS V5.3.1, CICS continues to require the CICS-MQ bridge shipped in WebSphere MQ for z/OS V5.3.1, and the WebSphere MQ PTF for APAR PK39200 must be applied.

See also the statement Components transferred from WebSphere MQ in the Compatibility section.

CICS service management

A wide range of new functions includes enhancements to the OTE, improvements to systems management, and new capabilities in the CICSplex SM Web User Interface. There are also improvements in the capacity of applications to deal with large data content, and enhancements to CICS trace and to monitoring and statistics.

Note that the CICSplex SM TSO End User Interface is removed in CICS TS V3.2.

Online management of program libraries: A facility is introduced which enables data sets from which program artifacts will be loaded to be defined dynamically without it being necessary to restart the CICS region. This is in addition to the existing means of defining the data sets statically in the DFHRPL concatenation.

Support for Enterprise Workload Manager: 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 containing multiple, interacting servers.

CICS TS V3.2 provides support for EWLM in a manner transparent to CICS applications, and no change to applications is required to enable them to be monitored with EWLM. CICS support for EWLM means that CICS provides facilities for internal management of ARM correlators,

requesting them from EWLM, accepting them from the various transports, forwarding them on, and passing them back to EWLM. By utilizing revised interfaces with WLM on z/OS, CICS effectively indicates to the EWLM Control Center when the processing of a CICS transaction starts and ends, and what kind of transaction it is. CICS flows an ARM correlator with the transaction, so that EWLM is informed of where work is processed and how it flows through the EWLM management domain.

Note: EWLM is only supported for external communications over the following: SOAP, HTTP, the new CICS IP interconnectivity for DPL, IIOP, and MRO. Within a CICS system, correlators are accessible from task related user exits (TRUEs) and certain global user exits (GLUEs) via the performance block token.

Threadsafe file control commands: In CICS TS V3.2, the commands for accessing local and Record Level Sharing (RLS) VSAM files are now threadsafe. These changes should result in improved performance for threadsafe applications that contain a mixture of commands accessing files and DB2® on an open task control block (TCB). Also, for pure VSAM applications running on an open TCB, there is a higher throughput capability due to better utilization of concurrent CPUs.

The commands that are made threadsafe are READ (including READ UPDATE), REWRITE, DELETE, UNLOCK, WRITE, STARTBR, RESETBR, READNEXT, READPREV, and ENDBR. In addition, the SPI command INQUIRE FILE is now threadsafe.

Note that the commands for accessing files using other access methods (remote files, Shared Data Tables, Coupling Facility Data Tables, and BDAM files) remain non-threadsafe.

Threadsafe definition for system autoinstalled global user exits: For optimum performance of threadsafe programs, CICS TS V3.2 enables system autoinstalled GLUE programs to be defined as threadsafe.

GLUE programs that are required early during CICS initialization are required to be configured to CICS by using the ENABLE command, and this command can now specify an override of THREADSAFE.

CICS users are encouraged to ensure all GLUE programs are threadsafe, and are defined to CICS using this mechanism.

Threadsafe CICS journaling commands: CICS threadsafe applications that make use of journaling commands can now benefit from better performance as the following commands are now threadsafe:

- WRITE JOURNALNAME, and WRITE JOURNALNUM
- WAIT JOURNALNAME, and WAIT JOURNALNUM
- XPI WRITE_JOURNAL_DATA

Threadsafe WebSphere MQ commands: For information on this further threadsafe item, refer to the Components transferred from WebSphere MQ section.

Enhancements to Java configuration and management: The CICS support for Java programs has been enhanced to provide predictable response times, improved robustness, and better diagnostics. For example:

- It is now possible pre-emptively to start Java Virtual Machines (JVMs) using the PERFORM JVMPOOL command.
- The timeout threshold of JVMs can be changed from the default 30 minutes of inactivity to a period up to 7 days, or indefinitely.
- The termination of JVMs can be actioned against a subset of JVMs within a pool, rather than the whole JVM pool.
- The JVM garbage collection process can now be scheduled to take place within a CICS system program.
- For debugging purposes JVM trace information can now be formatted and integrated with CICS trace facilities.

Note: CICS TS V3.2 does not support Java applications in resettable mode. For more information, refer to the Compatibility section. Also, refer to the Statement of direction section.

Integrated installation of CICSplex SM: In CICS TS V3.2, the installation and configuration of the CICSplex SM components has been simplified by being integrated with the installation of CICS. There is no longer any need to use the EYUISTAR job: CICSplex SM is installed, along with CICS, using the DFHISTAR job.

In addition, the CICS resource definitions required for CICSplex SM resources are now dynamically installed, removing the need manually to create definitions in the CICS system definition (CSD). This applies to the CMAS, the Web User Interface server, and the CICSplex SM agents in the regions managed by CICSplex SM.

The EYU9XDUT utility can now create the definitions required to start a Web User Interface and its CICSplex. This removes the former requirement to use the TSO End User Interface or a batch utility to create these definitions.

Enhancements to CICSplex SM: Several important functional enhancements are introduced to CICSplex SM which simplify its use, and provide enhanced data support for system management.

The new utility EYU9XDBT simplifies the setup and use of the CICSplex SM management environment, making it easier and quicker to exploit the capabilities of CICSplex SM. It can also be used as an alternative to the batched repository-update facility (BATCHREP) for management and maintenance of data repository resources.

Active task data, which is observable via the TASK resource table and associated views, is now accessible using the TASKRMI base table. The TASKRMI data and application naming fields have also been added to the HTASK record, and a new set of Web User Interface views is shipped to display them. In addition, CICSplex SM provides full functional support for IP interconnectivity for DPL with the new IPCONN and IPCONDEF base tables. Problem diagnosis in this area is augmented by the new TASKASSC and IPFACIL base tables. CICSplex SM workload balancing has been upgraded to accommodate dynamic routing over IP connections.

Support for dynamic program library management is provided through the new LIBRARY, LIBDSN, and LIBDEF base tables.

Enhancements to the CICSplex SM Web User Interface: The CICSplex SM Web User Interface is now easier to use, and has a number of new features. The enhancements include:

- Help information is available for all fields. In addition, the terminology used in Web User Interface views and menus is simplified and improved. Care has been taken to ensure that the terminology used is consistent throughout. Long titles used as column headings or button text have been reduced in length, improving screen layout and enabling views to display more data.
- Summary views can now be expanded to display the details of summarized records, through a new link provided to open a new tabular view displaying those records that relate to the selected summary row.
- Map support is added to the Web User Interface, allowing a user to explore the associations between administrative resource definitions within CICSplex SM in an interactive, diagrammatic manner. This is very useful for understanding the relationships of components within the CICSplex, and in particular for understanding the topography of applications and associated systems. The Web User Interface map function was also delivered on CICS TS V3.1 in PTF UK15173. (Note that, as stated in the Compatibility section, the CICSplex SM TSO End User Interface has been removed from CICS TS V3.2).
- The COVC transaction for management of the Web User Interface allows the exporting of items from the Web User Interface repository. The "ALL" option has been added to make it easier to export the whole repository in a single action. The sorting of tabular views has been enhanced by allowing sort on CICS system name.

CICSplex SM support for new functions: Operations and systems staff can immediately use CICSplex SM to manage the new CICS capabilities and resources using its Business Application Services (BAS), operations, and real-time analysis (RTA) functions. These are accessible through the CICSplex SM Web User Interface and system management API.

Revised CICSplex SM Web User Interface view and menu packaging: The manner in which CICSplex SM Web User Interface views and menus are packaged has been changed, to simplify their import into the Web User Interface repository. Previously, the default set of views and menus were shipped as three members of the SEYUVIEW data set (one for each language); this sometimes resulted in problems in servicing, leading to chains of prerequisite PTFs. Now, there will be three members per map or viewset. Corresponding changes to the COVC Web User

Interface management transactions identify an import data set and the members to be imported as an alternative to a transient data queue (TDQ). This change removes the inhibitors to providing timely service to the Web User Interface viewsets and menus.

Customers who have view definitions created on previous releases can import and continue to use these definitions in CICS TS V3.2.

Larger capacity for shared data tables: A shared data table can now hold more than 2 GB of data, removing the previous limit of a total of 2 GB for all shared data tables owned by a CICS region. This enables CICS to manage large quantities of frequently-accessed application data cached in shared data tables for high performance purposes.

The maximum practical size is now normally limited only by the amount of real storage available. The table control information (consisting of table entry descriptors and index nodes) is moved into two data spaces, so shared data tables no longer use any significant amount of virtual storage in the CICS region. The data table records are stored in multiple data spaces if necessary, with new data spaces being allocated automatically, up to the installation limit for data space storage or a maximum of 100 data spaces (200 GB) per CICS region. There is no limit on the size of an individual shared data table apart from the overall limit for the CICS region.

Support for larger capacity VSAM ESDS files: CICS TS V3.2 now supports entry sequenced data sets (ESDS) in VSAM greater than 4 GB in length, allowing CICS applications easily to manage larger quantities of data stored in files.

VSAM formerly had the 4-GB limit, but the limit was removed by the introduction of support for an extended format, extended addressing ESDS data set (or "extended ESDS"). This involves the use of a new 64-bit extended relative byte address (XRBA).

CICS writes new format forward recovery log records for extended ESDS files which include the 64-bit RBA. These forward recovery records are supported by CICS VR V4.2 (refer to the **CICS Tools information** section). In addition, CICS VR V4.2 supports extended ESDS files when the file is offline from CICS and being updated by batch jobs via its batch logging capability.

For the combined environment whereby an extended ESDS file is online to CICS TS V3.2 and is being updated by batch jobs, this is supported by use of the CICS-VSAM RLS function and Transactional VSAM Services (TVS). This requires TVS APAR OA19958.

Improved timing data precision in monitoring and statistics records: Enhancements are introduced to both the timing precision and the data capacity of CICS monitoring and statistics data. The monitoring clocks now measure elapsed time and CPU time for CICS TCBs to an accuracy of one microsecond, rather than in units of 16 microseconds as hitherto. The previous limit on clock capacity of about 19 hours has also been removed. Previously held as a 32-bit value, it is now a 64-bit value. This means it is only limited by the capacity of the local store clock.

This brings advantages in several areas. With the faster processors available today, the increased precision gives more accurate accounting of CPU time, for charging purposes. It is now easier to determine the exact nature and extent of possible CICS performance problems. In addition, the increase in clock capacity means that it is possible to monitor very long-running CICS transactions.

Note: Clocks for transaction resource class data still use a 32-bit value, measured in units of 16 microseconds.

Refer also to Processing CICS SMF 110 records in the Compatibility section.

Compression for monitoring data records: Data compression can now be performed on the System Management Facilities (SMF) 110 monitoring records produced by the CICS Monitoring Facility. z/OS services are used to compress and expand the data. This should enable greater use of the CICS Monitoring Facility, which can make awareness and analysis of CICS performance problems much easier. It also counteracts the effect of the increased data produced by the improved CICS timer data precision.

Note: The use of compression is optional, and the default is that compression is not used. Therefore tools which process CICS SMF 110 records will not be affected unless compression is switched on. Any tool that is intended to process CICS SMF 110 records for compressed data needs to ensure that it supports the z/OS Data Compression and Expansion Services (CSRCSRVS).

Enhancement to CICS statistics: The monitoring domain global statistics (type MONITOR) are extended to include MVS™ Workload Manager (WLM) address space goal information. This information will be useful in understanding the MVS WLM settings that are being used for your

CICS and CICSplex SM regions.

Increase in default size of the trace table: The default size of the trace table is increased from 16 KB to 4 MB. The larger trace table size improves the probability of capturing sufficient information for problem diagnosis should the need arise.

Enhancement allowing DFHTRxxx trace programs to run RMODE(31): The Generalized Trace Facility (GTF) trace formatting routine calls a suite of CICS trace programs DFHTRxxx. In CICS TS V3.2, these programs have been enhanced to run with RMODE(31) to prevent short-on-storage problems when they are loaded into a CICS region by analysis products, such as IBM Fault Analyzer.

Enhancements to INQUIRE MVSTCB: Enhancements are made to the INQUIRE MVSTCB command, which shows the addresses and storage information for the MVS TCBs in the CICS address space. These are extensions to include the storage key and amount-in-use of each allocated storage element. The corresponding support is added to CICSplex SM.

XCF group limit avoidance: To use the cross-system coupling facility (XCF) to communicate in a sysplex, each participating CICS region joins an XCF group as a member. CICS TS V3.2 now provides the ability to specify the name of the group to join, rather than, as previously, having all the CICS systems in the one DFHIR000 group.

This enables CICS systems to be partitioned into different XCF groups and thereby avoid the XCF limit of only 2047 members being allowed in a single group within a sysplex. For example, production systems could be members of one group, with development and test systems in a separate group.

This capability uses the facility in z/OS for supporting multiple XCF groups, and involves a new system initialization parameter, XCFGROUP, to allow users to specify the XCF group to be joined by the CICS region. In CICSplex SM, a new CICS-queried attribute, XCFGROUP, is added to the CMAS and CICSRRGN base tables.

EXCI has been enhanced to also support XCFGROUP.

CICS Service Flow Feature

The CICS Service Flow Feature of CICS TS V3.2 is an optional, no-charge feature. It provides the run-time capabilities to enable the creation of CICS business services by composing existing CICS applications and resources into service flows that implement the required business service behavior. CICS business services can be published as Web services, or integrated with enterprise solutions such as business processes hosted on WebSphere Process Server or WebSphere MQ-based Enterprise Application Integration (EAI) solutions. The CICS Service Flow Feature of CICS TS V3.2 will deliver enhanced run-time capabilities that extend the existing function of the CICS Service Flow Feature of CICS TS V3.1 with:

- Exploitation of CICS channels and containers by Service Flow DPL nodes
- Support for Link3270 non-mapped conversations
- Improved installation, management, and error handling capabilities

The CICS Service Flow Feature of CICS TS V3.2 will be orderable with CICS TS V3.2, and will be delivered during the second half of 2007. This edition of the CICS Service Flow Feature is the successor to the CICS Service Flow Feature of CICS TS V3.1. For further information, refer to CICS Service Flow Feature in the Compatibility section.

The CICS Service Flow Feature has revised packaging. IBM Rational Developer for System z is the IBM flagship offering for development of solutions for deployment on the System z platform. To utilize IBM Rational Developer for System z with the Service Flow Feature of CICS TS V3.2, the appropriate number of licenses of IBM Rational Developer for System z V7.1 must be obtained.

IBM System z Tools for CICS

This section provides information about the IBM portfolio of System z Tools, including releases to be delivered during 2007 in support of CICS TS V3.2.

CICS TS V3.2 delivers important new functionality that can help you to build flexible and agile application systems to enable your business to be more responsive to the changing needs of your customers and partners. To help you to reap immediate benefit from these advanced

capabilities, the IBM System z Tools portfolio is keeping pace, and all key products will support CICS TS V3.2 without change, or they will deliver enabling PTFs or new releases, in most cases providing Day 1 support.

The System z Tools help you modernize and transform existing CICS applications whether your goal is to:

- Develop and deploy new workloads to leverage the unique performance, availability, security, and cost benefits of System z
- Increase your responsiveness to business requirements by modernizing your mainframe platform
- Optimize management of your IT environment, reducing cost and complexity while improving governance and compliance

To help you transform CICS TS into your SOA hub on System z, the IBM System z Tools provide support right across the life cycle, whether you are building new applications or reusing existing applications. For CICS application developers, WebSphere Developer for System z (WDz) provides a single integrated development environment (IDE) for all supported languages and architectural styles when you are creating new CICS applications from scratch, or if you are wrapping, refactoring or otherwise reusing existing CICS applications.

Developers can also use CICS Performance Analyzer for z/OS (CICS PA) to understand the performance of new or changed CICS applications, and for identifying performance improvements, including the benefits of running applications in threadsafe mode prior to deployment. This helps to get the most benefit from your CICS application investments with reduced risk.

CICS Interdependency Analyzer for z/OS (CICS IA), WebSphere Studio Asset Analyzer, and Asset Transformation Workbench (ATW) help you to understand the structure of your programs can most easily be refactored as Web services.

WebSphere Host Access Transformation Services (HATS) takes the other approach by enabling developers to expose existing 3270 'green screen' applications as Web services.

System z Tools support the IBM Service Management initiative to help you to optimize your IT infrastructure and key service management processes, such as those defined by the IT Infrastructure Library (ITIL). For example, CICS PA and Tivoli OMEGAMON® XE for CICS on z/OS can work together to provide detailed CICS metrics that help you to diagnose performance-related problems within the problem management process, and view performance trend information for the capacity management process.

CICS Batch Application Control for z/OS (CICS BAC) and File Manager for z/OS provide automation and flexibility to the task of sharing CICS resources with batch systems, thus improving system availability.

Governance and compliance have always been required in business, but recent regulatory requirements such as the U.S. Sarbanes-Oxley legislation have made it even more relevant to the business of IT. IBM System z Tools can help you to implement compliance-related initiatives, for example by using CICS Configuration Manager for z/OS (CICS CM) to automate and manage CICS configuration changes in a controlled and authorized manner, or by using CICS VSAM Recovery for z/OS (CICS VR) to maintain the integrity of your VSAM data.

With the IBM System z Tools at hand, your enterprise can be fully equipped to get the best out of your CICS systems, and you'll keep your customers happy at the same time.

CICS Tools download program

Many of the products in the CICS Tools family can be downloaded and used for evaluation for up to 60 days, without commitment to purchase. For more information and for trial registration and product download, visit:

<http://ibm.com/software/os/zseries/trials/cicstools/>

System z Tools

The tools are listed in alphabetical order. Further information about any of the System z Tools listed here can be found at:

- CICS Tools

<http://ibm.com/software/htp/cics/tools/>

- Problem Determination Tools
<http://ibm.com/software/awdtools/deployment/>
- IBM Software
<http://ibm.com/software/os/systemz/>

Application Performance Analyzer for z/OS: Application Performance Analyzer for z/OS V7.1 is an application performance measurement tool designed for use on z/OS systems. Use this tool to measure and report on how system resources are used by applications running in a z/OS address space, such as Time Sharing Option (TSO) and batch. Application Performance Analyzer for z/OS can measure a step in a batch region, the transactions running under an online CICS and IMS™ subsystem, or the performance in a TSO region.

Asset Transformation Workbench: Asset Transformation Workbench V2.1 simplifies and accelerates mainframe application transformation projects, including those using CICS, with application understanding, business rule management and code restructuring tools.

CICS Batch Application Control for z/OS: CICS BAC will provide a PTF to deliver toleration support for CICS TS V3.2 at its general availability. CICS BAC enables batch programs to change the state of CICS system-owned VSAM files, transient data queues, programs and transactions dynamically. It also tracks all requests for state changes (made within and outside CICS regions) and ensures that each resource is in its correct state at region start-up.

The latest modification level, CICS BAC V1.1.1, which became available in September 2006, delivers security enhancements, VSAM RLS support, batch maintenance facility, CICS group/alias support, Object exclude support, and support for Interactive System Productivity Facility (ISPF) panels.

CICS Configuration Manager for z/OS: A PTF for CICS CM V1.2 will provide toleration and exploitation support of new and revised resource definitions in CICS TS V3.2 at its general availability. CICS CM lets you control and manage your enterprise-wide CICS resource definitions across CSD files and CICSplex System Manager data repositories seamlessly, through a single interface to let you gain tighter and more transparent control over CICS administration. CICS CM can also help the migration to CICS TS V3 from previous versions.

CICS CM V1.2 has already delivered enhancements through the service channel including a Journal Offload Utility (PTF for APAR PK24952) and support for mixed RLS and non-RLS CSDs (PTF for APAR PK32577).

CICS Interdependency Analyzer for z/OS: CICS IA V2.1 will ship a PTF to provide toleration support of CICS TS V3.2 at its general availability. CICS IA automates detection of run-time relationships within CICS systems. It will also deliver sample queries to assist in highlighting those applications currently running in previous levels of CICS TS that are most sensitive to CICS API and SPI command changes.

CICS Online Transmission Time Optimizer for z/OS: CICS Online Transmission Time Optimizer for z/OS (CICS OTTO) supports CICS TS V3.2 without change. CICS OTTO is the IBM productivity offering for CICS enterprises that rely on 3270 data stream optimization as part of their processes. It improves end-user productivity and increases network utilization through 3270 data stream optimization.

CICS Performance Analyzer for z/OS: A new version of CICS PA, V2.1, delivers Day 1 support and exploitation of CICS TS V3.2 including support for new SMF record formats, supporting early adopters of CICS TS V3.2 through their migration process. CICS PA is a powerful offline reporting tool that analyzes SMF to produce a wide range of reports and extracts that can help you to tune and manage your CICS systems. The new version also provides increased integration with Tivoli OMEGAMON XE for CICS on z/OS, giving you a complete, integrated CICS performance management solution. For more information, refer to [207-053](#), dated March 27, 2007.

For information on CICS PA V1.4 enhancements delivered through the service channel, refer to [206-236](#), dated October 3, 2006.

CICS VSAM Recovery for z/OS: A new release of CICS VR, V4.2, will provide Day 1 toleration and exploitation support of CICS TS V3.2, including support for extended addressability ESDSs used by CICS and batch applications. CICS VR recovers CICS and batch VSAM data from

physical or logical corruption, helping you to recover from errors quickly, reducing the need for offline processing to exceed its batch window and so improving the availability of your CICS systems. For more information, refer to [207-052](#), dated March 27, 2007.

CICS VR V4.1 has previously delivered enhancements through the service channel, including logstream copy enhancements (PTFs UK18335, UK18336, and UK18342 for APAR PK28852).

CICS VSAM Transparency for z/OS: CICS VSAM Transparency for z/OS (CICS VT) will support CICS TS V3.2 without modification. CICS VT enables the migration of data from VSAM files to DB2 tables and ensures continued access to the data in DB2, without modification to the CICS or batch VSAM application programs. The threadsafe File Control API in CICS TS V3.2 provides significant performance benefits for CICS VT, because CICS VT uses File Control GLUEs to intercept File Control API commands, and processes these as SQL calls to DB2.

Debug Tool Utilities and Advanced Functions for z/OS: Debug Tool Utilities and Advanced Functions for z/OS V7.1, which supports CICS TS V3.2, can help you to debug an application while it runs in a host environment, such as CICS, IMS, or DB2 Universal Database® (including DB2 Stored Procedures). It also applies to batch applications, TSO, and Interactive System Productivity Facility (ISPF). Debug Tool Utilities and Advanced Functions for z/OS can be used with almost any application, including COBOL, PL/I, C/C++, and Assembler applications running on z/OS systems. It can be used to debug the CICS TS V3.2 environment, including CICS Web-related applications.

Fault Analyzer for z/OS: Fault Analyzer for z/OS V7.1, which supports CICS TS V3.2, is a robust problem determination tool that helps you to discover why applications fail. It helps you to repair these failures quickly by gathering information about an application and its environment at the time of failure. Fault Analyzer for z/OS analyzes CICS system failures, and can also help to analyze WebSphere Application Server for z/OS system failures. Fault Analyzer for z/OS V7.1 will allow CICS TS V3.2 users to analyze CICS faults through a CICS-invoked transaction, in addition to the previously-existing ISPF interface.

File Manager for z/OS: File Manager for z/OS V7.1 supports CICS TS V3.2 and through its comprehensive, user-friendly tools helps you to work more efficiently with CICS data resources, DB2 data resources, IMS data resources, or z/OS data sets. A CICS component allows management of CICS TS VSAM file resources, transient data queues and temporary data queues, in addition to facilities provided by the previously-existing ISPF interfaces.

Session Manager for z/OS: Session Manager for z/OS (Session Manager) V1.3 will support CICS TS V3.2 without change. Session Manager provides access to multiple systems from a single 3270 terminal with log-off procedures, security checking, audit logging and centralized administration, operations, and monitoring.

A new version, Session Manager V2.1, will be delivered during the second half of 2007, providing support for high application availability and near continuous operations in a Parallel Sysplex® environment, as well as meeting a range of customer requirements. The major focus in this release will be the recoverability of critical backend sessions. If Session Manager is brought down for planned maintenance, or in the event of a system failure in the Session Manager region, it will be possible to recover active sessions without the need to log on to those applications again.

Session Manager V1.3 has already delivered initial support for Parallel Sysplex including workload balancing and shared configurations through the service channel as PTF for APAR PK33701.

Tivoli OMEGAMON XE for CICS on z/OS: Tivoli OMEGAMON XE for CICS on z/OS (OMEGAMON XE for CICS) V3.1 and V4.1 will provide Day 1 toleration support for CICS TS V3.2 as a PTF. OMEGAMON XE for CICS enables you to monitor performance and availability of your CICSplexes and individual CICS regions down to the task level. The product facilitates proactive management of complex CICS systems to help you achieve high performance and avoid costly downtime. OMEGAMON XE for CICS helps monitor and manage CICS transactions and resources to isolate and quickly detect situations and events in order to avoid or resolve problems as quickly as possible. OMEGAMON XE for CICS also integrates with CICS PA for a complete, integrated CICS performance management solution.

WebSphere Developer for System z: CICS applications and the architectures they rely on are changing. While core CICS processing continues, in many applications, BMS maps are giving way to Web and Web services interfaces. Core architectures are giving way to Model View Controller frameworks. Many customers are leveraging the strength of CICS, COBOL, and PL/I business processing through WebSphere Java Server Faces-based User Interface and

application flow processing.

In support of both core and modern architectures is WebSphere Developer for System z (WDz) V7.0, a workstation-based IDE that helps developers create CICS COBOL, PL/I, C, and Java services (business and data processing) linking them with the HTML and rich client interfaces of dynamic Web applications including support for J2EE. WDz also supports modern integrating capabilities including XML, and Web services technologies including a visual service development environment supporting the CICS Service Flow Feature. Through this feature, developers can model both programmatic and screen-driven application processes, and generate and deploy application microflows to support execution of these processes.

WDz helps developers rapidly create well-structured e-business systems that integrate CICS and WebSphere application software. At the same time WDz supports CICS traditional core application processing through native language and BMS map driven applications. Support is enabled through access to mainframe PDS, USS, editing, syntax checking, compiling, debugging, and job execution. Overall, WDz promotes the reuse and transformation of existing applications to help reduce costs and shorten the development cycle, and facilitates the need for heterogeneous skill sets in IT organizations by supporting COBOL, PL/I, Java, and Enterprise Generation Language (EGL) development.

WDz provides an integrated CICS testing, development, and debugging environment based on TXSeries™ for Multiplatforms V6.1. With some API and SPI restrictions, developers can now use TXSeries for Multiplatforms to develop, test, and debug COBOL application code to help ensure it is functionally correct before delivering it to CICS TS for further testing.

Using the new syntax checking capabilities provided by TXSeries for Multiplatforms V6.1, developers can now check their CICS application code for compatibility against the CICS TS V3.2 API and SPI. The syntax checker will not compile the code, but it will check for and identify any deviation from the CICS TS V3.2 specifications, giving developers additional confidence in the quality of their CICS code syntax.

WebSphere Host Access Transformation Services: HATS delivers tools to extend existing terminal applications quickly and easily to business partners, customers, and employees. In addition to transforming the user experience of existing applications, HATS can be used to transform and expand the connectivity of existing terminal applications by extending application tasks as Web services. Web services generated with HATS are deployed to a WebSphere Application Server.

Service Flow Modeler, an integrated component of WDz, can be used with any supported release of CICS TS to record CICS terminal-oriented application screen sequences as self-service transactions. Then, using HATS, these services may be configured and deployed as standard Web services to WebSphere Application Server. This can be achieved with WebSphere Application Server either on System z or on a distributed platform. HATS is able to run Web services created with any supported level of CICS TS.

This approach may benefit CICS TS customers with an immediate need to integrate CICS 3270 transactions with an SOA using Web services, but who are constrained in forward migration to CICS TS V3, or those who have limited availability of CICS application specialist solution development skills. With this approach, the solution assets recorded with Service Flow Modeler can be redeployed directly onto CICS TS V3.2, enabling easy forward migration of existing solution assets.

WebSphere Studio Asset Analyzer: WebSphere Studio Asset Analyzer V5.1 will provide Day 1 support of CICS TS V3.2, but without exploiting new V3.2 features. WebSphere Studio Asset Analyzer is a tool that assists IT personnel with the maintenance, extension, reuse, and transformation of existing applications through rapid application understanding and impact analysis. It provides in-depth insight into dependencies within and among application components — including composite applications that span mainframe and distributed components. This includes support for CICS TS Web services, as well as channels and containers.

WebSphere Studio Workload Simulator for z/OS and OS/390®: WebSphere Studio Workload Simulator for z/OS and OS/390 (Workload Simulator) V1.1 is a comprehensive test tool, which provides the ability to simulate terminals and the associated messages. It can be used for generating a large volume of messages to evaluate the reliability and approximate performance characteristics of a network under expected operating conditions. Simply stated, anything that a CICS TS V3.2 user can do at a terminal, Workload Simulator can do faster and more reliably.

Education support

The training offerings listed below are available. Note that most countries have course codes in the format of WWWWsss, where WWWW is the worldwide course code, and sss is a 1 to 3 character suffix. Note also that courses or course codes and titles may change.

- **CICS Fundamentals** (worldwide course code CI01). This course teaches about the major CICS concepts and facilities that are applicable to the CICS family of products. It focuses on the tasks involved in designing, programming, and managing applications.
- **CICS Basic Tailoring** (worldwide course code CI20). This classroom course is intended for systems programmers who will be installing and tailoring CICS TS.
- **CICS Problem Analysis** (worldwide course code CI29). This classroom course teaches the CICS system programmer how to analyze problem-related information provided by CICS TS.
- **CICSplex System Manager Introduction** (worldwide course code CI75). This classroom course teaches students about configuring CICSplex environments, and the capabilities, functions, and services provided by the CICSplex System Manager (CPSM).
- **CICSplex System Manager Administration** (worldwide course code CI76). This classroom course teaches students how to install, configure, and manage a CICSplex environment using CICSplex System Manager (CPSM). Students will be asked to define a CICSplex and policies for each CPSM component as well as to use Business Application Services (BAS) to define and install resources.
- **CICS Planning for Recovery** (worldwide course code CI28). This course covers the recovery and restart facilities of CICS Transaction Server and CICSplex environments. Lectures and case studies focus on CICS recovery, CICS logging requirements, task and system level recovery, recovery of files and the use of CICS VR, recovery from CICS queuing failures, and recovery in a CICSplex environment.
- **CICS Application Programming** (worldwide course code CI17). This classroom course teaches students to design, code and debug modern CICS application programs for e-business or traditional environments.
- **Understanding and Using CICS Web Services Support** (worldwide course code CI11). This classroom course teaches students to implement Web services in CICS. This includes exposing existing CICS transactions as Web services as well as starting from WSDL to implement CICS transactions, which can act as the WSDL defined Web services.
- **Connecting CICS to WebSphere Application Server via CICS Transaction Gateway** (worldwide course code CI71). This classroom course teaches how to use the CICS Transaction Gateway (CICS TG) to access CICS Transaction Server applications.

For additional information, visit the IBM Education Web page at

<http://www.ibm.com/services/learning/>

Select your country to view the available offerings. This site has descriptions for all classroom and self-study courses available in each country. The Web page also contains information on course schedules and enrollment procedures.

If you cannot find the information you need on the Web page, please call IBM Education at 800-IBM-TEACH (426-8322) for additional details or to enroll in a course.

Technical information

Hardware requirements

Processors: The basic requirement is for a processor that supports the prerequisite operating system and has sufficient processor storage to meet the requirements of the operating system, CICS TS V3.2, the application programs, the access methods, and all other software being run. The operating system requirement limits this to z/Architecture™ machines.

Parallel Sysplex support: A Parallel Sysplex environment is required by each of the data-sharing facilities supported by CICS, and by the MVS system logger's log stream merging facility. This requires one or more coupling facilities with their associated coupling links installed, an IBM Sysplex Timer® to provide a common external time source, and sufficient DASD paths to support the number of central processor complexes (CPCs) in the sysplex. The DASD paths can be provided either by DASD controllers with enough paths to dedicate one to each CPC in the

sysplex, or by an ESCON® director to provide the paths.

CICS support for data sharing can be used to access data in IMS databases, DB2 databases, VSAM data sets, CICS temporary storage, coupling facility data tables, or named counters.

If customers wish to exploit the WS-Security capability, which relies upon the z/OS Integrated Cryptographic Services Facility (ICSF), then appropriate System z cryptographic hardware is required. For the supported System z servers this hardware is the CP Assist for Cryptographic Functions (CPACF) and a Crypto Express2 (CEX2) feature.

Katakana Terminal Devices: Because CICS has to issue certain messages in mixed-case, the product is not supported with displays or terminal emulators that are restricted to the non-extended single-byte character set (SBCS) Katakana part of code page 930.

Software requirements: Note: For additional information on software requirements, refer to the Program Directory (GI13-0515). For online information, click on Detailed system requirements under Planning upgrades on the **CICS Support Page**

<http://www.ibm.com/software/htp/cics/tserver/support/>

Operating environment

- CICS TS V3.2 requires z/OS (5694-A01) V1.7, or later. The product will not initialize in an environment with a lower level of operating system installed.
 - If used with z/OS V1.7, PTF UA24585 for APAR OA14340 is required.
 - For EWLM support
 - The EWLM Managed Server must be active in the MVS image where CICS is running.
 - With z/OS V1.7, z/OS PTF for APAR OA12935 is required. This is UA29986 (Release 720), UA29987 (Release 72J), or UA29988 (Release 72S).
 - 64-bit support requires z/OS PTF(s) for APAR OA19565.
 - For TCP/IP support, Communications Server PTFs are needed. For z/OS V1.7, this is PTFs UK19627 and UK19628, both for APAR PK32534. For z/OS V1.8, this is PTF(s) for APAR PK40411.
 - The IBM XML Toolkit for z/OS (5655-J51) V1.9 is required. This is a no-charge product. It is used by WS-Security, but note that CICS TS V3.2 will not install if it is not present.
 - If the WS-Security function is used, XML Toolkit PTF UA32191 for APAR OA19511 is recommended.
- The IBM SDK for z/OS, Java 2 Technology Edition V1.4.2 (5655-I56) is required for use of Java application programs, enterprise beans, or the Web Services Assistant.
 - The IBM SDK for z/OS is available, without charge, on tape or by download from <http://www.ibm.com/servers/eserver/zseries/software/java/>
 - **Note:** The IBM 64-bit SDK for z/OS, Java 2 Technology Edition, Version 1.4 (5655-M30), is not supported.
- In order to forward recover an ESDS that has been updated by both CICS TS V3.2 and Transactional VSAM, PTF for APAR OA19958 is required on Transactional VSAM in z/OS V1.7, or later.

For developing Java programs (including enterprise beans), one of the following Integrated Development Environments (IDEs) is required:

- WebSphere Developer for zSeries V6.0 or WebSphere Developer for System z V7.0 (A copy of WebSphere Developer for System z V7.0 is shipped with CICS TS V3.2 as a marketing promotion. This can be used for these purposes, but note that in this marketing promotion, it is unsupported.)
- IBM Rational® Application Developer V6.0 or IBM Rational Application Developer for WebSphere Software V7.0
- WebSphere Studio Application Developer Integration Edition V5.1 or WebSphere Integration Developer V6.0

For deployment of enterprise beans, one of the above IDEs can be used, or the packaging

application (Application Server Toolkit) provided with WebSphere Application Server V5.1, V6.0, or V6.1 can be used.

JNDI support for enterprise beans can be provided by the LDAP server provided in SecureWay® Security Server and licensed as part of the base z/OS operating system.

CICS TS V3.2 will interoperate with supported levels of WebSphere Application Server (any platform) V5.1, and later. This applies directly for customers using RMI/IIOP or SOAP, and applies via CICS Transaction Gateway (CICS TG) V5.1 or later for those using JCA. It includes use of the SOAP for CICS feature.

The following levels of other products are supported for use with CICS TS V3.2:

- IMS Database Manager V8 (5655-C56)
- IMS Database Manager V9 (5655-J38)
- IMS Database Manager V10 (5635-A01)
- DB2 Universal Database Server for OS/390 V7.1 (5675-DB2), or later.
- WebSphere MQ for z/OS V5.3 (5655-F10)
- WebSphere MQ for z/OS V6.0 (5655-L82)
- Tivoli Decision Support for z/OS (5698-A27) V1.7, with PTF for APAR PK39321
- Tivoli Business Systems Manager V3.3 (toleration support only)
- Tivoli Federated Identity Manager V6.1.1
- Tivoli Composite Application Manager for SOA V6.1
- Tivoli Composite Application Manager for WebSphere V6.1
- CICS Universal Client V5.1, or later
- CICS TG V5.1, or later
- **Note:** From V6.0 onwards, this is two products: CICS TG for Multiplatforms and CICS TG for z/OS.

CICSplex SM Web User Interface: The CICSplex SM Web User Interface can be used with all browsers that support HTML V4. IBM has validated the use of the CICSplex SM Web User Interface with these browsers:

- Microsoft™ Internet Explorer 6.0 and 7.0
- Mozilla Firefox 2.0

Information Center: The Information Center can run locally on a workstation, or run on a server with remote access using a browser. This is supported on the following platforms:

- Microsoft Windows™ Server 2003 (32-bit)
- Microsoft Windows XP (32-bit)
- Microsoft Windows Vista
- Red Hat Enterprise Linux™ 4.0 (Intel®) (32-bit)
- SUSE Linux Enterprise 8, 9, and 10 (Intel) (32-bit)
- AIX® V5.2 and V5.3 (32-bit)

The Information Center can also run as a server only on the following platforms:

- z/OS V1.7, or later
- Red Hat Enterprise Linux 4.0 for zSeries
- SUSE Linux Enterprise 8 and 9 for zSeries

For best results, view the Information Center using one of the following browsers:

- Microsoft Internet Explorer 6.0, and later
- Mozilla Firefox 1.0, and later
 - PDF files shipped with the Information Center can be read using Adobe Acrobat Reader 5.0, or later, but Acrobat Reader 6.0 is necessary to benefit from the accessibility features introduced in Adobe Acrobat Distiller 6.0.
 - **Note:** For accessibility purposes, screen readers may impose restrictions on browser choice.

CICS Service Flow Feature: The CICS Service Flow Feature has the same prerequisite operating system as the base CICS product.

System z Tools (including CICS Tools): For information on these, refer to the IBM System z tools for CICS section.

Compatibility

APPLID migration: Introduced in this level of CICS TS is an enforced restriction for the uniqueness of the CICS TS V3.2 specific APPLID within the sysplex. To avoid errors being detected after CICS start-up, a check has been added during CICS initialization involving a plex-wide enqueue on the specific APPLID specified in the system initialization table (SIT), and CICS will not come up if this check fails.

The effects on system setup require that a unique APPLID name be chosen irrespective of the connectivity options in use for the CICS system. As previously for MRO, the use of the existing SIT parameter UOWNETQL will also be used as an APPLID qualifier for intercommunication over TCP/IP when connecting outside the plex when VTAM=NO is coded.

Defect support when running on Java at V1.4.2 level: CICS TS V3.2 supports the IBM SDK for z/OS, Java 2 Technology Edition, V1.4.2 (5655-I56). CICS defect support for this will continue only while CICS TS V3.1 is in service. Therefore customers should migrate to a later level of Java at or before support ends.

JVM modes in CICS: Support for Java programs using resettable mode has been removed in CICS TS V3.2. Programs must use continuous mode, support for which was introduced in CICS TS V2.3, bringing CICS use of Java into line with standard practices.

When moving applications from a resettable mode JVM to a continuous mode JVM, static variables will no longer be reset automatically, so programs which rely on this behavior must be changed. To assist in this, SupportPac™ CH1B, CICS JVM Application Isolation Utility, was introduced in May 2006. This is a code analyzer, which inspects Java bytecodes in class or jar files, and reports on their use of static variables and the methods in which they are modified. (For more information on CICS SupportPacs, refer to CICS SupportPacs in the Reference information section).

Support for WSDL 2.0: Currently, the WSDL 2.0 specification is a W3C Candidate Recommendation. If changes are made to this specification as it progresses to a W3C Recommendation then there may be a delay or change to the implementation of WSDL 2.0 support in CICS TS V3.2.

Support for WS-Trust: The WS-Trust February 2005 specification has been accepted as input by the Organization for the Advancement of Structured Information Standards (OASIS) for standardization. Currently, WS-Trust is an OASIS Committee Draft. If changes are made, there may be a delay or change to the implementation of WS-Trust support in CICS TS V3.2.

SOAP for CICS feature: As with CICS TS V3.1, the SOAP for CICS feature, which can be ordered with CICS TS V2.3 and formerly with CICS TS V2.2, cannot be ordered with CICS TS V3.2. However, to assist migration for customers who already have this feature, the feature can be used and is supported with CICS TS V3.2, and applications will continue to run. Customers are recommended to migrate to the Web services support capabilities of CICS TS V3.2.

CICS Service Flow Feature: The level of CICS Service Flow Feature that is provided with CICS TS V3.2 cannot be used with CICS TS V3.1. The CICS Service Flow Feature of CICS TS V3.1 cannot be used with CICS TS V3.2.

Customers who have implemented service flows using the CICS Service Flow Feature of CICS TS V3.1 must migrate the service flow models created to the CICS Service Flow Feature for

CICS TS V3.2 and regenerate the service flow executable for deployment to CICS TS V3.2. Tools to assist in migration of flow models created using the CICS Service Flow Feature of CICS TS V3.1 will be delivered when the CICS Service Flow Feature of CICS TS V3.2 is available.

Service flow executables generated using the CICS Service Flow Feature of CICS TS V3.1 will not run under the CICS Service Flow Feature of CICS TS V3.2. Forward binary compatibility between offerings is the usual migration approach that IBM strives to offer. In this instance, as the result of the maturing of the implementation to deliver enhanced serviceability, forward migration at the model level is the required approach.

For information on the previous edition of the CICS Service Flow Feature, available on CICS TS V3.1 on December 16, 2005, refer to [205-303](#), dated November 22, 2005.

Components transferred from WebSphere MQ: It is planned that future levels of WebSphere MQ for z/OS will continue to ship these components for use with earlier levels of CICS TS for as long as those earlier levels remain in service. However, the components shipped with these levels of WebSphere MQ for z/OS will not run if they are executed on CICS TS V3.2 or later; the components shipped with CICS TS must be used.

Removal of DFHLSCU: The LogStream Calculations Utility DFHLSCU, introduced in CICS TS V1.1 to assist in estimating the size of MVS logstreams based on the journaling activity of CICS/MVS® or CICS/ESA® systems, has been removed. This function is also provided by SupportPac CD14, which remains available.

CICSplex SM TSO End User Interface: As stated in the CICS TS V3.1 announcement, the CICSplex SM TSO End User Interface, which has been stabilized at the CICS TS V2.3 level, is removed in CICS TS V3.2. The Web User Interface has been further enhanced in this release.

CICSplex SM installation changes: Alterations to packaging in CICS TS V3.2 include changing CICSplex SM to be a dependent feature FMID of the CICS FMID. This means that, in applying service, there can be mutual prerequisites between PTFs for CICS and for CICSplex SM, reducing the risk of mismatched PTF installations.

CICSplex SM message changes: Many CICSplex SM messages have been moved to the CICS Message Domain, as part of national language enablement for translation. Consequently, it will be necessary to check to ensure the continued working of any automation that has been implemented based on these messages. For details, refer to the Migration Guides.

Use of CSACDTA / CSAQRTCA will now cause an ABEND: Support for direct access to CICS control blocks was withdrawn in CICS/ESA V4.1. Despite this, some applications and ISV code still access the CICS Common System Area (CSA) to find a running task's Task Control Area (TCA). Prior to the introduction of the OTE, the use of the CSA field pointer CSACDTA would correctly obtain the current task's TCA. But following introduction of OTE, which means that multiple user tasks can be running in parallel on separate open TCBs, the use by threadsafe code of CSACDTA will not give the correct TCA.

An alternative mechanism which is threadsafe, the DFHKERN macro, has been available since CICS TS V1.3. In CICS TS V3.1, the CSACDTA field was renamed to be CSAQRTCA. CICS TS V3.2 polices this, and if code loads the TCA address from this field and attempts to use it, the program will ABEND, with abend code ASRD, in order to avoid unpredictable results later in the processing.

BookManager® publications: CICS TS V3.2 will be the last level of CICS TS for which BookManager publications (delivered in the Collection Kit for Transaction Processing and Data Products, and in the Product Kit (PKIT)) will be made available. They will be delivered for CICS TS V3.2 as initially shipped, but will not subsequently be updated. (**Note:** The CICS TS V3.2 publications will not be included in the Collection Kit until its planned refresh in 2008).

The BookManager publications for previous levels of CICS TS will continue to be updated, where the product is still in service, until the end of 2008.

Customers currently using BookManager publications are recommended to use the Information Center.

Licensed publications: There are no licensed publications for CICS TS V3.2. The publications that previously were licensed are included in the single unlicensed Information Center.

For previous levels of CICS TS that are still in service, the documentation that has previously been licensed will be included in an unlicensed Information Center at the next refresh cycle.

Web Services Assistant: WSBind files created using the Web Services Assistant of CICS TS V3.1 (including the Web Services Assistant for Windows, SupportPac CA71) can be deployed into a CICS TS V3.2 region. However, users of CICS TS V3.2 creating new WSBind files are recommended to use the Web Services Assistant of CICS TS V3.2, which allows exploitation of the new features of this release.

Processing CICS SMF 110 records: With the introduction of improved timing precision in CICS monitoring data records, any tool intended to process CICS SMF 110 records needs to ensure that it supports the new timing data format.

CWI COMMAREA interface removal: As previously indicated, the support for passing HTTP requests and responses via COMMAREAs between applications and CICS will be removed in a future release of CICS TS. This mechanism, which was part of the initial CICS Web Interface, was superseded by the CICS Web Support APIs in CICS TS V1.3. Web-aware programs and converters using this interface should be migrated to use the EXEC CICS WEB commands designed for HTTP server applications.

DFHWBCLI COMMAREA interface removal: As previously indicated, the DFHWBCLI function introduced to provide outbound HTTP support will be withdrawn in a future release of CICS TS. Consideration should be given to migrating applications that link to DFHWBCLI, to use the new CICS Web Support EXEC CICS WEB SESSTOKEN() commands for HTTP client applications, made available in this release.

Web server plug-in removal: As previously indicated, the CICS WebServer plug-in, DFHWBAPI, will be removed in a future release of CICS TS. This is the CICS supplied plug-in program that enables a passthrough mechanism from the IBM HTTP Server, via the EXCI, into CICS Web support using the CICS business logic interface. Users are recommended to migrate to use the CICS TG.

ONC RPC removal: As previously indicated, CICS support for Open Network Computing Remote Procedure Call (ONC RPC) clients will be removed in a future release of CICS TS. The recommended migration path is to access CICS using the new support for Web services.

Application programming summary: The tables below give information on applications written in COBOL, PL/I, C/C++, Java, and Assembler.

COBOL compilers

Product name	Program number	CICS translator support	CICS TS V3.2 run-time support (1)
(2) OS/VS COBOL	5740- CB1 5734- CB4 5470- LM1	No	No (3)
(2) VS COBOL II	5668- 022 5668- 023 5668- 958	Yes	Yes (4)
(2) SAA(R) AD/Cycle(R) COBOL/370(TM)	5688- 197	Yes	Yes
(2) COBOL for MVS and VM V1	5688- 197	Yes	Yes
(2) COBOL for OS/390 and VM V2.1	5648- A25	Yes	Yes
(2) COBOL for OS/390 and VM V2.2	5648- A25	Yes(5)	Yes
(2) Enterprise COBOL for z/OS and OS/390 V3.1 to V3.3	5655- G53	Yes(5)	Yes
Enterprise COBOL for z/OS V3.4	5655- G53	Yes(5)	Yes

- (1) CICS TS V3.2 requires Language Environment (R)
- (2) COBOL compiler has been withdrawn from service on z/OS
- (3) Will not execute
- (4) VS COBOL II run-time not supported; must use Language Environment
- (5) COBOL compiler provides support for CICS integrated translator run-time

PL/I compilers

Product name	Program number	CICS translator support	CICS TS V3.2 run-time support(1)
(6) OS PL/I V1.5	5734-PLI	No	No
	5734-LM4		
(6) OS PL/I V2.3	5668-909	No	No
	5668-910		
	5668-911		
PL/I for MVS and VM	5688-235	Yes	Yes
(6) VisualAge(R) PL/I for OS/390 V2.2	5655-B22	Yes(7)	Yes
(6) Enterprise PL/I for z/OS and OS/390 V3.1 & V3.2	5655-H31	Yes(7)	Yes
Enterprise PL/I for z/OS and OS/390 V3.3 to V3.6	5655-H31	Yes(7)	Yes

- (1) CICS TS V3.2 requires Language Environment
(6) PL/I compiler has been withdrawn from service on z/OS
(7) PL/I compiler provides support for CICS integrated translator

C and C++ compilers

Product name	Program number	CICS translator support	CICS TS V3.2 run-time support(1)
(8) C/370(TM) V1	5688-040	No	No
	5688-039		
C/370 V2	5688-187	No	No
	5688-188		
(8) SAA AD/Cycle C/370 V1.1	5688-216	Yes	Yes
SAA AD/Cycle C/370 V1.2	5688-216	Yes	Yes(10)
(8) C/C++ for MVS/ESA(TM) V3.1	5655-121	Yes	Yes
C/C++ for MVS/ESA V3.2	5655-121	Yes	Yes
OS/390 V1.1 C/C++	5645-001(11)	Yes	Yes
(8) OS/390 V1.2 & V1.3 C/C++	5645-001(11)	Yes	Yes
(8) OS/390 V2.4 to V2.9 C/C++	5647-A01(11)	Yes	Yes
OS/390 V2.10 C/C++	5647-A01(11)	Yes	Yes
z/OS V1.1 to V1.6 C/C++	5694-A01(11)	Yes	Yes
z/OS V1.7 & V1.8 XL C/C++	5694-A01(11)	Yes(9)	Yes

- (1) CICS TS V3.2 requires Language Environment
(8) C/C++ compiler has been withdrawn from service on z/OS
(9) C/C++ compiler provides support, with required PTF, for CICS integrated translator
(10) C/370 run-time library not supported; must use Language Environment run-time
(11) Component of this operating system

Java

Product name	Program number	CICS TS V3.2 run-time support
(12) Java for OS/390 V1.1.8	5655-A46	Application bytecode(13)
(12) VisualAge for Java, Enterprise Edition for OS/390	5655-JAV	Application bytecode(13)
IBM Developer Kit for OS/390, Java 2 Technology Edition, SDK 1.3.1	5655-D35	Application bytecode(13)
IBM SDK for z/OS, Java 2 Technology Edition, SDK 1.4	5655-I56	Yes
IBM 64-bit SDK for z/OS, Java 2 Technology Edition, SDK 1.4	5655-M30	No
IBM 31-bit SDK for z/OS, Java 2 Technology Edition, SDK 1.5	5655-N98	No(14)
IBM 64-bit SDK for z/OS, Java 2 Technology Edition, SDK 1.5	5655-N99	No

- (12) Java products have been withdrawn from service on z/OS.

- (13) Most Java application bytecode that executed on 5655-A46, 5655-JAV, and 5655-D35 should run on the IBM SDK for z/OS Java 2 Technology Edition, SDK 1.4 (5655-156) unchanged provided they have not used deprecated APIs.
(Support provided by 5655-JAV to compile Java bytecode directly into native object code has been withdrawn since CICS TS V2.3).
- (14) Refer to the section for:

Statement of direction

Assembler compilers(15)

Product name	Program number	CICS translator support	CICS TS V3.2 run-time support
(16) High Level Assembler for MVS and VM and VSE V1.1 to V1.4	5696-234	Yes(17)	Yes
High Level Assembler for MVS and VM and VSE V1.5	5696-234	Yes(17)	Yes

- (15) Older Assembler compilers that were previously supported by CICS are still supported
- (16) Assembler compiler has been withdrawn from service on z/OS
- (17) Application assembly language modules can run as Language Environment MAINs fully within the scope of Language Environment run-time, if translated with LEASM option

For further information, refer to the paper **Language Environment within CICS TS: Questions and Answers**, at

ftp://service.boulder.ibm.com/software/http/cics/PDF/le_qa.pdf

Performance considerations: Performance information will be available in the Performance Guide (SC34-6833), from general availability. In addition, at a later date, a performance report will be available on request from your IBM representative.

User group requirements: Requirements from the worldwide user group communities satisfied or partially satisfied by enhancements in CICS TS V3.2 include the following:

Requirement number	Description	Satisfied by
MR1117041324	Allow CICS to address Extended Format ESDS Files.	Support for Larger capacity VSAM ESDS files
MR0630042557	CICS INQUIRE PROGRAM should return the DFHRPL LOADLIB the program was loaded from.	Online management of program libraries
MR00069344	CICS MRO support for CICS Web Interface CWI and TCP/IP	IP interconnectivity for DPL (partially satisfies)
MR0721043235	CICS Support for TCP/IP Connections (Mainframe CICS Regions)	IP interconnectivity for DPL (partially satisfies)
MR0503054238	CICS to CICS TCP/IP communications including DPL, Function shipping, Exec CICS Start, ISC communications	IP interconnectivity for DPL (partially satisfies)
MR1013063621	CICS Webservices	Web services enhancements
MR062304621	cics/mq calls should be threadsafe as are cics/db2 calls	Components transferred from WebSphere MQ
MR1108044948	cics/mq calls should be threadsafe as are cics/db2 calls	Components transferred from WebSphere MQ
MR0503057024	Container support for EXEC CICS WEB and DOCUMENT API	Updates to CICS Web Support (Partially satisfies)
MR112805282	DBCICD05017 - Improve functionality of DFHLS2WS and	Enhancements to data mapping and to WSDL in Web

	DFHWS2LS	services
MR082906205	DFHLS2WS Should Put the URL in the WSDL	Enhancements to data mapping and to WSDL in Web services
MR1103064840	DFHPITL should disclose the target program if a "Target program not linkable" SOAP fault occurs.	Web services enhancements
MR0517062323	DFHRPL - Critical VS Non-Critical	Online management of program libraries
MR0511045149	Extend COMMAREA beyond 32K for DPL calls	IP interconnectivity for DPL and Statement of Direction
MR0408056043	GLUE's need correct program attributes when enabled during Phase 1 PLT	Threadsafe definition for system autoinstalled Global User Exits
MR0503056343	Integration of CPSM into native CICS	Integrated installation of CICSplex SM
MR0118056959	J9 TCBS in CICS are detached due to inactivity and take a great deal of time to re-initialize	Enhancements to configuration and management for Java 1.4.2
MR1006054724	JAVA Monitoring Tool	Enhancements to configuration and management for Java 1.4.2
MR0523024115	Loadlib Identification	Online management of program libraries
MR0115072217	Make VSAM APIs as threadsafe	Threadsafe File Control API (Partially satisfies)
MR0321056030	Need more information in the logs for abend AWBM	Updates for CICS Web Support
MR00073735	Add CEMT SET NEWCOPY for resource DOCTEMPLATE	Updates for CICS Web Support
MR0327004950	CICS improve install of Document Template by utilizing CEMT	Updates for CICS Web Support
MR0506021841	CICS DOCTEMPLATE usage statistics	Updates for CICS Web Support
MR1106022431	Provide refresh capability and status information for DOCTEMPLATE resources.	Updates for CICS Web Support
MR0415021747	CEMT and SPI provide DOCTemplate refresh capability	Updates for CICS Web Support
MR1107034027	Allow user to customize the text in the browser Basic Authentication pop-up dialog	Updates for CICS Web Support
MR1129043947	CICS Outbound SOAP Support for Basic Authentication	Updates for CICS Web Support (Partially satisfies)
MR0315051612	Populate the TRAN, TERM, and USERID fields in smf 110 records from AOR and FOR.	Enhanced TCP/IP management and control (Partially satisfies)
MR0925063810	Preset Security for TCP/IP service	IP interconnectivity for DPL
MR0419057350	Provide a means to return the IPADDR info from CINIT for TN3270 Terminals	IP interconnectivity for DPL
MR0517062327	Provide dynamic RPL management	Online management of program libraries
MR1106022947	Provide Load Library dataset names for the CICS DFHRPL and STEPLIB concatenations.	Online management of program libraries (Partially satisfies)
MR111902664	Provide USECOUNT for Java programs	Enhancements to configuration and management for Java 1.4.2
MR00067918	Remove 32K byte input limitation of CWI	Updates for CICS Web Support
MR041906664	TIMEOUT CAPABILITY FOR "EXEC CICS INVOKE WEBSERVICE" WHEN USING HTTP TRANSPORT	Web services enhancements
MR092704611	Variable Data Areas in CICS SMF 110 Performance Records	Compression for Monitoring data records
MR0929033732	XRBA support for ESDS files in CICS	Support for Larger capacity VSAM ESDS files
MR092302310	CICS TS does not start if a TCPIP error occurs.	Enhanced TCP/IP management & Control
MR0124026357	TCPIP Connectivity for CWI	Enhanced TCP/IP management & Control
MR063005276	Add Terminal TCPIP Address checking to SMF 110 Records	IP interconnectivity for DPL
MR1004046451	Display client's IP address for	Enhanced TCP/IP management

	cics tasks	& Control
MR00076151	No CICS command to INQUIRE TCP/IP resources	Enhanced TCP/IP management & Control
MR0211022649	Support DPL, function shipping, and transaction routing over a native TCP/IP connection	IP interconnectivity for DPL (Partially satisfies)
MR0209046649	NEWCOPY Java program enhancements	Enhancements to configuration and management for Java 1.4.2
MR0728036318		
MR0607046249	Ability to keep JVM's active in CICS	Enhancements to configuration and management for Java 1.4.2
MR061603474	Large Data Tables	Large capacity for shared data tables
MR0609032646	Request for CICS TS to support all VSAM extended formats	Support for larger capacity VSAM ESDS files (Partially satisfies)
MR0522013547	Extended addressability for ESDS & RRDS & VRRDS VSAM files greater than 4GB	Support for larger capacity VSAM ESDS files (Partially satisfies)
MR0220026040	CICS Extended addressability for ESDS files	Support for larger capacity VSAM ESDS files
MR0522015210	Running out of storage using Cics Web	Updates for CICS Web Support
MR0705066638	SQS in the ECDSA when using the CWI (CICS Web Interface)	Updates for CICS Web Support (Partially satisfies)
MR0725031121	Allow user to customize the text in the browser Basic Authentication pop-up dialog	Updates for CICS Web Support
MR0212042345	Provide NEWCOPY for DOCTEMPLATE	Updates for CICS Web Support
MR0309065647	DFHOSTAT	Improved timing data precision in Monitoring and Statistics records
MR1013052112	DFHWS2LS needs to support the URI MAP TRANSACTION-Attribute	Web services enhancements
MR101305695	CICS DFHWS2LS needs to support "nillable=true"	Enhancements to data mapping and to WSDL in Web services
MR0802022418	MASSTAT is not available for the API	Enhancements to CICSplex SM
MR050305674	Simplify CPSM into CICS term.	Enhancements to CICSplex SM (Partially satisfies)
MR0829035046	IMPORT and EXPORT CICSplex WUI VIEWS enhancements	ALL option for COVC export (Partially satisfies)
MR0503056343	Integration of CPSM into native CICS	Integrated installation of CICSplex SM
MR1218033014	REMFRAN vs LOCTRAN in CPSM	Enhancements to CICSplex SM
MR1212004858	REMFRAN vs LOCTRAN in CPSM	Enhancements to CICSplex SM
MR0227025218	Add MQ connection information to CICSplex/SM OPERATIONAL Views	CICSplex SM support for new function
MR0929032448	Add MQ information to CPSM	CICSplex SM support for new function
MR1208044240	CICS CPSM Web User Interface (WUI) MAP Command	Map capability in the CICSplex SM Web User Interface
MR0331055734	Enable the option of hyperlinking to record count in CPSM WUI summarized view	Enhancements to the Web User Interface
MR033105727	Context help for the CPSM WUI	Enhancements to the Web User Interface
MR033105568	Improved diagnostics for problems involving LE, CICS and Java	Enhancements to configuration and management for Java 1.4.2
MR0503052650	Large Data Tables	Larger capacity for shared data tables
MR0201077020	CPSM SAM console message	Enhancements to CICSplex SM
SSSHARE011159	Change DFHRPL concatenation	Online management of program libraries
SSSHARE011404	Dynamically reconfigure the CICS DFHRPL concatenation	Online management of program libraries
SSSHARE015880	CICS DFHRPL concatenation number support	Online management of program libraries
MR0622061625	CICS Licensed Manuals accessed via Internet.	Information Center enhancements

MR0721043250	MQ-CICS shutdown stats	Components transferred from WebSphere MQ
MR0222073457	CICS should let you know what dataset a pgm came from out of DFHRPL	Online management of program libraries
SSSHARE01431	Ability to compress DFHRPL libraries	Online management of program libraries
MR0314063329	Add support to dynamically access duplicate load modules in the DFHRPL list	Online management of program libraries (partially satisfies)
MR031406589	Ability to dynamically manage DFHRPL load library concatenation list	Online management of program libraries

Planning information

Packaging

Elements included in CICS TS V3.2

- The base CICS element of CICS Transaction Server for z/OS V3.2 is CICS V6.5.
- The CICSplex System Manager element is CICSplex SM V3.2.

Other formerly separate products packaged in CICS TS V3.2 are:

- REXX Development System for CICS/ESA
- REXX Runtime Facility for CICS/ESA
- CICS Application Migration Aid V1.1

Also shipped with this product as a marketing promotion is a media pack with one free license of IBM WebSphere Developer for System z (WDz). No support is provided with this license. WDz is not part of CICS TS, and is not required in order to use CICS TS.

Physical delivery: The following items are shipped together with the basic machine-readable material for the product:

- CICS TS V3.2 hardcopy publications (Release Guide; Memo to Licensees; Program Directory)
- Licensing material:
 - CICS Transaction Server for z/OS V3.2: Licensed Program Specifications
 - CICS WS-Security Component: License Information booklet; IBM International Program License Agreement (IPLA) booklet; Proof of Entitlement
 - WebSphere Developer for System z V7.0: Proof of Entitlement
 - Note that the IPLA licensing material for WebSphere Developer for System z is included in it in softcopy
- CD-ROM: CICS Information Center (SK4T-2578)
- Subset of media pack: WebSphere Developer for System z V7.0

Certain other items, such as specification sheets of related IBM products, may be included.

If the CICS Service Flow Feature is ordered, the following items are shipped together with the basic machine-readable material:

- CICS Service Flow Feature: hardcopy Program Directory (G113-0505)
- Note that the CICS Service Flow Feature does not have a separate Licensed Program Specification document. It is included in the Licensed Program Specification of the base product. Included with a delivery of the Service Flow Feature of CICS TS V3.2 is a copy of the CICS TS V3.2 licensed program specifications. This must replace the licensed program specifications you already have for CICS Transaction Server for z/OS V3.2 if that is at its initial level, GC34-6810-00, dated June 2007.

Security, auditability, and control

CICS TS V3.2 includes support for the WS-Trust specification within WS-Security. For details, refer to the Functions delivered in CICS TS V3.2 section of this announcement.

HTTP Basic Authentication is now supported when Web static content (from UNIX® files or document templates) is specified in a URIMAP.

When UNIX files are specified in a URIMAP to supply static content, access controls for the CICS user ID executing the Web transaction are now applied in addition to those for the CICS region user ID.

CICS resource security is now applicable to document templates.

Additional features are made available in CICS support of HTTP Basic Authentication:

- When CICS is an HTTP server, the realm name that is sent in the HTTP WWW-authenticate header can now be customized by specifying it in the TCPIPSERVICE definition. This realm name is displayed whenever a Web browser requests the username and password that are to be used to access the server system.
- When CICS is an HTTP client, the credentials (username and password) that need to be sent to the server can now be specified on the WEB SEND command. If the credentials are omitted, they can be supplied by the XWBAUTH global user exit. Samples of XWBAUTH are provided that supply these credentials by accessing an LDAP server or a Security Token Service.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Ordering information

Advance publications: The publication CICS Transaction Server for z/OS Version 3 Release 2: Release Guide, GC34-6811, is available now for free download, in PDF format, from the IBM Publications Center, at

<http://www.ibm.com/shop/publications/order>

Ordering z/OS through the Internet

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the U.S., Canada and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries Web site at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

Current licensees

Current licensees of CICS TS V3.1 will receive instructions on how to order this update from IBM Integrated Supply Chain.

When CICS TS V3.2 is available, CICS TS V3.1 will no longer be available.

New licensees

Shipment will begin on the planned availability date.

- Orders that ship before the planned availability will receive CICS TS V3.1.
- Orders that ship after the planned availability date will receive CICS TS V3.2.

The existing ordering information for CICS TS V3 (5655-M15) is unaffected by this announcement, with the exception of the ordering for the CICS Service Flow Feature. However, the whole ordering information is repeated here for the convenience of users.

The base CICS TS product code can only be ordered through Customized Offerings. However, an MES order may be used for optional components that are not specified on the base order. For these orders, specify:

Type: 5655 Model : M15

Basic license: To order a basic license, specify the program number and feature number 9001 for asset registration. Specify the feature number of the desired distribution medium shown below.

To order a basic license, specify the program number 5655-M15.

Specify feature number 9001 for asset registration. Note that this registration is required even though delivery is by Customized Offerings (CBPDO and ServerPac).

Note that an order placed by the standalone path results in the shipment of the associated items (refer to the Packaging section), but not of the machine-readable media. In order to receive machine-readable media, an order must be placed through the Customized Offerings.

CICS Service Flow Feature: To order this feature of CICS TS V3.2 through the standalone ordering path, specify the program number 5655-M15 and feature number 9001 for asset registration.

In addition specify the following:

Description	Orderable Supply ID
CICS Transaction Server for z/OS V3.2: CICS Service Flow Feature	S013W83

Note: Following the general availability of CICS TS V3.2, the previous orderable supply ID for the CICS Service Flow Feature, S0129LW, will no longer be usable.

The CICS Service Flow Feature of CICS TS V3.2 will not be available immediately on the general availability of CICS TS V3.2. Orders can be placed, but will result in delivery at a later date.

Service Flow Feature for CICS TS V3.1: The Service Flow Feature for CICS TS V3.1 is again available, as from August 24, 2007. Orders can be accepted, via CBPDO only, from August 21, 2007. The Service Flow Feature for CICS TS V3.1 is now ordered as a feature of CICS TS V3.2, as follows.

Description	Orderable Supply ID
CICS Transaction Server for z/OS V3.2: Service Flow Feature for CICS TS V3.1	S014CP6

Parallel sysplex license charge (PSLC) basic license: To order a basic license, specify the program number and quantity of MSU.

Specify feature number 9001 for asset registration.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable PSLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	Basic MLC, PSLC below 3 MSU Basic MLC, PSLC AD SYSUSGREG NC, PSLC AD

Workload License Charge (WLC) Basic License: If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable WLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the Workload Registration Variable WLC Identifier on the licenses.

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	Basic MLC, Variable WLC Workload Registration, Variable WLC

Entry Workload License Charge (EWLC) Basic License: To order a basic license, specify the program number and the quantity of MSUs.

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	Basic MLC, Entry WLC

S/390® and System z Usage License Charge, basic license: Specify the applicable S/390 and System z Usage License Charge option. Also, specify feature number 9001 for asset registration.

Charges will be based upon the Peak MSUs. Usage reported between thresholds of features 1, 2, or 3, will be rounded up to the next MSU level. Above 1.0 MSU, usage will be rounded to the nearest whole MSU. For example, 2.4 MSUs would round to 2.0 MSUs for pricing, and 2.5 MSUs would round to 3.0 MSUs for pricing.

The customer pricing will be determined by selecting either:

- Feature 1 (if usage is below 0.25 MSU)
- Feature 2 (if usage is between 0.26 and 0.50)
- Feature 3 (if usage is between 0.51 and 1.0)

Feature 3+ (# MSUs from 2-11 times the charge associated with feature number 4) + (# MSUs from 12-44 times the charge associated with feature number 5) + (# MSUs from 45-78 times the charge associated with feature number 6) + (# MSUs above 78 times the charge associated with feature number 7 – if applicable)

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	0 to 0.25 MSU Base 0.26 to 0.5 MSU Base 0.51 to 1.0 MSU Base Level A Chg/MSU (2 to 11 MSUs) Level B Chg/MSU (12 to 44 MSUs) Level C Chg/MSU (45 to 78 MSUs) Level D Chg/MSU (Above 78 MSUs) Level D Chg/MSU (Above 78 MSUs), per 50 MSUs

Examples for ordering:

A customer with a measured usage (from the IBM Measured Usage report) of 0.3 MSU would:

Order quantity 1 of the 0.26 to 0.5 MSU base feature

A customer with 6.6 MSUs (from the IBM Usage report) would:

Be rounded up to 7.0 MSUs

Order quantity 1 of the "0.51 to 1.0 MSU" base feature

Order quantity 6 of the Level A 1 MSU feature

A customer with 15 MSUs (from the IBM Usage report) would:

Order quantity 1 of the "0.51 to 1.0 MSU" base feature

Order quantity 10 of the Level A 1 MSU feature

Order quantity 4 of the Level B 1 MSU feature

A customer with 50 MSUs (from the IBM Usage report) would:

Order quantity 1 of the "0.51 to 1.0 MSU" base feature

Order quantity 10 of the Level A 1 MSU feature

Order quantity 33 of the Level B 1 MSU feature

Order quantity 6 of the Level C 1 MSU feature

A customer with 85 MSUs (from the IBM Usage report) would:

Order quantity 1 of the "0.51 to 1.0 MSU" base feature

Order quantity 10 of the Level A 1 MSU feature

Order quantity 33 of the Level B 1 MSU feature

Order quantity 34 of the Level C 1 MSU feature

Order quantity 7 of the Level D 1 MSU feature

Growth opportunity license charge (GOLC): To order a basic license, specify the program number and the correct level.

Specify feature number 9001 for asset registration.

Specify the GOLC monthly license option.

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	Basic MLC, GOLC

System z entry license charge (zELC): To order zELC software, specify the program number and z800 model. Also specify feature number 9001 for asset registration.

Specify the zELC monthly license option.

Entitlement identifier	Description	License option / pricing metric
S0118T7	CICS Transaction Server for z/OS Version 3	Basic MLC, zELC

Single version charging: To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

Basic machine-readable material

Orderable Supply ID	Language	Distribution Medium	Description
S011HRC	US English	3480 Tape Cartridge	CICS TS V3.2
S0118TF	Simplified Chinese	3480 Tape Cartridge	CICS TS V3.2
S0118TD	Japanese	3480 Tape Cartridge	CICS TS V3.2

Note that the product as delivered includes messages and CICSplex SM Web User Interface panels and online help translated to all of these languages. All languages exist on the same tape; the different orderables only affect the shipment of translated hardcopy publications together with the tapes.

Customization options: Select the appropriate feature numbers to customize your order to specify the delivery options desired. These features can be specified on the initial or MES orders.

Example: If publications are not desired for the initial order, specify feature number 3470 to ship media only. For future updates, specify feature number 3480 to ship media updates only. If, in the future, publication updates are required, order an MES to remove feature number 3480; then, the publications will ship with the next release of the program.

Initial shipments

Feature	Description
3444	Serial Number Only (suppresses shipment of media and documentation)
3470	Ship Media Only (suppresses initial shipment of documentation)
3471	Ship Documentation Only (suppresses initial shipment of media)

Update shipments

Feature	Description
3480	Ship Media Updates Only (suppresses update shipment of documentation)
3481	Ship Documentation Only (suppresses update shipment of media)
3482	Suppress Updates (suppresses update shipment of media and documentation)

Optional machine-readable material: To order, select the feature number for the desired distribution medium:

Optional Source (excludes Object-Code Only modules)

Description	Orderable Supply ID
Optional Source (excludes Object-Code Only modules) -- 3480 Tape Cartridge	S0118TP

Source Listings: No source listings are provided for CICS TS V3.2. However, access to such listings is available by the View Program Listings (VPL) system. Customers wanting to use VPL to view source listings for CICS TS V3.2 can get a user guide for VPL by sending an e-mail to:

vpladmin@mahvm1.boulder.ibm.com

Information Center and publications

Information Center

The Information Center is powered by Eclipse technology. It consists of an Eclipse Help System, with the information for CICS TS V3.2 as a set of plug-ins. The Information Center can be run from the CD-ROM provided with the product, or it can be installed onto a workstation or server.

The Information Center CD-ROM is Form Number SK4T-2578. This includes the publications that previously were licensed. One copy of this is automatically shipped as part of the product.

The Information Center can also be viewed, downloaded, or ordered on CD-ROM (for a fee) from the IBM Publications Center, at

<http://www.ibm.com/shop/publications/order>

The Information Center Readme and What's New (Release Guide) sub-sections are translated into Spanish, Brazilian Portuguese, Japanese, and Simplified Chinese. The Migration sub-section is also translated into Spanish and Japanese. The translated versions will only be made available through the Update Manager feature in the Information Center on or after June 29, 2007. Additional sub-sections, which may be translated at a later date, can also be accessed in this way.

Information Center enhancements: The CICS TS V3.2 Information Center is upgraded to run on the IBM Eclipse Help System V3.1.1 level. As a result, the Information Center has a number of enhancements:

- Update Manager. IBM refreshes the documentation in the Information Center on a regular basis. A user can obtain these updates directly from an installed Information Center using the Update Manager functionality, rather than reinstalling the whole Information Center from a CD-ROM or download. A command line interface is provided for server installations, and an icon in the user interface is provided for local installations. Update Manager allows a user to select and download new and updated information on a special download site.
- An enhanced search engine and search result listing. The enhanced search engine returns results that are more relevant to the search criteria, and the search results can optionally be viewed with an additional summary for each topic.
- Improvements to the user interface. These include the introduction of the "Quick menu", which allows users either to search or print a topic or section of the navigation, and a new icon to turn search highlighting on and off.

In the CICS TS V3.2 Information Center, the CICS documentation has been enhanced to include the following:

- New headers and footers on every page, providing a feedback link, timestamp for when the topic was last updated, a link to the PDF, and a Web site for the displayed topic.
- Additional learning path and new product overview section.
- Anchors. The CICS navigation now includes a number of anchor points, allowing users to write their own document plug-ins to use these anchor points and extend the information center navigation. The list of anchor points is published in the Information Center.

The inclusion of all the documentation for CICS TS V3.2, including the documentation that previously was licensed, in a single unlicensed Information Center (available as a CD-ROM and also online and by download from the Publications Center) makes for much easier availability of all information on CICS TS.

Printed publications: In addition to the softcopy information in the Information Center, the following printed documentation is delivered as hardcopy with the product.

Title	Form number
CICS Transaction Server for z/OS V3.2: Release Guide	GC34-6811
CICS Transaction Server for z/OS V3.2: Licensed Program Specifications	GC34-6810
CICS Transaction Server for z/OS V3.2: Memo to Licensees	GI 13-0514
CICS Transaction Server for z/OS V3.2: Program Directory	GI 13-0515

In addition, if the CICS Service Flow Feature is ordered:

CICS Service Flow Feature: Program Directory	GI 13-0505
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Of these, The Licensed Program Specifications and the Memo to Licensees are in hardcopy only; they are not provided in the Information Center.

Additional printed copies of these books can be purchased for a fee from the online IBM Publications Center, at

<http://www.ibm.com/shop/publications/order>

A PDF version of the Release Guide for CICS TS V3.2 is available now at the IBM Publications Center.

Publications: The following publications are provided within the Information Center in PDF format. These publications are not separately available, but if hardcopy is required, they can be printed from the PDF files.

Note that the information in the Information Center is derived from the same source material as for these publications; in general, concerning any particular topic, the same material can be found either in the Information Center or in the applicable publication. However, information for the CICS — MQ adapter function, newly introduced in this release, will only be provided in the Information Center.

Title	Form number
CICS Transaction Server for z/OS V3.2: Program Directory	GI 13- 0515
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for OS/390 V1.3	GC34- 6855
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V2.2	GC34- 6856
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V2.3	GC34- 6857
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V3.1	GC34- 6858
CICS Transaction Server for z/OS V3.2: Release Guide	GC34- 6811
CICS Transaction Server for z/OS V3.2: Installation Guide	GC34- 6812
CICS Transaction Server for z/OS V3.2: System Definition Guide	SC34- 6813
CICS Transaction Server for z/OS V3.2: Customization Guide	SC34- 6814
CICS Transaction Server for z/OS V3.2: Resource Definition Guide	SC34- 6815
CICS Transaction Server for z/OS V3.2: Operations and Utilities Guide	SC34- 6816
CICS Transaction Server for z/OS V3.2: CICS Supplied Transactions	SC34- 6817
CICS Transaction Server for z/OS V3.2: Application Programming Guide	SC34- 6818
CICS Transaction Server for z/OS V3.2: Application Programming Reference	SC34- 6819
CICS Transaction Server for z/OS V3.2: System Programming Reference	SC34- 6820
CICS Transaction Server for z/OS V3.2: Front End Programming Interface User's Guide	SC34- 6821
CICS Transaction Server for z/OS V3.2: C++ OO Class Libraries	SC34- 6822
CICS Transaction Server for z/OS V3.2: Distributed Transaction Programming Guide	SC34- 6823
CICS Transaction Server for z/OS V3.2: Business Transaction Services	SC34- 6824
CICS Transaction Server for z/OS V3.2: Java Applications in CICS	SC34- 6825
CICS Transaction Server for z/OS V3.2: Problem Determination Guide	SC34- 6826
CICS Transaction Server for z/OS V3.2: Messages and Codes	GC34- 6827
CICS Transaction Server for z/OS V3.2: Trace Entries	SC34- 6828
CICS Transaction Server for z/OS V3.2: Intercommunication Guide	SC34- 6829
CICS Transaction Server for z/OS V3.2: External Interfaces Guide	SC34- 6830
CICS Transaction Server for z/OS V3.2: Internet Guide	SC34- 6831
CICS Transaction Server for z/OS V3.2: Recovery and Restart Guide	SC34- 6832
CICS Transaction Server for z/OS V3.2: Performance Guide	SC34- 6833
CICS Transaction Server for z/OS V3.2: IMS Database Control	

Guide	SC34- 6834
CICS Transaction Server for z/OS V3. 2: RACF(R) Security Guide	SC34- 6835
CICS Transaction Server for z/OS V3. 2: Shared Data Tables Guide	SC34- 6836
CICS Transaction Server for z/OS V3. 2: CICS DB2 Guide	SC34- 6837
CICS Transaction Server for z/OS V3. 2: Web Services Guide	SC34- 6838
CICS Transaction Server for z/OS V3. 2: CICSplex SM Concepts and Planning	SC34- 6839
CICS Transaction Server for z/OS V3. 2: CICSplex SM Web User Interface Guide	SC34- 6841
CICS Transaction Server for z/OS V3. 2: CICSplex SM Administration	SC34- 6842
CICS Transaction Server for z/OS V3. 2: CICSplex SM Operations Views Reference	SC34- 6843
CICS Transaction Server for z/OS V3. 2: CICSplex SM Monitor Views Reference	SC34- 6844
CICS Transaction Server for z/OS V3. 2: CICSplex SM Managing Workloads	SC34- 6845
CICS Transaction Server for z/OS V3. 2: CICSplex SM Managing Resource Usage	SC34- 6846
CICS Transaction Server for z/OS V3. 2: CICSplex SM Managing Business Applications	SC34- 6847
CICS Transaction Server for z/OS V3. 2: CICSplex SM Application Programming Guide	SC34- 6848
CICS Transaction Server for z/OS V3. 2: CICSplex SM Application Programming Reference	SC34- 6849
CICS Transaction Server for z/OS V3. 2: CICSplex SM Resource Tables Reference	SC34- 6850
CICS Transaction Server for z/OS V3. 2: CICSplex SM Messages and Codes	SC34- 6851
CICS Transaction Server for z/OS V3. 2: CICSplex SM Problem Determination	SC34- 6852
CICS Transaction Server for z/OS V3. 2: CICS Family Interproduct Communication	SC34- 6853
CICS Transaction Server for z/OS V3. 2: CICS Family Communicating from CICS on System/390(R)	SC34- 6854
CICS Transaction Server for z/OS V3. 2: Diagnosis Reference	SC34- 6862
CICS Transaction Server for z/OS V3. 2: Data Areas	SC34- 6863
CICS Transaction Server for z/OS V3. 2: Supplementary Data Areas	SC34- 6864
CICS Transaction Server for z/OS V3. 2: Debugging Tools Interface Reference	SC34- 6865

Translated books: A subset of the publications will be translated to Spanish, Brazilian Portuguese, Japanese, and Simplified Chinese. These books can be obtained, or hardcopy (where available) ordered, from the IBM Publications Center on or after June 29, 2007. Additional publications, which may be translated at a later date, can also be accessed in this way.

Title	Form number
CICS Transaction Server for z/OS V3. 2: Release Guide -- Japanese	GC88- 4364
CICS Transaction Server for z/OS V3. 2: Migration from CICS Transaction Server for OS/390 V1.3 -- Japanese	GC88- 4366
CICS Transaction Server for z/OS V3. 2: Migration from CICS Transaction Server for z/OS V2.2 -- Japanese	GC88- 4367
CICS Transaction Server for z/OS V3. 2: Migration from CICS Transaction Server for z/OS V2.3 -- Japanese	GC88- 4368
CICS Transaction Server for z/OS V3. 2: Migration from CICS Transaction Server for z/OS V3.1 -- Japanese	GC88- 4369
CICS Transaction Server for z/OS V3. 2: Performance Guide -- Japanese	GC88- 4375
CICS Transaction Server for z/OS V3. 2: Release Guide -- Simplified Chinese	G151- 0657
CICS Transaction Server for z/OS V3. 2: Installation Guide -- Simplified Chinese	G151- 0658
CICS Transaction Server for z/OS V3. 2: Internet Guide -- Simplified Chinese	S151- 0659
CICS Transaction Server for z/OS V3. 2: Release Guide -- Spanish	GC11- 3462

CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for OS/390 V1.3 -- Spanish	GC11-3464
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V2.2 -- Spanish	GC11-3465
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V2.3 -- Spanish	GC11-3466
CICS Transaction Server for z/OS V3.2: Migration from CICS Transaction Server for z/OS V3.1 -- Spanish	GC11-3467
CICS Transaction Server for z/OS V3.2: Release Guide -- Brazilian Portuguese	G517-8870
CICS Transaction Server for z/OS V3.2: Installation Guide -- Brazilian Portuguese	G517-8871

Product Kits (PKITs): In addition, the books for the product, as included on the Information Center CD-ROM in PDF format, are available separately for download from the IBM Publications Center, in both PDF and BookManager softcopy form. These are:

Order	Form number
BookManager PKIT	SK4T-2580
PDF PKIT	SK4T-2581

Refer to the Compatibility section for a statement concerning BookManager publications.

Collection Kit for Transaction Processing and Data Products: This Collection Kit is a set of CD-ROMs, containing books in BookManager and also PDF format for a range of IBM transaction processing and data products, including CICS TS V3.2 and other members of the CICS family. Its Form Number is SK2T-0730.

The CICS TS V3.2 books are planned to be included in it in the next refresh following general availability, which will be in 2008. However, refer to the statement on BookManager books in the Compatibility section.

One copy of the Collection Kit CD-ROM will be shipped, free of charge, with the product if the following is specified in the order.

Description	Orderable Supply ID
Collection Kit for Transaction Processing and Data Products	S0118TL
Collection Kit for TP & D Products -- DVD	S013Z7B

Further copies of the Collection Kit are available from the online IBM Publications Center, for a fee.

Redbooks™ and Redpapers: IBM Redbooks and Redpapers are developed and published by the IBM International Technical Support Organization (ITSO). They typically provide positioning and value guidance, installation and implementation experiences, typical solution scenarios, and step-by-step "how-to" guidelines. They often include sample code and other support materials that are also available as downloads from this site.

They are available online, as hardcopy books, in IBM Redbook CD-ROM collections, and on the Internet through the external IBM Redbooks Web site and other sites.

The following are some more recent Redbooks relevant to CICS TS V3.2.

- Architecting Access to CICS within an SOA (SG24-5466)
 - New level published November 1, 2006
- Implementing CICS Web Services (SG24-7206)
 - Published June 28, 2006; Updated for WS-Security, published December 12, 2006
- Securing Access to CICS within an SOA (SG24-5756)
 - Published December 12, 2006
- Application Development for CICS Web Services (SG24-7126)
 - Published May 11, 2006

- Java Application Development for CICS (SG24-5275)
 - New level published August 14, 2005
- CICS Transaction Server V3R1 Channels and Containers Revealed (SG24-7227)
 - Published September 15, 2006
- Threadsafe Considerations for CICS (SG24-6351)
 - New level published July 21, 2006
- CICSplex SM Workload Management for CICS Web Services (SG24-7144)
 - Published December 5, 2005
- Revealed! The Next Generation of Distributed CICS (SG24-7185)
 - Published September 18, 2006
- Using the Web User Interface in CICSplex SM (SG24-6793)
 - Published October 16, 2005
- Migration Considerations for CICS Using CICS CM, CICS PA, and CICS IA (SG24-7294)
 - Published October 19, 2006

Note: There are also many Redbooks about CICS Tools and about CICS Transaction Gateway and other related products.

For further information on Redbooks, visit

<http://www.redbooks.ibm.com/>

The following are some Redpapers relevant to CICS TS V3.2:

- From code to deployment: Connecting to CICS from WebSphere for z/OS (REDP-0206)
 - Published May 14, 2002, updated February 21, 2003
- WebSphere for z/OS to CICS and IMS Connectivity Performance (REDP-3959)
 - Published January 10, 2006, updated May 2, 2006
- Revealed! The Next Generation of Distributed CICS (REDP-4099)
 - Published April 26, 2006
- Performance Considerations and Measurements for CICS and System Logger (REDP-3768)
 - Published December 8, 2003

For further information on Redpapers, visit

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Customized offerings

Product deliverables are shipped only via Customized Offerings (for example, CBPDO, ServerPac, SystemPac®).

CBPDO and ServerPac are offered for electronic delivery, where ShopzSeries product ordering is available. For more details on electronic delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

Media type for this software product is chosen during the customized offerings ordering process. Based on your customer environment, it is recommended that the highest possible density tape media is selected. Currently offered media types are:

- CBPDOs — 3480, 3480 Compressed, 3590, 3490, 3592*
- ServerPacs — 3480, 3480 Compressed, 3490E, 3590
- SystemPacs — 3480, 3480 Compressed, 3490E, 3590

* 3592 is highest density media, which will ship the smallest number of components

Once a product becomes generally available, it will be included in the next ServerPac and SystemPac monthly update.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after inclusion in ServerPac.
- SystemPac shipments will begin four weeks after inclusion in SystemPac due to additional customization, and data input verification.

Terms and conditions

The Terms and Conditions for CICS TS V3.2 are based on those which apply for CICS TS V3.1. However, they include some changes, and are here restated in full.

Information Center: Customers with a license for CICS Transaction Server for z/OS V3.2 are licensed, at no additional charge, to install and run the Information Center on suitable workstation or server machines, which are not the designated machine, within the same enterprise. It may be run on as many machines as are reasonably necessary for use in conjunction with CICS TS V3.2.

WebSphere Developer for System z: This Program is accompanied by a copy of WebSphere Developer for System z (WDz), with one Proof of Entitlement. This entitles you to install and use WebSphere Developer for System z for any purpose, subject to the terms and conditions of the license agreement which accompanies WebSphere Developer for System z. There are no additional restrictions on its use.

WDz is not part of this program, is subject to its own license agreement, does not have defect support, and is provided solely for promotional purposes.

SOAP for CICS feature: A license for CICS Transaction Server for z/OS V3.2 includes a license entitlement for the "SOAP for CICS" feature; customers who have been licensed to use the "SOAP for CICS" feature of IBM CICS Transaction Server for z/OS V2.2 or V2.3 may retain this feature after their license for CICS TS V2.2 or V2.3 has been relinquished and continue to use it with IBM CICS Transaction Server for z/OS V3.2.

Connectivity code: Customers with a license for CICS TS V3.2 may copy, free-of-charge, the following connectivity code to any z/Architecture machine in the same sysplex, whether running CICS or not, to enable communication with the licensed CICS TS V3.2:

- CICS External Communication Interface (EXCI — Load Library SDFHEXCI)
- CICS inter-region communication SVC (DFHIRP)

The service and support entitlement under the license for the CICS TS V3.2 extends to copies of the above items when they are running on a different z/Architecture machine for this purpose.

Application development and system utilities: To assist developing, testing, or analyzing their applications offline from their production CICS systems, customers with a CICS Transaction Server for z/OS V3.2 license may copy the following utilities, free of charge, to any z/Architecture machine within the same enterprise:

- The CICS Translator (modules DFHEAP1\$, DFHEDP1\$, DFHECP1\$, and DFHEPP1\$, which are to be found in SDFHLOAD)
- The Exec Interface stubs DFHELII, DFHEAI, and DFHEAI0
- The Statistics utility program (DFHSTUP)
- The Trace utility program (DFHTUP)
- The Dump utility program (DFHDUP)
- The IPCS Dump Exit module (DFHPD650)

- The IPCS trace formatting modules (DFHTU650 and DFHTG650)
- The Monitoring utility program (DFHMNDUP)
- The System Definition File utility program (DFHCSDUP)
- The Load Module Scanner (DFHEISUP)
- The Load Library Scanner (CAULMS)
- The BMS macro generation utility program (DFHBMSUP)
- The Journal utility program (DFHJUP)
- The Sample monitoring data print program (DFH\$MOLS)
- The CICS log stream subsystem interface (SSI) exit routine (DFHLGCVN and DFHGTVCN)
- The CICS log stream and coupling facility sizing utility (DFHLSCU)
- CICS tools for Web services (the USS scripts DFHWS2LS and DFHLS2WS, the JCLs DFHWS2LS and DFHLS2WS, and the HFS files dfjwsdl.jar, xsd.jar, ecore.change.jar, xsd.resources.jar, common.jar, ecore.jar, xsd.test.jar, common.resources.jar, qname.jar, and wsdl4j.jar)

The service and support entitlement under the license for the CICS Transaction Server for z/OS V3.2 extends to copies of the utilities listed above when they are running on a different z/Architecture machine within the same enterprise.

Translator use with CICS TS V3.2: The translators, which are shipped with CICS TS V3.2, cannot be used with some earlier (pre-Language Environment) compilers. With respect to any translator, which can be used with earlier compilers, the following conditions apply:

1. Provided the customer has a current license for both CICS TS V3.2 and the applicable compiler, the customer may retain, and continue to use, any translator shipped with any earlier level of CICS.
2. Customers do not require a license for earlier levels of CICS to support any such use or retention of translators.

Note: If used in this way, any translator, which was shipped with a level of CICS that is not (or no longer) in service, is unsupported.

Jar files: Customers with a license for CICS Transaction Server for z/OS V3.2 are licensed to make and use as many copies of applicable jar files as they require in conjunction with their use of the licensed CICS TS V3.2. These are:

- The JCICS classes: dfjcics.jar
- CICSEJBClient.jar

Open Source items: This product contains Open Source items. Text concerning the licensing of these items is included in the product Licensed Program Specifications.

CICS WS-Security Component: The implementation of WS-Security, the CICS WS-Security Component, is packaged in the product as a unique FMID with the identifier JCI640W. This FMID is licensed under the terms and conditions of the IBM International Program License Agreement (IPLA). A delivery of CICS TS V3.2 includes paper items licensing the CICS WS-Security Component.

Web Services Assistant: Customers with a license for CICS Transaction Server for z/OS V3.2 are licensed to copy the Web Services Assistant to a workstation running a Microsoft Windows operating system. Any number of copies can be made. This provides function for CICS TS V3.2 equivalent to that which is available for CICS TS V3.1 by downloading Support Pac CA71.

CICS Service Flow Feature: The CICS Service Flow Feature is an optional feature of CICS TS V3.2. Should the license for CICS TS V3.2 lapse, then so does the license for the CICS Service Flow Feature.

IBM Operational Support Services — SupportLine: Yes

IBM has transformed its delivery of hardware and software support services to put you on the road to higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

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Sub-capacity charges for VWLC products are based on product LPAR utilization capacity. Product LPAR utilization capacity for a VWLC product is the highest number of MSUs utilized by the combined LPARs in which a VWLC product runs concurrently during a reporting period. The number of MSUs is based on the highest observed rolling four-hour average utilization used by the combination of the relevant LPARs during the reporting period. For additional details on IBM Workload License Charges, refer to [200-354](#), dated October 3, 2000, [201-258](#), dated September 11, 2001, and [202-105](#), dated April 30, 2002.

Sub-capacity charges terms and conditions

System z software charges at less than full machine capacity for eligible VWLC products apply when z/OS is running in z/Architecture (64-bit) mode on as System z 900, no other MVS-based operating system is licensed to that server and the required information is provided by the customer in accordance with the applicable terms.

Sub-capacity charges for a VWLC product is based on the utilization of the LPARs where or when the product executes. To obtain charges at less than full machine capacity for VWLC products the customer is required to:

- Sign and abide by the terms of the Attachment for IBM System z Workload License Charges — (Z125-6516)
- Obtain the latest version of the Sub-Capacity Reporting Tool
- Install any VWLC product and System z 900 Licensed Internal Code (LIC) service required for sub-capacity charging. Required service will be listed on the WLC web site
<http://www.ibm.com/zseries/swprice>
- Collect SMF data as required by the Sub-Capacity Reporting Tool. Retain the collected SMF data for a period of not less than six months.
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- Configure machine to send weekly Transmit System Availability Data (TSAD) to IBM through the System z 900 Remote Support Facility (RSF). If the machine cannot connect via the RSF, provide this TSAD through an alternate means documented in the z/OS publication Planning for Workload License Charges at

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